

RUSSIAN JOURNAL OF AGRICULTURAL AND SOCIO- ECONOMIC SCIENCES

ISSN 2226-1184



#6(66)

June 2017

"RJOAS is an interdisciplinary open access journal of agriculture and socio-economic studies. The journal aims at establishing a bridge between theory and practice in the fields of agriculture and socio-economic research..."

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DOI <https://doi.org/10.18551/rjoas.2017-06.01>

THE IMPACT OF SERVICE VARIETY ON ORGANIZATIONAL STRUCTURE IN A HETEROGENEOUS SECTOR: A REGRESSION ANALYSIS OF GERMAN RETAIL HORTICULTURE

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ABSTRACT

Structural change towards services becomes exigent when the sales do not meet operational direction anymore. Thus, the a priori strong heterogeneity in German retail horticulture (GRH) requires knowledge in the interaction of relevant internal parameters to find the best individual combination. On this account, the present paper has two goals: First, to systematise relevant, internal characteristics (contingency), considering previous research, by running a confirmatory factor analysis. Second, we investigate the impact of the service variety on the organizational structure and economic parameters, in order to find the right combination for GRH by running regression analysis. Based on a previous exploratory study, 283 retail nurseries were asked questions in an online survey and their answers were interpreted in a quantitative way. Part 1: We gave proof that relevant situational characteristics on GRH include size, level of controlling, experience and service variety as internal factor variables, showing high eigenvalues. Part 2: We found causal relationships between the service variety and the number of hierarchy, span of control and hierarchy configuration (H1). The size is also of significant importance but on a minor level. Size faces positive correlation on delegation (H2), and the size and the level of controlling also have adequate impact on the sales volume. Meanwhile the configuration variables have no impact on the sales volume. This means that sales volume is related to the size and the level of controlling but independent of the configuration. Accordingly, there is no coordinated interaction of contingency, structure and delegation variables with impact on the sales volumes (H3). Structural delegations on sales volume are significantly acquisition/marketing and planning as operational performance-variables, which are mostly done by the owner/CEO himself. These tasks show negative coefficients, which lead to the proposal that with growing sales, the level of delegation has to be improved and these tasks must be transferred to employees. On this account, central structures focussing on performances, not products, and a low level of departmentalization together make up the ideal organizational structure for GRH.

KEY WORDS

Confirmatory factor analysis, heterogeneity, organizational analysis, regression analysis, services.

In times of structural change, increasing competition, multiple sale channels and a war for talent (Meyerding, 2016), the German horticulture market is exposed to new requirements. Keeping up means turning away from accustomed procedures. The economy of family businesses predominantly originated from crop growing production with wholesaling distribution (Bahnmüller, 2011; BMELV, 2013). Nowadays, procedure and distribution channels have often modified to retail and services, known as retail horticulture. With the traditional heterogeneous structure breaking up, the operational emphasis is being deferred, and a new spectrum of products and services is emerging (Hohengartner, 2016). Most of the horticultural companies are small-medium sized enterprises (SMEs) with an increasing service portfolio (Engelke, 2016) but without adequate management tools (Gabriel & Bitsch, 2014). This is not limited to German horticulture but can be conferred to European horticulture in general.

The German horticulture ranks with a gross value of 1% within the German National Economy, whereas the retail sector ranks highest with a gross value of 22% (Dirksmeyer & Fluck, 2013). There is a gradient from larger companies with higher turnover than smaller companies, and there are also better profits for retail and service companies than other companies (ZBG, 2014). Although German retail horticulture (GRH) has higher consumption per capita on plants and services compared to European retail horticulture (Tröster, 2016), sales volumes are stagnating and decreasing, respectively, which correlates with a decreasing gross income and negative net income (ZBG, 2015). Hence, from an economic view, the future looks dire. The situation becomes exigent when sales does not conform to the operational direction anymore, and structural change is inevitable. When there is economic dissatisfaction, management has to react. As the relevant literature shows, there is a dependency between management skill level and successfully handling change management processes (Wong, 2005 e.g.). The deficiencies of GRH highlight the necessity to investigate organizational structures.

One way to investigate organizational change is to take the contingency approach (CA). This approach identifies the context of the situation to highlight the individual organizational structure. The aim is principally to identify relationships between the dependent variable of organizational structure and the independent variable of contextual situations and use the correlation between the variables to explain the individual organization. Pairing the right structure with the appropriate situation creates the 'fit' (see Figure 1).

Because of previous studies, Kieser (1985) discussed the problem of low correlation, high variances, and highly inexplicable solutions in the CA. This discussion leads to criticism of the CA, because the monocausal view and the lack of relevant variables obscure identification of efficiencies (Kieser, 1985). Despite these fundamental criticisms, there is consensus that the CA is appropriate to explain structural differences because relevant influencing factors and their impact are considered, which can help to optimize internal parameters within the wide spectrum of contingent research (Armbrecht, 1992). The CA helps to structure and orient the organizational system (Kieser & Kubicek, 1995).

The purpose of the CA differs between authors. While Vahs (2009) & Kieser (2006) classify the construct as one modern organizational theory that takes a dominant role, others believe the CA is only suitable as a philosophy (Schreyögg, 2003) to build a conceptual framework in organizational studies (Lee, 1989). Even with the different points of view, there is consensus that the CA is one possible approach to analyse an organization and that the CA represents an improvement over previous approaches, such as the bureaucracy model from Weber (Al-Wagdani, 2010). Because of its progression with successive components that enables a holistic view, the CA was chosen for the conceptual framework of the current research.

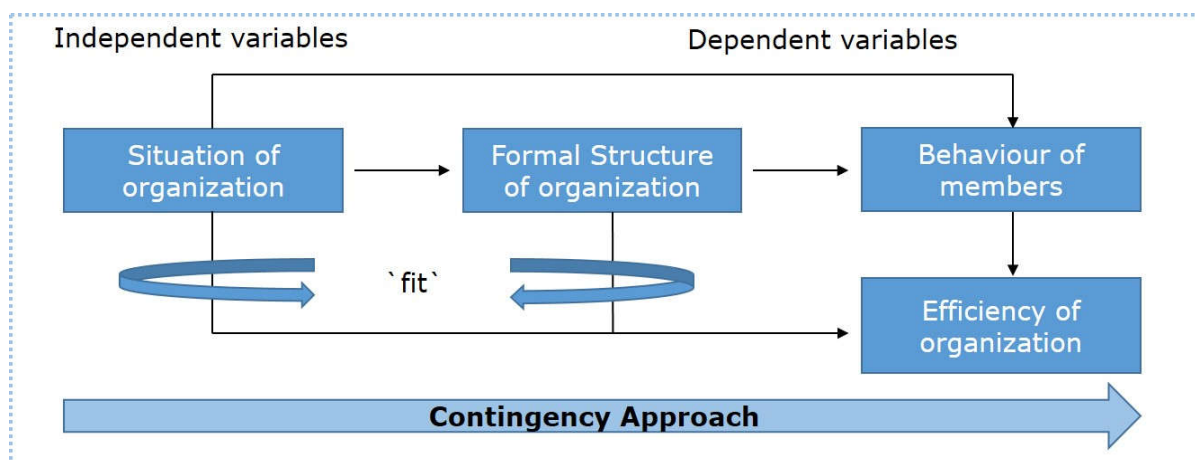


Figure 1 – The analytical model of the contingency approach, in accordance with Vahs (2009), Kieser (1985) and Kubicek & Wollnik (1975).

Fundamental observations of the CA were made by Hall (1972), Pugh & Hickson (1968), Pugh, Hickson & Hinings (1969), and later Auzair (2015). Vahs (2009) summarizes the contextual variables, subdivided as follows: internal variables of enterprise age and size, kind of foundation, product portfolio, technology, critical situation, complexity, development stage, and successor establishment; and external variables of competition, customization and the global environment. These factors mainly result from the manufacturing sector; but there is little research on the retail sector and its place in the horticulture market. Böckelmann (1995) highlighted different factors that influence organizational structure in crop production in a study that focused on wholesaling without services. He found that the role (behaviour, leadership) of the entrepreneur is strongly affected by the company size and also the product program, because an extension of the portfolio requires different structure. Schwarz (2008) researched horticultural services and determined their success factors, such as location, employment and organizational efficiency in a study that analysed two individual business lines against GRH with a mix of properties. Therefore, different basic requirements impede to transfer on other branches of trade.

German retail horticulture is faced with structural changes, little knowledge in structural organization available, and an increasing demand on services. The next section describes the relevance of services and the transition to the structural variables in order to formulate the hypotheses.

Different kind of services. Different kinds of services are pure services or added services in combination with the core product (Gann & Salter, 2000; Lovelock, 1983 e.g.). This bundled package is called a hybrid product. Often, companies start providing services by with added services introduced in their day-to-day business; later, when the business is growing, pure services will follow. Transforming from a producer to a service provider requires a new focus on process organization and organizational structure (Guerrieri & Meliciani, 2005; Miller, 1982). Departmentalization needs to be improved in order to optimize the division of work. Improving the departmentalization enables the creation of self-contained departments, internal outsourcing and ancillary departments, and external outsourcing (Rainfurth, 2003; Rogelio & Kellenberg, 2003). Note that GRH is also transforming: it originated as a crop-growing production industry and is now broadening its profile. The compound of the product mix plays a vital role in the structural differences between manufacturing and service companies (Marhaeni & Nugroho, 2015; Dutta, 1991). For example, heterogeneous enterprises require a better focus on employment and monitoring and differ in size and behaviour (Oi, 1983). Nesheim (1990) agrees and interrelates the characteristics of service management and the organizational design. He states, for example, that the closer the interaction between the customer and the producer, the more important delegation is. Furthermore, when production and consumption occur simultaneously, flexibility and outsourcing should be increased. Dealing with services automatically also requires the customer integration as central part (Chervonnaya, 2003 e.g.).

There is high diversity in different lines of business, and that is also the case in GRH. Engelke (2013) discovered that the enterprise size and the operational emphasis are variables that influence the service portfolio. In contrast to pure retail companies, service companies show a superior span of control, lower control intensity, higher formalisation and divisional configuration, with superior departmentalization and level of controlling. In a health service survey, Da-Cruz et al. (2011) identified the location, the size, the specific request and the offers on the local surroundings (competition) as influencing factors in service lines, especially in companies with a heterogeneous product portfolio (Hahn & Taylor, 1990). An increasing product / service portfolio takes the risk of complexity within the organizational structure (Jacobs and Swink, 2011 e.g.), and the companies have to find their individual constellation, which is part of the service management (Kellog, 1995) and which requires an adequate service controlling (Thompson, 1997).

Transition to the structural variables. As mentioned, GRH is characterized by heterogeneous structures. When talking about the individual organization, this research must take the characteristics of SME into account, as most of the GRH businesses fall into

this category (Reymann, 2009). Compared to larger firms, Hutzschenreuter (2009) specifies the liability of smallness, which often has a flat structure with little hierarchy, few management control systems and a low degree of functional organization. He also mentions the liability of informality (an absence of formal structure and low level of standardization) and finally the ownership and management (see also Deimel, 2008). The latest will be described in hypothesis 2.

In organizational analyses, the whole organization cannot be surveyed, so an extract must be selected (e.g., Titscher, Meyer & Mayrhofer, 2008). Different definitions of an organization can be analysed from various perspectives, such as structuring, so there is a heterogeneous field. The consensus is that an organization is defined through specific purposes, regulations and stable borders, as central units of the institutional organization (Schreyögg, 2003 e.g.). Referring to the literature review, the current paper focusses on the structural variables as follows:

- Configuration ('organigram': span of control, control intensity, hierarchy, hierarchy configuration);
- Specialisation (departmentalization);
- Flexibility;
- Centralisation and delegation of tasks.

This research focuses on configuration and specialisation in order to picture the staffing. Flexibility shows the number of departments where the staff is applied. Delegation shows the allocation of tasks. The literature reviews much research in the interaction with hierarchy and span of control. Keren & Levhari (1979) state that with decreasing levels of hierarchy, the span of control increases, as there is more staff for each supervisor to manage. But the differences shrink when other determinants accrue, such as task characteristics, management principles, organizational arrangements and human resources (e.g. Schulte-Zurhausen, 2005). This goes along with different lines of businesses (Theobald & Nicholson-Scrotty, 2005).

Research on GRH is rare and has studied the following elements: Success factors (Schwarz, 2008), customer satisfaction (Schöps, 2013), risk management (Von Allwörden, 2005), characteristics, weakness and strengths (BMELV, 2013; Bahn Müller & Hintze, 2003, to name a few), assortment (Menrad, 2008), controlling application (Gabriel & Bitsch, 2016; Lentz, 2008), statistics (Dirksmeyer & Fluck, 2013) and intercompany comparison (ZBG, 2015).

This study seeks to explore the effects of certain structural configurations on GRH with regard for the internal variables. Former studies have often resulted in low significance levels of correlation. It is odd that size, a major variable, is only seldom acknowledged in contingency approaches on SMEs (Chenhall, 2003).

Recapitulating, that internal factors, such as the product portfolio (Vahs, 2009), affect the structural organization, there is no safe ground, if and in which way the services do. We know, that servicing requires to consider specifics, particularly the uno-actu-principle, intangibility, influence of customer (Choi, Nazareth & Jain, 2010 e.g.), which differs to the manufacturing sector. Getting the fact, that there is an increasing relevance of the services in the companies, and the portfolio are changing, the strong heterogeneity on GRH is accordingly a consequence. Principally, the companies face the risk of complexity when overloading the number of services within the portfolio (Gann & Salter, 2000), especially when the structural organization is not customized. Assuming, that the number of services in GRH is increasing in the past (Zentralverband Gartenbau, 2017), and the level of organization is low (Gabriel & Bitsch, 2014), we formulate:

Hypothesis 1 (H1): There is negative correlation between the service variety and the structural organization of GRH.

Research is barren on the topic of the relationship between structural delegation and GRH. In a quantitative study with 104 nurseries, Böckelmann (2005) highlights different factors that influence entrepreneurs, mainly the operation size and the product portfolio. He discovered that the chief executive officer is strongly affected by the size and the product program. Despite the topical nearness, this study focused on wholesaling without services. As mentioned above, ownership and management are of central importance in SMEs and

are often integrated in one person. Chandler & Hanks (1994) describe the owner-manager dominance with concentration of key decisions by the owner himself. With these facts in mind, it appears meaningful to investigate the details of the structural delegation: Which tasks are dominated by the owner, and which are delegated to staff. Considering, that an ordinary level of organization requires an adequate level of delegation (Lentz, 2008), this is often not the case in German horticulture (Böckelmann, 2005). If the service variety in fact negatively affects the structural organization (see H1) we conclude, that increasing services have also a negative effect on the level of delegation:

Hypothesis 2 (H2): There is negative correlation between the level of delegation and the service variety.

If there is in fact a possible negative relationship between the service variety and the organizational structure / delegation, there must be also an effect on the sales volume as economic parameter. We know, that in many horticultural companies, the sales volumes are stagnating / decreasing within the last years (ZBG, 2015). This means, that even though the number of services is increasing, there is no economic success. For this reason, we formulate:

Hypothesis 3 (H3): There is negative interaction between the of service variety, structural organization/ delegation and the sales volume.

Despite the popularity of discussing the area of services in the horticultural market, little attention is paid to analysing the internal parameters of GRH. This paper first aims to systematise relevant, internal characteristics (contingency), considering previous research. To approach the problem, we next use regressions to investigate the interrelationship between situation, structure (configuration, delegation) and sales volume.

METHODOLOGY OF RESEARCH

Sample and procedure. The results of an upstream, exploratory study (Engelke, 2016) were the basis of the current study. The research question of this prior survey was to determine, from the internal perspective, which characteristics distinguish the a priori strong, heterogeneous GRH. Therefore, 64 different characteristics of 7 horticultural companies were collected in an inductive way and later interpreted on the principles of the qualitative content analysis by Mayring (2010) in a previous study. Based on these results, the main study was begun: The first aim was to verify the characteristics of the qualitative prior study in an adjacent quantitative procedure, to find significances. For this purpose, an online survey was conducted among certain companies between February and June of 2015. The email addresses were collected from different sources, such as specialist literature, a register of GRH members, a classified directory of retail nurseries (Taspo, 2010/2011) and personal collecting. Furthermore, an article was published online to support participation.¹

Deriving the exact number of companies in GRH is difficult because of different lines within the horticulture market (e.g., floristry, ornamental plants and retail nursery) and because of a strong heterogeneity within these lines. The characteristics of GRH, mentioned in section 1, are common in many countries, so this phenomenon is not of Germany but of retail nurseries in general (e.g., Tröster, 2016). The focus of this research was retail nurseries with direct selling and different products and services. Thus, it was important to refine the suitable audience. The following categories were omitted: very small companies (such as floristry shops), as they are retail nurseries only by classification; large retail nurseries, as they are more like garden centres; suspended companies; wholesalers and pure trading companies. During compilation, the addresses were constantly verified, and only those with an email account were chosen. Because of the above-mentioned heterogeneity and, therefore, lack of delimitation between the lines, the literature specifies a number of approximately 10,000 (Dirksmeyer & Fluck, 2013) to 16,500 companies (Zentralverband Gartenbau e.V., 2017) with a high variance assumed. An effective database of approximately 4,500 current companies was generated. To achieve a large

¹ GABOT. For discretion, the web address is not listed.

response, it was important to address the owners/CEOs at the opportune time, just before the spring season, which traditionally means the beginning of the peak season with an accordingly heavy workload. Along with the questionnaire, a personal cover letter was directed to the owner/CEO. A photo of the researcher and background information were included, and to gain favour and credibility, the letter stated that the researcher was the owner of a GRH. The questionnaire was created with the online interface LimeSurvey. The mailing was carried out at the end of February in 2015. After completion, the data were converted, edited and adjusted into IBM SPSS 23/24 for further processing. There were 580 replies, of which 283 respondents thereof filled out the forms completely, resulting in a response rate of 6,3%. This became the basic population of the study. Although the participants were not randomly chosen for the purpose of attaining representative status, they were, nevertheless, a fairly large basic population as a foundation for analysing the research target. Next, the research procedure is illustrated (Figure 2).

Measures:

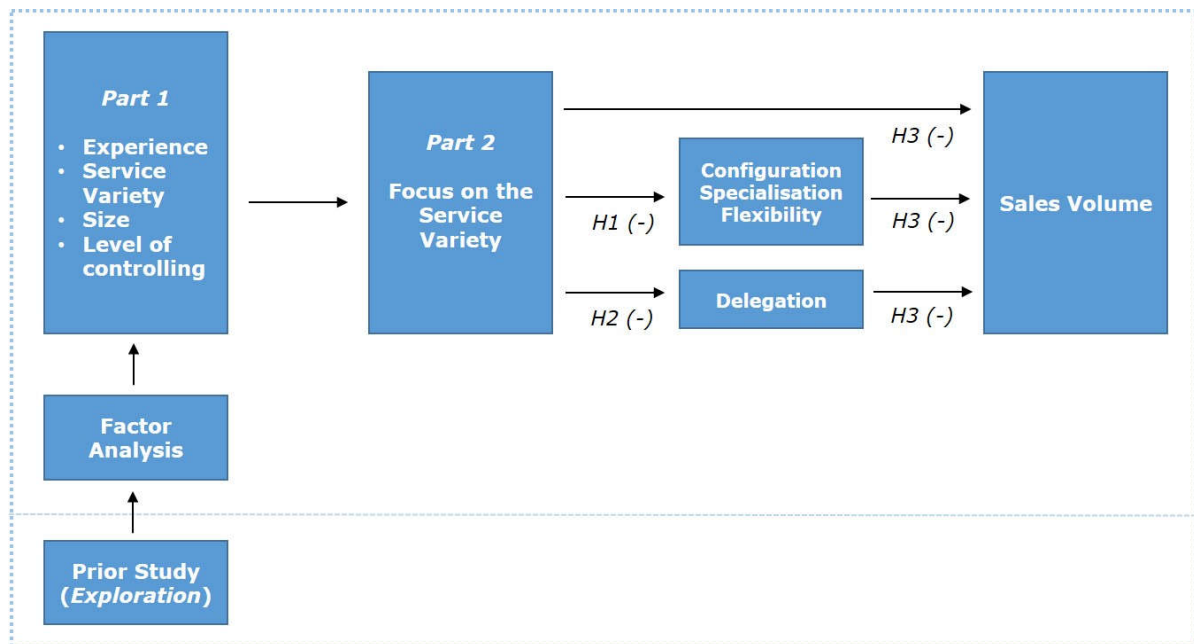


Figure 2 – Setting the hypothesis in the research procedure

Part 1: In accordance with Figure 1, we first analyse the situational parameters, trying to sort out relevant characteristics in GRH. For further approaches we intend to reduce the data set because the structure of a set of variables can then be better understood and the problem with multicollinearity can be avoided. In a previous pilot study, we exploratory determined 64 different characteristics on GRH. On this account, a confirmatory factor analysis (IBM SPSS 23/24) was embedded, conducted on these items. Principally, there are now factors including a set of single variables. The choice of contingent variables was deductively sorted, due to the fact that it is not clear at this stage if the rotation will be successful in finding homogeneous factor groups. After the run, the reliability of the scale is post-analysed with Cronbach's α . This is important to validate the questionnaire.

Part 2: We start running the correlation and regression procedure to find feasible interrelationship between the service variety and structural variables (H1) as factors and the level of delegation (H2). The relationship between these variables aims to exemplify the architecture (the 'fit'). The impact on the economic parameter is tested according to hypothesis 3. All procedures were run in one direction (dependent/independent variables), trying to explain causality.

The choice of the right regression model depended on the level of measurement (Buchanan & Bryman, 2009), because of different response options and parameters. Along with the correlation, we performed multiple regressions on the structural variables, ordinal regression on the economic variables, and multinomial, logistic regression on delegation

and on economic variables. With these new insights, the hypotheses will be answered. All data were illustrated with Microsoft Excel 2013.

The questionnaire consists of 29 questions in 3 sections: 1) General information about the company and owner/CEO (including occupation and product portfolio); 2) formal, structural organization (e.g., configuration, specialisation, departmentalization and flexibility); and 3) process organization (e.g., centralisation, delegation and control). At the end of the questionnaire, the sales volume was requested. With regard to the two main objectives of the research, identifying characteristics and interrelationship between situation, structure and economy, it is important to find the right level of measurement for the structural variables, following Kieser & Kubicek (1995). Thus, consistent scales were chosen to describe the structural organization: Predominantly ordinal variables in all three sections of the questionnaire principally followed in the same order on a five-point Likert scale, ranging from 1 (least) to 5 (most). There were also nominal variables (service portfolio), binary variables (departmentalization) and continuous variables (number of staff). Some discrete variables were treated as continuous variables, predominantly the organizational structure section. Though some questions were formulated in a different direction, these were later adjusted when transforming into IBM SPSS 23/24.

Descriptive statistics:

The survey participants were predominantly owners (83%; $N = 280$), indicating a majority of private companies, with an average age of 51 years ($N = 279$). The companies were mostly founded between 61 and 100 years ago, (32.2%; $N = 276$). Successor establishments were not arranged (43.8%; $N = 240$), though 13.4% were planning to close in the future ($N = 240$). With a high degree of unarranged successor establishment, future prospects are significantly not positive. Of the respondents, 57.24% ($N = 283$) do crop production, and 71% ($N = 283$) are in retail distribution. The companies are mainly situated in towns of 5,000–20,000 inhabitants (31.9%; $N = 276$)—which are considered small towns, following the generally accepted declaration in Europe (Gabler, 2014)—with a catchment area of 10–20 km² (42.6%; $N = 270$). The catchment area may indicate, for example, the spending power of the customer, and increases with increasing product variety (Spectrum.de, 2016). With an area of 10–20 km², it seems that more than circumjacent customers visit.

Operational performances: Of the owners / CEOs, 33.9% ($N = 218$) rate themselves as practitioners, performing the day-to-day tasks of 56.3% ($N = 220$). Service experience is less than 30 years (56.1%, $N = 205$), operational emphasis is 75%–100% retail (55.3%, $N = 221$). Employment includes 6–10 staff (35.7%, $N = 210$), sales volume in euros is 350,000–600,000 (29.1%, $N = 213$), and the number of present pure services is 11 ($N = 283$) out a total of 34. The controlling variables differ only slightly, moderately on a medium level (all $N_s = 283$). There are only a small number of independent service departments (8.8%, $N = 283$) and ancillary departments (4.6%, $N = 283$). The staff works moderately in different departments on a medium level (flexibility) with 42.2%, $N = 271$. The average number in the hierarchy is 3.37 ($N = 283$), which is fairly even. The average span of control is 2.4 ($N = 283$); that is, only a few employees per supervisor which indicates either few staff or many superiors. The average hierarchy configuration is 1.39 ($N = 283$), which means relatively few staff in the hierarchy. The average control intensity of 0.32 ($N = 283$) is equivalent to the span of control. The participating companies are scattered throughout Germany with different sizes and locations of towns/regions. There is a normal distribution of postcodes with $N = 260$.

RESULTS OF STUDY

The conventions of contingency approaches are based on contextual, individual situations. In contrast to previous studies, which mainly focussed on the manufacturing industry sector, this paper examines German retail horticulture, which is characterized by strongly heterogeneous structures, as identified in a previous pilot study (Engelke, 2016). On this basis, a confirmatory factor analysis was first conducted on 64 items with Varimax rotation. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the

analysis, where KMO = 0.761 ('middling', according to Moutinho & Hutcheson, 1999) and all KMO values for individual items were greater than 0.65, which is well above the acceptable limit of 0.5 (Field, 2014). An initial analysis was run to obtain eigenvalues for each factor in the data. Four factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 39.15% of the variance. The items that cluster on the same factors suggest that factor 1 represents the level of controlling, factor 2 represents size, factor 3 represents service variety and factor 4 represents experience. As Table 1 shows, these four factors include a set of single variables.

As a test of the reliability of the scales, level of controlling, size and service variety all had high reliabilities with Cronbach's $\alpha = 0.85/0.86$. Experience had relatively low reliability with Cronbach's $\alpha = 0.68$.

Interrelation between situation and structure:

Table 1 – Situational variables and factors correlating on structural variables (Spearman's correlation coefficient)

Factor 1-4	Includes Variables	Situational	Number Departments	Number Ancillary	Flexibility	Number Hierarchy	Hierarchy Configuration	Span of Control	Control Intensity
Experience	Foundation		0.024	-0.016	-0.081	-0.079	-0.062	-0.039	-0.011
	Experience		-0.013	-0.134	0.017	0.007	-0.044	0.074	0.013
Size	No. operational manager		0.024	0.000	0.014	0.124	0.080	-0.015	0.214*
	No. departments manager (retail)		0.111	0.054	-0.133	0.176	0.279**	0.216*	0.222*
	No. departments manager (service)		0.084	0.094	-0.076	0.006	0.256*	0.059	0.137
	No. worker (service)		0.081	-0.019	-0.061	0.077	0.080	0.078	0.052
	No. office worker		0.124	-0.005	0.020	0.123	0.118	0.096	0.171
	No. apprentices		0.058	0.125	-0.042	0.151	0.016	0.114	0.082
	Total no. staff		0.081	-0.010	-0.095	0.131	0.086	0.120	0.158*
Level of Controlling	Strategy planning		0.071	0.061	0.085	0.073	-0.034	-0.060	0.048
	Budget planning		0.061	0.117	0.024	0.056	-0.010	-0.030	0.071
	Liquidity planning		0.093	0.038	-0.026	0.113	-0.026	-0.034	0.109
	Earning/Expenditure planning		0.068	0.091	0.021	0.058	-0.043	-0.082	0.037
	Capital planning		0.009	0.030	-0.040	0.014	-0.034	-0.090	0.067
	Statistics		0.071	0.148*	-0.027	0.102	-0.001	-0.053	0.013
	Post calculation		0.031	-0.006	-0.017	-0.006	-0.077	-0.081	0.076
Service Variety	No. core performances		0.179**	0.164**	-0.029	0.557**	0.400**	0.479**	0.385**
	No. hybrid services		0.067	0.041	-0.050	0.419**	0.287**	0.372**	0.342**

Notes: Only those single variables with high eigenvalues are listed, after factor rotation.

* $p < 0.05$ (2-tail), ** $p < 0.01$ (2-tail).

In the left column, you see factors 1-4 and the embedded single contingent. The data are visualized with a heatmap. Changing colours means increasing values. Firstly, significant relationships between situation and structure are mainly on the service variety ($p < 0.01$). Secondly, the largest effects are with the number of hierarchy, related to the following factors: service variety ($r_s = 0.557$), span of control ($r_s = 0.479$), hierarchy configuration ($r_s = 0.400$) and control intensity ($r_s = 0.385$), all with $p_s < 0.01$. It is clear that service variety has the highest impact on organizational structure, which was unexpected; normally, following Wernitz (2015), size is the major factor in many studies. Size is also of relevance, but it is on a minor level of significance. Both single variables of the factor service variety show similar results. Differences are solely in the level of shape: Core performances show higher values, which could explain higher organizational structures; meanwhile hybrid services don't affect the structures so much—they are part of the product.

Next, we start running multiple regression in order to find predictabilities on this result.

As the model shows, service variety is the main predictor on most of the dependent structural variables. The relevant structure variables, explaining fair model stability and acceptable variances (Chin, 1998), are solely configuration variables: number of hierarchy ($R^2 = 0.196$), span of control ($R^2 = 0.113$) and hierarchy configuration ($R^2 = 0.101$), all $p_s < 0.000$.

The increasing simultaneous span of control and number of hierarchy is a surprise, for they are usually an opposed ratio (Keren & Levhari, 1979). A disproportionate rise in the number of staff, which indicates the size, could explain the ratio's outcome. This finding

concur with an increasing hierarchy configuration, which also indicates that the number of staff could be the responsible factor. To sum up: The more service variety, the more staff, and the more hierarchy, the higher the span of control and hierarchy configuration.

Table 2 – Multiple regression: Linear model of predictor of different structural variables (var.)

Coefficient: Number of Hierarchy					
Step		b	SE B	β	p
1	(Constant)	3.371	0.082		P = 0.000
	Factor Service Variety	0.628	0.082	0.417	P = 0.000
2	(Constant)	3.371	0.080		P = 0.000
	Factor Service Variety	0.628	0.080	0.417	P = 0.000
	Factor Size	0.253	0.080	0.168	P = 0.002
Notes: a) Dependent var.: Number of Hierarchy; b) R ² = .171 for Step 1; ΔR ² = .196 for Step 2 (ps < .000)					
Coefficient: Hierarchy Configuration (HC)					
Step		b	SE B	β	p
1	(Constant)	1.398	0.050		P = 0.000
	Factor Service Variety	0.285	0.050	0.323	P = 0.000
Notes: a) Dependent var.: Hierarchy Configuration; b) ΔR ² = 0.101 (ps < 0.000)					
Coefficient: Span of Control					
Step		b	SE B	β	p
1	(Constant)	2.402	0.102		P = 0.000
	Factor Service Variety	0.622	0.102	0.341	P = 0.000

Notes: 95% bias-corrected and accelerated confidence intervals. Confidence intervals and standard errors based on 283 bootstrap samples. Only significant results are pictured.

a) Dependent var.: Span of Control; b) ΔR² = 0.113 (ps < 0.000)

To check the results, the regression was also run with single variables (instead of factors), showing the same result. Flexibility, the number of service departments and ancillary departments are all minor, which means that departmentalization has no significant impact in this approach, in contrast to findings by Lay (2009) and Rainfurth (2003). On this account, the impact of services could play a vital role. These findings reject the first hypothesis.

Interrelation between situation and delegation. The questions for the delegation variables were asked with a nominal scale that had 3 options (owner/CEO, employee, office). For this reason, a multinomial logistic regression model was chosen to find out which people participated in different process tasks. These were tested against the four situational factors.

The pseudo-R² values (Cox & Snell and Nagelkerke) are all > 0.0, which means that if the predictor variables increase, the likelihood of the outcome variables does as well. The odds ratio (exponential of B), as the main coefficient of determination in logistic regression, shows that most variables have a negative effect on the outcome and that predominantly size (and also experience) show values greater than 1. This result means that if the predictor increases, the odds of the outcome also increase, and in a higher proportion, as well (Field, 2014). When size increases, delegation also increases. The service variety and the level of controlling are minor. To illustrate: When the size is increased by 1 unit, the proposal management with the owner/CEO decreases by 0.576 units, which is poor. When these tasks are delegated on the office, the values will increase by 1.631 units, meaning that the level of delegation is of significant importance.

The results also show that the influence of the owner/CEO is of major significance regarding the ratio of variables, which is in accordance with Weiland (2009); Kraus, Harms & Schwarz (2007). Given the fact that the number of tasks differs between the factor variables (the size is most important, level of controlling is least important, as measured by the odds ratio), meaning that some variables show positive impact on the delegation, the second hypothesis will be also be rejected.

Table 3 – Multinomial logistic regression: Linear model of predictor of different delegation variables

95% CI for Odds Ratio					
Outcome Variables (delegation)	Predictor Variables	b (SE)	Lower	Odds Ratio	Upper
Proposal Management (Owner/CEO) ¹	Size	-0.552 (0.183)	0.402	0.576	0.824
Proposal Management (Office) ²	Size	0.489 (0.252)	0.996	1.631	2.670
Acquisition / Marketing (Owner/CEO) ³	Size	-0.771 (0.202)	0.311	0.462	0.687
Acquisition / Marketing (Owner/CEO) ⁴	Service Variety	-0.423 (0.208)	0.436	0.655	0.986
Acquisition / Marketing (Office) ⁵	Service Variety	-0.776 (0.357)	0.231	0.465	0.936
Operational Perform. (Owner/CEO) ⁶	Service Variety	-1.189 (0.530)	0.108	0.305	0.861
Operational Perform. (Owner/CEO + Employee) ⁷	Level of controlling	-0.756 (0.304)	0.259	0.470	0.851
Accounting (Owner/CEO) ⁸	Size	-0.813 (0.217)	0.290	0.443	0.679
Customer Service (Owner/CEO) ⁹	Size	-0.736 (0.232)	0.304	0.479	0.755
Customer Service (Employee) ¹⁰	Experience	-0.765 (0.308)	0.255	0.465	0.850
Customer Service (Owner/CEO + Employee) ¹¹	Size	-0.390 (0.196)	0.461	0.677	0.995
Purchasing (Owner/CEO) ¹²	Experience	-0.516 (0.247)	0.368	0.597	0.968
Purchasing (Employee) ¹³	Size	0.519 (0.264)	1.003	1.681	2.818
Purchasing (Employee) ¹⁴	Experience	-0.993 (0.313)	0.201	0.371	0.684
Purchasing (Owner/CEO + Employee) ¹⁵	Experience	-0.673 (0.245)	0.315	0.510	0.825
Work Organization (Owner/CEO) ¹⁶	Size	-0.698 (0.263)	0.297	0.498	0.833
Work Organization (Owner/CEO) ¹⁷	Experience	-0.599(0.271)	0.323	0.549	0.935
Accountancy (Office) ¹⁸	Experience	0.362 (0.186)	0.997	1.436	2.068
Accountancy (Owner/CEO) ¹⁹	Size	-1.021 (0.242)	0.224	0.360	0.579

Notes:

95% bias-corrected and accelerated confidence intervals.

Confidence intervals and standard errors based on 283 bootstrap samples. Only significant results are pictured.

¹ R² = .157 (Cox & Snell), 0.180 (Nagelkerke). Model X² (4) = 23,585, p <0.001;

² R² = 0.157 /0.180. Model X² (4) = 23,585, p <0.001; ³ R² = 0.164 /0.191. Model X² (4) = 18,787, p <0.001;

⁴ R² = 0.164 /0.191. Model X² (4) = 18,787, p <0.001; ⁵ R² = 0.164 /0.191. Model X² (4) = 18,787, p <0.001;

⁶ R² = 0.199 /0.226. Model X² (3) = 11,003, p <0.05; ⁷ R² = 0.199 /0.226. Model X² (3) = 10,803, p <0.05;

⁸ R² = 0.209 /0.230. Model X² (4) = 36,847, p <0.001; ⁹ R² = 0.166 /0.179. Model X² (4) = 15,805, p <0.005;

¹⁰ R² = 0.166 /0.179. Model X² (4) = 15,517, p <0.005; ¹¹ R² = 0.166 /0.179. Model X² (4) = 15,805, p <0.005;

¹² R² = 0.145 /0.158. Model X² (4) = 15,825, p <0.05; ¹³ R² = 0.145 /0.158. Model X² (4) = 17,420, p <0.005;

¹⁴ R² = 0.145 /0.158. Model X² (4) = 13,359, p <0.05; ¹⁵ R² = 0.145 /0.158. Model X² (4) = 13,359, p <0.05;

¹⁶ R² = 0.189 /0.214. Model X² (4) = 24,584, p <0.001; ¹⁷ R² = 0.189 /0.214. Model X² (4) = 9,509, p <0.050;

¹⁸ R² = 0.276 /0.314. Model X² (4) = 16,541, p <0.001; ¹⁹ R² = 0.276 /0.314. Model X² (3) = 49,582, p <0.001.

Interrelation between situation and sales volume. The questions for the economic variables were asked with a nominal scale that had 6 options (where 1 =< 100,000, and 6 => 1,500,000 €). These questions were to discover the impact of the context factors on different levels of sales volume. For this reason, a multinomial, logistic regression model was chosen again.

Table 4 – Multinomial logistic regression: Linear model of predictor on sales volume

95% CI for Odds Ratio					
Outcome Variables in €	Predictor Variables	b (SE)	Lower	Odds Ratio	Upper
100,000-200,000	Experience	-1.181 (0.551)	0.104	0.307	0.904
100,000-200,000	Size + Experience	-0.942 (0.471)	0.155	0.390	0.981
200,000-350,000	Size	1.739 (0.533)	2.003	5.692	16.177
200,000-350,000	Experience	-1.062 (0.472)	0.137	0.346	0.871
350,000-600,000	Level of controlling	0.979 (0.337)	1.374	2.661	5.153
350,000-600,000	Size	2.073 (0.545)	2.733	7.951	23.132
350,000-600,000	Experience	-1.467 (0.479)	0.090	0.231	0.590
350,000-600,000	Size + Experience	-0.945 (0.350)	0.196	0.389	0.772
600,000-1,500,000	Level of controlling	1.480 (0.364)	2.154	4.393	8.959
600,000-1,500,000	Size	3.191 (0.591)	7.642	24.321	77.407
600,000-1,500,000	Experience	-1.463 (0.490)	0.089	0.231	0.604
600,000-1,500,000	Size + Experience	-0.947 (0.312)	0.210	0.388	0.716
>1,500,000 €	Level of controlling	1.932 (0.464)	2.778	6.901	17.145
>1,500,000 €	Size	4.681 (0.687)	28.081	107.878	414.430
>1,500,000 €	Size + Experience	-1.662 (0.393)	0.088	0.190	0.410

Notes:

95% bias-corrected and accelerated confidence intervals. Confidence intervals and standard errors based on 283 bootstrap samples. Only significant results are pictured. The reference-category is <100,000 €

Factor Level of controlling: R² = 0.515 (Cox & Snell), /0.535 (Nagelkerke). Model X² (5) = 39,095, p <0.001

Factor Experience: R² = 0.515 /0.535. Model X² (5) = 17,963, p <0.005;

Factor Size: R² = 0.515 /0.535. Model X² (5) = 114,193, p <0.001

Factor Size + Experience: R² = 0.515/0.535. Model X² (5) = 27,772, p <0.005

Table 4 shows the ascending sales volume variables (first column) and the predictor variables (second column) with significant values. Predictors on sales volume are size, level

of controlling, experience and the interaction of size + experience. We found different values within the various sales levels. The pseudo- R^2 values (Cox & Snell and Nagelkerke) are all high values above > 0.0 , which means that if the predictor variables increase, the likelihood of the outcome variables does very well. The Odds ratio (exponential of B), as the main coefficient of determination in logistic regression, shows that the size and the level of controlling have predominantly high values > 1 , which means that if the predictor increases, the odds of the outcome increases, as well (Field, 2014): By example of the sales volume: The higher the sales volume, the higher the odds ratio, and therefore the higher the likelihood of the size and level of controlling factors. The sales volume significantly increases with increasing size ($r_s = 0.540$, $p < 0.01$). More staff correlates with more sales volume, which is in accordance with the literature (e.g. Furnham & Fudge, 2015). Increasing sales volumes with increasing levels of controlling ($r_s = 0.316$, $p < 0.01$) could be explained with growing size. To find relationships between these both factors is not possible, because of significant interspaces in the factor rotation which enable a clear separation (Mak & Nebebe, 2016). Instead, we run the correlation with single variables and found medium effects ($p < 0.01$) which means that size and level of controlling are related and could indicate interactive effects.

For example, in the category 350,000-600,000 €, when size is increased by 1 unit, the sales volumes increases by 7.951 units (respectively 2.661 with the level of controlling). This means, that size (number of staff) and level of controlling are significantly associated with sales volumes. In contrast, experience shows low odds ratios below < 1 , which means that there are decreasing values with increasing sales volumes. It can be concluded that only the unexperienced companies have rising sales, which could lead to the conclusion that there are young companies or new services in the portfolio with no experience. This effect will be reinforced with the interaction of size and experience, when the size, as a main variable with high odds ratios, has single values of 7.951 but only 0.389 in interaction. So, there is a negative, contrary effect of experience.

Interrelation between structure and sales volume. Running different regression models, such as logistic and ordinal regression, which can be applied for the six ascending sales volume levels, we found no significant connection, for there are low coefficients and R^2 . Service variety as a factor had no influence on the structure variables. To verify, we tried the regression with the *single* variable 'current core services', finding the same result. To find an explanation, we use the example of the span of control: Components are the total number of staff and superiors, which is in turn part of the size. Regarding the unambiguous influence of size on the sales volume (see Table 4), we conclude an interaction of size and service variety. There has to be a conflict, either within the single components or between the factors as a whole. These interactions of multiple factors seem to be the cause for the negative effect on the sales volume. However, the configuration as a component of the structure has no impact on the sales volumes.

Interrelation between delegation and sales volume. The single tasks of delegation are run into ordinal regression with the sales volume, as Table 5 shows.

The R^2 -values (Cox & Snell/ Nagelkerke) all have high values ($R^2 = 0.599/ 0.624$, $p = < 0.001$), which provides a good explanation of the variance and accordingly the model. If the predictor variables increase, the likelihood of the outcome variables does very well. All B-values show a negative coefficient of determination with predominantly low values < 1 , which means negative effects on the outcome variables. Variables that influence sales volumes are acquisition/marketing (office), operational performances (owner/CEO + employee), work organization (owner/CEO), statistics (owner/CEO), planning (office), consulting (in person).

To illustrate with operational performances: Increasing the sales volumes by 1 unit decreases operational performances with the owner/CEO by 3.66 units ($p < 0.001$). This means, that the owner/CEO should reduce the day-to-day tasks when a certain sales volume (and correspondingly the size) is achieved.

Table 5 – Ordinal regression: Linear model of delegation (predictor) on sales volume (outcome)

95% CI for Odds Ratio

Outcome (Sales Volume) vs. Predictor Variable (delegation)	b (SE)	Lower	Upper
Sales Volume vs. Acquisition/Marketing: Office	-3.658 (1.267)	-6.141	-1.174
Sales Volume vs. Operational Performances: Owner/CEO + Employee	-1.808 (0.920)	-3.612	-0.004
Sales Volume vs. Work Organization: Owner/CEO	-1.062 (0.472)	0.479	4.418
Sales Volume vs. Statistics: Owner/CEO	-1.870 (0.729)	-3.299	-0.440
Sales Volume vs. Planning: Office	-5.526 (2.819)	-11.052	-0.001
Sales Volume vs. Consulting: In Person	-1.794 (0.918)	-3.592	0.005

Notes:

95% bias-corrected and accelerated confidence intervals. Confidence intervals and standard errors based on 283 bootstrap samples. Only significant results are pictured.

$R^2 = 0.599$ (Cox & Snell) / 0.624 (Nagelkerke). Model $\chi^2(45) = 97,643$, $p < 0.001$

These tasks have to be delegated to staff, which is in accordance with Titscher, Meyer & Mayrhofer (2008) and Lentz (2004), as a sign of a higher level of delegation when the company is growing. Summarizing, the structure has no significant impact on sales volumes, and there is accordingly no coordinated interaction of situational, structure and delegation variables. Thus, we support the third hypothesis. Figure 3 shows a summary of the results.

Building the model:

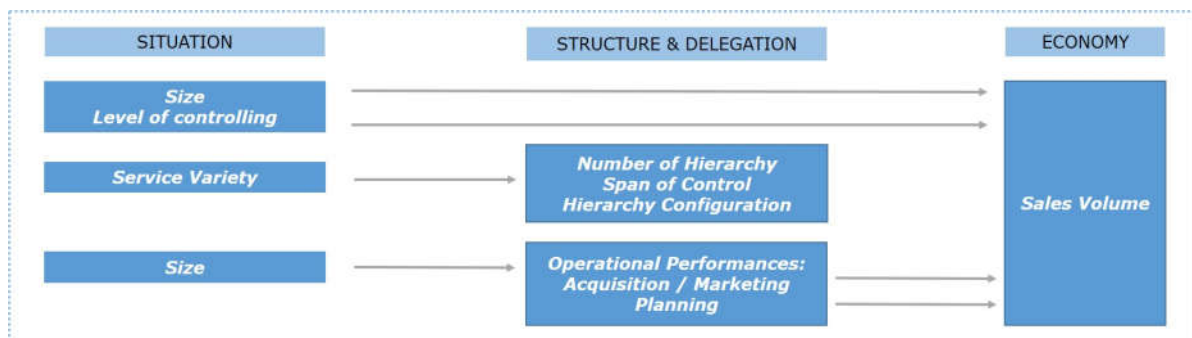


Figure 3 – Model of associated parameters of situation, structure and economy. Based on the regression procedures; only significant results pictured.

The causal relationship between the parameters are shown with arrows: the a) the size and the level of controlling with sales volume, b) service variety with span of control, hierarchy configuration and number of hierarchy, c) size with acquisition and planning (operational performances), d) acquisition and planning (operational performances) with sales volume.

DISCUSSION OF RESULTS

In a two-step approach, this paper first aims to systematise relevant, internal characteristics, building on previous research. Second, we try to emerge the impact of the service variety on the organizational structure and economic parameters in order to find the right combination for GRH.

Part 1: Identifying significant characteristics. Previous studies on GRH predominantly describe single topics, such as characteristics (e.g., BMELV, 2013; Bahn Müller & Hintze, 2003), success factors (Schwarz, 2008), customer satisfaction (Schöps, 2013), risk management (Von Allwörden, 2005), assortment (Menrad, 2008), controlling application (Gabriel & Bitsch, 2016; Lentz, 2008), statistics (Dirksmeyer & Fluck, 2013) and intercompany comparison (ZBG, 2015). But there is still, to the authors' knowledge, a gap in research for the interaction of context, structure and economic parameters with services. Choosing the CA as the appropriate method, we systematically found 64 different characteristics in a quantitative way, gathered from an online survey and previous exploration. Therefrom, four contingency factors were found to be significant: size, level of controlling, experience and service variety as internal parameters. These homogeneous groups all have KMO values for individual items greater than 0.65, which is well above the acceptable limit of 0.5 (Field, 2014). Cronbach's α confirms the reliability of this categorising

with $\alpha = 0.85/0.86$ respectively and $\alpha = .68$ with the experience factor variable, which is not on safe ground. The relevant literature subdivides internal and external variables (Vahs, 2009), so we restricted to the internal parameters; external parameters such as customer influence, central services characteristics, environmental and competition variables were not considered. With these first results given, we successfully dissolved the heterogeneity with finding homogeneous factors of GRH, which encouraged finding interrelation on the structural parameters in the next step.

Part 2: Impact of the service variety on organizational structure. Concentrating on these four factors, we revealed different effects on the organizational structure. We found a large positive association between the factor of service variety and certain configurational variables, specifically the number of hierarchy ($r_s = 0.557$) and the span of control ($r_s = 0.479$), all p_s [2-tail] < 0.01 ; these results were backed by $R^2 = 0.196 / 0.113$, all $p_s < 0.000$ in multiple regression, confirming acceptable validity of the model.

Returning to the research aims, we tried to analyse organizational structures with the assumption that services play a major role on GRH. With the large correlation given, this can be surely supported, but is the amount of services the main indicator? Reflecting that there is an average spectrum of only 11 out of 34 pure services (N=234), we also analysed the kind of service. We found an average 7 (out of 27) hybrid products in portfolios (N=175), which is low. Hybrid products mean that the physical product is linked with an added service (e.g., Guide, Jayaraman & Linton, 2003). As we explained, companies often start providing services with hybrid product as a first step in business. When the demand for service grows, the organizational structures and configuration need to be adapted. This goes along with the current results, as the services significantly affect the number of hierarchy, the span of control and the hierarchy configuration. Here we conclude that the employment is the key for this phenomenon, because all three structural variables are dependent on it: while the span of control describes the ratio of the total number of staff and executives, the hierarchy configuration describes the ratio of the total number and the number of hierarchy level. These facts are getting important when realizing, that the services in general are predominantly dependent on the staff and less the physical product (Wan, Evers and Dresner, 2012; Kahn, 1995 e.g.). Realising that the services are becoming more prominent on GRH, the current empiricism shows major topicality. On the other hand, we could not find significance in departmentalization, which was not affected. When services are not assigned to particular service departments, they must be executed in day-to-day business. This leads to the conclusion that the status quo of 'structural servicing' is solely on its way but not very well developed in the participating companies. This conclusion is confirmed with the low level of pure and hybrid services. A low level of pure services could also indicate a higher level of specialisation and functional differentiation (Speer & Hughey, 1995), but that cannot be answered yet. On this account, the number of services is a restricted parameter to evaluate success, as the non-significant effect on sales volumes confirms. The insight of the low level of departmentalization also indicates functional structures in primary organization, contrary to earlier studies (Engelke, 2013). Categorizing by function focusses on the performances (e.g., purchasing, marketing), which are centrally structured, enabling quick decisions and coordination, which is generally positive (Duncan, 1979). But central structuring also concentrates responsibilities on the superior, which causes the problem of overloading (e.g., Covin & Slevin, 1988). Of particular interest is that functional structuring characterizes restricted, homogeneous product portfolios in a stable environment (e.g., Voigt, 2016), in contrast to division structuring, which moreover characterizes larger enterprise sizes. This also corresponds with our results, for there is also a relatively low number of products, as we described earlier.

Trying to categorize the development of organization (Anand & Daft, 2007) in GRH, we face the simple self-determination of the primary organization as a sign that GRH is situated in the first era of organization. With these arguments in mind, it can be stated that the organizational structures on GRH are not quite sophisticated, which confirms the specialist literature (e.g., Gabriel & Bitsch, 2014). Possible reasons for this organizational resistance with services can be explained with limitations in ability, resources, staff and

demarcation (Rainfurth, 2003). Summing up, we deductively reason that GRH is clumsy with changing processes, which is in line with SMEs in general (Hutzschenreuter, 2009).

With these arguments, it is possible to explain the negative coefficient of determination with predominantly low B-values < 1 . The owner/CEO works too much in a central position that is predominantly the performing and organizing the work and running statistics. This misuse of the owner/CEO negatively affects the sales volume; these tasks have to be delegated to employees. Meanwhile, other tasks like acquisition, marketing and planning must not be done by the office; this should be done by superiors. So, the results reveal the reality of structural delegation in GRH, which is in line with Böckelmann (2005). The delegation itself is mainly affected by the size of the organization, showing high values of odds ratios > 1 : With increasing size, the better is the level of delegation.

Contributing to the enterprise size, we confirm, results in direct and strong, causal interrelation to increasing the sales volume ($r_s = 0.540$, $p < 0.01$, $\chi^2(5) = 114,193$, $p < 0.001$), which is not surprising, as the few literatures in CA has highlighted this before on different lines of business. This means, the more staff, the more sales volume (e.g., Furnham & Fudge, 2015; Chenhall, 2003). But we also found the level of controlling as a significant factor variable. This result is a surprise, because, to the authors knowledge, only few studies in literature have supported it. We cannot purely state that there is an interactive effect with size (employment), sales volumes and level of controlling, because the factor analysis showed large distances between the size and the level of controlling. So, there must be another explanation, which cannot be answered safely.

To help, we can embrace other central components of GRH: retail and crop production. As the descriptive statistics showed, both are significant in most participating companies. Structure and process differ from pure and added services in the portfolio, depending on the operational emphasis (Rogelio & Kellenberg, 2003). With this given, the importance of the service controlling for purposes of monitoring and navigating becomes popular, especially with a heterogeneous portfolio (product mix) (Becker & Rech, 2013 e.g.) or as a function to retain rational management (Meffert & Bruhn, 2009). These arguments could be cause for the rising application of controlling tools, and thus a reason for the positive effect on the sales volume. Furthermore, this could explain the high standard, on the contrary of previous research (e.g., BMELV, 2013). On this assumption, our results reveal fresh knowledge.

The moderate impact of the experience factor corresponds with previous results (e.g., Hall, 1972) but gives no reason to overrate, because the Cronbach's value was weak ($\alpha = 0.68$), so the informative value is limited.

Because potential process and outcome variables are involved in services (e.g., Edvardsson, Gustafsson & Roos, 2005), the behaviour of the organization members (staff and superiors) must also be considered. This goes along with the principles of the analytical model of the CA, as we chose the conceptual framework.

This research has highlighted new aspects of the heterogeneous retail horticulture industry in Germany and opens the door for subsequent organizational analysis. Particularly, the effect of the service portfolio on organizational structure needs to be analysed in more detail, remembering that the service variety showed no effect on the sales volume. It is conceivable that other findings will occur with different portfolio combinations. With this understanding, a subdivision of the portfolio at variable times in company's life cycle seems of most interest to get detailed knowledge. With the current findings, we created the foundation.

CONCLUSION

We gave proof that relevant situational characteristics on German retail horticulture (GRH) include the size, level of controlling, experience and service variety as internal factor variables, showing high eigenvalues. We found causal relationships between the service variety and the number of hierarchy, span of control and hierarchy configuration. The size is also of significant importance but on a minor level. Size faces positive correlation on delegation, and the size and the level of controlling also have adequate impact on the sales volume. Meanwhile the configuration variables have no impact on the sales volume. This

means that sales volume is related to the size and the level of controlling but independent of the configuration. Accordingly, there is no coordinated interaction of contingency, structure and delegation variables with impact on the sales volumes. Structural delegations on sales volume are significantly acquisition/ marketing and planning as operational performance-variables, which are mostly done by the owner/CEO himself. These tasks show negative coefficients, which lead to the proposal that with growing sales, the level of delegation has to be improved and these tasks must be transferred to employees. On this account, central structures focussing on performances, not products, and a low level of departmentalization together make up the ideal organizational structure for GRH.

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DOI <https://doi.org/10.18551/rjoas.2017-06.02>

**ОЦЕНКА ТЕХНОЛОГИЧЕСКОГО РАЗВИТИЯ СЕЛЬСКОГО ХОЗЯЙСТВА:
ТЕХНИЧЕСКИЙ АСПЕКТ**
EVALUATION OF THE TECHNOLOGICAL DEVELOPMENT OF AGRICULTURE:
THE TECHNICAL ASPECT

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АННОТАЦИЯ

В статье представлены методические подходы к оценке уровня технологического развития сельского хозяйства и обозначены основные направления развития рынка сельскохозяйственной техники, как ключевого элемента организационно-экономического механизма технической модернизации АПК. В статье обоснованы основные направления технико-технологической модернизации сельского хозяйства России в рамках реализации государственной программы развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2013-2020 годы, и даны предложения по совершенствованию механизма стимулирования локализации производства сельскохозяйственной техники.

ABSTRACT

The article presents methodological approaches to assessing the level of technological development of agriculture and outlines the main directions for the development of agricultural machinery market as a key element of the organizational and economic mechanism for technical modernization of agro-industrial complex. The article substantiates the main directions of technical and technological modernization of agriculture in Russia within the framework of the state program for the development of agriculture and regulation of markets for agricultural products, raw materials and food for 2013-2020, and offers suggestions for improving the mechanism for stimulating the localization of agricultural machinery production.

КЛЮЧЕВЫЕ СЛОВА

Экономика, сельское хозяйство, машинно-тракторный парк, техническая оснащенность, воспроизводство.

KEY WORDS

Economy, agriculture, machine and tractor park, technical equipment, reproduction.

Вопрос экономической оценки уровня технологического развития и эффективности реализации производственного потенциала в сельском хозяйстве комплексный.

Подходить к его решению необходимо исходя из ряда позиций. Так достаточно важно оценивать технологическое развитие сельского хозяйства с позиции государства, региона и хозяйствующего субъекта. С другой стороны только оценив уровень технологического развития невозможно сделать объективные выводы о тенденциях развития, и принять обоснованное управленческое решение по направлениям стимулирования роста уровня технологического развития сельскохозяйственных отраслей. В этой связи следующим этапом оценки должно явиться изучение динамики урожайности культур, продуктивности животных, темпов воспроизводства технической базы, возрастной структуры парка, рынка техники.

Важным моментом является изучение технологий производства, уровень ресурсо- и энергоёмкости сельскохозяйственной продукции.

За последние годы машинотракторный парк АПК России значительно изменился как количественно, так и качественно. Ввиду своей специфики аграрное производство энергоёмкое. В целом оснащение сельхозпроизводства в России техникой характеризуется отрицательной динамикой.

Таблица 1 – Структура парка основных видов сельскохозяйственной техники в России

Показатель	2013 г.		2015 г.		2016 г.	
	Ед.	%	Ед.	%	Ед.	%
Тракторы	466520	100	458624	100	454990	100
Из них возрастом						
- до 3-х лет	69511	14,9	63749	13,9	61879	13,6
- от 3 до 10 лет	112898	24,2	118325	25,8	121482	26,7
- старше 10 лет	284111	60,9	276550	60,3	271629	59,7
Зерноуборочные комбайны	1264246	100	125636	100	125170	100
Из них возрастом						
- до 3-х лет	23606	18,7	23619	18,8	23657	18,9
- от 3 до 10 лет	43176	34,2	44978	35,8	44435	35,5
- старше 10 лет	59462	47,1	57039	45,4	57078	45,6
Кормоуборочные комбайны	20290	100	19352	100	18756	100
Из них возрастом						
- до 3-х лет	3226	20,5	3096	16	2982	15,9
- от 3 до 10 лет	8015	37,1	7954	41,1	7409	39,5
- старше 10 лет	9049	42,4	8302	42,9	8365	44,6

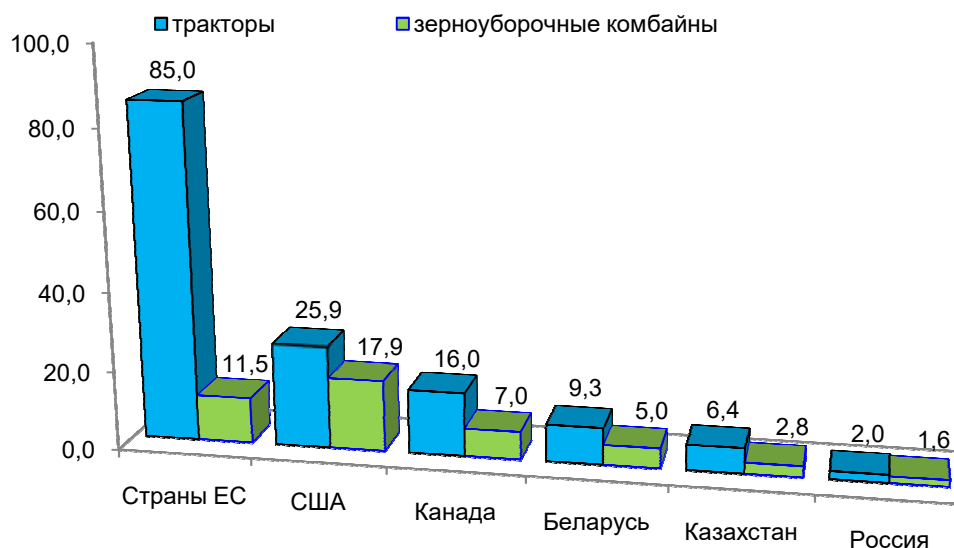


Рисунок 1 – Обеспеченность основными видами техники в ряде стран мира (тракторов на 1000 га пашни, комбайнов на 1000 га посевов)

К числу приоритетов технологического развития АПК следует отнести: технологическое переоснащение организаций комплекса; энерго- и ресурсосберегающие технологии производства, хранения и переработки сельскохозяйственной продукции; воспроизводство плодородия почв, предотвращение всех видов их деградации, разработка адаптивных технологий агроэкосистем и агроландшафтов; развитие производства органической продукции сельского хозяйства; создание современной системы информационного и инфраструктурного обеспечения инновационной деятельности в АПК; разработка государственной инновационной политики и стратегии на федеральном и региональном уровне, нацеленных на становление прогрессивных технологических укладов; формирование

организационно-экономического механизма модернизации АПК; усиление роли государственных организаций в активизации инновационной деятельности; разработка региональных и муниципальных инновационных программ развития АПК; совершенствование системы подготовки кадров в области инновационной деятельности, обеспечивающих повышение инновационной активности организаций и коммерциализацию результатов научных исследований.

Современная экономическая ситуация диктует необходимость импортозамещения на рынке сельскохозяйственной техники, так как зависимость техническая может перерасти в зависимость технологическую (невозможность заменить иностранные образцы российскими аналогами не позволит в конечном итоге реализовывать ресурсосберегающие и интенсивные технологии в сельском хозяйстве). В целом при формировании механизма технико-технологической модернизации подразумевает обоснование стратегически значимых сильных, слабых сторон государства и его возможностей и угроз (табл. 2).

Таблица 2 – SWOT-анализ уровня технического развития сельского хозяйства Российской Федерации

Сильные стороны	Слабые стороны
1. Государственная поддержка производителей отечественной техники 2. Политика импортозамещения на рынках сельскохозяйственной продукции и ресурсных рынках 3. Локализация производства иностранной техники на территории России	1. Большая доля техники со сроком эксплуатации более 10 лет 2. Экономические санкции и колебания валютных курсов 3. Узкий модельный ряд техники, производимой в России 4. Высокая доля сельскохозяйственных производителей с ограниченными финансовыми ресурсами
Возможности	Угрозы
1. Предоставление субсидий из федерального бюджета на возмещение затрат на производство и реализацию сельскохозяйственной продукции, сельскохозяйственной техники СЗР, удобрений 2. Увеличение оборотного капитала за счет роста спроса на сельскохозяйственную продукцию 3. Сниженные цены на импортную технику (отсутствие таможенных барьеров)	1. Снижение объемов производства продукции вследствие несоблюдения сроков агротехнических работ 2. Снижение темпов внедрения инновационных технологий 3. Снижение обеспеченности агробизнеса средствами производства 4. Низкий уровень дифференциации мер государственной поддержки технической модернизации АПК

Источник: составлено автором.

Если говорить о государственной позиции то можно отметить, что здесь превалирует интерес как в росте уровня технологического развития сельского хозяйства, однако нельзя забывать о стране происхождения материально – технических ресурсов. На государственном уровне учитывается наряду с интересами сельскохозяйственных производителей и интересы сельскохозяйственного машиностроения, производителей производственных ресурсов функционирующего на территории государства.

На рисунке 2 схематично представлена методология экономической оценки технологического развития сельского хозяйства.

В этой связи при оценке уровня технологического развития сельского хозяйства на уровне страны необходимо проанализировать помимо общепринятых показателей наличия и обеспеченности, рыночные показатели конкурентоспособности сельскохозяйственной продукции, российской техники и определить с механизмом государственного регулирования.

Если оценивать технологического развития сельского хозяйства с позиций субъектов федерации можно отметить, что здесь выступает на первый план сравнительная оценка регионов между собой. Обеспеченность современной техникой позволяет регионам обеспечить своё население продовольствием и представить на межрегиональный и внешний рынок конкурентоспособную продукцию. В этой связи уровень технологического развития выступает как показатель эффективности

реализации региональных программ развития сельского хозяйства. С точки зрения сельскохозяйственного производителя ключевыми оцениваемыми параметрами являются затраты в соотношении с эффектом от применения техники.

Федеральный уровень (уровень государства)				
Экономическая оценка парка техники, обеспеченности в расчете на единицу площади или поголовье, нагрузки на единицу техники, обеспеченности энергетическими мощностями (как в целом, так и в разрезе видов техники), возрастной структуры.	Экономическая оценка тенденций и темпов воспроизводства технической базы сельского хозяйства, включающий анализ объемов поступления новой и выбытия изношенной техники, как в натуральном, так и в относительном выражении, анализ и экстраполяция тенденций технического переоснащения	Изучение рынка сельскохозяйственной техники с точки зрения конкурентных позиций отечественного машиностроения. Анализ объемов производства сельскохозяйственной техники, уровень использования производственных мощностей, инновационной составляющей производства. Оценка ёмкости и структуры рынка сельскохозяйственной техники. Анализ рыночных позиций основных поставщиков сельскохозяйственной техники.	Разработка и обоснование ключевых, концептуальных направлений регулирования рынка сельскохозяйственной техники нерыночными методами, входящими в «зеленую» корзину ВТО. Разработка и реализация мер протекционистской политике на рынке сельскохозяйственной техники. Оценка стратегических направлений развития сельскохозяйственного машиностроения. Формулировка механизмов стимулирования технической модернизации сельского хозяйства	
Региональный уровень				
Оценка тенденций и темпов обновления парка техники, объемы внесения удобрений, породный и	Определение средней нагрузки на основные виды сельскохозяйственной техники, соотношение её с мощностными и производственными характеристиками сельскохозяйственной техники	Анализ энергообеспеченности и энерговооруженности. Причем данные показатели необходимо рассмотреть в динамике	Оценка доли современной техники в структуре парка используемой в сельскохозяйственном производстве.	Определение слабых мест в техническом оснащении сельского хозяйства региона, разработка и реализация региональных стратегических документов по стимулированию технологического развития с учетом особенностей регионального АПК
Уровень сельскохозяйственного производителя				
Оценка обеспеченности и организации техническими ресурсами. Определение потребности в сельскохозяйственной технике по	Экономическое обоснование выбора сельскохозяйственной техники на основе системы критериев и технико-экономических характеристик.	Анализ представленных на рынке марок техники с учетом конкурентных особенностей производителя и поставщика техники	Определение момента списания (продажи) изношенной техники, оценка срока окупаемости новой техники. Оценка нагрузки на технику.	Оценка парка сельскохозяйственной техники с точки зрения ресурсо- и энергоэффективности. Выбор техники и технологий с оптимальными соотношениями затрат и эффекта.

Источник: составлено автором.

Рисунок 2 – Методология экономической оценки уровня технологического развития сельского хозяйства: технический аспект

Сельскохозяйственная организация, основывая своё производство с позиций коммерческой выгоды, оценивает технику как ресурсную базу для получения дохода. В этой связи предприятию не важно в какой стране и под какой маркой произведена сельскохозяйственная техника, важны её технико-экономические характеристики, производительность, стоимость, ремонтпригодность, надежность, энергоёмкость, затраты на техническое обслуживание, наличие в регионе центра по техническому обслуживанию и ремонту, условия поставки, доступность и условия получения заёмных средств и так далее.

Таким образом, отметим, что объективная и оперативная оценка использования сельскохозяйственной техники вопрос многогранный. К нему существует достаточно много подходов. По нашему мнению оценивать техническую оснащенность и эффективность использования техники необходимо на уровне государства, региона и организации. Причем на каждом уровне существуют свои особенности экономической оценки, которые формируются исходя из целей оценки и информационной базы.

Оценка показателей технической оснащенности, энергообеспеченности, энерговооруженности, объемов внесения удобрений, породный и сортовой состав, трудоёмкость, средней мощности парка и возрастной структуры может позволить сделать выводы об уровне технологического развития сельского хозяйства региона, дать исходную информацию для принятия решений о механизмах и направлениях государственной поддержки технологической модернизации агробизнеса. В тоже время видно, что эти показатели в отдельности не могут стать базой для сравнительной оценки технической оснащенности региональных АПК. Поэтому считаем весьма актуальным разработку методики, позволяющей распределять регионы на группы по уровню технологического развития. Это позволит разработать и реализовывать в регионах с различным уровнем технической оснащенности различные комплексы мер по стимулированию технической и технологической модернизации.

Мероприятия по стимулированию технической и технологической модернизации сельского хозяйства региона должны применяться в случаях, когда уровень технического потенциала стабилен. Однако наблюдается отрицательная динамика в возрастной структуре, энергообеспеченности, снизился уровень конкурентоспособности отраслей регионального агробизнеса, для обновления парка не столько физически изношенной техники, сколько морально изношенной, снижения трудоёмкости и наращивания финансово-экономического потенциала сельского хозяйства в целом. Технологическая модернизация необходима, в том числе, если, состояние технической базы сельского хозяйства региона ещё может признаваться удовлетворительным, но сохранение устаревших технологий производства в ближайшее время существенно может снизить конкурентоспособность.

Вместе с тем, существует достаточно много критериев оценки уровня технологического развития сельского хозяйства региона, причем они зачастую основываются на не сопоставимых и не связанных между собой показателях. В этой связи существует потребность, в разработке относительно простой и понятной методики сравнительной оценки уровня технологического развития регионов, формирующей на выходе однозначный ответ на вопрос, насколько соответствует используемый парк сельскохозяйственной техники современным условиям внутри региональной и внешней конкуренции. Для этого необходимо подобрать адекватные критерии оценки уровня технологического развития региона, сравнить их значения с неким базовым (нормативным) значением, привести результаты расчетов в сопоставимый вид, учитывающий суммарно результаты оценки предложенных показателей, причем желательно, чтобы исходные данные для расчетов были легко доступны, достоверны и объективны. В этой связи нами предлагается в качестве источника информации для оценки уровня обеспеченности сельского хозяйства региона современной техникой использовать данные, имеющиеся в официальных статистических сборниках. На наш взгляд, статистические сборники, ежегодно публикуемые федеральной службой государственной статистики «Наличие техники, энергетических мощностей в сельскохозяйственных организациях Российской Федерации» и «Обеспеченность тракторами и комбайнами сельскохозяйственных организаций Российской Федерации» дают достаточно полную и объективную информацию о техническом потенциале регионов, и позволяют оценить видовую, возрастную и мощностную структуру парка. Информация, представленная в этих статистических сборниках, является аналитической базой для оценки тенденций формирования и использования различных элементов технического потенциала АПК региона, которые, зачастую, не поддаются прямому сравнению.

Укажем, что оценочные показатели являются агрегатными, что может стать причиной того, что получаемые результаты могут существенно колебаться, а универсальные подходы, применяемые ко всем субъектам федерации, могут нивелировать специфические особенности, характеризующие конкретные регионы.

Поэтому показатели обеспеченности региона сельскохозяйственной техникой, энергообеспеченности, видовой и возрастной структуры необходимо применять комплексно. Это позволит всесторонне проанализировать технический потенциал регионального сельского хозяйства, сделать обоснованные выводы по направлениям технической модернизации и разработать и реализовать рациональную стратегию развития агробизнеса региона.

Технологическая модернизация представляет собой действенное средство повышения эффективности агробизнеса, как на уровне региона, так и на уровне хозяйствующего субъекта, однако требует серьезных капитальных затрат и пересмотра технологий производства продукции. При этом важным является обоснованный выбор направления технического перевооружения при ограниченности ресурсов. Поэтому основой управления техническим потенциалом сельского хозяйства региона является его диагностика.

На основании результатов оценки ключевых показателей оценки технического потенциала всех 83 регионов Российской Федерации разработан метод классификации, отличительной особенностью которого является возможность сравнительной оценки и распределения субъектов федерации по уровню модернизации технической базы АПК в соответствии с их рейтингом, рассчитанным как суммарное значение баллов рейтинга, присваиваемых в зависимости от уровня показателей характеризующих с разных точек зрения материально-техническую базу регионального сельского хозяйства.

Оценив общеизвестные показатели, характеризующие технический потенциал сельского хозяйства регионов, нами предлагается присваивать регионам баллы рейтинга, по методике, представленной в таблице 3. Укажем, что способ присвоения баллов в предложенной методике максимально адаптирован к созданию программы для ЭВМ для оценки степени модернизации технической базы региона.

Количество начисляемых баллов за соответствие показателя критериальному значению определено по результату опроса экспертов о важности показателей для оценки состояния парка техники в АПК региона. В качестве экспертов выступали специалисты Департаментов сельского хозяйства регионов, ученые аграрных вузов и НИИ.

Отметим, что критериальные значения показателей, при которых прибавляются баллы, рассчитаны в большей степени, исходя из средних показателей по стране, а не из нормативов. Дело в том, что существующие нормативы не учитывают достаточно серьезные изменения в производительности современной техники. Исходя из устаревших нормативов, многие ученые констатируют значительное снижение технического потенциала, так например, по нормативу на 1000 га посевов зерновых требуется 10,5 комбайнов, на 1000 га посевов сахарной свеклы 12,6 свеклоуборочных комбайнов. Однако современная техника позволяет выполнять те же объемы работ со значительно меньшими затратами трудовых, технических, энергетических ресурсов. Так, например, в ЦФО на 1000 га посевов зерновых приходится 2,6 зерноуборочных комбайнов, и этого количество хватает, чтобы выполнять своевременно уборку. Поэтому предложенная нами методика в большей степени рассчитана на сравнительный анализ. Для оценки необходимо суммировать баллы рейтинга и на основе полученного значения сделать вывод об уровне модернизации технической базы региона.

Используя при оценке баллы рейтинга, мы делаем возможным приведение несопоставимых между собой показателей технической оснащенности в сопоставимый вид. Также укажем, что количество начисляемых баллов предлагается дифференцировать в связи с тем, что не все показатели в равной степени характеризуют уровень технического потенциала региона. Например, коэффициент

обновления отдельных видов техники достаточно ёмко характеризует динамику процесса модернизации. Темпы обновления отдельных видов техники, как группа показателей, даёт информацию о ежегодном обновлении машинно-тракторного парка. Однако отметим, что процесс обновления парка техники в России осуществляется достаточно медленно. Так, срок полезного использования (срок начисления амортизации) тракторов, комбайнов, посевных комплексов и другой мобильной, навесной и прицепной техники составляет в зависимости от вида от 3 до 7 лет, что требует создания условий, при которых коэффициент обновления должен составлять от 33% до 14%. Предложенный нами уровень в качестве критерия, равный 5%, выбран исходя из средних по России темпов обновления. Сложившаяся ситуация с низкими темпами обновления парка заставляет сельскохозяйственных производителей использовать технику сверх нормативного срока. С одной стороны, это увеличивает её капиталоотдачу, с другой стороны, уменьшает темпы освоения современных технологий, ресурсо- и энергосберегающей техники и снижает конкурентоспособность российского агробизнеса. Превышение темпов обновления посевных комплексов над сеялками является показателем интенсивного освоения сберегающих технологий в растениеводстве. Если же говорить о стационарном оборудовании для сельского хозяйства, отметим, что уровень коэффициента обновления, равный 5%, вполне соответствует необходимому значению, при котором данное оборудование, физически и морально устаревая, подвергается замене.

Таблица 3 – Методика начисления баллов рейтинга при оценке степени модернизации технической базы сельского хозяйства региона

Группы показателей	Критериальные значения показателей	Методика расчета	Бальная оценка
1	2	3	4
1. Темпы обновления отдельных видов техники	Коэффициент обновления тракторов свыше 5%	$K_{отр} = \frac{\text{Кол} - \text{воприобретенныхновыхтракторов}}{\text{Наличиетракторовнаконецгода}} \times 100\%$	1 балл
	Коэффициент обновления зерноуборочных комбайнов свыше 5%	$K_{озк} = \frac{\text{Кол} - \text{воприобретенныхновыхзерноуборочныхкомбайнов}}{\text{Наличиезерноуборочныхкомбайновнаконецгода}} \times 100\%$	1 балл
	Коэффициент обновления кормоуборочных комбайнов свыше 5%	$K_{окк} = \frac{\text{Кол} - \text{воприобретенныхновыхкормоуборочныхкомбайнов}}{\text{Наличиекормоуборочныхкомбайновнаконецгода}} \times 100\%$	1 балл
	Коэффициент обновления посевных комплексов выше коэффициента обновления сеялок	$K_{опк} = \frac{\text{Кол} - \text{воприобретенныхновыхпосевныхкомплексов}}{\text{Наличиепосевныхкомплексовнаконецгода}} \times 100\%$ $K_{ос} = \frac{\text{Кол} - \text{воприобретенныхновыхсеялок}}{\text{Наличиесеялокнаконецгода}} \times 100\%$	1 балл
	Коэффициент обновления доильных установок свыше 5%	$K_{оду} = \frac{\text{Кол} - \text{воприобретенныхновыхдоильныхустановок}}{\text{Наличиедоильныхустановокнаконецгода}} \times 100\%$	1 балл
2. Оценка нагрузки и мощности основных видов сельскохозяйственной техники	Нагрузка на 1 трактор менее 260 га пашни	$N_T = \frac{\text{Площадьпашни}}{\text{Кол} - \text{вотракторов}}$	1 балл
	Средняя мощность тракторов выше среднероссийского уровня (в 2013 году 115 л.с.)	$\bar{M}_T = \frac{\text{Суммарнаямощностьтракторов}}{\text{Кол} - \text{вотракторов}}$	1 балл
	Средняя мощность тракторов выше среднероссийского уровня при средней нагрузке на 1 трактор менее 260 га	x	1,5 балла
	Нагрузка на 1 зерноуборочный комбайн свыше 350 га посевов зерновых культур	$N_K = \frac{\text{Площадьпосевовзерновых}}{\text{Кол} - \text{возерноуборочныхкомбайнов}}$	1 балл
	Средняя мощность уборочных комбайнов выше среднероссийского уровня (в 2013 году 201 л.с.)	$\bar{M}_K = \frac{\text{Суммарнаямощностькомбайнов}}{\text{Кол} - \text{вокомбайнов}}$	1 балл
	Средняя мощность комбайнов выше среднероссийского уровня при средней нагрузке на 1 трактор свыше 350 га	x	1,5 балла

1	2	3	4
3. Оснащенность сельскохозяйственного производства энергетическими мощностями	Уровень энергообеспеченности более 200 л.с. на 100 га посевных площадей	$\text{Э}_0 = \frac{\text{Энергетическая мощность}}{\text{Посевные площади}} \times 100$	1 балл
	Рост энергообеспеченности относительно предыдущего года	$\Delta \text{Э}_0 = \text{Э}_0 \text{ отч} - \text{Э}_0 \text{ баз}$	1,5 балла
	Энерговооруженность превышает среднероссийский уровень (в 2013 году свыше 15 л.с. на 1 среднегодового работника)	$\text{Эв} = \frac{\text{Энергетическая мощность}}{\text{Кол} - \text{вработников}}$	1 балл
4. Оценка уровня использования новой техники в сельскохозяйственном производстве	Удельный вес тракторов в возрасте до 3-х лет свыше 10%	$\text{УВнтр} = \frac{\sum \text{поступившие новые тракторы за последние 3 года}}{\text{наличие тракторов на конец отчетного года}}$	2 балла
	Удельный вес зерноуборочных комбайнов в возрасте до 3-х лет свыше 15%	$\text{УВнтр} = \frac{\sum \text{поступившие новые ЗУК за последние 3 года}}{\text{наличие ЗУК на конец отчетного года}}$	1 балл
	Удельный вес кормоуборочных комбайнов в возрасте до 3-х лет свыше 15%	$\text{УВнтр} = \frac{\sum \text{поступившие новые КУК за последние 3 года}}{\text{наличие КУК на конец отчетного года}}$	1 балл
	Удельный вес посевных комплексов в возрасте до 3-х лет свыше 25%	$\text{УВнтр} = \frac{\sum \text{поступившие новые посевные комплексы за последние 3 года}}{\text{наличие посевных комплексов на конец отчетного года}}$	2 балла
	Удельный вес доильных установок в возрасте до 3-х лет свыше 15%	$\text{УВнтр} = \frac{\sum \text{поступившие новые доильные установки за последние 3 года}}{\text{наличие доильных установок на конец отчетного года}}$	2 балла
	Удельный вес свеклоуборочных машин в возрасте до 3-х лет свыше 15%	$\text{УВнтр} = \frac{\sum \text{поступившие новые СУМ за последние 3 года}}{\text{наличие СУМ на конец отчетного года}}$	0,5 балла

Источник: составлено автором.

Показатели нагрузки на технику, по нашему мнению, необходимо анализировать в непосредственной связи с мощностными характеристиками техники. В этой связи нами сгруппированы показатели нагрузки с показателями средней мощности. В качестве норматива по средней мощности взяты средние данные по России. Относительно показателей средней нагрузки отметим, что высокая степень загрузки техники не всегда указывает на низкую техническую оснащенность. Так, например, высокая нагрузка на зерноуборочный комбайн является фактором повышения скорости окупаемости техники, так как современные комбайны способны в оптимальные сроки убирать 500 и более гектаров посевов зерновых культур, при условии грамотного севооборота (посадки культур с разными сроками созревания). В этой связи дополнительные баллы рекомендуется начислять при условии нормальной загрузки и достаточно высокой средней мощности техники.

Одной из универсальных характеристик технической базы сельского хозяйства является энергообеспеченность и энерговооруженность. Эти показатели учитывают все энергетические мощности, как мобильные (тракторы, комбайны, автомобили), так и стационарные (оборудование для животноводства, оросительные системы), причем эти мощности соотносят с земельными и трудовыми ресурсами, что делает полученную информацию сопоставимой и более полной. Также для регионального АПК важным является динамика изменения энергообеспеченности.

Ключевым показателем, характеризующим уровень модернизации парка техники, является удельный вес новой техники. В этой связи нами предлагается оценить долю новой техники в структуре парка. Укажем, что ключевыми показателями освоения новых технологий в сельском хозяйстве является обновление парка тракторов, приобретения новых посевных комплексов, как элемента внедрения нулевой и минимальной технологий в растениеводстве, и использование новых доильных установок, как фактора инновационного развития молочного скотоводства.

Суммарный рейтинг регионов позволяет распределить их на группы и применить

к ним сходные механизмы стимулирования технической модернизации. При помощи предложенной методики можно найти слабые места в региональном техническом потенциале сельского хозяйства, оценивая суммы баллов в разрезе групп показателей.

Таким образом, по результатам расчетов может получиться 3 укрупненные группы регионов:

группа 1 – регионы с низкой степенью модернизации технической базы сельского хозяйства;

группа 2 – регионы с недостаточным уровнем технического оснащения сельского хозяйства;

группа 3 – регионы с развитой технической базой сельского хозяйства.

Распределение показателей оценки по группам позволит более детально распределить регионы с учетом особенностей технической оснащенности сельского хозяйства. В таблице 5 представлена краткая характеристика регионов с разной степенью технической оснащенностью.

Таблица 5 – Характеристика регионов с различной степенью модернизации технической базы сельского хозяйства

Проблемные места в развитии технической базы сельского хозяйства регионов	Особенности технической оснащенности регионов
1. Низкие темпы обновления отдельных видов техники	Данные регионы характеризуются старением парка сельскохозяйственной техники ввиду недостаточной эффективности аграрного производства, ежегодно снижается конкурентоспособность сельского хозяйства в силу недостаточного внедрения новой техники и технологий. Однако низкий уровень обновления парка основных видов техники может сложиться в отдельно взятом году, поэтому необходимо анализировать конъюнктуру рынка техники и текущий уровень диспаритета цен.
2. Низкая средняя мощность основных видов сельскохозяйственной техники и нерациональная их загрузка	Нерациональная загрузка техники и низкая средняя мощность парка свидетельствуют о неэффективном использовании технического потенциала, а также о недостаточном внедрении в аграрное производство ресурсосберегающих технологий, широкозахватной и высокопроизводительной техники и оборудования производящего за один проход несколько операций.
3. Низкая оснащенность сельскохозяйственного производства энергетическими мощностями	Низкая энергетическая обеспеченность свидетельствует о недостатке производственных мощностей. Прежде чем разрабатывать меры по увеличению мощностей, необходим их структурный анализ. Недостаток энергетических мощностей может быть как следствием так и причиной высокой трудоёмкости сельскохозяйственного производства.
4. Низкая доля новой техники в сельскохозяйственном производстве	Отсутствие или недостаток новой техники в структуре парка свидетельствует о низкой инвестиционной привлекательности сельского хозяйства региона. Также этот показатель свидетельствует об отсутствии политики модернизации АПК в регионе и слабом освоении инновационных технологий.

Источник: составлено автором.

К группе с низкой степенью модернизации технической базы сельского хозяйства считаем целесообразным отнести регионы, которые в сумме наберут 10 и менее баллов. От 10 до 15 баллов – регионы с недостаточным уровнем технического оснащения сельского хозяйства. Соответственно, если регион в результате оценки наберет более 15 баллов, то сельское хозяйство этого региона можно считать достаточно обеспеченным современной техникой.

В целом предложенная методика позволит как оценить уровень технического развития сельского хозяйства региона, так и оценить проблемные места в его формировании. На основе полученных результатов можно обоснованно формулировать и реализовывать меры государственной поддержки по формированию рациональной и конкурентоспособной материально-технической базы региона, с учетом его особенностей.

В России 83 субъекта федерации, в каждом из которых в той или иной степени осуществляется сельскохозяйственное производство. В каждом из регионов аграрное производство обладает специфическими организационными, экономическими, почвенно-климатическими особенностями, в связи с чем, уровень технической оснащенности АПК регионов существенно различается. Поэтому для формирования условий интенсивной и рациональной технической модернизации сельского хозяйства необходимо выявить региональные особенности, тенденции развития аграрных отраслей. Предложенная выше методика позволяет провести сравнительную оценку состояния технической базы сельского хозяйства на уровне региона. Преимуществом данной методики является относительная простота использования, доступность исходной информации (весь необходимый эмпирический материал для расчетов публикуется в статистической отчетности). Для апробации методики нами выбраны 16 регионов из 8 федеральных округов (по 2 региона из каждого округа). Так, сравнительная оценка состояния технической базы сельского хозяйства была проведена в следующих регионах: Орловская и Белгородская области (ЦФО), Псковская и Вологодская области (СЗФО), Краснодарский край и Республика Калмыкия (ЮФО), Ставропольский край и Республика Ингушетия (СКФО), Республика Башкортостан и Нижегородская область (ПФО), Свердловская и Курганская области (УФО), Республика Бурятия и Кемеровская область (СФО), Хабаровский край и Амурская область (ДВФО).

Оценку проведем в разрезе групп показателей, для того чтобы определить не только степень технической оснащенности сельского хозяйства регионов, но и слабые места в обновлении материально-технической базы.

Исходные данные для расчета берутся в статистическом сборнике «Наличие техники, энергетических мощностей в сельскохозяйственных организациях Российской Федерации». Также отметим, что по результатам оценки коэффициентов обновления отдельных видов техники можно судить об отраслевой направленности модернизации. Так, если высокий темп обновления тракторов говорит о модернизации сельского хозяйства в целом, то высокие показатели обновления зерноуборочных комбайнов и посевных комплексов свидетельствуют о развитии растениеводства, и наоборот высокий уровень коэффициента обновления кормоуборочной техники и доильных установок может говорить о развитии животноводства.

Представленные результаты оценки темпов обновления отдельных видов техники в регионах наглядно показали, что в Белгородской области происходит интенсивное и комплексное обновление парка сельскохозяйственной техники, что является фактором инновационного развития агробизнеса в целом. В этом регионе следует обратить внимание на обновление тракторного парка, как основной тягловой мощности сельского хозяйства.

Крайне низкий уровень обновления парка сельскохозяйственной техники наблюдается в Псковской, Вологодской, Курганской областях, Хабаровском и Краснодарском краях и в Республике Калмыкия. В этих регионах целесообразно разработать и реализовать мероприятия по стимулированию обновления парка сельскохозяйственной техники. В данных регионах низкий уровень обновления парка снижает конкурентоспособность сельскохозяйственного производства.

В Амурской и Орловской областях и Республике Башкортостан происходит интенсивное обновление растениеводческой техники, что свидетельствует о высокой эффективности производства продукции растениеводства в данных регионах и развитии данной отрасли. В данных регионах необходима целевое обновление парка техники для животноводства.

Интенсивное обновление техники для животноводства наблюдается в Нижегородской, Свердловской, Курганской, Кемеровской областях и Республике Бурятия. Интенсивное развитие животноводства способствует развитию растениеводства, в этой связи целесообразно создание условий по интенсификации обновления техники для кормопроизводства.

В Белгородской, Орловской областях и Ставропольском крае наблюдается рациональное сочетание нагрузки на тракторы и зерноуборочные комбайны и их мощности. В данных регионах сформирован парк техники, который способен осуществлять эффективное производство сельскохозяйственной продукции при достаточно быстрой окупаемости капитальных затрат на приобретение техники. Отметим, что высокий средний уровень мощности комбайнов свидетельствует о формировании парка современной производительной техники. Средняя мощность уборочных комбайнов является одним из ключевых показателей, так как уборка является ограниченным во времени этапом производственного процесса в растениеводстве и высокая производительность позволяет существенно, как снизить сроки уборки, так и увеличить среднюю урожайность и эффективность производства. Укажем, что при использовании мощных тракторов в условиях невысокой загруженности позволяет выполнять технологические процессы в оптимальные сроки. В данных регионах рекомендуется стимулировать обновление парка техники, причем ключевым условием должно являться приобретение широкозахватной и производительной техники, ресурсосберегающего оборудования.

В Республике Башкортостан рациональное соотношение мощностных характеристик и нагрузки на уборочную технику. В данном регионе достаточно развиты организационные отношения с машинно-технологическими станциями, которые позволяют использовать при уборке культур производительную технику без высоких капитальных затрат сельскохозяйственных товаропроизводителей. В этой республике необходимо обратить внимание на стимулирование обновления тракторного парка, что позволит использовать в производстве широкозахватную прицепную технику.

Необходимо сконцентрировать внимание на использование маломощной техники в Республике Бурятия, что связано с особенностями почвенно-климатических условий и специализацией аграрного производства. Весьма негативным считаем тот факт, что в Нижегородской области не сформирован парк производительных тракторов и комбайнов. Для данного региона необходимо сформулировать и реализовать целевые программы по формированию мощного парка техники, позволяющего осуществлять эффективное производство сельскохозяйственной продукции. Отсутствие в регионах парка мощных тракторов и комбайнов не дает реализовать потенциал по производству продукции растениеводства с низкой себестоимостью и высокими качественными характеристиками.

Сформированный тракторный парк в Курганской области дает потенциальные возможности по развитию ресурсосберегающего земледелия, что подтверждается высоким уровнем коэффициента обновления посевных комплексов. Узким местом в развитии технического потенциала сельского хозяйства региона является неразвитый парк уборочной техники, что в современных условиях может стать сдерживающим фактором конкурентного развития сельского хозяйства.

По нашему мнению в Псковской, Вологодской, Свердловской, Амурской областях, Республиках Калмыкия, Ингушетия и Хабаровском крае с точки зрения мощности техники не развита техническая база сельского хозяйства, в данных регионах необходимо создание организационно-экономических условий по существенной модернизации парка техники, в противном случае аграрное производство в этих регионах будет неконкурентоспособным.

Для комплексной оценки технической оснащенности сельского хозяйства региона необходимо произвести оценку оснащенности аграрного производства энергетическими мощностями, причем эти показатели необходимо оценить в динамике.

Проанализировав показатели обеспеченности сельскохозяйственного производства энергетическими ресурсами, можно отметить, что Краснодарский, Ставропольский края и Нижегородская область в целом обеспечены энергетическими ресурсами. Причем в Краснодарском крае и Нижегородской области парк сформирован маломощной техникой, а в целом энергетические мощности сформировались за счет количества техники и оборудования, что позволяет эффективно развиваться лишь

субъектам малого агробизнеса. Также целесообразно указать на проблемы с обеспеченностью энергетическими мощностями в Псковской, Курганской, Кемеровской, Амурской областях, Республиках Калмыкия, Ингушетия, Бурятия и в Хабаровской крае. Недостаточная энергообеспеченность и энерговооруженность может стать причиной быстрого физического износа используемой техники, повышения эксплуатационных затрат, роста себестоимости готовой сельскохозяйственной продукции и как следствие снижения конкурентоспособности агробизнеса в целом. В этой связи в регионах с низкой оснащенностью сельского хозяйства энергетическими мощностями целесообразна разработка региональных целевых программ, направленных на стимулирование сельскохозяйственных производителей на приобретение энергонасыщенной техники, а также на развитие в регионах машинно-технологических станций, способных обеспечить субъектов агробизнеса услугами по осуществлению технологических операций.

Особое внимание целесообразно уделить оснащению сельскохозяйственного производства энергетическими ресурсами в регионах, относительно обеспеченных мощностями, в таких как Белгородская, Орловская, Вологодская, Свердловская области, а также Республике Башкортостан. В этих регионах существует высокий потенциал для дальнейшего повышения эффективности агробизнеса за счет резервов оптимизации энергообеспеченности, причем, зачастую, речь идет не о замене физически изношенных мощностей, а о целенаправленной и экономически обоснованной модернизации парка сельскохозяйственной техники и оборудования, способных выполнять качественно и в установленные оптимальные сроки технологические операции, а также рационально вооружить и загрузить трудовые ресурсы. Поэтому в регионах с относительно высокой оснащенностью сельского хозяйства энергетическими ресурсами необходим дифференцированный подход к формированию и реализации механизмов технической модернизации и интенсификации формирования и использования энергетических ресурсов.

Как уже отмечалось ранее, важной характеристикой, дающей представление об уровне модернизации парка сельскохозяйственной техники, является удельный вес новых тракторов, комбайнов и другого оборудования. Результаты оценки показали, что в Псковской, Вологодской, Свердловской, Курганской, Кемеровской областях, а также в Республике Башкортостан сформированный парк сельскохозяйственной техники в основном базируется на старых тракторах, комбайнах и оборудовании. Укажем, что этот факт негативно сказывается на конкурентоспособности и эффективности сельскохозяйственного производства. В этих регионах необходимо существенное обновление парка техники, а также создание условий по техническому обслуживанию старой техники различных марок.

Достаточно эффективно происходит техническая модернизация в Белгородской, Орловской, Амурской областях и в Хабаровском крае. В данных регионах необходимо вести обоснованную политику по формированию рынка сельскохозяйственной техники, особое внимание уделяя формированию цивилизованной дилерской сети, способной наряду с поставкой новой техники, обеспечить качественное обслуживание, обеспечение запасными частями. Также данным регионам необходимо создание условий для объективной стоимостной оценки имеющегося парка сельскохозяйственной техники для создания базы даны о его залоговой стоимости с целью увеличения доступности кредитных ресурсов аграрным организациям. На наш взгляд, в этих регионах возможна разработка и реализация механизма отслеживания и стимулирования целевого использования собственных средств аграрных организаций (прибыли и амортизации) на дальнейшую техническую и технологическую модернизацию сельскохозяйственного производства.

Представленные выше расчеты дают дифференцированную информацию об отдельных оценочных характеристиках технического потенциала сельского хозяйства регионов. В целом вывод об уровне технической модернизации сельского хозяйства регионов можно сделать, сопоставив суммарные значения баллов. В таблице 5

представлены группы регионов по уровню модернизации технической базы сельского хозяйства, а также общие рекомендации по развитию технического потенциала АПК.

Таблица 5 – Оценка уровня технической модернизации сельского хозяйства регионов

Регионы	Сумма баллов	Общие рекомендации
Регионы с низкой степенью модернизации технической базы сельского хозяйства		
Псковская область	5	<i>Сельское хозяйство данных регионов необходимо признать, работающим на устаревшем оборудовании и технике. Для развития необходимы кардинальные меры по технической модернизации. Следует использовать все возможности государственной поддержки сельскохозяйственных производителей направленные на техническое оснащение и модернизацию. Причем речь не идет о внедрении инноваций, речь идет о достаточном оснащении сельскохозяйственного производства техникой, способной производить конкурентоспособную продукцию с учетом природно-климатических и рыночных условий. Причем при разработке и реализации мер поддержки необходимо оценить специализацию, и возможные резервы роста.</i>
Вологодская область	6	
Республика Калмыкия	3	
Республика Ингушетия	8	
Свердловская область	8	
Курганская область	9	
Республика Бурятия	6,5	
Кемеровская область	8	
Хабаровский край	8	
Регионы с недостаточным уровнем технического оснащения сельского хозяйства		
Краснодарский край	11	<i>Сельскохозяйственные производители данных регионов обеспечены сельскохозяйственной техникой, однако её мощностная и структурная характеристика не способна в настоящий момент и в перспективе обеспечить конкурентоспособное сельскохозяйственное производство, особенно с учетом требований ВТО. Целесообразно стимулирование модернизации и внедрения инноваций.</i>
Ставропольский край	11,5	
Республика Башкортостан	11	
Нижегородская область	10,5	
Амурская область	11	
Регионы с развитой технической базой сельского хозяйства		
Белгородская область	18	<i>Современный парк техники обеспечивает интенсивное и конкурентоспособное развитие АПК. Однако необходимо использовать и развивать данное конкурентное преимущество осваивая меры поддержки технической и технологической модернизации разрешенные ВТО (особенно в рамках «зеленой корзины»). Целесообразно стимулировать самоинвестирование сельскохозяйственных производителей на техническую и технологическую модернизацию.</i>
Орловская область	17	

Источник: составлено автором.

Таким образом, предложенная методика способна классифицировать сельское хозяйство регионов по уровню модернизации технической базы, определить слабые места, и позволяет обосновать направления государственной поддержки. Проводя оценку с использованием предложенной методики, органы управления сельским хозяйством федерального и регионального уровня могут принимать обоснованные решения по использованию различных механизмов повышения конкурентоспособности АПК и стимулированию технической модернизации сельского хозяйства на уровне регионов.

Представленный набор показателей позволяет довольно объективно оценить уровень технологического развития сельского развития.

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DOI <https://doi.org/10.18551/rjoas.2017-06.03>

DO GOVERNMENTAL INCENTIVES PROMOTE PARTNERSHIPS AMONG AGRICULTURAL FIRMS? A MULTIPLE CASE STUDY FROM ITALY

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ABSTRACT

The paper analyses a sample of successful multi-stakeholder projects co-financed by the European Agricultural Fund for Rural Development in Friuli Venezia Giulia Autonomous Region (Italy) to understand what factors allow governmental incentives to trigger more effective partnerships among agricultural firms. Our analysis, based on the standardized approach for the benchmarking of rural development initiatives designed by the Assembly of European Regions, identified six predictors of success. Three are associated to the contents of the project, i.e., strategic vision, sustainability over time and market orientation; two are linked to the nature of the partnership, i.e., critical mass and project leaders' entrepreneurship; one more seems to be associated with policy design rather than implementation, i.e., the design of funding requirements specifically targeted to address critical weaknesses in agricultural development. Thanks to a better understanding of these predictors of success, policy-makers promoting rural development can improve the cost-effectiveness of incentive schemes, in particular by setting tighter standards to be met by agricultural firms wishing to access preferential funding.

KEY WORDS

Partnership, agriculture, incentives, good practice, European Union.

Rural development is undoubtedly a key area for governmental intervention, in the European Union (EU) as well as in the Russian Federation [1, 2, 3]. The economic viability of farming and forestry remains central to rural economies; at the same time, related issues such as environmental protection, climate change, biodiversity, water supply and food security are becoming increasingly important dimensions of the modern concept of sustainability.

In order to coordinate intervention strategies in the area of rural development across the Member States, in 1962 the EU established a Common Agricultural Policy (CAP), which underwent several changes over the years but is still the largest single item of expenditure in the EU budget, accounting for 39% of the total in 2015 [4]. Pursuant to European Commission Regulation No. 1698/2005, which provides the framework regulations underpinning the CAP, EU policies pursue three objectives: increase the competitiveness of agriculture, farming and forestry through restructuring, development and innovation; enhance the environment by supporting territorial management; improve the quality of life in rural areas and promote the diversification of economic activities.

As in the Russian Federation [5, 6], also in the EU dedicated governmental subsidies are available through the CAP to improve the competitiveness of agriculture, farming and forestry, especially in order to support capital expenditure [7]. In the case of the EU such support is primarily channelled through the European Agricultural Fund for Rural Development (EAFRD), overseen by the European Commission's Directorate General for Agriculture and Rural Development. EAFRD supports the implementation of Rural Development Programmes (RDPs) across the EU, agreed with and co-financed by national and regional governments along standardized guidelines to tackle the specific challenges of development in different local contexts.

The promotion of partnerships in agriculture is a recurring theme in the debate about rural development: in many EU Member States the small average size of farms and agro-industrial businesses implies that they lack scale economies, negotiation power and innovation potential, and thus the competitiveness needed today to operate effectively on the market. Partnerships help address the constraints small producers face in scaling up, including high transaction costs and lack of information [8]. We use here the broader term “partnership” rather than the term “cooperation” because we do not refer exclusively to the establishment of farmers’ consortia, cooperatives and associations, but to all the multi-stakeholder arrangements that can trigger complementarity and synergies among different players, and especially with other market participants along agricultural value chains.

The aim of our study is to understand the factors underpinning successful partnerships in agriculture, based on an in-depth analysis of “good practices” co-financed by the 2007-2013 RDP of Friuli Venezia Giulia Autonomous Region in Italy. Friuli Venezia Giulia is located in the northeast of Italy, bordering Veneto Region, Austria, Slovenia and the Adriatic Sea: it covers a total area of 7,858 km² and has a population of 1.2 million people. The region is mostly rural; Utilised Agricultural Area (UAA) covers 28% of the territory and is mainly used for arable crops and pasture, whereas forests cover 41% of the territory and tend to expand due to the abandonment of agriculture, driven in turn by the fact that 23% of UAA is in mountain areas. Agriculture employs 3.26% of total employed people and generates 1.2% of the total added value of the region. Farm structure is fragmented: 22,320 agricultural firms operate in the region, with an average size of 10 hectares. 62% of farm holders practice agricultures only part-time, and only 4% of them have a high school degree in agronomics [9].

The Regional Government of Friuli Venezia Giulia is keenly aware of the need to improve the competitiveness of the agricultural sector, and promoting more effective and more sustainable partnerships is an important target goal in its RDPs: the 2007-2013 RDP of Friuli Venezia Giulia stated explicitly that “an increasing autonomy from public transfers and a growing competitive capacity can be the result of a strong orientation towards quality, efficiency, innovation, environmental compatibility and the development of forms of cooperation and integration that can bring producers to the market” [10, p. 131]. On the backdrop of this vision the unit of the Regional Administration responsible for rural development commissioned this study, based on the assumption that more systematic evidence on what makes partnerships successful is important not only for market players, but also for the policy-makers in charge for the design and implementation of governmental programmes supporting agriculture.

METHODOLOGY OF RESEARCH

To understand the factors underpinning successful partnerships in agriculture we chose to use a qualitative methodology, more suitable to help identify commonalities in the heterogeneous set of the projects co-financed by the 2007-2013 RDP of Friuli Venezia Giulia. More specifically we analyzed a series of six “good practices” as a multiple case study [11]. To identify good practices, in agreement with the unit of the Regional Administration responsible for rural development we took three requirements into account:

- first of all, to be assessed in a reliable way projects had to be already concluded, or at least nearing conclusion (minimum 80% of planned expenditure already accounted for);
- secondly, they had to stand out for the results they achieved, in terms of impact, cost-benefit ratio, innovative partnership or working methods;
- the last criterion was a balanced distribution of good practices among the different lines of intervention (so-called “axes” and “measures”) co-financed by the 2007-2013 RDP of Friuli Venezia Giulia.

The following six projects were selected as good practices: integrated territorial project “Urban agriculture” (support to farms located in the territory of Udine, the second largest town in Friuli Venezia Giulia); integrated value chain project “Fantinel Pitars” (improved coordination of supply chain for more effective marketing of wine products); integrated value

chain project “Venchiaredo” (improved coordination of supply chain for more effective marketing of cheese products); agricultural collective action “Vigna in Collio” (upgrading of equipment among the wineries in the Collio area); forestry collective action “Certified poplar plantation in Friuli Venezia Giulia” (certification of environmental sustainability of poplar plantations); forestry collective action “Ovaro, Rigolato, Prato Carnico, Comeglians and Paluzza Municipalities” (support to the refurbishment of old wooden buildings in mountain areas according to traditional architectural standards).

The sample of projects we selected guaranteed a balanced distribution among the lines of intervention funded by the 2007-2013 RDP of Friuli Venezia Giulia: half of them are “integrated projects” in the EAFRD terminology, i.e. territorial or value chain partnerships, and half are “collective actions”, i.e. partnerships among direct competitors. Four projects concern agriculture, whereas two deal with forestry; integrated forestry projects could not be included, since, by the time of our study was carried out, none of them had come to conclusion or to the expenditure threshold we set.

Our analysis was based on the project documents made available to the Regional Administration by each project leader and summarized in a data acquisition form. For this purpose we adopted the standard template used by the Assembly of European Regions in the framework of the RUR@CT network to facilitate the transfer and benchmarking of good practices in rural development across the EU [12]. Project document data were triangulated with semi-structured interviews with project leaders and other key informants to better appreciate the factors, especially in terms of design and dynamics that made it possible for expected results to be achieved, and for partnerships to prove successful. Whenever possible two researchers were involved in the interviews to reduce the risk of subjective interpretation of answers; the completed data acquisition form was then validated by project leaders and other interviewees.

RESULTS AND DISCUSSION

Our study allowed the identification of six commonalities shared by the projects qualifying as good practices. Three predictors of success are associated to the contents of the project, i.e., strategic vision, sustainability over time and market orientation.

- *Strategic vision.* Projects seem to be more effective if they explicitly aim further than securing financial contributions, and if they focus on strategic goals (medium to long-term) rather than merely tactical (short-term) ones, not only in the design phase, but also in the implementation of project activities. In the most forward-looking cases, support for the projects’ strategic objectives became a discriminating criterion for joining the partnership, also because in some cases project participation requires partners to behave according to predetermined conditions, not only in terms of the advanced investment on which financial support is calculated, but also of compliance with certain production guidelines.

- *Sustainability over time.* As widely acknowledged in the project management literature, successful projects extend beyond the original planning horizon, although sometimes in partially different formats. Sustainability over time is directly related to the ability to operate pursuing a strategic vision. Moreover, the sustainability of a partnership beyond its formal deadline can be a proxy indicator of the fact that the project has been designed to address a real need, rather than just to exploit a funding opportunity. In these cases partnerships continue to exist over time, even though some of their members may change, and use available financing opportunities to achieve their goals. In many cases, therefore, one of the most important achievements of the projects we identified as good practices is testing or consolidating this kind of long-term relationships.

- *Market orientation.* For the lines of intervention for which access to end consumers is important, strategic vision and sustainability over time also mean the pursuit of a market positioning that provides beneficiaries a sustainable competitive advantage. This is especially relevant for integrated value chain projects, but not only: also collective actions at times display this feature. When governmental contributions just help bear the burden associated with capital expenditure, competitive implications are negligible. When financial

support funds investments that help lower operating costs, the implications in terms of market positioning and competitive advantage are undoubtedly more relevant. The most ambitious projects go further, aiming to widen the margin between prices and costs to the benefit of all partners through activities that pursue primarily an increase in market value based on product differentiation [13], for instance through certification of environmental sustainability or improved traceability of the supply chain.¹

Two more predictors of success seem to be linked to the nature of the partnership, i.e., critical mass and project leaders' entrepreneurship.

- *Critical mass.* Taking into account the small average size of agricultural, farming and forestry firms in Friuli Venezia Giulia, patchy initiatives are likely to have a limited impact, while projects that set up partnerships among multiple stakeholders working in the same direction and pursuing at least partially shared goals tend to be more effective. In this perspective, integrated territorial projects and integrated value chain projects seem more promising than collective actions; while integrated projects are explicitly aimed at facilitating cooperation among entities from the same geographic area or belonging to two or more segments of the same supply chain, collective actions tend to finance actions carried out in parallel by firms and institutions that keep operating autonomously, failing, at least in some cases, to catalyse the development of real synergies.

- *Project leaders' entrepreneurship.* Most of the projects selected as good practices are coordinated by leaders who stand out for their entrepreneurship: they do not stop at facilitating the obtainment by all partners of the financial contributions made available through the EAFRD, but actively seek to establish and maintain a true partnership. Not surprisingly, they tend to match the profile of "policy entrepreneurs" suggested by Kingdon [15]. As a consequence, it is not enough for project leaders to have the formal requirements and skills necessary to submit applications and manage bureaucratic procedures: they also need substantial (not necessarily hierarchical) transformational leadership *vis-à-vis* other project participants, based on a deeply-seated commitment to making the partnership work in order to achieve individual goals.

One final commonality shared by the projects identified as good practices seems to be linked to policy design rather than implementation: successful partnerships are consistently associated with lines of intervention where funding requirements were specifically designed to address critical weaknesses in agricultural development. For each line of intervention, RDPs establish that applications have better chances of success and financial support corresponds to a higher share of expenditure provided that partnerships or proposed project activities meet certain requirements. This is a very effective feature, which leads applicants to design partnerships and activities in such a way to fully meet these requirements, in keeping with the logic of nudging as a driver of success in modern governmental policies [16]. Obviously partners' commitment is not always genuine, and in many cases it is merely a matter of box ticking. On the other hand, one must remember that regional governments set these requirements based on a detailed analysis of the critical challenges to rural development in each area of intervention. The good practices we analyzed suggest that providing preferential support to projects allowing partners to test innovative, targeted solutions to these challenges leads to interesting results. One likely driver of success seems to be that the availability of preferential funding supports the agenda of "policy entrepreneurs" who in many cases are already striving to trigger change among their peers: it is not surprising that some interviewees suggest that preferential funding for fully compliant projects should be even more prominent.

Given the intrinsic limitations of a multiple case study, the good practices we studied are not expected to represent systematically all the projects funded by the 2007-2013 RDP of Friuli Venezia Giulia, nor was the analysis designed as a fully-fledged final evaluation, i.e. with the

¹ According to the classical taxonomy of competitive strategies suggested by Porter, cost leadership is the strategy of a firm offering standardized products at very low per-unit costs for buyers who are price-sensitive; differentiation is the strategy of a firm offering products that are considered unique industry-wide and are addressed to buyers who are relatively price-insensitive [14].

aim of feeding into the 2014-2020 programming cycle. Nevertheless, our findings seem coherent with those of authoritative sources in the field, such as the World Economic Forum's New Vision for Agriculture initiative [17]. We believe that the features shared by successful projects help shed light on what it takes for governmental incentives to promote effective partnerships in the agricultural sector. Thanks to a better understanding of these commonalities, policy-makers promoting rural development in the EU as well as in the Russian Federation can improve the cost-effectiveness of incentive schemes, in particular by setting tighter standards to be met by agricultural firms wishing to access preferential funding.

Research was conducted in the framework of and received partial funding by the Friuli Venezia Giulia Rural Development Programme for 2007-2013 of the European Agricultural Fund for Rural Development.

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DOI <https://doi.org/10.18551/rjoas.2017-06.04>

ANALYSIS OF THE COMPETITIVE ADVANTAGES OF RUSSIAN BUSINESS IN THE FOOD MARKET

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ABSTRACT

In modern conditions, in connection with the aggravation of the political situation and the introduction of food embargo on the goods of major importers, the problem of providing the Russian population with high-quality and affordable food is becoming urgent. This problem is complex, requiring a wide theoretical and historical interpretation. In this regard the historical and economic analyses of the food sector was carried out, the historical reasons for the emergence of dependence on imports in the food market of the Russian Federation was revealed and the main directions of the solution of the problem of providing the population with food were analyzed on the basis of mobilizing of the system of competitive advantages of Russian business and public policy measures. The study is overviewed different approaches to the problem of competitiveness from the point of view of various economic theories. The main opportunities for increasing the competitiveness of Russian business in the food market are also overviewed in article. There are three types of competitive advantages: market, resources and institutional. A company should combine these competitive advantages with a purpose to develop the most successful competitive strategies. The Government should assist the domestic companies in realization of their competitive potential.

KEY WORDS

Food manufacturers, food suppliers, wholesale companies, trade, retail, competitive advantages, competitiveness, competition, national business, market, resources, institutional, competitive strategy.

Problems of the formation of the modern food sphere in Russia are connected with the problems which have arisen in last century. They are: state agriculture, impossibility of ensuring consumer demand, artificial understating of the prices for agricultural production (Serova, 2010). For better understanding of the modern food sphere we should analyze its formation by stages.

In the late 19th early 20th century, the Russian Empire stood on a special place in the food market of Europe, ranking the first place in the world for production of grain bread. Over half of the world's rye, a fifth of the world's wheat crop, a third of barley and a quarter of all oats were also manufactured in Russia. Grain was the main income item and the profit from its sale accounted nearly the half of the income from all exports. In 1913, the Russian Empire exported about 10.5 million tons of grain.

Until the end of the 1950s, the Soviet Union continued to export grain, despite the poor harvest and famine in the countryside. The main task of export was to obtain the currency that was necessary for the country industrialization, and then for the restoration of the national economy destroyed by the Second World War. The collectivization of agriculture that took place in the USSR adversely affected the development of the food sector.

Despite the short-term effect, that helped the state to raise the grain export, to finance industrialization, the consequences of collectivization were extremely severe: a reduction of livestock, as the peasants had to slaughter cattle in order to not surrender it into collective farm property, the mass famine of 1932-1933. The weakening of economic incentives for the development of agricultural production, the alienation of peasants from property and the results of their labor. The breakdown of traditional economic and social ties, ultimately led to a crisis in agriculture and the economic decline that began in the 60s of the 20th century.

The policy of virgin lands development, initiated by Nikita Khrushchev, did not give the expected results. The USSR from the net exporter of agricultural products turned into a net importer. Import of grain was carried out due to the income gained from the export of raw materials - oil and gas, as well as goods of industrial production. One of the factors that further influenced the growth of the USSR's import dependency was also the Nikita Khrushchev's politics struggling against households that worsened the well-being of collective farmers, since the personal farms were the main sources of their income. Due to this, outflow of the population from rural areas continued, that affected negatively the state of agriculture.

As for the RSFSR, it was, above all, a net importer of agro-food products - its own production was not enough to provide food security. The state, while maintaining low prices for food, subsidized domestic consumers in increasing proportion. In 1989, the share of subsidies in the retail price of basic foodstuffs reached 80%. At the same time, opinion polls in the village showed that only 10-15% of rural residents wanted to lead an independent economy.

Agro-food policy in modern Russia should also be considered in stages:

The first stage (1991-1994) began with the liberalization of prices, the elimination of the state procurement system in the agricultural sector, the abolition of mandatory production plans for agricultural enterprises, subsidies and benefits for agriculture. For 1992-1994 about 12 million land plots were distributed. About 300 thousand households took advantage of their right to withdraw from collective farms and organize their own family farms. At the same time, up to 40% of registered agricultural producers in Russia did not actually conduct economic activities. As a result, a high proportion of low-margin producers remained on the market. Russia received food aid.

At the second stage (1994-1998) - the policy of liberalization began to supplant agrarian protectionism. Russia introduced minimum guaranteed prices, import tariffs and quotas, export subsidies, and stopped receiving humanitarian assistance. The first data on grain exports appeared.

At the third stage (1998-2005) the government began to implement comprehensive measures with clearer objectives. Protectionism began to grow. The devaluation of the ruble led to the crisis of the national economy, but in 1998 the volume of imports to Russia fell by 20% (to \$74 billion), in 1999 - by another 28% (to \$ 53 billion). At the same time, the demand for domestic products increased after the crisis and was quite easily satisfied on an extensive basis due to unloaded production capacities. The decline in imports caused by the devaluation was the most important factor of economic growth.

In 2001-2002, Russia for the first time in the new history exported significant volumes of grain - 7.1 million tons, entering the top ten world countries for wheat exports and the top five for barley.

At the fourth stage (from 2006 to 2013), the agrarian budget and trade protectionism continued to grow. In 2006, the agrarian sector was named for the first time among the priorities of the country's development. At the end of December of the same year, the Law «On the Development of Agriculture» was adopted and the State Program for the Development of the Sector

In 2009, the United Grain Company was established, which was called upon to become the largest exporter of Russian grain.

At the fifth stage (starting from 2014), policy of import substitution of food products was announced. The government imposed sanctions against a number of exporting countries, and also partially restricted the export of Russian food (mainly grain).

In modern conditions, import substitution should be based not on prohibitive measures, but on strategic planning of the entire value chain in the food sector, reindustrialization of the economy, technological and innovative breakthrough, and increasing competitiveness of Russian producers. Undoubtedly, the possibility of import substitution of food products is closely related to the ability of the national business to use its competitive advantages.

Implementation of the competitive advantages system. Russian enterprises in the food market could take an advantage from the current political and economic situation and

increase their internal efficiency and competitiveness through the implementation of the entire complex of competitive advantages (Simanovskaya M., Silanteva E., 2016).

Russian enterprises in the food market along the entire value chain: food manufacturers, suppliers and retailers have a certain competitive potential that can be evaluated from the standpoint of the current market, resources and institutional theories of the competitive advantages of organization. Therefore, they should take advantage of the prevailing protectionist situation and increase their competitiveness through the implementation of the entire system of competitive advantages.

The market competitive advantages of Russian companies in the food market. The market theory of the competitive advantages of the organization, the largest contribution to which was provided by Mikhail Porter (Porter, 1993), is based on the assumption that in order to ensure the company's competitiveness in relation to competitors, it needs to occupy an advantageous position in the industry. In other words, in the concept of Mikhail Porter, the strategy is understood as positioning the business in a stable and well-defined industry structure. In accordance with the concept of market positioning, Russian firms should choose the field of activity, the result of which is not only valuable for consumers, but also help the company to position itself in a competitive environment in the most efficient manner.

The existence of the phenomenon of territorial asymmetry in providing food for the population is the main competitive advantage of Russian food manufacturers. In some regions of the Russian Federation, food import is unprofitable, which is associated with high logistical costs of suppliers.

Parts of the regions in the eastern part of the country are extremely remote from the main importers. This makes impossible to supply, for example, perishable products with a shelf life of several days. They should be manufactured in the domestic conditions.

The resource competitive advantages of Russian companies in the food market. The theory of resources competitive advantages has developed in recent decades. A special contribution to the development of this theory was made by: E. Penrose, C. Prahalad and H. Hamel, R. Grant. According to this theory, the priority direction of the company's development is that, where the existing complex of unique resources and capabilities strategically meets the goals of the industry. In the short term, the competitiveness of a firm depends on the price and consumer characteristics of its key products, but in the context of global competition in the long term, competitiveness is based on the ability of the company to create key competencies at lower costs and faster than competitors. On the basis of these competitive advantages unforeseen products are born.

One of the resources competitive advantages of Russian manufacturers are unused production capacities. According to the Russian Grain Union, with grain exports of 30 million tons (2014), Russian infrastructure was potentially capable for processing up to 50 million tons of grain for export, while the share of high-quality, high-protein wheat of grade 3 increased in the structure of exports. Production in Russia is also potentially attractive from the standpoint of cheap labor of sufficiently skilled workers. An important intangible asset of Russian food manufacturers is the loyalty to Russian brands that are familiar to consumers from childhood, such as, for example, «Red October». One of the important resources competitive advantages of Russian manufacturers is relatively cheap electricity and high volume of water resources.

The institutional competitive advantages of Russian companies in the food market. According to the institutional theory of competitive advantages (Katkalo, 2006), economic behavior and economic choice of an organization are determined not only by resource opportunities, but also have an institutional and social nature. The institutional approach is based on the notion that competition in the modern world has an essential element of cooperation, manifested in the activities of companies within the network entities. In modern economy, to create additional competitive advantages, the company should be effectively integrated into the environment and network relationships with other firms, the state and civil society actors. However, the emerging new institutional networks between economic entities are fraught with new serious ethical problems that require deep reflection. In modern Russia,

attempts to resolve such contradictions are carried out within the framework of various industry and interindustry associations.

The cooperation of Russian food manufacturers has been intensified within the sectors. A striking example of such cooperation is the Association of Food manufacturers and suppliers «Rusprodsyuz» that unites more than 400 Russian producers and promotes their interests.

The cooperation of Russian food manufacturers also has been intensified within the entire Russian food market. Rusprodsyuz is the part of the Interindustry Economic Council that elaborates and promotes the strategy of food industry development. This Council also was founder of the «Code of Good Practices» that regulates the relationship between trade and food organizations.

The cooperation of Russian manufacturers with trading enterprises is also carrying out. One of the areas of cooperation of food manufacturers and trade is the «Retailers brands». Retailers buy food of local manufacturers and sell it under their own brands. Often this food is the «cheapest». It is sold under such brands as «Red Price» (Pyaterochka), «Every Day» (Auchan). This direction of trade companies business became especially in demand in conditions of food embargo introduction and a fall of the ruble exchange rate.

The Government supports Russian small and medium-sized companies in the food market. For this purpose, the Federal Trade Law was adopted. The Law protects to a certain extent the interests of small and medium-sized businesses, regulating the relationship between trade organizations and suppliers. One of the protective measures for small and medium-sized companies in the food market is the limited market share of retailers in the regions that should not exceed 25% in regions. But at the same time, according to experts of the Chamber of Commerce and Industry of the Russian Federation, the current deficit of modern trade formats creates a multitude of problems and difficulties in the relationship between trade and suppliers. Complex of competitive advantages:

An effective competitive strategy of Russian manufacturers should combine competitive advantages of different types regarding not only individual characteristics of the company and industry, but also the economic situation in the country and world. Consideration of competitive advantages based on only one of the approaches may lead to the fact that the company will lose important components of competitiveness.

The main task of the modern economic policy of the state is to create an adequate institutional infrastructure for food complex development. This infrastructure should provide national manufacturers with the opportunity to realize their competitive advantages and also to cooperate in good faith with trading enterprises.

CONCLUSION

The historical analysis of the food sector formation showed that the problems of the formation of the modern food sphere in Russia arose in the last century and is associated with state agriculture, the inability to provide consumer demand, and the artificial understatement of prices for agricultural products. Liberalization of the economy led to the destruction of the agro-industrial complex, for the reconstruction of which it is necessary for the state to carry out a sound economic policy and increase the competitiveness of Russian business.

Analysis of the Russian food market showed that Russian companies have competitive potential and certain market, resources and institutional competitive advantages. In this regard, the complex use of competitive advantages theory tools in practice is necessary in order to analyze ways to increase the competitiveness of domestic food manufacturers, and create a conscientious trading environment that ensures food security for the population and allows different sizes Russian manufacturers to develop.

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ANALYSIS OF THE INFLUENCE OF EXTERNAL AND INTERNAL ENVIRONMENTAL FACTORS ON BUSINESS PERFORMANCE: A STUDY ON MICRO SMALL AND MEDIUM ENTERPRISES (MSMES) OF FOOD AND BEVERAGE

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ABSTRACT

This study aimed to analyze and explain the influence of external environmental factors on internal environmental factors, along with the influence of external and internal environmental factors on business performance. This research was an explanatory research, using the questionnaire as the primary data and appointing the owners/managers of the enterprises as the object of the research. The total sample of this research was 108 respondents of MSMEs in the sector of food and beverage that were registered in the Office of Cooperatives, SMEs, Industries, and Trades of Batu City. The data analysis of this research indicated that external environmental factors had a positive and significant influence on internal environmental factors. Similarly, external and internal environmental factors also had a positive and significant influence on business performance.

KEY WORDS

External environmental factors, internal environmental factors, business, performance.

Micro Small and Medium Enterprises (MSMEs) have an important role in the national economic development and growth in all countries, not only in developing countries but also in developed countries. In addition to its contribution to gross domestic product (Tambunan 2008), MSMEs also play a role in employment, income making, and community economic movement. In Indonesia, MSMEs have a significant role in national economic development. MSMEs can be accessed as a rescuer in the national economic recovery because MSMEs can survive and thrive in the storms of economic crisis since 1998 (Utami and Lantu, 2014).

The development of Micro Small and Medium Enterprises (MSMEs) in Indonesia is one of the priorities in national economic development. This is because businesses become the backbone of people's economic system, which is to not only reduce the gap issues among income groups and business actors, or intended for poverty alleviation and labor absorption (employment). Moreover, its development is able to intensify the economic basis and give a significant contribution to improving the regional economy and national economic resilience. These conditions and facts are in line with the results of the small empirical research conducted by Demirbag *et al.* (2006), indicating that the success of small and medium enterprises has a direct impact on the economic development in both developed and developing countries. Micro Small and Medium Enterprises (MSMEs) have the ability to create cooperation with a minimum cost. They are pioneers in the world of innovation and have a high flexibility that enables the businesses to meet the consumers' needs.

The contribution of Micro Small and Medium Enterprises (MSMEs) to the national economy can be seen from several aspects, including from the aspects of business units, labor absorption (employment), and the contribution of Gross Domestic Product (GDP). Based on the data published by the Ministry of Cooperatives and Small and Medium Enterprises in 2013, the contribution of MSMEs reached 57.895.721 or 99.99% of the total number of business units. If reviewed from the aspect of labor absorption (employment), the contribution of MSMEs in 2013 amounted to 114,144,082 people or approximately 96.99%. Meanwhile, the contribution of Gross Domestic Product (GDP) in 2013 amounted to 5,440,007.9 billion or 60.34%. The data suggest that the MSMEs sector is one of the important pillars of the national economy.

Despite having a very important role in the economy of Indonesia, Micro Small and Medium Enterprises (MSMEs) still face various external and internal issues such as: complex legal and regulatory constraints, lack of access to external financing, low human resource capacity, lack of management skills and training, and low technological capacity. This is in line with the opinion of Urata (2000), stating that the problems faced by small businesses can be grouped into two, namely financial and nonfinancial problems (business management). The financial problems include (1) lack of compatibility (mismatch) between available funds and the funds which can be accessed by small businesses; (2) the absence of a systematic approach to funding small businesses; (3) high transaction costs, caused by complicated credit procedures that take a lot of time while the amount of credit disbursed is very small; (4) lack of funds access to formal fund sources, either caused by the absence of banks in remote areas or the inadequate information; (5) high interest on loans for investment and working capital; (6) the large number of small businesses that have not been bankable, either due to the lack of transparent financial management or lack of managerial and financial capabilities. In another side, the non-financial problems (business management) include: (1) lack of knowledge of production technology and quality control, caused by the lack of opportunities to follow technological developments and lack of education and training; (2) lack of marketing knowledge, caused by the limited information on market that small businesses can reach, and limited number of small businesses that can provide products/services in accordance with market demands; (3) limitations and lack of skilled and creative human resources; and (4) lack of small businesses' understanding of accounting and finance.

Based on the problems stated above, MSMEs should be ready and prepared in capturing every opportunity as well as develop it optimally. If viewed from the existing perspective, the business opportunities must certainly be supported with a good performance by companies. Glancey (1998) defined that a performance refers to the level of achievement or attainment of a company within a certain period. The performance of a company is highly crucial for the development of the company. The company's goal is to maximize the value of the company reflected in various performance measures. The performance of a small business can be seen from the profitability and growth of the level of sales.

Jauch and Glueck (1998) explained that performance is the level of achievement or attainment of a company within a certain period. A company's performance is very influential on the development of the company. The company objectives, including: to remain standing or exist (survive), to gain profit (benefit), and to be able to develop or grow (growth), can be achieved if the company has a good performance. The performance of a company can be seen from the level of sales, profit levels, payback (return on capital), turnover rates, and market share achieved. One of the factors that must be implemented before formulating the goals and strategies applied in a company is environmental analysis and diagnosis. It is difficult for corporate leaders to know the problems faced until it can eventually lead to ineffective strategy formulation.

An effective planning serves to anticipate the negative things occurring or try to lead the environment to a favorable direction. The environmental analysis carried out commonly includes two things: the analysis of the external environment producing the images of opportunity and threat that will be faced by a company and the analysis of the internal environment creating the images of strength and weakness owned by a company. There are many factors affecting the achievement of a small company, including internal and external environmental factors. The success of the company depends on the company capability to manage these two factors through the analysis of environmental factors as well as the formation and implementation of business strategy. Internal challenges for MSMEs, especially in its development, cover a broad aspect of improving the quality of human resources, organizational-technological management capabilities, entrepreneurial competence, wider access to capital, transparent market information, other production input factors, and a healthy business climate that support innovation, entrepreneurship, business practice and fair competition. The increased value of entrepreneurship, marketing, and technological skills, as well as financial management will certainly improve the achievement

or performance of the business. Similarly, the success of external factors, including social networks, legality, government support, coaching, technology, and access to information will be achieved if there is a correspondence between external and internal factors through the application of appropriate means.

Based on the background and previous studies, the researcher has been interested and intended to examine the influence of external and internal environmental factors on business performance. This research was conducted on food and beverage MSMEs located in Batu City. The purpose of this study was to analyze and explain what factors that might affect business performance and what the impacts are given from the influence of external and internal environmental factors on business performance.

THEORETICAL REVIEW

Definitions and Characteristics of MSMEs. Law No.20 of 2008 on Micro Small and Medium Enterprises has provided a clear definition of each business. It is written in the Act about who will carry out the business, capital limitations, and annual sales results. It is also explained that a micro business refers to a productive business conducted by an individual and/or business entity (enterprises) in accordance with the criteria of micro business as regulated in the Law. In contrast, small businesses are stand-alone economic enterprises, not a subsidiaries or branches of medium-sized or large-scale business, done by an individual and/or business entity. Furthermore, medium-sized businesses are independent economic enterprises, not subsidiaries or branches of companies and not cooperating with small or large business entities with the total assets and turnovers as stipulated in the Law. Micro Small and Medium Enterprises (MSMEs) are business units that continue to develop until now. According to Law No.20 of 2008, Micro Small and Medium Enterprises (MSMEs) aim to grow and expand its businesses in order to build a national economy based on a just economic democracy. In Indonesia, there are different views on the definition of MSMEs based on different perspectives such as the amount of assets/capital or the number of employees. Based on Law No.20 of 2008 and the Central Bureau of Statistics (*BPS*), the characteristics of MSMEs can be summed up as follows:

Table 1 – The Characteristics of MSMEs

n/n	Law No.20 of 2008		<i>BPS</i>
	Total Net Worth/year	Total Sales/Year	Number of Employees
Micro	< Rp. 50.000.000	< Rp. 300.000.000	< 4 employees
Small	Rp. 50 – Rp. 500 M	Rp. 300 – Rp. 2,5 M	5 – 19 employees
Medium	Rp. 500– Rp. 10 M	Rp. 2,5 M – Rp. 50 M	20 – 99 employees

Source: Law No. 20 of 2008 and *BPS* (2017).

Corporate Environment. Jones (1995) explained that corporate environment is a series of resources that surrounds the company's organization to support the business success in facing competition. Strategic managers should be involved in environmental observations, both of the internal environment (to know the strengths and weaknesses) and the external environment (to see opportunities and threats that may occur). Crijns and Ooghi (2000) revealed that each stage of company growth is the result of the two environments where the company does its business, namely the internal and external environments that affect each other. The important external factors influencing the company growth are industry, market, competitors, and economic climate. While the internal factors that affect the growth of company are the characteristics of entrepreneurs. This is in line with the research conducted by Bouazza, *et al.* (2015), stating that the growth of SMEs in Algeria is hampered by several interrelated factors, including the factors of the business environment that are beyond the control of SMEs and internal factors of SMEs.

External Environment. Wheelen and Hunger (2001) described the external environment as a power outside the company that has direct influence and interest to the company, such as governments, trade unions, creditors, trade associations, shareholders, special interest

groups, and the communities surrounding the company. This is in line with the views of Pearce and Robinson (2014) and David (2009), stating that external environment is factors beyond the control of a company that may affect the success of the company. Furthermore, the results of the research conducted by Alkali and Isa (2012) indicated that external environmental factors consist of access to capital and government supports, which have a positive and significant influence on company performance. This suggests that access to capital is highly important in running and developing business along with its impact on company performance. In order to achieve the goals of a business, a company needs capital to finance the business well. The statement is in accordance with the research results of Bouazza *et al.* (2015), stating that some factors, including unhealthy competition of the informal sectors; complicated procedures and bureaucracy; burdensome laws, policies and regulation; inefficient tax systems; lack of access to external financing; and low human resource capacity are the main external environmental factors, consisting of economic, political, technological, and socio-cultural factors, have a positive and significant effect on organizational performance.

Internal Environment. Pearce and Robinson (2014) argued that the experiences of large and small companies show that an in-depth environmental understanding and internal company assessment are very crucial in developing a company's success. Considering that the internal environment encompasses various aspects within a company, the analysis of the internal environment should consider the strengths that laid the foundations for corporate strategy. Wheelen and Hunger (2001) divided the internal environment into three important categories: 1) structures – the way in which a company is organized in terms of communication, authority, and workflow; 2) cultures – the pattern of beliefs, expectations, and values shared with the members of an organization in which organizational norms specifically conjure up and define the acceptable behaviors of the members of top managers to operational employees; and 3) resources – the assets in the form of raw materials for production process of goods/services contained in the organization of the company. In another side, David (2009) divided the internal forces into six important categories, consisting of the functions of management, marketing, financial/accounting, production and operation, research and development, and management information system. If the various things in the internal environment are done well, it will be very potential that the success of a strategy can be achieved as desired by the company (Pearce and Robinson, 2014).

Duncan (1972) and Williams (2009) in Abolaji and Oni (2015) stated that the internal environment of an organization consists of factors related to the firm that influences its ability to achieve the stated objectives, and develop as well as implement feasible plans, which consequently contribute to its performance. The internal environment can also be described as internally controlled forces operating within the organization itself that has a direct impact on organizational performance. This includes financial resources, information and knowledge, corporate capabilities, incentives, organizational demographics such as the size of inter-institutional relationship, corporate objectives, and employee skills (Freeman and Reid, 2006 in Abolaji and Oni, 2015). Meanwhile, the research results of Bouazza *et al.* (2015) indicated that entrepreneurial characteristics, low managerial skills, lack of marketing skills, and low technological capacity are the major environmental factors affecting the growth of SMEs in Algeria.

Business Performance. Jauch dan Glueck (1988) described that performance refers to the level of achievement or attainment of a company within a certain period. The performance of a company is crucial in the development of the company. The objectives of a company, including: to remain standing or exist (survive), to gain profit (benefit), and to be able to develop or grow (growth), can be achieved if the company has a good performance. The performance of a company can be seen from the level of sales, profit levels, payback (return on capital), turnover rates, and market share achieved.

Researchers have proposed the sales growth, employment growth, income growth, and market share growth as the most important measurement of small enterprises performance (Kim and Choi, 1994; 1996; Luo, 1999; Miles *et al.* 2000; Hadjimanolis 2000). This is also based on an argument stating that growth is a more appropriate and accessible

indicator than financial performance indicators. Another alternative opinion is that performance is multidimensional and therefore it is useful to integrate different dimensions of performance in an empirical study (Lumkin and Dess, 1996). It is appropriate to view financial performance and growth as different aspects of performance, in which each has an important and unique information. Together, financial growth and performance provide a wider description of the company's actual performance rather than using individual measurements. In this study, performance measurements were performed using non-financial measures.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

This study actually was aimed to explain the external and internal environmental factors influencing the success and performance of companies, particularly Micro Small and Medium Enterprises. Both external and internal environmental factors can directly affect the performance or success of businesses, and indirectly affect the success of Micro Small and Medium Enterprises (MSMEs).

Based on the theoretical review and the adjustment with the Micro Small and Medium Enterprises examined, this research used the variable of internal environment factors, including: entrepreneurship characteristic factor, management capacity, marketing skill, and technology capacity. Meanwhile, the external environmental factors include legal and regulatory framework, access to external financing, and human resource capacity. These factors are considered relevant in conducting the study on Micro Small and Medium Enterprises (MSMEs) in Batu City.

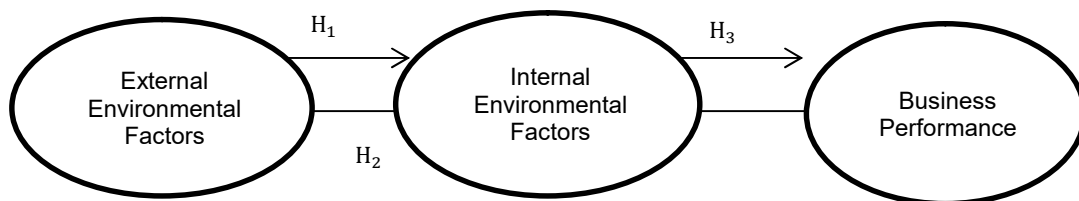


Figure 1 – Model of Conceptual Framework and Hypothesis

Based on Figure 1, the statements of hypothesis used in this research are as follows:

H1: External Environmental Factors have a significant effect on Internal Environmental Factors;

H2: External Environmental Factors have a significant effect on Business Performance;

H3: Internal Environmental Factors have a significant effect on Business Performance.

METHODS OF RESEARCH

The type of this research was explanatory with quantitative approach. The number of samples examined was 108 MSMEs in the field of food and beverage in Batu City, Jawa Timur (East Java) Province, Indonesia, by having the owners/managers as the target respondents. The source of data obtained in conducting this research derived from primary and secondary data. The primary data were directly obtained based on the respondents' answers on the questionnaires distributed to the MSMEs examined. The measurements were made using *Likert Scale*, in which the respondents' answers of each statement were given a score of 5 (for the highest value) up to 1 (for the lowest value). The questionnaires obtained from the overall food and beverage MSMEs have been met and adjusted with the needs of the research, thus it was feasible to be forwarded to the stage of data analysis.

The technique of data analysis used in this research was Partial Least Square (PLS) with the analysis tool of SmartPLS 3.0. The data analysis with PLS consists of two stages: evaluation of measurement model (outer model) and evaluation of structural model (inner model). The outer model evaluation consists of three criteria, namely convergence validity,

discriminant validity and composite reliability. In the calculation of convergent validity criterion, the minimum loading factor was 0.50 (Chin, in Ghazali, 2011). Discriminant validity was measured by comparing the square root of AVE for each construct with the correlation value between constructs in the model. Good discriminant validity, namely the square root of AVE, for each construct was greater than the correlation between constructs in the model. If the value of AVE root is higher than the correlation value between the constructs, then it means that good discriminant validity has been achieved. The next test for analyzing the outer model was observing the construct reliability of the latent variable measured by two criteria, namely composite reliability and Cronbach alpha of the indicator block measuring the construct. The construct was considered reliable if the values of composite reliability and Cronbach alpha value are above 0.70. Table 2 shows the output of composite reliability and Cronbach alpha.

Table 2 – Composite Reliability and Cronbach Alpha

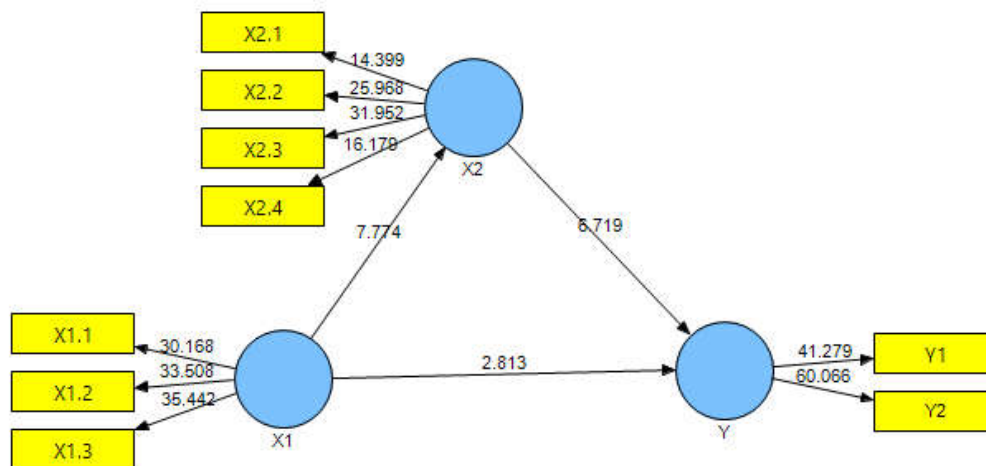
Variable	AVE	Composite Reliability	Cronbachs Alpha
X1	0.7819	0.9149	0.8618
X2	0.7920	0.9383	0.9123
Y	0.8742	0.9329	0.8561

Source: PLS, 2017.

Note: X1= External Environmental Factors, X2= Internal Environmental Factors, Y1= Business Performance.

Based on the Table 2, it can be seen that the outer model had met the criterion of good discriminant validity with the AVE value above 0.5 and the construct was declared reliable because it had complied the value of composite reliability and cronbach alpha above 0.70.

Moreover, the inner model or structural model testing was performed to see the relationship between the construct of significance value and *R-square* of the research model. The structural model was evaluated by using *R-square* for the dependent construct of t-test as well as the significance of the structural path parameter coefficients.



Source: SmartPLS (2017).

Figure 2 – Structural Model (Inner Model)

The testing on the structural model was done by knowing the R-square, which is the goodness-fit model testing.

Table 3 – R-Square

Variable	R Square
X2	0.4265
Y	0.6046

Source: PLS, 2017.

Based on the table above, the value of R-square for Internal Environmental Factors was 0.4265. The R-square value indicated that 42.65% of Internal Environmental Factors variable (X2) could be influenced by internal environmental factors (X1). And the rest of 57.35% was influenced by other variables out of what was examined. The R-square value on Business Performance of 0.6046 showed that Business Performance variable (Y) was influenced by External Environmental Factors (X1) and Internal Environmental Factors (X2) (60.46%), while the rest of 39.54% was influenced by other variables out of what was examined.

Evaluation of PLS model was done with Q^2 predictive relevance used to measure how good the value of observation produced by the model and also its parameter estimation. The value of Q^2 predictive relevance can be obtained by this equality:

$$\begin{aligned} \text{Value of } Q^2 &= 1 - (1 - R^2) \times (1 - R^2) \\ Q^2 &= 1 - (1 - 0.4265) \times (1 - 0.6046) \\ Q^2 &= 1 - 0.02267 \\ Q^2 &= 0.7732 \end{aligned}$$

Based on the calculation, the model has a predictive relevance because the value of Q^2 obtained was > 0 , that was 0.7732 and it belongs to strong category (Ghozali, 2011).

RESULTS AND DISCUSSION

In PLS, the statistical testing of each relationship hypothesized was done by using simulation. In this case, a method of bootstrap was performed on the sample. The testing with bootstrap method was intended to minimize the abnormalization problem of the data research. The results of the testing with bootstrapping of the PLS analysis is as follows:

Table 4 – Path Coefficient (Mean, STDEV, T-Values)

Variable Relationship	Original Sample (O)	Standard Deviation (STDEV)	T-Statistics (O/STERR)
X1 -> X2	0.6531	0.084	7.7737
X1 -> Y	0.2398	0.0853	2.8128
X2 -> Y	0.5994	0.0892	6.7187

Source: PLS (2017).

The estimated parameter significance provided a very beneficial information on the relationship between the variables of the research. The standard used in examining the hypothesis was the value existing in output result for inner weight. The hypothesis testing could be conducted by comparing t-statistic to t-table. T-table could be obtained from 108 respondents from whom t-table of 1.960 was obtained. Thus, it can be concluded that the analysis results of the hypothesis testing are that H1, H3, and H3 are accepted.

Inferential Statistics Analysis. The results of the hypothesis testing with SmartPLS that has been done in the previous indicate that all of the 3 hypotheses proposed in this research are accepted. Here is the detail explanation:

Effect of External Environmental Factors on Internal Environmental Factors. The results of the statistical tests showed that the t-statistical value of the influence of external environmental factors on internal environmental factors was 7.7737. The test results showed that the t-statistics $> 1,960$. Meanwhile, the coefficient of external environmental factors path and internal environment factors was equal to 0,6531, meaning that external environment factors had a positive and significant effect of internal environment factors. That is, the better external environmental factors will influence the business performance through internal environmental factors. The results of this study are in line with the theory put forward by Pearce and Robinson (2008), stating that external environment is a factor outside the control of a company which can influence the choice of direction and action, organizational structure and internal processes of the company. The results of this research and theory are

also reinforced by the results of previous research, stating that a good external environment will positively influence the internal environment and the results will have an impact on the business performance improvement (Minzu, 2010). Similarly, the results found by Wilkinson (2002) and Bouazza, *et al.* (2015) suggested that external environmental factors have an effect on internal environmental factors and also on the growth and performance of SMEs. That is, if the external and internal environmental factors can be utilized and managed optimally, it will be an opportunity for MSMEs to develop the business and eventually result in a success that is the improved performance of the business itself.

Effect of External Environmental Factors on Business Performance. The results of the statistical test with SmartPLS which examined the relation between external environment factor to business performance showed that the path coefficient test was 0.2398 and t-statistic was equal to 2,8128 which was bigger than t-table (1,960) and significant or $p \leq 0,05\%$. These results indicated that external environmental factors had a significant positive effect on business performance. That is, the better the external environment is, the better the business performance will be. It shows that MSMEs Food and Beverage in Batu City have an external environment that supports the business performance. The greater support from the government in the form of regulation/pro-business policy could make the access to external funding (in this case, the easiness in obtaining capital from financial institution/banks and capacity of skilled human resources) have an impact on the improvement of Food and Beverage business performance in Batu City. The results of this research support the previous studies, showing that external environmental factors affect business performance (Banham, 2010; Alkali & Isa, 2012; Bouazza, *et al.*, 2015; and Kraja & Osmani, 2015).

Effect of Internal Environmental Factors on Business Performance. The results of the third hypothesis test regarding the influence of the internal environmental factors on business performance showed that the path coefficient of 0.5994 and the t-statistics of 6.7187 were greater than t-table (1,960) and significant or $p \leq 0.05\%$. These results indicated that internal environmental factors had a significant positive effect on business performance. It showed that MSMEs Food and Beverage in Batu City had a good internal environment in supporting business performance. Therefore, the better the owners/managers of the businesses execute the management capacity, the product promoting, and the utilization and use of technology in improving production efficiency, the more positive the impact on the improvement of Food and Beverage business performance in Batu City will be. The results of this study are in line with the results of the previous studies, revealing that internal environmental factors have a positive and significant influence on business performance (Sidika, 2012; Aylin, *et al.* 2013; and Kraja & Osmani, 2015; Abolaji and Oni, 2015; Bouazza *et Al.*, 2015). The results indicate that internal environmental factors can improve business performance.

Research Limitations. The researcher realizes that, in the implementation of this research, there are some obstacles and limitations, including:

The data used in this research were the data obtained from the owners/managers of food and beverage MSMEs, in which the respondents' answers considered appropriate with the respondents' measures possibly have not yet reflected the variables that have not been studied. Nevertheless, the researcher had tried to give the appropriate statements and made it easier for the respondents to understand them, so that the best answers to reflect the variables studied (external environmental factors, internal environment factors, and business performance) could be achieved.

This research took only one type of sectors of Micro Small and Medium Enterprises namely sector of food and beverage business, so the generalization result of this research is limited.

The lack of theoretical review or reference of previous studies related to the effect of external environment factors on internal environment factors of MSMEs has made the researcher difficult to relate the results of this research with the previous studies.

CONCLUSION AND SUGGESTIONS

The conclusions that can be drawn from the results of the analysis and discussion in the previous section, as well as the relevance to the research objectives, are as follows:

1. The results of the analysis indicate that external environmental factors have a positive significant effect on internal environmental factors on MSMEs of Food and Beverage in Batu City. Legal and regulatory framework, access to external funding, and human resource capacity are the factors of the external environment found to have a significant influence on internal environmental factors.

2. The external environmental factors have a significant and positive influence on the business performance of Food and Beverage MSMEs in Batu City. The factors found to affect the business performance include the legal and regulatory framework, access to external funding, and human resource capacity. The better the management of external environmental factors is, the greater level of business performance of Food and Beverage in Batu City will be.

3. The results of the analysis indicate that the internal environmental factors positively and significantly affect the business performance in MSMEs of Food and Beverage in Batu City. The entrepreneur characteristics, management capacity, marketing skills and technological capacity are the factors of internal environment that are found to have a significant effect on the business performance.

Based on the conclusion section, here are some suggestions expected to be carried out for both practical interests and further research development:

1. For the government, the determined regulations should be directed to policies that are pro-business of Micro Small and Medium Enterprises (MSMEs). The facilities and mediation conducted by the government in providing convenience to entrepreneurs should be focused on the ease of access to finance/capital resources, technical and managerial training, ease of business license attainment, availability of business centers/locations and market information.

2. For owners or managers of Micro Small and Medium Enterprises (MSMEs), they need to increase the competence of entrepreneurship in order to be able to face competition. With a maximum competence, it is expected that MSMEs can achieve better performance so that they can still exist in any environmental conditions.

3. For further researchers, it is expected that the future studies can be done with a developed model, by adding other variables that can influence the performance of food and beverage MSMEs, as well as examine different objects.

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DOI <https://doi.org/10.18551/rjoas.2017-06.06>

**ЭКОНОМИЧЕСКИЙ АНАЛИЗ ИМПОРТА СЕЛЬСКОХОЗЯЙСТВЕННОЙ ТЕХНИКИ
ДЛЯ РАЗВИТИЯ МЯСНОГО И МОЛОЧНОГО СКОТОВОДСТВА В РОССИИ И
ОЦЕНКА ПЕРСПЕКТИВ ЛОКАЛИЗАЦИИ ЕЁ ПРОИЗВОДСТВА**
ECONOMIC ANALYSIS OF AGRICULTURAL MACHINERY IMPORTS FOR
THE DEVELOPMENT OF MEAT AND DAIRY CATTLE IN RUSSIA AND PROSPECTS'
ASSESSMENT FOR LOCALIZATION OF ITS PRODUCTION

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АННОТАЦИЯ

В статье определены сегменты рынка сельскохозяйственной техники для мясного и молочного скотоводства, где доминируют иностранные бренды, как локализованные на территории стран участниц ЕАЭС, так и без производства на их территориях. Приведено обоснование основных направлений технико-технологической модернизации сельского хозяйства России в рамках реализации государственной программы развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2013-2020 годы, и даны предложения по совершенствованию механизма стимулирования локализации производства сельскохозяйственной техники.

ABSTRACT

The article defines segments of the market of agricultural machinery for meat and dairy cattle breeding, where foreign brands dominate, both localized in the territory of the EAEC member countries, and without production in their territories. The substantiation of the main directions of technical and technological modernization of Russian agriculture in the framework of the

state program for the development of agriculture and regulation of markets for agricultural products, raw materials and food for 2013-2020 is given, and proposals are made to improve the mechanism for stimulating the localization of agricultural machinery production.

КЛЮЧЕВЫЕ СЛОВА

Экономика, сельское хозяйство, машинно-тракторный парк, техническая оснащенность.

KEY WORDS

Economy, agriculture, machines and tractors park, technical equipment,.

Российский рынок сельскохозяйственной техники для мясного и молочного скотоводства является весьма ёмким. Все зарубежные производители техники для АПК (мировые лидеры) заинтересованы в увеличении своей доли на российском рынке и пытаются наращивать продажи. Для обеспечения продовольственной безопасности Российской Федерации, в Доктрине четко обозначено одно из приоритетных направлений экономической и производственной политики государства – поэтапное снижение зависимости отечественного агропромышленного и рыбохозяйственного комплексов от импорта технологий, машин, оборудования и других ресурсов. Только наличие собственного сельхозмашиностроения позволит России проводить самостоятельную и независимую политику, направленную на импортозамещение продуктов питания, машин и оборудования, обеспечение продовольственной безопасности страны. Производство сельхозмашин в России сосредоточено в 10 ключевых сегментах, в которых отечественные компании сохранили существенные компетенции: тракторы сельскохозяйственные; машины для обработки почвы (плуги, бороны, культиваторы, комбинированные агрегаты); машины для посева (сеялки, посевные комплексы и машины посадо-рассадочные); машины для внесения удобрений и полива (машины для внесения органических и минеральных, жидких и твердых удобрений, ирригационные системы); машины для защиты растений (опрыскиватели самоходные, прицепные и навесные); машины для уборки зерновых и зернобобовых; машины для уборки корнеклубнеплодов; машины и оборудование для послеуборочной обработки и хранения урожая; оборудование для животноводства и птицеводства; машины для заготовки кормов. Говоря о формировании технического потенциала мясного и молочного скотоводства нельзя замыкаться на доильных установках и оборудовании коровников. Кормозаготовительная техника играет, зачастую ключевую роль в формировании эффективной системы производства.

Таким образом, следует отметить, что в настоящее время ограниченность перечня сельхозтехники, выпускаемой российскими заводами, и виды сельхозтехники, по которым лидируют российские производители, производимой в ограниченных объемах в стране и производство которой на отечественных предприятиях отсутствует (Таблица 1).

Таблица 1 – Перечень сельхозтехники, выпускаемой российскими заводами, производимой в ограниченных объемах и производство которой на отечественных предприятиях отсутствует

Лидирующие позиции российских производителей	Производство в РФ в ограниченном количестве	В РФ производство отсутствует
Техника для кормозаготовки (косилки, пресс-подборщики и др.)	Стойловое оборудование, оборудование для доения	Большинство сегментов оборудования для животноводства (в т.ч. для беспривязного содержания)

Для увеличения темпов обновления парка техники в 2017 г. Минсельхоз России предлагал рассмотреть вопрос о развитии производства зарубежной сельхозтехники на территории страны с высокой степенью локализации. В настоящее время зарубежные компании, выпускающие сельскохозяйственную технику и имеющие предприятия в России, могут получать господдержку (постановление Правительства Российской Федерации от 27.12.2012 г. № 1432) и рассчитывать на компенсацию утилизационного сбора (постановление Правительства Российской Федерации от 6 февраля 2016 г. № 81) при условии, что начальный уровень локализации производства

техники и оборудования в России должен составлять не менее 30 % с обязательным поэтапным увеличением до 50 %. Реализация мер протекционистской политики Российской Федерации в рамках реализации Государственной программы развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2013–2020 годы стимулировала иностранные компании, предлагающие сельскохозяйственную технику, организовывать сборочное производство на территории России.

Особое внимание при разработке организационно-экономических основ воспроизводства технической базы сельского хозяйства следует уделить отрасли животноводства. На сегодняшний день лидеры в животноводстве значительно обновили техническую и технологическую базу данной отрасли, и это дало возможность сделать производство продукции высокорентабельным. Существующее сегодня на рынке животноводческое оборудование обладает высокой пропускной способностью, поэтому фермы с небольшим поголовьем животных в полной мере не будут использовать ресурс данной техники, что сделает приобретение и использование её экономически неоправданным. Одной из основных проблем эффективного использования технической базы животноводства является неполная загрузка имеющихся производственных мощностей и площадей.

Стойловое оборудование является сегментом рынка в котором 75% рынка формируют российские организации и 25% иностранные фирмы. Относительно доильного оборудования следует отметить, что 60% доильного оборудования за пределами сроков полезного использования и лишь 15% животноводческих ферм осуществляют производство молока на современном оборудовании. Однако при реализации крупных проектов по модернизации приобретается иностранное оборудование. Техника и оборудование для животноводства формирует отдельную нишу на рынке. Ключевыми производителями являются Westfalia Surge и DeLaval и Big Dutchman.

Достаточно крупным сегментом на рынке оборудования для животноводства формирует охладительное оборудование, системы навозоудаления и стойловое оборудование. Основными российскими производителями оборудования для молочного животноводства являются ОАО «Кургансельмаш» (Курганская область) и ООО «Уралспецмаш» (Челябинская область). На их долю приходится порядка 6% национального рынка. Из числа зарубежных производителей, осуществляющих торговлю своей продукцией на территории России, также следует выделить следующие компании: ItalMix (Италия), Nolan (Дания), Pееcon (Голландия), SEKO и Sgariboldi (Италия)¹. DeLaval и Westfalia Surge сформировали 60% российского объема продажи оборудования для содержания КРС.

Таблица 2 – Основные рыночные характеристики DeLaval как поставщика сельскохозяйственной техники для молочного скотоводства на российском рынке

Характеристика организации	Модельный ряд	Рыночные характеристики
DeLaval специализируется на производстве техники и оборудования для молочного скотоводства и продает технику в более чем 100 стран. DeLaval является одной из трех компаний частной шведской группы Tetra Laval. Две другие компании – это Tetra Pak и Sidel	Предлагаются доильные залы для беспривязного содержания, индикаторы надоев, подвесные части, уплотнители, молокопроводы, вакуумные установки, фильтры, молокоприемники, оборудование для промывки и др. Оборудование DeLaval обеспечивает весь производственный цикл производства молока.	У организации 16 производственных подразделений, 1166 дилеров, 3 научно-исследовательских центров. Занимает более 32% рынка доильного оборудования.

Основываясь на данных официальной статистики можно сделать вывод о том, что оснащение сельскохозяйственных организаций в среднем по РФ кормоуборочной техникой в количественном выражении снижается. Однако, на наш взгляд, сокращение

¹ Сформулировано авторами на основании данных сайта «Животноводство КРС: Россия в ВТО» [Электронный ресурс] / Режим доступа: <http://veterinar.wmsite.ru/vopros/rossii-v-vto/>

количества техники — это вполне естественный процесс, связанный с изменением производительности современной техники. Динамика обеспеченности аграрных организаций основными видами техники для кормопроизводства представлена в таблице 4.

Таблица 3 – Основные рыночные характеристики Westfalia Surge как поставщика сельскохозяйственной техники для молочного скотоводства на российском рынке

Характеристика организации	Модельный ряд	Рыночные характеристики
Техника Westfalia Surge и в России представлена фирмой GEA Farm Technologies (ООО «ГЕА Фарм Технолоджиз Рус»), которая специализируется на производстве техники и оборудования для молочного скотоводства. В России компания начала работу с 2003 года. Компания продает свое оборудование в 140 странах мира.	На рынке представлено доильное оборудование, доильные залы, стойловое оборудование, охладители.	У организации 38 представительств в регионах России. Занимает 38% рынка доильного оборудования. Репутация надежного и инновационного оборудования.

Таблица 4 – Обеспеченность сельскохозяйственных организаций кормоуборочной техникой (на начало года)

Показатели	Годы									2016 в % к 2008
	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Кормоуборочные комбайны, тыс. шт.	26,6	24	21,4	20	18,9	17,6	16,1	15,2	14,0	52,6
Косилки, тыс. шт.	53,8	49,2	44,1	41,3	39,3	37,5	35,6	33,9	32,2	59,9
Грабли тракторные, тыс. шт.	24,9	22,6	20,4	19,2	18,5	17,6	16,8	16,0	15,1	60,6
Пресс-подборщики, тыс. шт.	28,7	27,2	24,7	24,1	24,2	23,7	22,7	21,9	20,9	72,8
Приходится пашни на 1 трактор, га	197	210	226	236	247	258	274	290	307	155,8
Приходится на 100 тракторов, штук:										
косилок	13	14	13	13	13	14	14	14	14	107,7
грабель	6	6	6	6	6	6	6	6	6	100,0

По данным видна отрицательная динамика наличия кормоуборочной техники. Следует указать, что самой дорогостоящей кормоуборочной техникой являются кормоуборочные комбайны, причем в количественном выражении их наличие снизилось на 47,4%, с учетом реализации механизмов государственной поддержки. В тоже время отметим, что снижение прицепного и навесного оборудования происходит пропорционально снижению количества тракторов, о чем свидетельствуют показатели, характеризующие вооруженность тракторов оборудованием.

Основу парка кормоуборочных комбайнов составляют как отечественные, так и зарубежные машины, такие как прицепные ПН-450, КСД-2,0, КДП-300; самоходные - марок КСК-100, Агромаш КСК-11 и их модификации; КСК-600, КСК-800, КСГ-Ф-70, К-Г-6, типов Е-280, «ДОН»; «RSM», «Марал» и другие; а также силосоуборочные типов КСС-2,6; «Полесье» и другие. В последние годы наблюдается устойчивая тенденция к вытеснению современной самоходной энергонасыщенной кормоуборочной техникой прицепных и полунавесных машин.

Если говорить о освоении субсидий предприятиями производящими кормоуборочную технику можно отметить некоторый рост активности (Таблица 5).

Изменение механизмов государственной поддержки российских производителей может дать дополнительные конкурентные преимущества для иностранных поставщиков, особенно для тех которые наладили сборку своей техники на территории РФ. С точки зрения сельскохозяйственных товаропроизводителей может возникнуть зависимость от иностранных поставщиков запасных частей, так как новая импортная кормозаготовительная техника является весьма привлекательной с точки зрения соотношения цены и качества. Развитие животноводства является приоритетной задачей для государства, тем самым повышается актуальность обеспечения кормопроизводства качественной техникой, с оптимальными технико-экономическими характеристиками без ущерба для продовольственной безопасности страны.

Таблица 5 – Производители и объемы реализации кормоуборочной техники в Российской Федерации

Производители сельскохозяйственной техники	Наименование техники	Фактический суммарный объем субсидий, тыс. руб.		Реализовано техники, ед.	
		2014 г.	2015 г.	2014 г.	2015 г.
ООО «Комбайновый завод «Ростсельмаш»	Зерно- и кормоуборочные комбайны	1 234 998	3 160 304	1653	2415
ООО «Завод Бежецксельмаш»	Грабли, косилки, пресс-подборщики, почвообрабатывающая техника	433	12 108	13	174
ФГУП «Омский экспериментальный завод»	Культиваторы, рыхлители, грабли	2 080	9 601	22	50
ООО «Интенсивные технологии»	Измельчители-раздатчики кормов, смесители-раздатчики кормов	3 433	8 875	16	22
АО «Клевер»	Косилки, пресс-подборщики, грабли	1 179	6 836	33	115
ЗАО СП «Брянксельмаш»	Кормозаготовительная техника	-	2 099	-	3
ООО «Краснокамский РМЗ»	Пресс-подборщики	2 226	0	31	0

Еще одним динамично занимающим рыночную нишу навесной и прицепной техники в России является компания Kuhn. В мире она достаточно давно зарекомендовала себя как лидер на рынке техники. На рынке России эта компания появилась в 2008 г., однако уже в настоящее время занимает существенную долю на рынке.

Таблица 6 – Основные рыночные характеристики Kuhn как поставщика сельскохозяйственной техники на российском рынке

Характеристика организации	Модельный ряд	Рыночные характеристики
Первое представительство открыто в России в 2008 г. В настоящее время во всех федеральных округах организовано дилерское представительство: в северо-западном — 3 дилера, в центральном — 21 дилер, в Приволжском — 13 дилеров, в южном — 9 дилеров, в Дальневосточном — 1 дилер, в Сибирском — 3 дилера, в Уральском — 4 дилера	Широкий модельный ряд посевной, почвообрабатывающей техники, опрыскивателей. Прицепные силосоуборочные комбайны (одно и двухрядные прицепные комбайны и четырехрядные навесные комбайны), прессподборщики (тюковые, рулонные, комбинации с обмолотчиками), дисковые косилки, косилки-плющилки, ворошилки, валкователи ²	Специализация на навесной и прицепной технике. Агрессивная маркетинговая стратегия на рынке. Привлекательное соотношение цена/качество. Сформировавшаяся на мировом рынке репутация. Доля на рынке 4%.

Одним из динамично осваивающих рынок кормоуборочной техники является компания Krone, которая реализует кормоуборочные комбайны, косилки, пресс-подборщики, грабли, вспушиватели и другую кормозаготовительную технику.

Следует отметить, что для завоевания региональных рынков сельскохозяйственной техники иностранным производителям необходимо открывать дилерские центры. Как видно из представленных таблиц, иностранные производители довольно успешно решают проблему представительства в регионах. Широкая дилерская сеть важна еще и потому, что сельскохозяйственная техника габаритна и транспортировка ее довольно дорогостояща. Поэтому сельскохозяйственные производители отдают предпочтение при покупке не только более доступной технике с точки зрения цены, но и доступной с точки зрения технического обслуживания, доставки как самой техники, так и запасных частей.

В связи с этим необходим комплексный механизм технико-технологической модернизации сельского хозяйства стран членов ЕАЭС.

² Сформулировано автором на основании данных официального сайта Kuhn [Электронный ресурс] / Режим доступа: <http://www.kuhn.ru> [дата обращения 02.07.2016]

Таблица 7 – Основные рыночные характеристики Krone как поставщика кормозаготовительной техники на российском рынке

Характеристика организации	Модельный ряд	Рыночные характеристики
Специализируется на производстве кормозаготовительной техники. Дилерская сеть в России представлена 26 организациями	Кормоуборочные комбайны (<i>BigX500</i> , 700,850, 1100, <i>EasyCollect</i> , <i>EasyFlow</i> , <i>XDisc</i>), самоходная косилка-плющилка (<i>BigM-500</i>), 15 марок пресс-подборщиков, в том числе 3 крупногабаритные, широкий спектр валкователей, ворошителей, дисковых косилок	Широкий модельный ряд техники. Кормоуборочные комбайны высокой мощности. Хорошая репутация и налаженный сервис. Доля на рынке чуть более 1%

Механизм технико-технологической модернизации сельского хозяйства стран членов ЕАЭС – это многоаспектная проблема, связанная со стимулированием технической модернизации, как сельского хозяйства, так и сельскохозяйственного машиностроения с учетом международной конкуренции. Данный механизм включает в себя вопросы государственной поддержки на государственном и надгосударственном уровне, финансово-экономический механизм, стимулирование развития инновационных процессов в аграрной экономике, разработку и внедрение новых технологий производства, систему взаимодействия научных, управляющих и производственных структур. Причем все эти аспекты должны решаться на уровне государства, регионов, а также на уровне отдельных сельскохозяйственных производителей.

Цель механизма технико-технологической модернизации сельского хозяйства – создание условий для интенсивного формирования современной технической базы, обеспечивающей конкурентоспособное производство продукции АПК, в условиях актуализации вопросов обеспечения продовольственной безопасности, импортозамещения на рынках сельскохозяйственной продукции и технических ресурсов.

Проблема разработки механизма технико-технологической модернизации для сельского хозяйства в последние годы является актуальной, так как с одной стороны происходит сокращение парка сельскохозяйственной техники, а с другой появились на рынке машины и оборудование со значительно превосходящими технико-экономическими показателями работы (увеличение мощности, количества выполняемых операций за проход и производительности техники), нарастает дефицит финансовых ресурсов, растет конкуренция как на рынке продовольствия так и на рынке техники и технологий.

Основными показателями оценки эффективности реализации механизма технико-технологической модернизации для сельского хозяйства являются количественные показатели приобретения и использования современной техники, энергооснащенность, объем инвестиций в инновационное развитие, качественные показатели (изменение возрастной и мощностной структуры парка техники), структура рынка сельскохозяйственной техники в разрезе поставщиков, уровень межгосударственного обмена техническими ресурсами на рынках ЕАЭС и ВТО.

В условиях кризисных явлений в экономике, санкций, на фоне интеграционных процессов ВТО и ЕАЭС техническая модернизация сельского хозяйства становится базовым фактором обеспечения продовольственной безопасности, стимулом развития сельскохозяйственного машиностроения.

Техническо-технологическую модернизацию сельского хозяйства не стоит путать с воспроизводством технической базы, так как при модернизации происходит не только и не столько замена старой техники новой в том числе и превосходящей по технико-экономическим параметрам, но и, что самое главное, внедрение принципиально новых технологий, меняющих структуру и объем удельных затрат на производство продукции.

В условиях международной интеграции важно вести грамотное управление сформировавшимся рынком сельскохозяйственной техники, так как в конечном итоге именно он становится материальной базой для обеспечения продовольственной безопасности страны. Существующая структура рынка техники и доля импортной

техники в структуре парка не позволяет говорить о продовольственной безопасности с точки зрения технического потенциала.

Российский рынок техники характеризуется его высокой ёмкостью, что является конкурентным преимуществом, позволяющим влиять на условия импортных поставок, стимулировать иностранных производителей повышать локализацию производства на территории государства. Поддержку необходимо осуществлять на стадиях разработки новых образцов техники (субсидии на НИОКР постановление №1312 от 30.12.2013 г.), стадии производства, и стадии продажи. В тоже время РФ в условиях экономических санкций и в рамках договорённостей ВТО и ЕАЭС, на наш взгляд должна придерживаться политики импортозамещения на рынках техники и технологий. Снижение государственной поддержки может нивелировать тенденции развития сельскохозяйственного машиностроения за 2013-2016 годы.

Работа подготовлена в рамках выполнения Государственного задания ФАНО России №0578-2014-0003 «Совершенствование системы профилактических и оздоровительных мероприятий по туберкулезу животных в современных условиях хозяйствования».

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DOI <https://doi.org/10.18551/rjoas.2017-06.07>

**НАПРАВЛЕНИЯ СОВЕРШЕНСТВОВАНИЯ НАЛОГОВОЙ ПОЛИТИКИ В РФ КАК
СПОСОБ ОБЕСПЕЧЕНИЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ**
DIRECTIONS OF IMPROVING TAX POLICY IN THE RUSSIAN FEDERATION
AS A METHOD OF ENSURING ECONOMIC SAFETY

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АННОТАЦИЯ

В статье оценивается роль и место налогового блока как одного из элементов общей системы экономического управления. Рассмотрены основные направления совершенствования налоговой политики как один из способов обеспечения и укрепления системы экономической безопасности. Выявлены наиболее острые спорные аспекты современной действующей налоговой системы и последствия их применения на практике. Дана оценка эффективности действующей налоговой системы, взаимодействия всех элементов налогового пространства. Определены перспективные направления развития и совершенствования налоговой политики и налогового законодательства.

ABSTRACT

The article assesses the role and place of the tax block as one of the elements of a common system of economic management. The main directions of improving the tax policy are considered as one of the ways to ensure and strengthen the system of economic security. The most acute controversial aspects of the current tax system and the consequences of their application in practice were revealed. The effectiveness of the current tax system, interaction of all elements of the tax space is assessed. Prospective directions of development and improvement of tax policy and tax legislation have been determined.

КЛЮЧЕВЫЕ СЛОВА

Налоговая политика, процентная ставка, государственная поддержка, платежеспособность, налоговое бремя, малое предпринимательство, экономическая безопасность, налоговая угроза, дифференцированное налогообложение.

KEY WORDS

Tax policy, interest rate, state support, solvency, tax burden, small business, economic security, tax threat, differentiated taxation.

Экономическое развитие любого государства зависит от многих составляющих, экономическая среда, в свою очередь, многоэлементна, сложна, пронизана обширной сетью взаимоотношений. В этой цепочке одно из первых мест занимают представители государственного управления в лице различных государственных учреждений, регламентирующих деятельность всех игроков экономической арены, контролируя, упорядочивая и поддерживая их функционирование, исключая нарушение чьих-либо интересов. Среди участников системы госуправления налоговая система заслуживает особого внимания с точки зрения органа, способствующего поддержанию экономической безопасности. В вопросе ее обеспечения налоговые

органы ведут постоянную работу по совершенствованию разрабатываемых и реализуемых мероприятий.

Экономическую политику страны можно представить в виде сложной системы взаимоотношений, своего рода цепи, одним из звеньев которой является налоговая политика. Приемы налогового управления на практике становятся как правило эффективным рычагом воздействия со стороны госорганов на производственную и распределительную сферы. Можно с уверенностью заявить, что именно от эффективности мероприятий по реформированию налоговой системы зависит успех общего экономического реформирования. Главное в процессе преобразований выбрать верное направление и учитывать специфику складывающейся экономической ситуации, т.е. меры должны быть действенными, результативными, актуальными, применимыми на практике.

В вопросе обеспечения экономической безопасности следует сделать акцент на налоговой безопасности, с этой точки зрения налоговая система рассматривается как элемент государственного управления, гарантирующий защищенность интересов как физических лиц, так и организаций от негативных экономических факторов, кризисных явлений, а также от самой налоговой сферы в ситуации нарушения законодательства, превышения полномочий и пр. Среди угроз, относящихся к категории налоговых, выявляются два вида – связанные с материальными потерями (доплата налогов, штрафные санкции) и нематериальные соответственно (уголовная ответственность в отношении руководства, дополнительный налоговый контроль, ухудшение деловой репутации, отзыв лицензии или банкротство). Нематериальные угрозы сложнее выявить, но их последствия для организаций более серьезные. Отсюда можно сделать вывод о необходимости разработки и применения мероприятий эффективной налоговой политики.

Приоритетными направлениями налоговой политики в среднесрочной перспективе являются повышение инвестиционной привлекательности, государственная поддержка производственного сектора экономики, акцент на наукоемкие производства, модернизация оборудования, совершенствование производственного процесса, выбор направления развития малого и среднего предпринимательства в качестве перспективного, создание условий для возврата капитала в российскую юрисдикцию (налоговая амнистия), дальнейшее совершенствование налогового администрирования и адаптация налогового законодательства к современным специфическим условиям, проверка на практике применимости нормативно-правовой базы, сближение правил бухгалтерского и налогового учета, минимизация расхождений и спорных моментов, усиление их взаимозависимости и взаимопроникновения.

Безусловно, одним из основных аспектов, обеспечивающих действенность налоговой политики, является стабильность, устойчивость налоговой системы в целом, исключение ее уязвимости перед негативными факторами экономической и политической сфер.

Обозначенные выше приоритеты в той или иной степени представлены в проекте основных направлений налоговой политики на 2017 год и плановый период 2018 и 2019 годов, однако проект можно дополнить рядом мероприятий по отдельным видам налогов.

Например, в вопросе налогообложения малого и среднего бизнеса следует рассмотреть процедуру применения правил налогообложения непосредственно для индивидуальных предпринимателей, субъектов малого предпринимательства, являющихся организациями.

На сегодняшний день распространена концепция дифференцированного налогообложения в зависимости от специфики представителей малого предпринимательства без учета размера бизнеса. Совершенство применения на практике такого подхода можно оспорить. Если анализировать особенности налогообложения организаций и индивидуальных предпринимателей, между ними существует заметная разница. Говоря о прибыли (доходы за вычетом расходов) в

предпринимательстве рассматривается ставка 20% по налогу на прибыль в организации, в отношении доходов (за вычетом расходов) у индивидуальных предпринимателей речь идет о 13 % по налогу на доходы физических лиц.

Ставки по налогам в организациях и по предпринимателям, соответствующие критериям, установленным Федеральным законом от 24.07.2007 г. № 209 – ФЗ «О развитии малого и среднего предпринимательства Российской Федерации», должны иметь одинаковый размер. Для решения подобного вопроса размер налоговой ставки по налогу на прибыль следует уравнивать до 13% в отношении всех участников малого бизнеса.

Федеральный закон от 29 декабря 2014 года № 477 – ФЗ дает право применения нулевой налоговой ставки в течение двухлетнего периода для вновь организовавшихся и зарегистрированных индивидуальных предпринимателей, осуществляющих деятельность в производственной, социальной и (или) научной сферах. Федеральный закон от 13 июля 2015 года № 232-ФЗ в дополнение применения нулевой процентной ставки рассматривает сферу бытовых услуг населению. Практика применения налогового законодательства в этом вопросе имеет ввиду нормативно-правовую базу субъектов Российской Федерации, которая касается непосредственно индивидуальных предпринимателей, применяющих упрощенную систему налогообложения и патентную систему.

Если на практике создавать равные условия уплаты налогов для всех участников малого бизнеса, независимо от организационно-правовой формы, в качестве действенной меры по совершенствованию региональной налоговой политики станет применение «налоговых каникул» и для вновь созданных организаций, которые задействованы в сфере производства, области социального-бытового обслуживания, науке, применяющих упрощенную систему налогообложения.

В качестве поддержки малого предпринимательства стоит рассмотреть предложение по освобождению представителей малого бизнеса от налога на имущество. С первого января 2015 года субъекты малого бизнеса применяющие упрощенную систему налогообложения, патентную систему налогообложения и единый налог на вмененный доход не освобождаются от уплаты налога на имущество в отношении имущества, по которому налоговая база рассчитывается исходя из кадастровой стоимости. Малый бизнес пока не испытывает серьезных проблем с уплатой подобного налога и увеличением налогового бремени в связи с тем, что большинство субъектов Российской Федерации пока не перешли на исчисление налоговой базы по налогу на имущество организаций и по налогу на имущество физических лиц исходя из кадастровой стоимости. В ситуации перехода субъектов к данной системе налогообложения имущества при оценке его по кадастровой стоимости малый бизнес претерпит нежелательные изменения и потеряет привлекательность. Именно поэтому целесообразным будет освобождение от имущественного налога представителей малого бизнеса.

В качестве мероприятий по совершенствованию системы налогообложения стоит реализовывать на практике возможности переноса убытка, полученного индивидуальным предпринимателем на будущие периоды. Нередко у предпринимателей возникают непредвиденные ситуации в бизнесе, чреватые значительным финансовым ущербом, который крайне сложно возместить за короткий период в условиях ограниченности ресурсов и потери работоспособности. Данная мера будет способствовать своего рода поддержке малого бизнеса.

Налоговой базой по налогу на прибыль в соответствии с главой 25 НК РФ признается денежное выражение прибыли, подлежащей налогообложению. При анализе результатов работы организации по отчетному периоду, равному 12 месяцам, можно выявить либо положительную, либо отрицательную тенденцию, т.е. либо превышение доходов над расходами, либо превышение расходов над доходами соответственно. Во втором случае при превышении расходов над доходами получается отрицательная разница, оцениваемая с налоговой точки зрения как убыток. Тогда налоговая база оценивается применительно к данному налоговому

периоду как нулевая. По закону организация имеет право переносить полученный убыток на будущие налоговые периоды, но не более чем на десять. Ситуация переноса убытка означает возможность уменьшения налоговой базы текущего налогового периода на сумму убытка, полученную ранее или на часть этой суммы.

Налоговая база по налогу на доходы индивидуальных предпринимателей, согласно главы 23 НК РФ, определяется как денежное выражение доходов, уменьшенных на сумму налоговых вычетов, предусмотренных статьями 218 – 221 Налогового Кодекса (в том числе на сумму профессиональных налоговых вычетов).

В случае превышения суммы налоговых вычетов в налоговом периоде над суммой доходов за этот же налоговый период, налоговая база принимается равной нулю. На следующий налоговый период отрицательная разница (убыток) между суммой налоговых вычетов и суммой доходов не переносится.

В отношении индивидуальных предпринимателей, работа которых признана за отчетный период убыточной, правило уменьшения налоговой базы текущего налогового периода по налогу на доходы физических лиц на сумму убытка полученного в предыдущем налоговом периоде главой 23 НК РФ не предусмотрено.

Таким образом, создание равных условий применения налогового законодательства для всех участников малого бизнеса, независимо от организационно-правовой формы, должно осуществляться не только в вопросе процентных ставок, но и в отношении показателя убыточности и возможности переноса убытков на будущие периоды в целях своего рода стабилизации работы и минимизации негативного воздействия экономических факторов. Следует внести дополнения в нормативно-правовую базу по данному вопросу в рамках налога на доходы физических лиц.

В качестве методов совершенствования организации и применения приемов налоговой политики следует провести реформирование в области использования патентной системы налогообложения. Данная система служит своего рода способом замены единого налога на вмененный доход для отдельных видов предпринимательской деятельности. Согласно Налогового Кодекса РФ плательщиками единого вмененного налога являются как индивидуальные предприниматели, так и организации. Патентная система налогообложения в современных условиях распространена только на плательщиков физических лиц. В связи с этим возникает необходимость пересмотра перечня плательщиков патентной системы за счет организаций, соответствующих базовым условиям применения данного специального налогового режима.

Существенной проблемой, тормозящей эффективное применение патентной системы налогообложения, является отсутствие возможности уменьшения начисленной суммы патента на страховые взносы, уплачиваемые за работников, занятых в сферах деятельности, в отношении которых уплачивается патент, а также на страховые взносы, которые уплачивает индивидуальный предприниматель за себя. Данный аспект в большей степени расценивается как неблагоприятный, отрицательно сказывается на налоговой нагрузке предпринимателя, а, следовательно, эта система налогообложения при применении на практике оказывается не столь действенной и эффективной. В рамках применения единого налога на вмененный доход такое правило действует и предполагает уменьшение начисленных за налоговый период сумм налога на страховые взносы.

Поскольку патент вводился с целью замены единого налога на вмененный доход, эффективным станет практика уменьшения суммы исчисленного с налоговой базы единого налога и на патентную систему, а именно возможность уменьшения исчисленного патента на страховые взносы с заработной платы работников, но не более чем на пятьдесят процентов. В ситуации, когда индивидуальный предприниматель в своей деятельности не привлекает наёмных работников, необходимо предусмотреть возможность уменьшения патента без ограничений на сумму страховых взносов, уплаченных за себя.

Часто обсуждаемым и критикуемым остается вопрос транспортного налогообложения как у физических лиц, так и у представителей малого бизнеса. В данном направлении следует провести переоценку именно отношения с точки зрения экологического воздействия и пользователей автотранспортных средств. Например, система налогообложения должна иметь в своей основе ключевые принципы. Во-первых, с точки зрения увеличения транспортных средств в современной жизни, первостепенное место должен занимать показатель экологичности транспортных средств и экологической безопасности автомобилей. Кроме того, наибольшую негативную реакцию вызывает ненадлежащее состояние автомобильных дорог и завышение налоговых процентных ставок в рамках региона. Следовательно, расчет процента по транспортному налогу в региональном аспекте должен проводиться с учетом взаимосвязи степени износа дорожного покрытия, состояния транспортного средства и его негативного влияния на состояние дорог.

Таким образом, более эффективным станет подход разделения транспортного налога на две составляющие – экологический налог и налог на пользователей автомобильных дорог. Предлагается, объектами налогообложения по экологическому налогу признать наземные, водные и воздушные транспортные средства, то есть те транспортные средства, которые оказывают негативное воздействие на окружающую среду. В отношении данных транспортных средств налоговую базу определить как экологический класс двигателя транспортного средства.

Налоговые ставки следует установить в зависимости от экологического класса транспортного средства, определяемого в соответствии с техническим регламентом «О требованиях к выбросам автомобильной техникой, выпускаемой в обращение на территории Российской Федерации, вредных (загрязняющих) веществ», утвержденного Постановлением Правительства Российской Федерации от 12 октября 2005 г. N 609.

Для исчисления суммы экологического налога стоит использовать K1 – корректирующий коэффициент экологического класса двигателя транспортного средства, учитывающий объем двигателя транспортного средства.

Объектами обложения налогом на пользователей автомобильных дорог необходимо признать наземные транспортные средства, имеющие двигатель.

Налоговую базу определить как снаряженная масса транспортного средства. Снаряженная масса транспортного средства – это совокупная масса транспортного средства со стандартным оборудованием, всеми необходимыми эксплуатационными расходными материалами (например, моторное масло и охлаждающая жидкость), полным баком топлива, но без учета пассажиров и (или) груза.

Налоговые ставки необходимо дифференцировать в зависимости от снаряженной массы транспортного средства.

Преобразования в налоговой сфере подразумевают выбор наиболее эффективного вектора развития, применение актуальных и действенных мер налоговой политики, совершенствование налогового законодательства и системы управления. Все эти мероприятия станут стимулом к накоплению и рациональному использованию государственного потенциала и национального богатства, будут способствовать гармонизации интересов государства и общества, гарантируя прогрессивное социально-экономическое развитие и улучшение качества жизни.

Осознавая необходимость налогового реформирования, стоит учитывать, что система налогообложения должна быть конкурентоспособной в сравнении с другими государствами и их системами, следовательно, процедуры налогового администрирования должны максимально учитывать интересы всех сторон налоговых взаимоотношений, особенно поощрять законопослушных налогоплательщиков.

Кроме условия стабильности и сбалансированности налоговой системы, обязательным аспектом должен стать баланс российской бюджетной сферы. Однако не стоит вмешиваться в те сектора экономики, в которых достигнут оптимальный уровень налоговой политики – в таком случае она должна оставаться неизменной.

Система налогового контроля должна соответствовать ряду требований. Прежде всего, речь идет о законности, кроме того, система налогообложения должна быть

логичной, не противоречивой, согласованной с общей системой государственного управления. Обязательным условием является своевременный мониторинг и внесение изменений и корректировок в структуру с целью адаптации системы к современным условиям, т.к. экономическая среда, рыночная сфера динамичны, законодательство претерпевает постоянные перемены, особенно налоговое.

Налоговый контроль и управление представляет собой сложную многоэлементную систему взаимоотношений, поэтому любого рода изменения не должны приводить к дисбалансу, а осуществляться комплексно, т.е. если речь идет об оптимизации определенных видов налогов, недопустимо увеличение налогового бремени по другим.

Все изменения, вносимые и применяемые на практике, должны в результате доказывать свою целесообразность, т.е. быть эффективными, действенными, давать положительный эффект в большей степени, нежели затраченные некогда усилия и ресурсы на реализацию предложений.

Практика применения налоговой политики такова, что в ней задействованы абсолютно все участники экономических отношений, однако реакция на применяемые мероприятия неоднозначная. Одна часть налогоплательщиков относится к категории «полного послушания», когда выполняются все требования. Есть представители, которые занимают «оборонительную» позицию, когда каждое предписание государственных органов обсуждается, оспаривается. Существует «сбалансированная», оптимальная тактика, когда соблюдаются конструктивные отношения с контролирующими органами, но со стороны налогоплательщиков проводится сопоставление деятельности госорганов на предмет правильности и соответствия нормативным актам. Наиболее часто встречаются первые две позиции, они малоэффективны и негативно воздействуют на общую систему обеспечения налогового контроля и экономической безопасности, а самой трудной по реализации является третья, но она более эффективная. Методы налоговой политики можно подразделить на 2 уровня: стратегический (по охвату более масштабный и рассчитан на долгосрочную перспективу) и текущий (применение к конкретным операциям).

Любой участник экономических отношений, независимо от организационной правовой формы и масштаба деятельности, проводит большое число хозяйственных операций, часто осуществляя действия, связанные с налоговым учетом. С целью повышения эффективности налоговых мероприятий целесообразно иметь специально образованную службу, которая компетентна в реализации налоговой политики и в ведении действенного налогового учета и контроля. Такие структурные подразделения должны по роду деятельности активно взаимодействовать со службой экономической безопасности и быть в ее подчинении. Если компания небольшая по размеру, достаточно в штате сотрудников иметь налогового консультанта, тогда в вопросе ведения налоговой политики вся работа переходит службе безопасности с его участием, если нет такой службы – ответственным становится финансовый отдел.

Разрабатывая налоговую политику, стоит соизмерять масштабы ее применения и размер компании – масштабность налоговых мероприятий в сфере малого бизнеса может быть экономически нецелесообразной. Обычно в небольших компаниях налоговым и бухгалтерским учетом занимается бухгалтер в единственном лице. Для обеспечения эффективности сопоставления бухгалтерской и налоговой систем контроля следует использовать в работе разработанные и широко применяемые рекомендации по снижению налоговых рисков ФНС России, а также пользоваться услугами специализированных служб налоговых консультаций. Приобретает популярность процедура передачи представителями малого бизнеса налогового и бухгалтерского учета на аутсорсинг профессионалам.

При оценке влияния налоговой политики на обеспечение экономической безопасности организации или региона учитывается ряд показателей, среди которых финансовая устойчивость, займоспособность, платёжеспособность, ликвидность, кредитоспособность. Кроме того, учитывается показатель налоговой нагрузки по выручке (нагрузка по выручке рассчитывается как сумма всех начисленных налогов,

деленная на выручку), по активам (нагрузка по активам рассчитывается как сумма всех начисленных налогов, деленная на активы), по себестоимости (нагрузка по себестоимости рассчитывается как сумма всех начисленных налогов, деленная на себестоимость).

Применение вышеперечисленных коэффициентов достаточно относительное – следует проводить их отбор с точки зрения возможности их повсеместного использования и качества получаемого в итоге результата.

Таким образом, реализация на практике указанных предложений позволит создать условия для развития малого и среднего бизнеса в Российской Федерации, а также устранить существенные недостатки действующей системы транспортного налогообложения.

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DOI <https://doi.org/10.18551/rjoas.2017-06.08>

**ТОРГОВЛЯ АЗЕРБАЙДЖАНА ПРОДОВОЛЬСТВЕННЫМИ ТОВАРАМИ И
РЕГУЛИРОВАНИЕ ЭТОЙ ОТРАСЛИ**
TRADE OF AZERBAIJAN BY FOOD PRODUCTS AND REGULATION OF THIS SECTOR

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АННОТАЦИЯ

С 2004 года и по сей день торговый оборот Азербайджана постоянно обладал положительным сальдо, что нельзя сказать относительно торговли продовольственными товарами. Хотя высокие нефтяные доходы и увеличивают общий экспорт, развитие сельского хозяйства и связанных с ним отраслей переработки не были приоритетами на этом фоне. В итоге, в стране всё ещё высоким является доля импорта продуктов, производство и переработка которых возможна в Азербайджане, одновременно, доля экспортируемых первичных и обработанных пищевых продуктов является незначительной, которые могут быть основной экспортной продукцией. В данной статье ставится целью анализ торговли продовольственными товарами и регулирование их государством.

ABSTRACT

Since 2004, to this day, Azerbaijan's trade turnover has always had a positive balance, which cannot be said about the trade in food products. Although high oil revenues increase overall exports, the development of agriculture and related processing industries was not a priority. As a result, in the country the share of import of products which production and processing it is possible in Azerbaijan is still high, at the same time, the share of exported primary and processed food products is insignificant, which may be the main export production. This article aims to analyze the trade in food products and their regulation by the state.

КЛЮЧЕВЫЕ СЛОВА

Экспорт, импорт, торговля, производство, регулирование торговли, сельское хозяйство.

KEY WORDS

Export, import, trade, production, trade regulation, agriculture.

После обретения Азербайджаном независимости произошел разрыв экономических отношений, как и во всех бывших советских республиках, создались сложности во всех отраслях. Обычно, в первую очередь, такого рода сложности проявляются в продовольственном секторе. Ввиду централизованного снабжения и обеспечения в прошлом, в нашей стране отсутствовал опыт в создании внешнеэкономических отношений напрямую, т.е. самостоятельно. Этот факт на длительное время замедлил создание торговых отношений не только между республиками, бывшими в составе СССР и получившими свою независимость, но и с ближайшими соседями. В итоге, в первые годы независимости Азербайджана, страна столкнулась с острой нехваткой продуктов, централизованно поставляемых (например, мука и сахар), а также с проблемой, когда продукты, производимые в стране, не продавались. В данный период с изменением специализации сельского хозяйства приоритетным считалось обеспечение потребности страны продовольственными

продуктами, в том числе, зерном и сахаром. Но низкая урожайность и экстенсивные хозяйственные условия препятствовали достижению всего этого. В итоге постепенно налаженных экономических отношений, вначале, с близкими соседями, а затем и с дальними странами была решена проблема обеспечения страны продовольствием за счет импорта; развитие сельского хозяйства было не столь приоритетным. Как правило, этот фактор наблюдается в странах с высокой прибылью от продажи нефти. Но, с другой стороны, учитывая, что цена нефти колеблется в зависимости не только от экономических, но и политических факторов, следует отметить, что такое направление представляет собой опасность для стабильного развития. В общем, как в нефтяной отрасли, где цена колеблется, так и в других отраслях, например, в производстве и экспорте других продуктов, необходима диверсификация. Резкое уменьшение нефтяной прибыли в последние годы ещё раз доказывает то, что необходимо было ускорить развитие ненефтяного сектора в стране еще 10-15 лет тому назад.

В настоящее время, во внешней торговле многих развитых стран широко используется укрепление экономической мощи путём ограничения импорта с помощью рычагов государства и стимулируется экспорт, что составляет основу экономической теории меркантилистов. На самом деле, неоспорим факт, что увеличение зависимости от импорта мешает экономическому росту развивающихся стран, способствуя лишь подъёму экономической мощи развитых стран. Хотя меркантилисты и выдвигают идею о том, что торговля является средством для накопления капитала, в то же время оценивают сельское хозяйство, как начало всех богатств [2,с.81], считают, что именно в сельском хозяйстве накапливается первичный капитал [7,с.99], что труд и земля являются источником богатства [8], отводят особое место и придают огромное значение роли сельского хозяйства в торговле [10,с.25]. Начиная от представителей физиократов [4,с.3;3,с.46], классической школы [11;12] до представителей теории устойчивого экономического роста [5,с.52-53], экономисты придавали сельскому хозяйству огромное значение, как в торговле, так и в общем экономическом развитии. Как составная часть экономической безопасности любой страны, основы продовольственной безопасности закладываются в сельском хозяйстве, но и меры по регулированию внешней торговли играют огромное значение.

В настоящее время сельское хозяйство Азербайджана сравнительно с кризисом первых лет независимости не только сильно развивается, но и во много раз превысило уровень советского периода в производстве некоторых товаров. Продовольственное самообеспечение страны с 2000 года по сегодняшний день улучшилось, хотя доля продовольственных продуктов в абсолютных цифрах в общем импорте не уменьшилась, но в общем относительном весе - уменьшилась. Это можно ясно проследить в нижеследующей таблице 1. Меры, направленные на увеличение роста многих сельскохозяйственных продуктов начиная с 2000 года, положительно повлияли на уменьшение импорта продовольственных товаров. Как видно из таблицы 1, в 1995 году, в общем импорте продовольственные товары составляют 41,5%, тогда как в 2000 году эта цифра составляет 19%, а в 2015 году - 14,9%. Но Азербайджан шел по пути экстенсивного развития сельского хозяйства, не была обеспечена безопасность некоторых продовольственных товаров, сельское хозяйство практически развивалось на уровне обеспечения внутренних потребностей, производство ранее вывозимых за пределы республики продуктов резко уменьшилось, недостаточно использован экспортный потенциал сельскохозяйственных продуктов и т.д. подобного рода проблемы всё ещё ждут своего разрешения.

Обычно, в торговом обороте какой-либо страны, в первую очередь, обращают внимание на то что, торговый баланс является отрицательным или положительным. В этом отношении, начиная с 2004 года, увеличение нефтяного экспорта и высокая цена на нефть стали причиной многократного увеличения экспорта в сравнении с импортом. Подобный высокий положительный торговый баланс получает одобрение среди населения. Но специалисты указывают на важность двух основных показателей качества экспорта. Это следующие: 1) Составляющую основу экспорта должно

составлять не сырьё, а обработанный продукт; 2) Добившись разнообразия в составе экспортированных товаров, используя в полной мере потенциал всех отраслей страны, можно достичь его устойчивого развития, а также можно застраховаться от отрицательного влияния на мировом рынке. Отсутствие именно этих двух показателей качества на протяжении многих лет стали препятствием на пути положительного развития торговли в Азербайджане, на что ясно указывают эти статистические материалы (Рисунок 1).

Таблица 1 – Импорт основных продовольственных товаров в Азербайджане, млн. долл. США

По группам продуктов	Годы				
	1995	2000	2005	2010	2015
Общий импорт	667,7	1172,1	4211,2	6600,6	9221,4
Живые животные и продукты животного происхождения	74,3	31,6	44,9	86,2	136,0
Продукты растительного происхождения	51,5	119,5	171,9	437,4	457,4
Жиры и масла растительного и животного происхождения	54,5	11,2	36,1	93,7	83,8
Готовые продукты питания, спиртные и безалкогольные напитки, уксус, табак	96,8	59,5	194,5	616,4	688,8
Итого	277,1	221,8	447,5	1233,7	1366,1

Источник: Государственный комитет статистики Азербайджана [1].

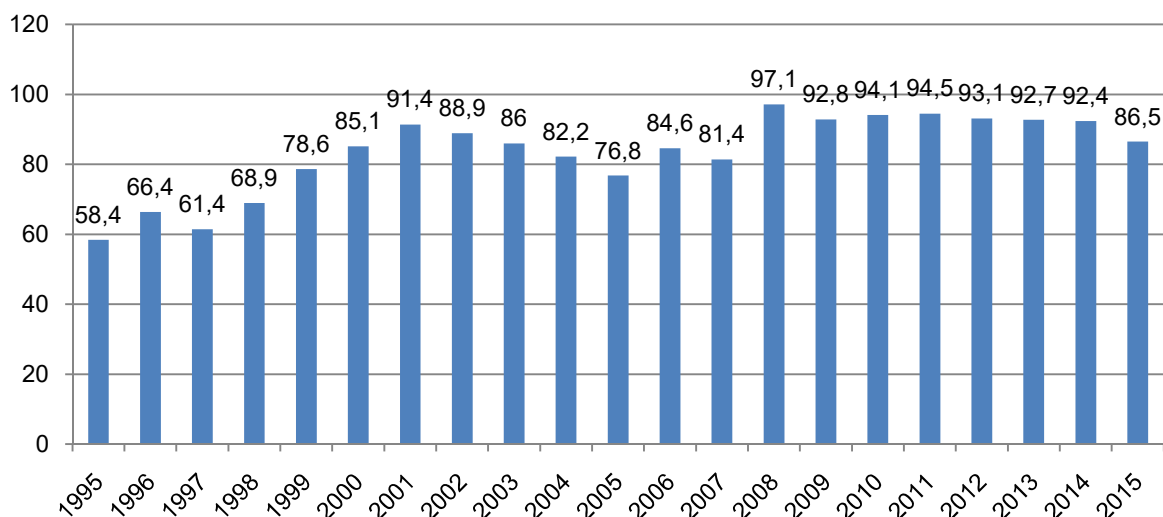


Рисунок 1 – Доля минерального топлива, нефти и продуктов нефтепереработки в экспорте, %
Источник: Государственный комитет статистики Азербайджана [1].

Как видно из диаграммы, с 2000 года по сегодняшний день, исключая 2005 год, процентный показатель экспорта нефтепродуктов был выше 80%, а в 2008 году даже достигал 97,1%. С другой стороны, основной частью экспортируемых нефтепродуктов было нефтяное сырьё, что, как мы отметили, характеризует экспорт вовсе не с положительной стороны. Так как нашей целью является исследование торговли продуктами питания, мы считаем достаточными эти сведения для представления общего торгового оборота.

Торговля продовольственными товарами, наряду с зависимостью от выпуска и переработки сельскохозяйственных продуктов, формируется под влиянием курса национальной денежной единицы – маната. Так, в течение 2005-2014гг. курс маната был выше курса доллара, что, в свою очередь, стимулировало импорт, и местные сельскохозяйственные производители не смогли конкурировать с субсидированным импортом других стран.

Как видно из таблицы 2, в советское время, по причине того, что пшеница в основном ввозилась из других республик, её мало сеяли, взамен, больше потребности внутреннего рынка производились такие продукты, как табак, овощи, фрукты и ягоды,

виноград, которые вывозились из республики. Кризис в 1995 году привел к сокращению производства всех продуктов. В 2000 году, в сравнении с 1995 годом, ощущался рост производительности, с 2005 года производство многих продуктов (за исключением табака, винограда и чая) опередило показатель 1985 года. К сожалению этого нельзя сказать о чае, табаке и винограде. Таким образом, в настоящее время, предприятия по производству этих продуктов импортируют сырье из-за границы. Из-за того, что прежние рынки экспорта были заняты, сложно было вновь наладить производство и вновь организовать их экспорт, что не позволяет этим отраслям дойти до уровня хотя бы 1995 года.

Таблица 2 – Производства основных сельскохозяйственных продуктов (тысяча тонн)

Продукты	Годы				
	1985	1995	2000	2005	2015
Зерновые и зернобобовые	1297,9	921,4	1540,2	2126,7	2999,4
Табак	60,0	11,7	17,3	7,1	3,5
Картофель	219,7	155,5	469,0	1083,1	839,8
Овощи	872,2	424,1	780,8	1127,3	1275,3
Бахчевые	48,6	41,9	261,0	363,8	484,5
Фрукты и ягоды	346,4	324,4	477,0	625,7	888,4
Виноград	1789,6	308,7	76,9	79,7	157,1
Чай	31,7	9,4	1,1	0,7	0,6
Мясо	168,0	109,4	153,6	198,0	298,6
Молоко	951,0	826,5	1031,1	1251,8	1924,5
Яйца, млн. штук	947,7	455,8	542,6	874,6	1178,6

Источник: Государственный комитет статистики Азербайджана [6].

Импорт и экспорт продовольственных продуктов. Импорт в группе живых животных и животноводческих продуктов в 1995 году составлял 74,3 млн. доллара¹, что составило 11,1% общего ввоза (таблица 1). Среди этих товаров основное место занимают молочные продукты, яйца птиц, натуральный мёд и др. продукты животного происхождения, объём которых составляет 6,2%, а также мясо и другая дополнительная мясная продукция-с объёмом 4,8%.

В связи с увеличением внутреннего производства в 2000 г. и в 2005г. уменьшается импорт продуктов этой группы и, соответственно, составляет 2,7 и 1,1%. Но, начиная с 2010 года, вновь начинается повышение импорта продуктов этой группы, который составил в 2010 году 86,2 млн. доллара, в 2015 году - 136,0 млн. доллара. Повышение импорта этих видов продукции не был отражён в удельном весе. Так, это было связано с увеличением общего объёма импорта от 667,7 млн. долларов в 1995 году до 9. 221,4 млн. долларов в 2015 году. Иными словами, увеличение общего объёма предотвратило увеличение относительных цифр и, соответственно, составило 1,3 и 1,5%. Если одной причиной увеличения импорта продовольственных продуктов по сравнению с прошлыми годами является увеличение численности населения и увеличение его покупательной способности, то, другой причиной, как мы отмечали, является курс маната, что стимулировало дешёвый импорт. В 2010 г. и 2015 г. опять среди продуктов этой группы молоко, молочные продукты, натуральный мёд, яйца птиц и другие продукты животного происхождения, занимали основную часть импорта и соответственно, составляли 59,2 и 57,2 млн. долларов. В 2015 году увеличился импорт живых животных и составил 51,7 млн. долларов, что связано с политикой улучшения состава животноводческих пород, с завозом из-за границы породистого крупного рогатого скота. В общем, животноводство в стране ещё не развито на должном уровне. Если сравнить распределение этих продуктов на душу населения в развитых странах, то в Азербайджане этот показатель вдвое или даже намного ниже. В настоящее время годовая норма мяса и мясопродуктов, в среднем берётся 31 кг на душу населения, тогда как в 2015 году показатель потребления составлял 33 кг на душу населения, что

¹ Здесь и в последующем цифры будут показаны в долларах США.

создает впечатление отсутствия недостатка в этой отрасли. Но, на самом деле, в стране норма количества мяса и мясопродуктов, взятая на душу населения низкая, к тому же эти продукты из-за высокой цены и, соответственно, низкой покупательской способности, мало потребляются. Иными словами, производство продуктов этой отрасли нельзя считать удовлетворительным.

В группе продуктов растительного происхождения в 1995 году было импортировано товара всего на 51,5 млн. долларов, которые составляют 7,7% от общего объема импорта. Хотя удельный вес продуктов этой группы к 2015 году и уменьшился, в абсолютных цифрах сумма повысилась и в 2015 году достигла 457,4 млн. доллара. И в 1995 году и в последующие годы, среди этой группы продуктов самое большое место принадлежало импорту зерновых культур. Так, если в 1995 году зерновых было завезено на 20,1 млн. доллара, эта цифра в 2015 году стала 343,4 млн. доллара. Первой причиной все еще высокой доли импорта зерновых в Азербайджане является наличие высокого уровня потребления хлеба и хлебобулочных изделий в рационе населения. Второй причиной явилось то, что хотя, в сравнении с 1995 годом, было посажено зерновых культур больше в двойном размере, но это не привело к импортозамещению. Экстенсивное развитие производства зерновых культур, низкая урожайность по сравнению с развитыми странами (в среднем 31 ц/га), в результате все еще сохраняют высокую долю импорта этих продуктов (т.е. зависимость от импорта 35,5%). Если Азербайджан при сохранении нынешней территории посева и сможет увеличить производительность вдвое, то сможет обеспечить потребность пищевых продуктов и кормов на зерновые культуры в стране в условиях нынешней численности населения и экономического уровня. Но реализации этого плана препятствует несколько причин: малоземелье, несоблюдение правильных агротехнических норм и неиспользование производителями высокоурожайных сортов зерновых культур и т.д., что является темой отдельной статьи. Хотелось бы отметить, что по мере повышения покупательной способности населения, с развитием отрасли птицеводства, повышается объем импорта зерновых, который в настоящее время составляет приблизительно 1,6 млн. тонн. Но в этой группе ввоз овощей и фруктов, тоже велик, хотя в сравнении с 1995 годом производство стало выше чем потребление, но сумма, потраченная на них, увеличилась с 7,8 млн. долларов до 58,0 млн. долларов. Несмотря на то, что страна обеспечивает потребность в этих продовольственных товарах, показатель импорта остается очень высоким. Это связано, с одной стороны, как с потребностью в импорте тропических и цитрусовых культур, так и, с неусовершенствованной системой хранения и упаковки, которая приводит к необходимости импорта в зимний период. Другая причина же исходит из собственных монопольных интересов продавцов на рынке сбыта. Увеличение ввоза в страну, из года в год, ещё одного продукта из этой группы причинило большой урон местным производителям и создало условия для обеспечения внутреннего рынка, в основном, за счёт ввоза. Это относится к производству чая. Производство 0,6 тысяч тонн этого продукта в 2015 году (в 1985 году 31,7 тыс. тонн) подняло процент зависимости страны от импорта чая до 87,6%, и не ожидается в ближайшее время уменьшение импорта этого продукта, занимающего в рационе населения значительное место. Так как, если начать в прежнем объеме посев площадей чая, сократившихся более, чем в десятикратном размере и, принимая во внимание, что урожай будет получен через 6 лет, то прогресса в этой области в ближайшем будущем не предвидится. В то же время, больший объём импорта уменьшает интерес местных производителей, чтобы заниматься этой отраслью. По статистическим данным, в 2015 году Азербайджан импортировал 7,5 тыс. тонн чая на 16,3 млн. доллара. То же самое можно сказать о масличных семенах и плодах, других семенах, лекарственных растениях. Малая доля посевных площадей растений, предназначенных для производства растительных масел, создаёт в этой отрасли почву для ввоза сырья, их стоимость в 2015 году составляла 10,5 млн. долларов. В том числе, в группе жиров растительного и животного происхождения отмечается большой объём импорта, в 2015 году на 83,8 млн. долларов, что показывает импорт большого количества сырья для производства

растительных масел. Из них в 2015 год объем сливочного масла составлял сумму 22,4 млн. доллара, а зависимость от импорта этого продукта в стране была 31,5%. Но, если учитывать пищевой рацион населения Азербайджана, на самом деле, низкое потребление сливочного масла объясняется тем, что цены на масло выше, чем покупательская способность населения. Иными словами, если цены будут доступными, то потребление станет намного выше.

В группе готовых продуктов питания, спиртных и безалкогольных напитков, уксуса, табака доля импорта самая большая. Это, в свою очередь, должно объясняться тем, что переработка сельскохозяйственных продуктов в стране находится на очень низком уровне. Если учесть, что импорт продовольственных товаров в 2015 году составлял 14,9%, из которых - 7,5% или 688,8 млн. долларов приходится на долю этих продуктов. Из продуктов в этой группе табак и промышленные заменители табака составляют самую большую часть – 297,6 млн. долларов. Из них- 10,3 млн. долларов приходится на табачное сырьё. В Азербайджане в 1985 году было произведено 60 тыс. тонн табака, тогда как производство в 2015 году всего 3,5 тыс. тонн способствовало зависимости перерабатывающих предприятий от импортного сырья, а также создало условия для импорта на большие суммы табачных изделий. В этой группе, вторая большая сумма выделена на импорт сахара и других сахаросодержащих кондитерских продуктов. Здесь основное место занимает не сахар, а импорт сырья для его производства, потому что в 2015 году зависимость сахарного сырья от импорта составила 96,4%, а готового сахара- 37,2%. В первые годы независимости Азербайджана по причине дефицита таких продуктов как пшеница, сахар, в стране появился стимул для начала засеивания сахарной свёклы, которая ранее не засеивалась. Однако, открытие завода по производству сахара в 2008 году с мощностью производства в 700 тыс. тонн, не стало толчком для развития этой отрасли. Причиной этого является то, что завод работает, в основном, с привозным сырьём. Это, в свою очередь, указывает на то, что импорт не регулируется в соответствии с интересами местных производителей.

Импорт в 2015 году готовых зерновых, мучных, молочных продуктов и мучных кондитерских изделий на 58 млн. долларов доказывает то, что местные производители в этой отрасли не выдерживают конкуренции. В общем, в 2015 году импорт продуктов питания составил 1,4 млрд. долларов. Для Азербайджана - это большая цифра, и производство большей части этих импортируемых продуктов возможно в стране. Мы отмечали, что высокий курс маната до 2014 года стимулировал импорт. Этот фактор уже повлиял на некоторое снижение импорта продукции в 2015 году, привозимых в больших суммах. К этой теме мы вернёмся позже. Пока рассмотрим структуру экспортируемых из Азербайджана продуктов питания (таблица 3).

Таблица 3 – Экспорт основных продовольственных товаров в Азербайджане, млн. долл. США

По группам продуктов	Годы				
	1995	2000	2005	2010	2015
Общий экспорт	637,2	1745,2	4347,2	21360,2	11424,5
Живые животные и продукты животного происхождения	0,6	0,5	1,5	0,5	2,3
Продукты растительного происхождения	13,3	28,5	193,6	190,3	335,9
Жиры и масла растительного и животного происхождения	0,3	3,6	68,4	188,3	153,3
Готовые продукты питания, спиртные и безалкогольные напитки, уксус, табак	24,4	24,2	63,5	214,2	278,9
Итого	38,5	56,7	326,9	593,3	770,5

Источник: Государственный комитет статистики Азербайджана [1].

В группе живые животные и продукты животного происхождения не стоит ожидать экспорта на большие суммы. Как мы уже отмечали, в Азербайджане животноводство в сравнении с растениеводством развито слабее. В 2015 году, в этой группе основные места занимают молочные продукты, яйца птиц, натуральный мёд и другие продукты животного происхождения на самую крупную сумму в 1,6 млн.

долларов. В общем, продукты этой группы составили всего 2,3 млн. долларов и не заняли в экспорте никаких процентов.

Продукты растительного происхождения в 2015 году среди экспортируемых товаров, имели самую высокую сумму в 335,9 млн. долларов, что составляет 2,9% от общего экспорта. В этой группе основное место занимают фрукты- 220,2 млн. долларов. Следует отметить, что экспорт свежих фруктов с 2005 года по сей день постоянно занимал в экспорте Азербайджана особое место. В этой группе второе основное место занимают овощи. Эти продукты экспортировались на 91,7 млн. долларов. В подгруппе – кофе, чай и специи экспортировалось продукции на 19,5 млн. долларов. Так как, эти продукты, в основном, импортировались в Азербайджан, то следует отметить, что на экспортированных после упаковочного процесса этих продуктах неправильно указывать Азербайджан как страну-производитель.

В группе жиры и масла растительного и животного происхождения в 2015 году экспорт был осуществлён на 153,3 млн. долларов, что не даёт нам права думать о высоком уровне производства в стране. Так, в этом же году было импортировано растительных масел на 70,3 млн. долларов и статистические данные говорят о самообеспечении этими продуктами на 60,5%. Но, в то же время, уровень зависимости от импорта составляет 73,3%, т.е. в стране сырьё для производства растительных масел, в основном, импортируется.

Также состав экспортируемых товаров в группе готовые продукты питания, спиртные и безалкогольные напитки, уксус, табак показывает, что экспорт формируется не за счёт производителей сельскохозяйственных продуктов. Так, в группе в 2015 году экспорт осуществлён всего на 278,9 млн. долларов. 212,1 млн. доллара из этой суммы приходится на долю сахара, так как мы отметили выше, сырьё в производстве сахара, в основном, зависит от импорта. В группе, по объёму суммы, второе место заняли спиртные и безалкогольные напитки, уксус на 25,8 млн. долларов. Но, к сожалению, сумма экспорта виноградного сорта вина, которое Азербайджан может, в основном, экспортировать, составил всего 3,8 млн. долларов. Причиной этого, как указано в таблице 2 является то, что эта отрасль до сих пор находится в кризисе. В этой группе продукты, переработанные из овощей и фруктов, занимают сравнительно крупную сумму. Эта сумма составляет 10,9 млн. долларов, в основном, формируется за счёт фруктовых соков. Но, конечно, выпуск фруктовых и овощных консервов намного отстаёт от сельскохозяйственного потенциала страны, а ведь экспорт этих продуктов мог бы принести немалый доход. В группе табак и промышленные заменители табака экспорт по объёму отличается от других, но сказанное о чае и сахаре можно отнести и к ним. Нами был отмечен тот факт, что по сравнению с 1985 годом нынешнее производство табака намного снизилось. Если в 2015 году в страну было импортировано 3 тыс. тонн табака, то экспортировано было 1,9 тыс. тонн или на 7,4 млн. долларов. Это показывает, что даже часть внутренней потребности происходит за счёт импортируемого табака. В общем, в 2015 году из Азербайджана экспортировано продовольственных товаров на 770,5 млн. долларов, что почти вдвое меньше импортируемого. В то же время, эта цифра меньше объёма экспорта в 2012-2014 гг., что объясняется повышением курса доллара. Доля экспортируемых продовольственных продуктов по сравнению с предыдущими годами в 2015 году стала выше (6,6%), это объясняется тем, что цена на нефть упала, и сумма общего экспорта стала почти в два раза меньше. Например, в 2013 и 2014 гг. экспорт продовольственных товаров соответственно составил 3,7 и 3,8%.

Регулирование торговли продовольственными товарами в Азербайджане. После обретения независимости в Азербайджане по мере перемен национальных интересов, структура внешнеэкономической деятельности и методы регулирования периодически менялись и улучшались. Регулирование государством внешнеэкономической деятельности претворяется в жизнь экономическими, административными, тарифными и нетарифными методами. К экономическим методам относят: таможенные платежи, налоги (НДС, акцизы и т.д.), таможенные сборы. К административным относятся: административные правила, запреты и нормативы.

Тарифные методы в современную эпоху выступают как регулирование экономической основы внешнеэкономической деятельности. Нетарифные регуляторы - это группа ограничивающих мер. Хотя таможенные тарифы выполняет разнообразные функции, но его основными функциями являются протекционистская и фискальная. Тем не менее, таможенные тарифы остаются основным инструментом в регулировании государством внешней торговли в защите местных производителей от иностранной конкуренции. Между уровнем развития страны и степенями таможенных тарифов существует некая зависимость. Таким образом, в стране с развитым хозяйством степени таможенных пошлин бывают низкими. В высокоразвитых странах производится достаточно конкурентоспособные товары, и, поэтому, нет необходимости в защите внутреннего рынка с помощью высоких тарифов и в стимулировании экспорта дополнительными мерами и заполнении бюджетной прибыли за счёт таможенных уплат. В настоящее время в нашей стране таможенные пошлины, в основном, варьируются от 0 до 15%, НДС 18%, акцизы же относятся из продовольственных товаров только к спиртным напиткам (за 1 литр – между 1-6 манат) и к табачным изделиям (на 1000 штук между 4-10 манат). По нашему мнению, вследствие продвижения в развитии сельского хозяйства, начиная с 2000 года, было необходимо действовать на цены продовольственных товаров через таможенные тарифы, стимулировать и защитить местное производство. Но в Азербайджане, до 2016 года, для защиты внутреннего рынка практически не применялись ни тарифные, и ни нетарифные методы. С одной стороны, высокие тарифы поднимают цены на внутреннем рынке, оказывают отрицательное влияние на социальное положение населения. Однако, как мы уже отметили, основной причиной была большая нефтяная прибыль, проблемы в развитии сельского хозяйства и связанных с ним перерабатывающих предприятий не давали возможности увеличения производства продовольственных товаров. Одновременно, позиция монополистов-импортеров мешала предпринимать серьёзные шаги. Анализ действующих в нашей стране таможенных тарифов показывает необходимость повышения импортных тарифов на продукты, которые производятся местными производителями а также на продукты, у которых есть потенциал для производства в стране, в частности, на фрукты и овощи, и их переработанные продукты.

Начиная с 2014 года, резкое понижение нефтяной прибыли и увеличение обменного курса доллара в несколько раз, стало наглядным доказательством необходимости ускоренного развития ненефтяного сектора, в том числе и сельского хозяйства. В итоге, с 2016 года в этой области, по сравнению с предыдущими годами, произошло сравнительное оживление. Так, в апреле 2016 года было создано Открытое Акционерное Общество «Заготовка и обеспечение продовольственной продукцией» в подчинении Министерства Сельского Хозяйства АР. Цель этого общества - стимулирование производства и переработки сельскохозяйственных продуктов, обеспечение развития производителей сельскохозяйственных продуктов, повышения качества продовольственной продукции, обеспечение рационального использования государственных средств, создание основ для улучшения социального положения населения, занимающегося сельским хозяйством в регионах страны, обеспечения централизованного осуществления закупки продовольственной продукции по государственному заказу².

Вторая мера была осуществлена в сентябре 2016 года. Были подняты тарифы на импорт на некоторые свежие и переработанные продовольственные продукты³. Например, тарифы на импорт мяса и дополнительных мясопродуктов настоящее время составляет на 1кг 1 доллар (прежний тариф составлял 15%). В том числе были установлены новые тарифы для следующих продуктов: яйца птиц на 1000 штук 100 долларов (15%); из овощей: помидоры и огурцы на каждый кг 0,4 доллара (0,1 доллара), на 1 кг лука 0,2 долл. (0,1 долл.), орехи и фундука на каждый кг 1,5 доллара

² Официальный сайт ОАО, <http://www.tedaruk.az/other/legislation>

³ Решение (№367) Кабинета Министров АР, 23.09.2016: <http://www.cabmin.gov.az/?/az/pressreliz/view/2038/>

(15%), свежий виноград и изюм на каждый кг 0,4 доллара(15%), из фруктов яблоко, груша, айва и хурма – на каждый 1 кг- 0,3 доллара (0,1 доллара); консервы, джемы, соки из овощей и фруктов и минеральные воды 15% или не менее чем 0,7 доллара за 1 литр (раньше для консервов, джемов и соков составляли 15%, а для минеральных вод- 0,2 доллара 1 литр).

Тем не менее, можно было этот список расширить. Так, сюда можно было отнести живую рыбу (в настоящее время тариф 0,5%), замороженную рыбу (15%), молочные продукты, натуральный мёд и другие продукты животного происхождения (15%), другие овощи (15%), в том числе баклажаны (на 1кг - 0,1кг), свежие, законсервированные, сушеные и другие фрукты (15%), в том числе свежий и сушеный инжир, мандарин, арбуз (на 1 кг – 0,9 долларов), абрикос, черешня и другие косточковые фрукты (на 1 кг 0,15 долл.) и сухофрукты (на 1 кг – 0,25 доллара), чёрный чай, тмин, анис, и др., пряности, масличные семена производящиеся в нашей стране (15%), жиры и масла растительного и животного происхождения (15%), в том числе оливковое, подсолнечное, кукурузное масла (0,5%), мясные и рыбные консервы, колбасы и т.д. (15%), сахарное сырьё, получаемое из сахарной свёклы (0%), макароны и мучные изделия (15%), вина виноградные (на 1 литр 1,4 доллара), табачное сырьё (15%), сигареты (на 1000 штук 0,5%), соль пищевую (15%).

В том числе, в октябре 2016 года Кабинет Министров АР принял решение предоставить субсидии на ряд экспортируемых продуктов ненефтяного сектора с 1 марта 2016 года по 31 декабря 2020 года⁴. Этот закон охватывает 25 товарных позиций, из них лишь 6 (кроме нафталановой мази) – продукты лёгкой промышленности остальные продовольственные товары. В товары, на которые предусмотрены субсидии, входят: натуральный мёд, сухофрукты, национальные сладости, пряности, фруктовые и овощные соки, консервы, свежие фрукты, минеральные воды, виноградные сорта вин, и др. спиртные и безалкогольные напитки. Эти субсидии дают надежду на то, что они явятся стимулом для повышения развития производства в сельском хозяйстве и связанных с ним перерабатывающих предприятиях. Базовая сумма экспортного поощрения составляет 3% от таможенной ценности экспортируемого товара. Оплата за продукты будет подсчитываться на основе применения коэффициента (между 1-2) на базовую цену.

Субсидии на экспорт могут осуществляться напрямую (оплата дотации при выходе производителя на внешний рынок) и непосредственно (льготное налогообложение, кредитование, страхование и т.д.). Пока что, в Азербайджане косвенные субсидии не применяется. Также возможно помочь экспорту продуктов национальных предприятий путём применения различных форм информационного и организационного воздействия на экспорт. В связи с этим, следует отметить, что, в 2003 году Министерством Экономики был создан «AZPROMO» - Фонд Поощрения Экспорта и Инвестиций в Азербайджане. Наряду с привлечением в страну инвестиций, в функции этого фонда входит создание информационной базы по возможностям экспорта и инвестиций, исследование возможностей региональной торговли (экспорта) для азербайджанского бизнеса, консультационные услуги компаниям-экспортерам, исследования рынка и пропагандирование торговой марки «Произведено в Азербайджане» на международном уровне⁵. Но, анализ экспортного состава, выявляет, что до 2016 года деятельность фонда не являлась удовлетворительной.

Подготовка 11 стратегического плана развития, охватывающего основные экономические отрасли также нужно оценить как важный шаг со стороны правительства Азербайджана. Так, два документа из них, называемые «стратегические дорожные карты» относятся к развитию логистики и торговли и к производству и переработке сельскохозяйственных продуктов. Дорожные карты состоят из стратегического видения до 2020 года, долгосрочного видения на период до 2025 года

⁴ Решение (№401) Кабинета Министров АР , 06.10.2016: <http://www.cabmin.gov.az/?/az/pressreliz/view/2071/>

⁵ Официальный сайт Azerbaijan Export and Investments Promotion Foundation (AZPROMO): <http://www.azpromo.az/1/en/5#llb=http://www.azpromo.az/1/en/51>

и стратегического целевого видения на период после 2025 года. В этих «дорожных картах» придается большое значение экспорту первичных и переработанных продуктов питания.

В странах мира как метод регулирования внешней торговли широко применяются нетарифные ограничения. Нетарифное регулирование является различным экономическим, политическим и административным методом прямого или косвенного ограничения внешнеэкономической деятельности. Такие мероприятия служат не только для усиления конкурентоспособности импортирующей страны, но и для защиты национальной промышленности, служит сохранению жизненного уровня и здоровья населения, национальной безопасности.

Согласно схеме классификации нетарифных методов, выработанной в начале 70-х гг. Секретариатом ГАТТ, в настоящее время существует более 800 нетарифных методов, объединённых в 5 категорий. Это нижеследующие методы: меры по ограничению количества импорта и экспорта; таможенная и административная формальности по экспорту и импорту; стандарты и требования к качеству финансов и услуг; ограничения в ведении счётов и взаимных выплат; участие государства напрямую или косвенно в операциях внешней торговли [9].

В общем, по своей функции нетарифные методы - это скрытые протекционистские меры. В настоящее время в Азербайджане не претворяется в жизнь никакая протекционистская политика. Без этого же ожидать уменьшения импорта бесполезно.

Подводя итоги, следует отметить, что большой объем импорта при одинаковых условиях отрицательно сказывается на объёме выпускаемой в стране продукции, продовольственной безопасности, и, в итоге, на социальном положении общества. Большой объём импорта – это утерянная экономическая выгода, вследствие уменьшения производства. Увеличение импорта приводит к потере рабочих мест в результате уменьшения производства, в целом, к снижению уровня жизни. Увеличение импорта - это также снижение эффективного использования почвы, техники, снижение темпа модернизации производства, уменьшение источников внутренней инвестиции. Увеличение импорта становится причиной действий, угрожающих национальной безопасности, как вывоз валюты за границу, скрытые операции с ценами и т. д. Увеличение экспорта ненефтяного сектора приводит к диверсификации экспорта, и наряду с уменьшением зависимости от нефтяной прибыли, приводит к устойчивости экономики, играет значимую роль в стимулировании населения в увеличении производства продуктов. Чтобы достичь этих целей, необходимо постепенно повысить тарифы на импорт большинства продовольственных продуктов, использовать нетарифные ограничения для защиты внутреннего рынка.

Заключение. Большая прибыль, полученная от нефтяного сектора, препятствовала полному использованию потенциала, как сельского хозяйства, так и других отраслей. Хотя сельское хозяйство и развивалось по сравнению с 90-ми годами прошлого столетия, но серьёзные проблемы в этом секторе всё ещё препятствуют обеспечению продовольственной безопасности;

Всё ещё высока доля импорта сельскохозяйственных продуктов, выращивание которых возможно в стране. Азербайджан может не только сам производить многие импортируемые пищевые продукты, но и может, организовать их продажу;

До уменьшения нефтяной прибыли в стране, практически, не проводились серьёзные меры по регулированию торговли продовольственными продуктами.

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DOI <https://doi.org/10.18551/rjoas.2017-06.09>

**THE AUTHORITY OF INDONESIA DEPOSIT INSURANCE CORPORATION
IN HANDLING SYSTEMIC-AFFECTED BANK FAILURE AFTER THE CONSTITUTIONAL
COURT'S DECISION NUMBER 53/PUU-XIII/2015**

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ABSTRACT

One of the functions of Indonesia Deposit Insurance Corporation is actively maintaining banking system stability in accordance with its authority. The present research aims to analyze the authority of Indonesia Deposit Insurance Corporation in handling systemic-affected bank failure after the Constitutional Court's Decision Number 53/PUU-XIII/2015. This research used normative research approach, laws approach, and systematic interpretation. Besides using the primary legal materials, secondary legal materials were used as well to give enlightenment that support primary legal materials. The result showed that the authority of Indonesia Deposit Insurance Corporation in handling systemic-affected bank failure after Constitutional Court's decision Number 53/PUU-XIII/2015 does not change. The decision of Constitutional Court only emphasizes the phrase of "selling all shares of bank" in Article 30 verse (1), Article 38 verse (1) and Article 42 verse (1) of Laws Number 24 of 2004 regarding Indonesia Deposit Insurance Corporation is intended as share owned by Shareholder of Systemic-affected Bank Failure Controller that has made and submitted statement letter as mentioned in Article 9 letter a section 4 point (iii) of Indonesia Deposit Insurance Corporation's Laws. Thus, in the moment of selling shares of systemic-affected Bank Failure, Indonesia Deposit Insurance Corporation only has authority to sell shares from the Controller Shareholder, not including public shareholder from the Bank Failure.

KEY WORDS

Authority, Indonesia Deposit Insurance Corporation, systemic-affected, bank failure, bank failure handling, constitutional court.

In November 21 2008, Indonesia Deposit Insurance Corporation received submission of Century Bank, Tbk handling through Decision of Financial System Stability Committee that determines PT. Bank Century, Tbk as systemic-affected Bank Failure. In handling PT. Bank Century, Tbk, Indonesia Deposit Insurance Corporation obtains duty and function granted by Laws of the Republic of Indonesia Number 24 of 2004 regarding Indonesia Deposit Insurance Corporation which has been amended to Laws of the Republic of Indonesia Number 7 of 2009 ("Laws of Indonesia Deposit Insurance Corporation").

One of the functions of Indonesia Deposit Insurance Corporation, based on Article 4 of Indonesia Deposit Insurance Corporation's Laws, is actively maintaining banking system stability in accordance with its authority. Hence, in realizing the function, Indonesia Deposit Insurance Corporation has duties to: 1) Formulate and determine policy in order to actively maintain banking system stability, 2) Formulate, determine, and conduct settlement policy of unsystemic-affected Bank Failure, 3) Handle systemic-affected Bank Failure.¹

In handling systemic-affected Bank Failure, based on the condition of Article 22 verse (1) letter b of Indonesia Deposit Insurance Corporation's Laws, it is set that the handling of systemic-affected Bank Failure is done by saving that involves or without involving the old shareholders. In handling PT. Bank Century, Tbk, Indonesia Deposit Insurance Corporation conducts saving actions without involving old shareholders because the shareholders do not

¹Article 5 verse (2) of Indonesia Deposit Insurance Corporation's Laws

fulfill the requirements of involvement in handling Bank Failure in accordance with the regulation in Article 33 verse (1) of Indonesia Deposit Insurance Corporation's Laws.²

After Indonesia Deposit Insurance Corporation takes over all rights and authorities of General Meeting of Shareholders, ownership, membership, and/or other concerns in Century Bank, Tbk³, some saving actions, by Indonesia Deposit Insurance Corporation in handling period, are conducted by doing re-branding for Century Bank, Tbk by changing its name to be PT. Bank Mutiara, Tbk; arranging new business plan and Temporary Capital Participation ("PMS"). In handling PT. Bank Mutiara, Tbk, Indonesia Deposit Insurance Corporation pays handling cost with total as much Rp 8,011 Billion. All handling cost of Bank Failure paid by Indonesia Deposit Insurance Corporation becomes Temporary Capital Participation ("PMS") in Bank Failure⁴. Temporary Capital Participation of Indonesia Deposit Insurance Corporation towards PT. Bank Mutiara, Tbk is then converted to be in form of share in PT. Bank Mutiara, Tbk with the composition as follows: 1) Share of Series A = 801.184.100.000.000 (99,9965%) , 2) Share of Sharies B = 28.350.177.035 (0,0035%)⁵.

What is meant by share of series A is the share owned by Indonesia Deposit Insurance Corporation as the conversion outcome of Temporary Capital Participation, while share of series B is the share owned by public society. As the continuation of systemic-affected Bank Failure handling, Indonesia Deposit Insurance Corporation, based on regulation in Article 42 verse (1) of Indonesia Deposit Insurance Corporation Law⁶, is obliged to sell all shares of Bank which is on the handling period. After passing some processes of share selling, the winning investor that will buy share of PT. Bank Mutiara, Tbk is chosen. The process of share selling to winning investor is done through 2 takeover phases: the first takeover is done on 99% share with the selling price as much Rp4.411.111.111 in November 20, 2014, and the remaining 1% share consists of Indonesia Deposit Insurance Corporation's share and 0,0035% of society's share with the selling price as much Rp44.399.018 in which the takeover to an Indonesia legal entity will be conducted after fulfilling certain conditions.⁷In the phase of Mutiara Bank's share selling, Indonesia Deposit Insurance Corporation faces problems related to the arrangement in Article 60 of Limited Liability Company Law when selling 0,004% share owned by society. Arrangement in Article 60 of Limited Liability Company Law⁸mainly mentions that the share ownership also gives material rights to its owner. Thus, the share owners also have rights to get protection over their ownership. According to Capital Market Authority⁹, if Indonesia Deposit Insurance Corporation conducts the remaining share selling as much 0,00035% owned by public shareholders, then the takeover by state occurs through Indonesia Deposit Insurance Corporation without concerning on principles of humanities, justice, expediency, certainty, transparency, agreement, participation, welfare, sustainability, and harmony and those aspects that also contradict with Article 28H verse (4) of Constitution of the Republic of Indonesia 1945.

In April 6, 2015, Indonesia Deposit Insurance Corporation supplicatedjudicial reviewto Constitutional Court on articles in Indonesia Deposit Insurance Corporation's Law that regulate share selling of Bank which are Article 30 verse (1), Article 38 verse (1) andArticle 42 verse (1). Those articles, according to Indonesia Deposit Insurance Corporation, are considered not giving legal certainty in the process of share selling which is the authority of Indonesia Deposit Insurance Corporation. In the articles regarding to selling, it is mentioned that Indonesia Deposit Insurance Corporation is obliged to sell the share of the saved bank or bank in handling. The "all bank share" phrase here invites different interpretation on its

²Annual Reportof Indonesia Deposit Insurance Corporation in 2008, page 56.

³Announcement of Indonesia Deposit Insurance Corporation Number:: PENG.003/KE/XI/2009 regarding Handling of PT. Bank Century, Tbk, published on website of Indonesia Deposit Insurance Corporation: www.lps.go.id in November 30, 2009.

⁴Article 37 verse (2) of Indonesia Deposit Insurance Corporation's Laws

⁵Decision of Constitutional Court: Number 53/PUU-XIII/2015, page 6

⁶Article 42 verse (1) : Indonesia Deposit Insurance Corporation is obliged to sell all handled bank's shares maximum 3 (three) years since the beginning of Bank Failure's handling as mentioned in Article 39.

⁷Annual Reportof Indonesia Deposit Insurance Corporation of 2014, page 23.

⁸Article 60 verse (1) of Limited Liability Company's Laws states : "Materials over shares as moving objects grant material rights to its owner. The right can be maintained to everyone".

⁹As cited from expert witness' statement, Sarjito, SE, SH, MBA Commissioner Deputy of Capital Market Supervisor I of Financial Services Authority in Constitutional Court's Decision of the Republic of Indonesia Number 53/PUU-XIII/2015.

meaning, which is whether the share selling of all bank share is only owned by Indonesia Deposit Insurance Corporation or all bank share is owned by both Indonesia Deposit Insurance Corporation and society, including public society that buys shares in Capital Market. Moreover, in the enlightenment of those articles, it does not attach meaning explanation of "all bank share". Concretely, according to Indonesia Deposit Insurance Corporation, it has caused legal uncertainty. Then, in September 7, 2016, Constitutional Court issued a decision regarding judicial review supplicated by Indonesia Deposit Insurance Corporation through Decision of Constitutional Court Number 53/PUU-XIII/2015.

By this Constitutional Court's decision, the writer will analyze further about the authority of Indonesia Deposit Insurance Corporation in handling systemic-affected Bank Failure after the decision of Constitutional Court.

METHODS OF RESEARCH

The present research utilizes judicial normative research method with laws approach, (McConville, 2007; Van Hoecke, 2011). The laws used as its legal materials are Decision of Constitutional Court Number 53/PUU-XIII/2015, Laws Number 24 of 2004 regarding Indonesia Deposit Insurance Corporation, Laws Number 7 of 1992 regarding Banking which has been amended to be Laws Number 10 of 1998, Bank of Indonesia Laws, Laws Number 40 of 2007 regarding Limited Liability Company, Laws Number 9 of 2016 regarding Prevention and Handling of Financial System Crisis, and Regulation of Indonesia Deposit Insurance Corporation. Besides using the primary legal materials, secondary legal materials are used as well to give enlightenment that support primary legal materials in form of law books, journal articles, and related researches' results (Soekanto, 2011). The legal materials collected through literature study and internet are then analyzed using systematic interpretation until it leads to a conclusion.

RESULTS OF STUDY

Judicial Review of Indonesia Deposit Insurance Corporation. As the judicial review request supplicated by Indonesia Deposit Insurance Corporation, the Constitutional Court in September 7, 2016, issued a Decision Number 53/PUU-XIII/2015 over a *quo* Indonesia Deposit Insurance Corporation's Supplication, which mainly states that it does not need new interpretation on article and/or verse which its constitutionality must be tested, so that on its injunction part, the Constitutional Court refuses Indonesia Deposit Insurance Corporation's Supplication, with considerations as follows:

That ownership right on material is one of human rights. Article 36 verse (2) and Article 37 verse (1) of Laws Number 39 of 1999 regarding Human Rights mainly regulate that revocation of ownership right on material for public concern is only allowed by repaying the loss logically and immediately, and its implementation is in accordance with the prevailing laws. The substance of Indonesia Deposit Insurance Corporation's Supplication has an essence that it has authority to sell all shares of Bank Failure which is in its handling, including selling shares of other parties bought in Capital Market. Since it is related to ownership takeover, then it must be referred to the prevailing laws.

That personal ownership right is under the protection of constitution. Personal ownership right is one of human rights protected by constitution which cannot be taken arbitrarily by anyone (vide Article 28 H verse (4) of Constitution of the Republic of Indonesia 1945). Share ownership gives material rights to its owner and the right can be maintained towards everyone (vide Article 60 verse (1) of Limited Liability Company's Laws). The protection of material rights on share owned by holder is the tangible implementation of protection over the guaranteed assets (vide Article 28 G verse (1) of Constitution of the Republic of Indonesia 1945). This means that the taking or the transfer of shareholder right over share owned by someone still must fulfill protection element to its owner, and it is not implemented in arbitrary way.

That share ownership by shareholder of Liability Company is the part of capital participation forms. Capital participation in Limited Liability Company is conducted in the moment of establishment or through Liability Company's share selling when it has been established, directly or through Capital Market both selling in share general offering and selling in secondary market (buy in Stock Exchange or out of Stock Exchange). Article 53 verse (2) of Limited Liability Company's Laws regulates rights of shareholder from similar share clarification, both founder and shareholder that buy shares directly or through Capital Market, and gives rights to its owner to attend and express opinion in General Meeting of Shareholder (RUPS), receives dividend payment, and remaining wealth from liquidation and other rights, attached in some articles in Limited Liability Company's Laws.

Ownership is absolute because it can be limited as long as it is set in laws. Article 28 J verse (4) of Constitution of the Republic of Indonesia 1945 regulating about assets takeover for public concern by state can be conducted as long as the principles of justice, expediency, certainty, transparency, agreement, participation, welfare, sustainability, and harmony are still guaranteed and upheld for asset owner taken for public concern.

Compensation on Ownership Right Takeover. The takeover of investor ownership right which is directly manifested by government (for state's concern) through nationalization cannot be realized unless government gives compensation in which its total refers to market price.¹⁰

Submission of ownership on asset. Submission of all rights owned by shareholder cannot be done without submission of shareholder as asset owner based on civil law. Statement Letter of Controller Shareholder ("PSP") relinquishes ownership right if bank turns to be Bank Failure and decided to be saved (vide in Article 9 letter a section (4) point (iii) of Indonesia Deposit Insurance Corporation's Laws) has a meaning that when Indonesia Deposit Insurance Corporation encounters Bank Failure, automatically ownership right of Controller Stakeholder is dominated by Indonesia Deposit Insurance Corporation. Therefore, after it conducts Temporary Capital Participation, the shareholder of Bank Failure comprises of Indonesia Deposit Insurance Corporation and public shareholder.

Restraint of Controller Shareholder in Liability Company. Controller Shareholder has major restraint access towards Bank policy including being able to commit an action for concern in Article 3 verse (2) of Limited Liability Company's Laws¹¹, so that it leads to a regulation in Article 9 letter a section (4) point (iii) of Indonesia Deposit Insurance Corporation's Laws that requires a statement letter revealing willingness to relinquish and submit all rights, ownerships, memberships, and/or others to Indonesia Deposit Insurance Corporation if Bank turns to be Bank Failure and it is decided to be saved in which it is more emphasized in the explanation of Article 43 of Indonesia Deposit Insurance Corporation's Laws which states that it takes over and runs all rights and authorities of shareholder, including authority of Liquidation process in General Meeting of Shareholder.

The meaning of phrase "all bank's share". Ownership of public share does not include meaning of phrase "all bank's share" in Article 30 verse (1), Article 38 verse (1), and Article 42 verse (1) of Indonesia Deposit Insurance Corporation Laws because of the explanation of Article 9 letter a section (4) point (iii) jo. only sets the readiness of Controller Shareholder to relinquish and submit their share ownership to Indonesia Deposit Insurance Corporation, while public shareholder is not included as a party that states readiness to relinquish and submit their share ownership to Indonesia Deposit Insurance Corporation. If the meaning of phrase "all bank's share" in those three articles are interpreted that 100% of bank share that is taken over and submit their share ownership to Indonesia Deposit Insurance Corporation, so it will be the only one shareholder on the Bank Failure, while if it is interpreted as all shares including public share, so it is a forced takeover by state which contradicts with Article 28G verse (1) jo. Article 28H verse (4) of Constitution of the Republic of Indonesia 1945.

¹⁰Banking Actin 2009 in Paragraph 49, 50, 51

¹¹is with the bad faith to utilize Liability Company for personal interest; involving in the act against the law conducted by Liability Company; unlawfully using wealth of Liability Company that causes its wealth insufficient to pay debt of Liability Company.

Saving Cost Return. Return of saving cost from the saved bank share selling is not interpreted that the return with share selling is done by selling share of Bank Failure owned by public shareholder.

Constitutional Court views that the different interpretation on the meaning of phrase “all bank’s share” as attached in regulation formula of Article 30 verse (1), Article 38 verse (1), and Article 42 verse (1) of Indonesia Deposit Insurance Corporation Laws, whether it covers all bank’s share is only owned by Indonesia Deposit Insurance Corporation or all bank’s share is owned by both Indonesia Deposit Insurance Corporation and society, including public society that buys shares in Capital Market, so that it does not need new interpretation on article and/or verse which its constitutionality must be tested.

DISCUSSION OF RESULTS

Definition of Bank Failure. Bank Failure, according to Article 1 section 2 of Laws Number 10 of 1998 regarding Amendment on Laws Number 7 of 1992 regarding Banking (herein after referred as Laws of Banking) is “*Business entity that collects fund from community in form of saving and distributes it to community in form of credit and or other forms in order to improve community life quality.*” According to O.P Simorangkir, Bank is one of business entities of financial institutions that aims to give credits and services. The lending is done either through personal capital or with funds trusted by third party or through emitting means of payment in form of demand deposit (Sembiring, 2012).

Failure of a bank is usually caused by problems in the bank itself. A bank is considered in problem if the bank faces difficulty that can endanger its business continuity which is the Bank’s business condition is getting worse marked by the decline of Capital, Asset Quality, Management, Rentability, Liquidity, and Sensitivity on Market Risk and bank management which is not realized based on caution principles (Zaini, 2012).

These are definitions of Bank Failure based on the related provisions:

Based on Article 1 section 5 Bank of Indonesia’s Regulation Number 10/31/PBI/2008 regarding Emergency Financing Facility for Conventional Bank, what is called as Bank Failure is the bank which faces financial difficulty in form of liquidity difficulty. Liquidity difficulty is difficulty of short-term financing experienced by bank caused by the incoming fund that is lower than the outgoing fund (mismatch). It leads to negative demand balance, and/or solvency difficulty which is the capital difficulty experienced by bank so that it does not fulfill Minimum Capital Adequacy Requirement (KPMR), set by Bank of Indonesia, which endangers its business continuity.

Based on regulation of Article 1 section 7 of Indonesia Deposit Insurance Corporation’s Laws, what is meant by Bank Failure is the bank that experiences financial difficulty and endangers its business continuity and it is stated that it cannot be fixed anymore by Banking Supervisory Agency (herein after referred as LPP) in accordance with its authority.

According to Zaini & Febriansyah, (2014) as cited from book entitled with *Legal Aspect and Indonesia Deposit Insurance Corporation Function*, the meaning of Bank Failure is the bank which faces liquidity difficulty. Liquidity difficulty is difficulty of short-term financing because the predicted incoming and outgoing cashflow. This can make negative balance and solvency difficulty or capital, so that it cannot fulfill Minimum Capital Adequacy Requirement. From some definitions of Bank Failure aforementioned, it can be stated that Bank Failure is the bank which faces liquidity difficulty and it can endanger its business continuity as well as it cannot be fixed by Banking Supervisory Agency (LPP).

In Laws of Indonesia Deposit Insurance Corporation, Bank Failure is categorized into 2 (two) groups: systemic-affected Bank Failure and unsystemic-affected Bank Failure. The meaning of systemic-affected¹², according to Krisna Wijaya, is if the failure of bank will give huge effects both on rush and on economy continuity (Wijaya, 2007). Then, the definition of systemic-affected Bank Failure, based on regulation of Article 1 of Indonesia Deposit Insurance Corporation’s Laws Number 5 of 2006 regarding Handling of Systemic-affected

¹² Before the prevailing of Prevention and Handling of Financial System Crisis’s Laws.

Bank Failure as amended to be Indonesia Deposit Insurance Corporation's Laws Number 3 of 2008, is Bank Failure considered giving systemic effect by Coordination Committee in which its handling is given to Indonesia Deposit Insurance Corporation.

Authority of Handling Bank Failure by Indonesia Deposit Insurance Corporation. Based on regulation set in Article 5 verse (2) of Indonesia Deposit Insurance Corporation's Laws, in actively participating in maintaining banking system stability in accordance with its authority, Indonesia Deposit Insurance Corporation has duties to¹³:

Formulate, determine, and conduct policy of bank resolution of unsystemic-affected Bank Failure; and

Conduct handling of systemic-affected Bank Failure.

For unsystemic-affected Bank Failure, Indonesia Deposit Insurance Corporation may save or not save after Banking Supervisory Agent or Coordinating Committee submits its resolution to it¹⁴. Its decision to save a Bank Failure is based on saving cost calculation which covers capital increase until the bank fulfills condition of solvency level and liquidity level.¹⁵ Moreover, Indonesia Deposit Insurance Corporation's Laws Number 4 of 2006 regarding Resolution of Unsystemic-Affected Bank Failure, which is amended to be Indonesia Deposit Insurance Corporation's Regulation Number 2 of 2007, states that to save a Bank Failure, it must fulfill some conditions which are as follows:¹⁶

- The highest saving cost estimation is 60% from the unsaved cost estimation;
- Bank still has good business prospect;
- There is a statement from Bank in General Meeting of Shareholder; and
- Bank submits several documents to Indonesia Deposit Insurance Corporation.

While for unsystemic-affected Bank Failure, the handling will be conducted after there is a submission from Coordinating Committee to Indonesia Deposit Insurance Corporation¹⁷. The implementation of systemic-affected Bank Failure resolution is named handling term to distinguish from settlement terms used in resolution of unsystemic-affected Bank Failure, (Prasetya, 2016). Bank Failure's handling, according to regulation set in Article 1 section 7 of Indonesia Deposit Insurance Corporation's Laws Number 1 of 2014 regarding Share Selling of the Saved Bank Failure, is a set of actions of Indonesia Deposit Insurance Corporation to save systemic-affected Bank Failure mandated by Coordinating Committee to it with or without involving old shareholder.

In Indonesia Deposit Insurance Corporation's Laws, it is mentioned that systemic-affected Bank Failure is conducted by Indonesia Deposit Insurance Corporation in two ways: by involving old shareholder (open bank assistance) or without involving shareholder.¹⁸ In terms of Bank Failure's handling by involving old shareholder, it can be done if the following conditions are fulfilled:¹⁹

Old shareholder of Systemic-affected Bank Failure has deposit capital at least 20% (twenty percents) from handling cost estimation;

There is a statement of Bank in General Meeting of Shareholder which at least contains willingness to:

- Grant rights and authorities of General Meeting of Shareholder to Indonesia Deposit Insurance Corporation;
- Submit bank management to Indonesia Deposit Insurance Corporation; and
- Not prosecute Indonesia Deposit Insurance Corporation or other parties chosen by it in terms of unsuccessful handling process, as long as Indonesia Deposit Insurance Corporation or the parties chosen by it runs its duties based on prevailing regulations started from date of Bank Failure's handling submission by Coordinating Committee to Indonesia Deposit Insurance Corporation;

¹³Article 5 verse (2) of Indonesia Deposit Insurance Corporation's Laws

¹⁴Article 21 verse (2) of Indonesia Deposit Insurance Corporation's Laws

¹⁵Article 23 verse (1) of Indonesia Deposit Insurance Corporation's Laws

¹⁶Article 10 of Indonesia Deposit Insurance Corporation's Unsystemic-affected Bank

¹⁷Article 21 verse (3) of Indonesia Deposit Insurance Corporation's Laws

¹⁸Article 32 of Indonesia Deposit Insurance Corporation's Laws jo Article 4 of Indonesia Deposit Insurance Corporation's Systemic Bank

¹⁹Article 5 of Indonesia Deposit Insurance Corporation's Systemic Bank

Bank submits some documents to Indonesia Deposit Insurance Corporation which cover:

- Use of Funding Facility from Bank of Indonesia;
- Financial Data of Debtor's Customers;
- Capital structure and list of shareholders in last 3 years; and
- Other information regarding to asset, obligation, and capital of bank required by Indonesia Deposit Insurance Corporation.

Requirement to capital deposit at least 20% (twenty percents) by Bank Shareholder whose shares are not exchanged in Capital Market, it is obliged to be fulfilled in 15 working days after Indonesia Deposit Insurance Corporation receives transfer of systemic-affected Bank Failure from Coordinating Committee, while for Bank whose shares are exchanged in Capital Market, it is obliged to deposit capital in 35 working days after Indonesia Deposit Insurance Corporation receives systemic-affected Bank Failure from Coordinating Committee.²⁰ Furthermore, if all requirements mentioned above have been fulfilled, then Indonesia Deposit Insurance Corporation will decide to conduct handling by involving old shareholder. Decision to conduct handling by involving old shareholder is done by it not later than 3 working days after the due date of requirement fulfillment to capital deposit by Old Shareholder²¹.

Then, started from Indonesia Deposit Insurance Corporation that conducts handling by involving Shareholder, then it results:²²

- Shareholder and committee of Bank relinquish and grant all rights, ownerships, memberships, and/or other concerns to Indonesia Deposit Insurance Corporation; and
- Shareholder and committee of bank do not prosecute Indonesia Deposit Insurance Corporation or parties chosen by it in the process of unsuccessful handling, as long as Indonesia Deposit Insurance Corporation or parties chosen by it runs its function in accordance with regulations.

After General Meeting of Shareholder grants its rights and authorities to Indonesia Deposit Insurance Corporation, then some actions that can be done by it, based on regulation in Article 26 of Indonesia Deposit Insurance Corporation's Laws, are Dominating, Managing, and Committing action of Ownership on asset or the things that become rights and/or obligation of bank, and executing temporary capital participation, and shifting bank management to other parties.

In the process of Bank Failure's handling in Indonesia, it recognizes some resolution methods. However, before choosing method that will be employed for handling process, besides concerning on social-economy condition of Indonesia in the present and in the future, there are 2(two) main principles that can be used to choose the method which are (Prasetya, 2016):

- *Least Cost Resolution Principle* obliges resolution authority to choose what option that has the lowest cost from all available options. In this principle, evaluation and calculation of all cost from alternative resolution are done by referring to *net present value basis* dan a *realistic discount rate* (Wong-Keun Yang, Sun Eae Chun, Martha C. Duncan, 2001)..
- *Lower cost resolution* obliges to choose one of resolution options which has the lowest cost compared to other options if bank's business license is revoked, so that it must pay insurance claim and run bank's liquidation process.

After implementing those two principles above, then Indonesia Deposit Insurance Corporation must choose resolution method that will be used to handle bank. These are the resolution methods which commonly prevail in some countries:

Reimbursement (payout) of insured depositors. Reimbursement method or payout method is commonly used when a Bank Failure's business license is revoked (William Su,

²⁰Article 7 of Indonesia Deposit Insurance Corporation's Systemic Bank

²¹Article 9 verse (2) of Indonesia Deposit Insurance Corporation's Systemic Bank P

²²Article 11 of Indonesia Deposit Insurance Corporation's Systemic Bank

2006). In this reimbursement option, there is an obligation of resolution option to pay customers' saving claim of Bank Failure which its business license is revoked. Then, payment cost of customers' saving by the resolution authority will be changed with results of assets selling from the Bank Failure or it is more known as Banking Liquidation.

Purchase and Assumption (P&A). P&A method, according to *General Guidance For Resolution of Bank Failures* from International Association Deposit Insurance (IADI, 2006), is defined as the takeover process of partial or all assets from Bank Failure as well as its obligation by Healthy Bank. Afterwards, resolution authority will give incentive to Healthy Bank that takes over assets and obligations of the Bank Failure. Then, the business license of Bank Failure, which its assets and obligations are taken over partly or entirely, will be revoked.

Bridge Bank. In the method of *Bridge Bank*, resolution authority will establish a bank or called Intermediary Bank to accommodate and manage partial asset or all asset temporarily and obligation of Bank Failure. Moreover, this Intermediary Bank will be sold to investor if its resolution process is accomplished. According to Hari Prasetya, this *Bridge Bank* method is the variation of P&A option. The difference is the type of Bank that will manage asset and obligation of Bank Failure. For P&A, the bank that will manage partial asset or all asset of Bank Failure is healthy bank that indeed has operated, while in *Bridge Bank*, the bank that will manage it is a temporarily new-established bank by Resolution Authority.

In the practice of *Bridge Bank* in some countries in the world, when resolution period has ended, the thing sold to investor is not Intermediary Bank, but it is only portfolio of its asset and obligation. Hence, this *bridge bank* practice is similar to establishment of asset Management Company.

Open Bank Assistance. Cited from *General Guidance For Resolution of Bank Failures* IADI, *Open Bank Assistance* ("OBA") is a resolution method in which a Bank Failure gets help from Resolution Authority in form of capital increase, deposit giving, or merger and acquisition. In OBA, resolution authority can place management team to manage bank. This OBA is frequently called *bail-out*. In OBA, it is commonly equipped with process of bank restructurization and also other improvement processes. Generally, this method is chosen to systemic-affected Bank Failure on banking system stability, (Prasetya, 2016) or if failure of a bank causes serious threat for finance stability and economy (William Su, 2006). Even if it is still used in some countries in the world, this OBA method is started to be left. For example, in America in 2010, *The Dodd-Frank Wallstreet Reform and Consumer Protection Act*²³ revokes this OBA option (FDIC, 2014).

In Indonesia's banking itself, handling process of Bank Failure which is the authority of Indonesia Deposit Insurance Corporation, based on Indonesia Deposit Insurance Corporation's Laws, uses two resolution methods: *Reimbursement and Banking Liquidation* and *Open Bank Assistance* which are conducted with Temporary Capital Participation or Merger and Consolidation. However, after Indonesia Deposit Insurance Corporation's Laws is set in April 15 2016, it obtains two additional methods that can be used: *Purchase and Assumption (P&A)* and *Bridge Bank*. The addition of two methods is set in Article 22 verse (1) of Prevention and Handling of Financial System Crisis Laws.²⁴

Judicial Review Supplication by Indonesia Deposit Insurance Corporation. Judicial review Supplication is requested by Indonesia Deposit Insurance Corporation when it conducts systemic-affected Bank Failure's handling, PT. Bank Century, Tbk, which then it is changed to be PT. Bank Mutiara, Tbk. In the process of Mutiara Bank's handling, the resolution method used by Indonesia Deposit Insurance Corporation is OBA or *Bail-out*. One

²³ *The Dodd-Frank Wallstreet Reform and Consumer Protection Act* is a law that sets about the newest America's financial regulation and legalized in July 10, 2010. The arrangement of this law aims to prevent causes of financial crisis in United States of Amerika some years ago. The law significantly influences authority of FDIC in its role as Banking Supervisor, Receiver, and an agency that runs function of Customer's Deposit Insurance as well as causes organizational structure change of FDIC.

²⁴ Article 22 verse (1) of Prevention and Handling of Financial System Crisis's Laws mentions as follows: "Solvency problems handling of Systemic Bank by Indonesia Deposit Insurance Corporation is implemented by these ways:

- a. Transferring a part of or all of assets and/or obligation of Systemic Bank to Recipient Bank;
- b. Transferring a part of or all of assets and/or obligation of Systemic Bank to Intermediary Bank; or
- c. Conducting Bank handling as in accordance with Laws regarding Indonesia Deposit Insurance Corporation."

of actions done by Indonesia Deposit Insurance Corporation with OBA method is operating Temporary Capital Participation²⁵ ("PMS"). Temporary Capital Participation, according to Article 1 section 11 of Indonesia Deposit Insurance Corporation, emphasizes that share selling will be counted as saving cost toward a bank and it is temporary because Indonesia Deposit Insurance Corporation is obliged to sell shares of Bank Failure in certain period with optimum return level.²⁶ Share selling, or it is commonly known divestment, is the selling of securities and/or government ownership either partly or entirely to other parties (Salim, 2013)

Based on provision in Indonesia Deposit Insurance Corporation's Law of Share Selling, bank's share selling can be processed in two methods: strategic sale and/or other methods which do not contradict with prevailing legal provisions and laws.²⁷ This share selling process is also realized openly and transparently by keep considering the optimum return level for Indonesia Deposit Insurance Corporation.²⁸

Share selling processes of Bank Failure based on provision in Indonesia Deposit Insurance Corporation's Laws Number 1 of 2014 regarding Share Selling of the Saved Bank Failure Process ("Indonesia Deposit Insurance Corporation's Law of Share Selling") are as follows:

Investor's Interest Delivery. Share selling process of Bank Failure is initiated with the interest delivery by investor to Indonesia Deposit Insurance Corporation. The investor candidate delivers letter containing statement that the candidate fulfills the desired requirements and other requirements set by Indonesia Deposit Insurance Corporation,²⁹ and has commitment and strong financial independency to fulfill all payment obligation on transaction of Share Selling of the Saved Bank punctually.

Investor Candidate Selection. Selection process of Indonesia Deposit Insurance Corporation is done by giving assessment to investor candidate that has fulfilled requirement as set in Article 7 verse (1) of Indonesia Deposit Insurance Corporation's Laws about Share Selling. Then, from the assessment, it will determine the winning investor candidate and then propose to Financial Services Authority to have fit and feasibility test towards the winning investor candidate.

After accomplishing the tests, Indonesia Deposit Insurance Corporation will determine the winning investor that deserves to buy shares from the Bank Failure.

Payment and Share Transfer. The last phase of share selling processes is payment and share transfer process. The process of payment on share selling transaction of the saved bank can be done by investor gradually or abruptly.³⁰ Then, share ownership of the saved bank sold by Indonesia Deposit Insurance Corporation is transferred to investor after all share selling price is paid. The deliverance of the saved bank is declared to end after share ownership of the saved bank, sold by Indonesia Deposit Insurance Corporation, is transferred by investor.³¹

In the share selling of PT. Bank Mutiara, Tbk by Indonesia Deposit Insurance Corporation in September 12, 2014, Indonesia Deposit Insurance Corporation and J Trust have signed Agreement of Conditional Share Purchase and Selling in which its content agrees that the sold object is all shares of PT. Bank Mutiara, Tbk. Moreover, its share is owned by Indonesia Deposit Insurance Corporation as much 99,9965% and the share is owned by society as much 0,0035%³². The first transfer conducted over 99% share in November 20, 2014, and the remaining 1% share which comprises of 0.996% share of Indonesia Deposit Insurance Corporation and 0,004% share of society will be processed to a Legal Entity of Indonesia if it has fulfilled certain conditions.³³

²⁵ Article 26 of Indonesia Deposit Insurance Corporation's Laws

²⁶ Article 42 of Indonesia Deposit Insurance Corporation's Laws

²⁷ Article 3 Verse (1) of Indonesia Deposit Insurance Corporation's Laws about Share Selling

²⁸ Article 4 verse (2) of Indonesia Deposit Insurance Corporation's Laws about Share Selling

²⁹ Article 7 verse (1) of Indonesia Deposit Insurance Corporation's Laws about Share Selling

³⁰ Article 9 of Indonesia Deposit Insurance Corporation's Laws about Share Selling

³¹ Article 13 of Indonesia Deposit Insurance Corporation's Laws about Share Selling

³² Putusan Mahkamah Konstitusi Nomor 53/PUU-XIII/2015, hal. 39

³³ Annual Report Lembaga Penjamin Simpanan Tahun 2014, hal 23.

At that time, judicial reviews supplicated by Indonesia Deposit Insurance Corporation since at the moment of selling 0,004% share of society, there are issues from related capital market authority set in Article 60 of Limited Liability Company's Laws³⁴ which the main point is that share ownership also grants material rights to its owner. Thus, share owner also deserves to obtain protection on his ownership. According to Capital Market Authority³⁵, if Indonesia Deposit Insurance Corporation conducts selling of remaining 0,0035% share owned by public shareholder, then takeover is executed by state through Indonesia Deposit Insurance Corporation without paying attention on principles of humanities, justice, expediency, transparency, agreement, participation, welfare, sustainability, harmony, and other elements that contradict with Article 28H verse (4) of Constitution of the Republic of Indonesia 1945.

Then, in April 6 2015, Indonesia Deposit Insurance Corporation supplicated judicial review to Constitutional Court. Judicial Review itself is a process of legislation testing. According to Soebечи (2016), Indonesia Law System through judicial review mechanism, the suppliant proposes an objection regarding:

- Law Material that is considered contradicting with Constitution, then objection can be supplicated to Constitutional Court.
- Law Material under law which is considered contradicting with higher laws and provision, then objection can be supplicated to Supreme Court.
- Decision, action, and/or discretion of officials or state administrative bodies can propose an objection to Administrative Court.

What is meant by suppliant based on Article 51 verse (1) Laws Number 24 of 2003 regarding Constitutional Court ("Laws of Constitutional Court") jo. Article 3 of Constitutional Court's Regulation Number No. 6/PMK/2005 (PMK 6/2005) is "Suppliant is the party considering his constitutional right and/or obligation harmed by the prevailing laws, which are as follows:

- Individual Citizen of Indonesia;
- Unity of Customary Law's society as long as it is alive and it is in accordance with society growth and principle of Unity of the Republic of Indonesia as set in Laws;
- Public or private legal entity; or
- State Institution.

Then, what is meant by constitutional right, according to explanation of Article 51 verse (1) of Constitutional Court Law, is "*rights set in Constitution of the Republic of Indonesia 1945, while what is meant by Individual is included into group of people who have same interest.*"

By referring to the provisions above, according to Prof. Dr. Jimly Asshiddiqie (Asshiddiqie, 2010), it can be known that every suppliant must:

- Being one of the four groups of legal subjects as mentioned in Article 51 verse (1) of Constitutional Court Law jo. PMK 6/2005
- That legal subject indeed has right or obligation as set in Constitution of the Republic of Indonesia 1945;
- That right or obligation of the suppliant has been harmed or disobeyed by the prevailing laws or part of the problematized laws;
- That harm is indeed proven as having causality or causal verband by the prevailing laws;
- That if the supplication is granted, and then the constitutional harm of the suppliant can be restored by cancelling the laws.

As one of legal subjects, based on Article 51 verse (1) of Constitutional Court's Laws jo. Constitutional Court's Regulation 5/2005, in principal case of judicial review supplicated

³⁴Article 60 verse (1) UUPT menyatakan : "Kebendaan atas saham sebagai benda bergerak memberikan hak kebendaan kepada pemiliknya. Hak tersebut dapat dipertahankan terhadap setiap orang".

³⁵Sebagaimana dikutip dari pernyataan saksi ahli Bapak Sarjito, SE, SH, MBA Deputy Komisioner Pengawas Pasar Modal I OJK dalam Putusan Mahkamah Konstitusi Republik Indonesia Nomor 53/PUU-XIII/2015.

by Indonesia Deposit Insurance Corporation, supplication of judicial review is based on these following elements:

Article 30 verse (1)³⁶, Article 38 verse (1)³⁷, and Article 42 verse (1)³⁸ of Indonesia Deposit Insurance Corporation's Laws do not grant legal certainty. It argues that those aforementioned articles do not attach explanation of "all bank share". This concretely causes legal uncertainty in selling process of Mutiara Bank handled by it. Furthermore, according to Indonesia Deposit Insurance Corporation, it deserves to obtain legal certainty as stated in Article 28D verse (1) of Second Amendment of Constitution of the Republic of Indonesia 1945³⁹.

There are different interpretations regarding to the meaning of "all bank share" phrase as stated in the provisions of Article 30 verse (1), Article 38 verse (1) and Article 42 verse (1) of Indonesia Deposit Insurance Corporation's Laws: whether it covers all shares both share of Indonesia Deposit Insurance Corporation and society including public society who buys shares in capital market.

The pros and contras of all shares selling of the saved Bank or the handled Bank.

The pros and cons divide opinions into two groups: *first*, the pro group stating that Indonesia Deposit Insurance Corporation has an authority to sell all shares by consideration that if the share selling process cannot be processed, then it can be understood that Indonesia Deposit Insurance Corporation does not obey its own provisions. On the other hand, this pro group also believes that norms formulation in Indonesia Deposit Insurance Corporation's Laws has been mentioned explicitly that it is obliged to sell all shares without exception to society's shares both in norms formulation and in the explanation of the laws. Then, in the arrangement of Indonesia Deposit Insurance Corporation's Laws, there is an obligation for it to conduct bank's share selling with optimum return level. In here, it can be known that Indonesia Deposit Insurance Corporation is required to do some actions in share selling in order to gain optimum results including in the essence of selling all shares of Bank Failure that involves society's shares. It is automatically interpreted as public authority of a state institution in which if Indonesia Deposit Insurance Corporation does not sell bank's shares, then it can be considered that it harms state finances.

Second, the cons group asserts that Indonesia Deposit Insurance Corporation does not deserve to sell society's shares with consideration that selling society's shares is contradicting with constitution mentioned in Article 28 H verse (4) of Constitution of the Republic of Indonesia 1945.⁴⁰ Besides, there is an opinion that even if Indonesia Deposit Insurance Corporation has done Temporary Capital Participation to Bank Failure, it does not eliminate society's share ownership since society does not gain their shares through the process against the law, so that there is no any fundamental reason to eliminate their rights over their shares. However, the fact shows that Temporary Capital Participation makes percentage of society's share value lower.

There is a probability that potential lawsuit may happen toward Indonesia Deposit Insurance Corporation from the society shareholder who has share of Mutiara Bank as much 0.0035%.

Authority of Indonesia Deposit Insurance Corporation after the Constitutional Court's Decision. From decisions and considerations of Constitutional Court as mentioned previously, based on authority, there is not any change of Indonesia Deposit Insurance Corporation's authority in handling systemic-affected Bank Failure. However, there are some things that become implications of Constitutional Court decision as seen from some sides which are as follows:

³⁶ "Indonesia Deposit Insurance Corporation is obliged to sell all saved bank's shares in the period of maximum 2 (two) years since the submission as mentioned in Article 25".

³⁷ "Indonesia Deposit Insurance Corporation is obliged to sell all handled bank's shares maximum 3 (three) years since submission as mentioned in Article 34 letter a".

³⁸ "Indonesia Deposit Insurance Corporation is obliged to sell all handled bank's shares maximum 3 (three) years since the beginning of Bank Failure's handling as set in Article 39".

³⁹ "Every person has a right on recognition, insurance, protection, and fair legal certainty as well as equal treatment before the law".

⁴⁰ "Every person deserves to have an individual right and the right cannot be taken arbitrarily by anyone"

Related to the interpretation of all Shares Selling in Article 30 verse (1), Article 38 verse (1) and Article 42 verse (1) of Indonesia Deposit Insurance Corporation's Laws. Since decision of Constitutional Court does not give new interpretation on "selling all bank's share" phrase in those aforementioned articles, so in conducting share selling of the handled Bank Failure, Indonesia Deposit Insurance Corporation only has an authority to sell share from Controller Shareholder (PSP) on Bank Failure. Besides, public shareholder is not included as a party whose share can be sold by Indonesia Deposit Insurance Corporation.

Related to statement letter of Shareholder. In Article 9 of Indonesia Deposit Insurance Corporation's Laws⁴¹, it is granted an authority to ask for a statement letter from Director, Commissioner Board, and Bank Shareholder when bank becomes the participant of Indonesia Deposit Insurance Corporation. Hence, when bank is declared as a Bank Failure, then it directly can sell shares from Controller Shareholder. However, the problem that occurs here is how if Controller Shareholder of Bank Failure does not make any statement letter? This absolutely implies that Indonesia Deposit Insurance Corporation cannot sell shares from Controller Shareholder since there is no commitment of relinquishing and submitting to Indonesia Deposit Insurance Corporation if bank turns to be Bank Failure and it is decided to be saved by it. Then, the second problem is that it does not close a possibility that composition of shareholder in a bank is the involvement of other shareholder in which Financial Service Authority (OJK) does not include it to qualification of both Controller Shareholder and public shareholder. The shareholder mentioned is not stated clearly in Decision of Constitutional Court Number 53/PUU/XIII/2015. This qualification of shareholder does not buy share from exchange, but its obtaining process can be started from the Closed Company which then turns to be go public. This shareholder absolutely must be viewed as having same position as public shareholder which is both are not included as parties that must state readiness to relinquish and submit their share rights and ownership to Indonesia Deposit Insurance Corporation if bank turns to be Bank Failure and it is decided to be saved or liquidated.

Related to obligation of Indonesia Deposit Insurance Corporation to sell shares with the optimum return level in accordance with regulation of Article 42 verse (3) of Indonesia Deposit Insurance Corporation's Laws. In Indonesia Deposit Insurance Corporation Laws in Article 42 verse (1), it is obliged to sell the handled bank's shares by concerning on optimum return level⁴². By limitation of Indonesia Deposit Insurance Corporation's obligation as explained in section 1, then there is risk potency that it cannot fulfill regulation of optimum return as set in Article 42 verse (2) of Indonesia Deposit Insurance Corporation's Laws. Therefore, it can not be blamed if regulation in Article 42 verse (2) of Indonesia Deposit Insurance Corporation's Laws is not fulfilled.

By comprehending explanation of some implications of Constitutional Court Decision Number 53/PUU-XIII/2015 above, the decision of Constitutional Court viewed from authority, can be stated that it reduces authority of Indonesia Deposit Insurance Corporation in handling systemic-affected Bank Failure, especially in the moment of Indonesia Deposit Insurance Corporation that must conduct share selling process of Bank Failure.

CONCLUSION

Based on the explication aforementioned, it can be concluded that:

⁴¹Article 9 letter a section 4 of Indonesia Deposit Insurance Corporation's Laws states: "As the participant of insurance as mentioned in Article 8, every Bank is obliged to:

a. Submit documents as follows:

...4) Statement letter as set in Article 9 contains statements from Shareholder:

- a) Being ready to relinquish and submit all rights, ownership, membership, and/or concern to Indonesia Deposit Insurance Corporation if bank turns to be Bank Failure and it is decided to be saved or liquidated;
- b) Being ready personally to be responsible for any negligence and/or action against the law that harms or endangers bank's business continuity; and
- c) Committing and being ready to obey all provisions as determined in Indonesia Deposit Insurance Corporation's Regulation...

⁴²Article 42 verse (3) states that the optimum return level as mentioned in verse (2) is at least as much of all temporary capital placement incurred by Indonesia Deposit Insurance Corporation.

By the decision of Constitutional Court Number 53/PUU-XIII/2015, the authority of Indonesia Deposit Insurance Corporation to handle systemic-affected Bank Failure does not change. However, one of the processes of the Bank Failure's handling, which is the process of share selling, Indonesia Deposit Insurance Corporation only has an authority to sell shares of Bank Failure's Controller Shareholder that has made and submitted statement letter as mentioned in Article 9 letter a section 4 point (iii) of Indonesia Deposit Insurance Corporation's Laws.

There is a risk possibly faced by Indonesia Deposit Insurance Corporation in handling systemic-affected Bank Failure which is the unfulfillment of optimum return level for Indonesia Deposit Insurance Corporation on costs incurred by it in handling the Bank.

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DOI <https://doi.org/10.18551/rjoas.2017-06.10>

PLANNED AND MARKET MODELS SYMBIOSES IN PRIMARY SECTORS OF NATIONAL ECONOMIES

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ABSTRACT

Proceeding from the materialistic understanding of human history, analysis results are presented in the article, based on the widely known Socio-Economic Formations conception. Main conclusion, which arises from this analysis, consists in assertion of fundamental role that planned and market models symbioses play in most national economies, characterized by their substantially developed primary sectors. Major other conclusions arrived at in the wake of the analysis are formulated briefly as follows: (1) all existing economic entities in national economies based on their primary sectors are essentially mixed; (2) according to this, national economies are proposed to be classified into three major categories – plan oriented (POE), virtually balanced (VBE), and predominantly market-oriented (MOE); (3) MOE and VBE economy types are estimated as prevailing now, while VBE and POE are presented as presumed strategic World's economic development directions; (4) "Plan vs. Market" economies controversy is asserted to be largely irrelevant to "Capitalism vs. Socialism or Communism" one, which is determined mainly by dominant surplus value appropriation mode; (5) both plan and market-oriented managerial mechanisms are rendered as essentially intrinsic and virtually indispensable for stable functioning and successful development of modern World's economy.

KEY WORDS

Materialist understanding of history, socio-economic formation, primary economic sector, economic models symbiosis, mixed economy, plan-oriented economy, market-oriented economy, virtually balanced economy.

The research described in the article was initiated at late 1980-s and is up to now continuing. Its underlying methodological idea is well-known Materialist Understanding of History, according to which all major historic transformations to large extent occur independently of humans' will and are even not always fully recognized by respective populations [1–3]. Within this idea the Socio-Economic Formation (SEF) conception, developed in its profound features by K. Marx, F. Engels, and V.I. Lenin, is most outstanding [4–6]. SEF conception describes political-economic structure of both previous and existing societies, whose essential core is presented as appropriately matched combination of Productive Forces and corresponding Socio-Economic Relations' patterns that determine social system functioning. Historic replacement of one SEF type by another is believed to be governed by objective mechanisms mostly insubordinate to the individuals' will.

All along the SEF theory existence it was exposed to various sorts of apprehensions and criticisms. In former USSR and modern Russia these assaults have been notoriously persistent at late 1980-s and became virtually deteriorative in the last decade of XX century [7–8], when Russia was painfully experimenting with hastily and recklessly adopted doctrine of so-called Chicago School of Economics. This period was marked by rapidly collapsing domestic economic integrity, which has been eventually reversed to upward trend only after Russia has switched-over to nation-oriented course beginning at early 2000-s.

One of the major challenges concerning SEF theory is that none of these formations has been ever seen in "pure" form. Clear response to this claim has already been done in classics' works. Widely known, for example, is Lenin's remark, asserting that all real SEFs are inevitably mixed as far as among other elements they contain within themselves the remnants of previous formations and prerequisites of future ones. Besides, historic

materialism classics more than once underlined substantially abstract nature of SEF notion, as well as all other scientific notions, theories, models, and laws. Apart from Marxism classics, there are great deals of publications, illustrating this close to universally accepted maxim. With respect to SEF theory it is clearly expressed, for example, in [9], where author in addition stresses the need for every scientific branch to as much as possible streamline its theories, replacing abstract scientific terms by descriptions of their manifestations in practice.

While SEFs are considered to be complex multifaceted political and socio-economic phenomena, appropriate to certain Valuables Production and Acquisition Modes, their economic essence is expressed by various more or less formalized and hence relatively simple models. Two widely known and frequently mentioned modern economic models are Planned and Market ones, which by consensus correspond respectively to Socialist and Capitalist SEF kinds. In more detailed classification schemes intermediate, transitional, and collateral model varieties are being singled out. For example, French scholar Michel Albert in his popular “Capitalism versus Capitalism” monograph distinguishes two capitalist economic models: Anglo-Saxon (liberal) and Rhine (non-liberal) capitalism types. According to this author, Anglo-Saxon model, represented by USA, Great Britain, Canada, Australia, New Zealand, Ireland, et al, is based on markets’ leading role, individualistic ideology, and deregulation. In Rhine model, represented by Germany, Japan, Scandinavian and other European countries, alongside market orientation, noticeable roles are assigned to state organizations, business associations, trade-unions, business networks, and other social structures. This model is characterized by presence of mechanisms that provide higher levels of individuals’ social security, expressed in tangible elements of collectivism, paternalism, and solidarity [10–11].

According to other existing classifications, specified by amounts of state participation in guaranteeing social security and collective patterns of intracorporate management, such countries with lengthy market traditions as Australia, Japan, Scandinavian, and some others are frequently rendered as virtually socialist.

One more criteria set for economic models differentiation are means of production ownership patterns. As is asserted in [12–13], on the background of modern economies’ deepening complexity ever more spheres are arising, where market motivation is either drastically limited or simply impossible. Besides, modern market models are increasingly becoming based on compositions of individually-private, partnership-private, joint-stock, state, and mixed ownership patterns, which urge further economic models diversification.

Growing number of publications are up to now devoted to dual-core or mixed models, which join together planned and market economic patterns. Most graphic demonstration of such models’ virtues is China’s experience, which due to this model’s adoption in historically short period managed to rise from almost scratch to one of the World’s major superpowers. An example of simple and at the same time effective mechanisms of mixed models realization is believed to be public-private partnership (PPP) [14]. Various Russian authors assume that PPP by its enhancing the efficiency of interaction between government, private business and civil society ensures economic growth and socialization of public relationships, as well as helps to solve some other major problems of domestic economy [15–17].

Substantial interest is provoked by publications of those authors, which propose personal variants concerning development and realization of new economic models, presumably more progressive compared to existing ones and simultaneously void of their flaws. For example, prominent adherent of Marxist legacy Harry Ratner critically juxtaposes two theoretic works: of A. Nove “The Economics of Feasible Socialism” (1983) and P. Devine “Democracy and Economic Planning” (1988) [18]. Whereas both authors essentially agree in criticizing Marx’s theory for its outdated character and lack of practical implementations, they substantially differ in prognostic assessments and proposals. The first advocates amalgamating both plan and market mechanisms and blending opposing to each other forms of ownership and control. The other rejects Nove’s “market socialism” and proposes instead a model of planning, which he calls “negotiated coordination”, that envisages employees’ participation in decision-making at all organizational levels.

It's worth mentioning some recent publications in Russian Journal of Agricultural and Socio-Economic Sciences, whose topics closely relate to those discussed above. One of them justifiably reminds of the controversies, unceasingly raging on the question of capitalism vague future and its pending necessity to give way to more balanced and just social organization [19]. The other attracts particular attention by its innovative idea of economy's "market versus plan" orientation measurement with the help of special index, proposed by the authors, whose quantitative value reflects economic activity's direction, determined to large extent by the country's legislation [20].

Article's author contribution to popularizing and development of ideas being discussed is presented in personal monograph [21] and some other author's publications [22–30].

Primary sectors' specifics in national economies. As is demonstrated in [30], primary sector of the World and many national economies is mainly represented by two productive complexes – Agro-Industrial and Mineral (Fig. 1). According to Russian long-standing tradition both complexes are embraced by a wide and versatile notion «Prirodopol'zovanie» (Nature Husbandry). Being akin to its English language version Natural Resources Management (NRM), Nature Husbandry notion is more comprehensive. Alongside with managerial functions it covers also social, demographic, ecologic, and other aspects of natural resources rational acquisition and utilization.

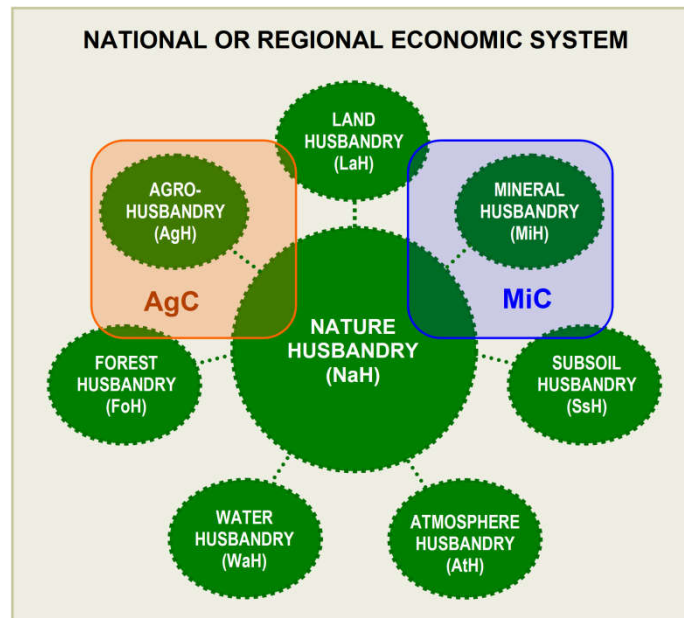


Figure 1 – Agricultural (AgC) and mineral (MiC) complexes' places in national or regional Nature Husbandry systems [30]

In addition to formal attribution to the same category, both complexes are coupled by a number of common features. It's worthwhile mentioning here some of them.

1. AgC and MiC functioning is highly dependent on peculiarities and freaks of natural environment.

2. Both complexes are characterized by invariable attachment of production facilities to locations endowed with appropriate natural resources and other prerequisites.

3. Natural resources exhaustibility and only partial or even totally absent renewability are almost equally characteristic to both complexes.

4. Both complexes are subjected to tendencies identical or similar in their manifestations – rising intensification of production processes, widening their scales and territories involved, etc.

5. Functioning of both complexes is coupled with high impacts, mostly negative, at natural and residential environments. This entails substantial efforts and resources, being allocated for neutralization or compensation of these impacts manifestations and outcomes.

		Liberal market economy's postulates						
		Plurality of producers	Multiplicity of consumers	Interchangeability of commodities and their groups	Production conditions' economic comparability	Absence of non-economic constraints and requirements	Unrestricted production renewability	Free choice of production parameters
Peculiarities of primary economic sectors	Nonrenewability of some natural resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Production facilities location on inalienable territories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Production processes' ecologic consequences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Characteristics' breadth of commodities and services	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Some natural resources' irreplaceability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Diversity of production conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Production processes' exposure to natural factors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Ecologic vulnerability of many production localities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 2 – Discrepancies between primary economic sectors peculiarities and liberal market economy's postulates [22; 23]

Attention is attracted here by the fact that all listed complexes' peculiarities substantially discord with initial requirements inherent to canonic liberal economy's model. For example, exhaustibility and nonrenewability of some major natural resources (item 3 of above enumeration) forces governments to introduce limitations or fully prohibit their industrial development and/or export. Complicated accessibility and poor or totally absent infrastructural adaptation of the territories being developed, as well as their intensive use for residential, recreational, nature conservation, and other socially meaningful purposes (items 1, 2, 5) leave as potentially viable producers of agricultural and mineral-based commodities only those rare firms which have required financial, material, technical, and other resources, and besides necessary experience in appropriate activities.

Listed characteristics substantially diverge with liberal economic model's postulates, which stipulate presence of many producers competing between themselves; comparability of starting and other economic conditions of their activities; interchangeability of market commodities, including those belonging to different tradable groups; conditions availability for free movement of production facilities, commodities, labor force; non-economic leverages absence with respect to producers and consumers; unlimited production renewability.

Some of mentioned AgC and MiC peculiarities that are not antagonistic with liberal economic model's requirements nevertheless impede its full-fledged employment because they dictate non-economic criteria and mechanisms utilization for productive processes management. For example, natural resources localization on inalienable territories urges agrarians and miners to engage with production assets proprietors, most often state or municipal governments, in particular relations that are not envisaged by liberal economic model. Similar effects are provoked by the production processes negative ecologic impacts, diversity of natural environment conditions, complicated accessibility and poor infrastructural procurement of the territories being developed. A simplified pattern of production processes peculiarities divergence with respect to liberal economic model requirements is shown at Fig. 2.

Institutional and functional structures of mineral resources management. While comparing organizational patterns of Mineral Resources Management (MRM) in various countries that in substantial quantities produce and/or consume mineral resources and at the same time belong to different Socio-Economic Formations, their significant similarity aptly reveals itself. Particularly, in developed countries that have predominantly Market-Oriented Economies (MOE) MRM is organized in significantly the same way that in former or modern states, characterized by their Plan-Oriented Economies (POE), among them those that position themselves as Socialist.

At the same time MRM organizational structures of various countries noticeably differ according to their affiliation with concrete SEF types. For example, mineral resources management in plan-oriented as opposed to market-oriented countries is characterized by prevalence of administrative management mechanisms over economic ones. Institutional, infrastructural, and ideological mechanisms of commodity-money relations there are less developed. Besides, different elements of MRM organizational structure are not completely accommodated to dynamically varying economic environment.

Most compatible with market economic model is mining of widespread minerals which is performed without use of complicated technological processes, huge mechanisms, and other bulky production facilities. But even in those circumstances, placer and underground mining of such valuable minerals as gold, platinum, precious stones etc., carried out by individuals and “wild” miners brigades, often rapidly acquires criminal forms and happen to be forcefully liquidated by local or central governments.

Specifics of large-scale industrial minerals production entail that main mineral resources producers and consumers – large and medium-sized firms and corporations – cannot claim to be full-fledged embodiments of market model. Suffice it to say that in intracorporate relations, where affiliated firms and hierarchically subdominant structural divisions participate, principles and rules of undivided authority, beforehand planning, and strict plan realization control are overwhelming. At state level all this is characteristic to planned economy. Nevertheless, firms and corporations, large among them, outwardly act as rightful participants of market relations in their modern, substantially complicated form compared to canonic market model. Market status of these economic subjects is expressed in their administrative independence; self-reliant choice of corporate activities, including their strategic and tactical directions; participation in transactions at national and World markets of assets, information, raw materials, finances, labor force, commodities, and services.

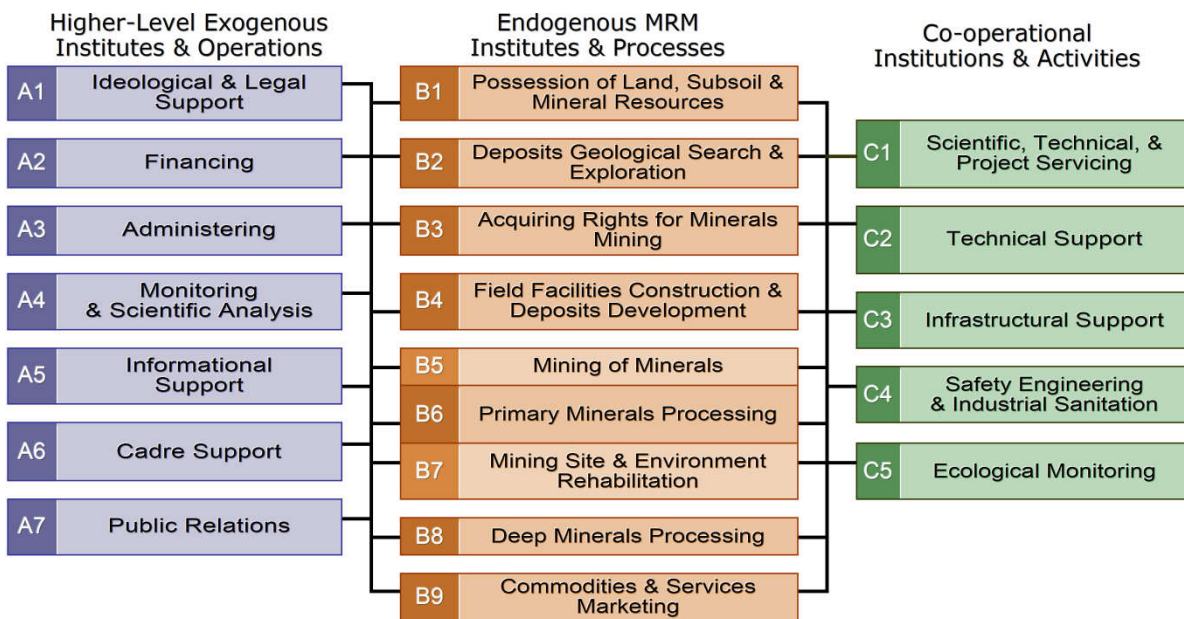


Figure 3 – Institutional and functional MRM-model at corporate and adjacent organizational levels [21; 22; 28]

Formalized description of MRM organizational structure is complicated by frequent and sometimes radical changes occurring there. In market-oriented economies some changes are determined by small and big crisis cycles. Other current changes are conditioned by global tendencies of natural resources exhaustion; World's political and economic topologies evolution; economic, scientific, technical progress; and many others. In their turn, global and local cyclic variations of market conditions entail recurring mutual interchanges between market (monetary) and planned (socially oriented) paradigms. Nevertheless, organizational forms, which are determined by production technologies and levels achieved in economic processes management, during long time periods retain their main features that can be illustrated by Fig. 3 schematic diagram.

At the model's core lies traditional-conventional differentiation of activities pertaining to extraction, processing, marketing, and industrial utilizing of mineral resources. This differentiation is reflected in industrial branches, territorial, and institutional MRM structure at its various organizational levels.

It's worth to note that model's central section, especially blocks B2, B4–B8, are playing almost identical roles in countries belonging to different SEFs, as far as these roles are rigidly determined by existing methods of raw materials industrial development. Nevertheless, at close look some distinctions pertaining to competing socio-economic systems are also revealed. For example, block Possession of Land, Subsoil, and Mineral Resources (B1), whose functions in state-run economies are significantly reduced, in market-oriented economies acquire prime significance. There this block is represented by real private and public owners, which possess, dispose, and/or personally utilize land, subsoil, and respective assets. These property elements are supplemented by traditional social relations and timely upgraded legislation that functions on the basis of adopted realization mechanisms. Natural resources industrial development in such countries most often begins at the owner's decision to practically implement his possessions, after which certain actions are undertaken stipulated by existing legislation and traditions – land and subsoil assets competitive marketing, appropriate companies inviting for geologic prospecting, exploration, designing, mining, processing, logistics, and so forth. In plan-oriented economies similar actions are typically initiated at higher organizational levels and reach production units in the form of adopted projects and plans, usually coordinated with other executive organizations.

Demonstrable differences exist between functions peculiarities, their distribution among MRM-model's blocks (Fig. 3), as well as their institutional realization throughout hierarchical structures of both plan and market-oriented economic systems. In author's publications [21–25] these similarities and deviations are specified in substantial details.

Similarities and watersheds between plan and market-oriented economies. One of key roles in plan versus market-oriented economies division lies in their hierarchical organizational structures. In both countries' groups functions of natural resources management are almost uniformly distributed among all existing organizational levels, including transnational one. At the same time some principal distinctions do exist. With respect to mineral resources management one of them consists in practically total absence of its individually-private form of realization in plan-oriented economies, whereas in market-oriented countries such organizational forms are practically commonplaces at all managerial levels. This manifests itself in that even vast territories together with natural resources located within their boundaries happen to belong to individuals which dispose of these assets at their personal will. Unlike market-oriented economies, where functions of resources ownership and disposal, financing, administering, cadre support, scientific analysis and aligned with it control (fig. 3) are, as a rule, prerogatives of companies themselves or close to them structures at the same organizational level, in plan-oriented economies these functions are typically distributed all along "managerial vertical line".

Substantial difference between two compared economy types lies in the absence of sharp demarcation lines among sectors and branches of market-oriented economies, which is characteristic to former socialist and to some extent modern POE countries. Companies' and corporations' specialization in market oriented economies is realized mostly according to their "know-how" – types of activities that ensure companies' highest competitiveness in

existing economic environment. Proceeding from this, companies emerge which are specialized, for example, in earth-moving, construction, mining, processing, logistics, legal consulting, and so forth. Accordingly, a company that is specialized in earth-moving operations may occasionally conclude contracts with whatever firms and objects that provide its production facilities utilization irrespective of these objects' pertaining to different economic branches.

Peculiarities of natural resources management in market-oriented economies are frequently demonstrated in production diversity, expressed in wide ranges of companies' activities types and spheres and revealed in their simultaneous or alternating operations. Cultivated and constantly kept updated readiness of large companies to switch onto new activities types and wide ranges of their applications serve in market conditions as sufficiently stable guaranties of companies' survival capabilities, competitiveness, and operational stability.

Proceeding from the experience of such developed MOE countries' as Australia, Brazil, France, Germany, UK, USA, et al it follows that national governments' participation in economies' primary sectors functioning is by no means confined to relatively short periods of economic crises and post-crisis recoveries, but persistently continues even in stable economic development conditions. It is exposed particularly in balanced interaction organization between primary and other sectors of national economies; creation, maintaining, and development of transport, residential, social, and other infrastructure types at primary sector objects localizations; rights and interests of primary sector producers' advocating at international markets etc.

In most national governments of traditionally market-oriented countries there are divisions whose functions encompass key management directions of production and commerce. These in particular are ministries, departments, committees of agriculture, minerals mining and utilization, fossil fuels and energetics, environment protection and development, etc. However, those divisions' functioning doesn't include direct administering of companies' and production/commercial units' current activities, excluding those units which are directly affiliated with appropriate governments.

Statics and dynamics of plan vs. Market models symbiosis. In above discussion it was demonstrated that with respect to economies' prime sectors the plan and market-oriented economic mechanisms act rather jointly than unrelatedly. Besides, natural resources management, being realized within competing socio-economic systems, continues to develop upon mutually complementary composition of structural elements belonging to compared economic models.

However, it will be deeply erroneous to contend that modern economy's structure is presented by certain combinations of only two opposing economic models. Quite obvious are presented their elements, not exclusively pertaining to either of the models and instead actually being invariant to both of them (Fig. 4).

In accordance with fig. 4 concise definitions, among factors and tendencies invariant with respect to compared economic models and roughly equally characteristic to both of them there are processes, connected with diversifications and/or consolidations of produced services and commodities, optimization of processes aimed at production costs reducing and goods quality enhancement, and others.

At the other hand, certain varieties of intensive NRM processes are specific primarily within market-oriented economies and nonrelevant to their plan-oriented versions or exist there in trimmed and underdeveloped variants. These are widely spread banking operations and services, massive expansion of operations with equities, free exchange operations with stocks and commodities, operational assets purchases and sales performed by enterprises etc.

As prerequisites and visual proofs of economy's market-orientation strengthening can be considered companies' denationalizations and privatizations. Among other evidences of the same kind are sales of state-owned share packages; development of social, transport, and informational infrastructures at regional and federal levels; relaxation of government control over transborder operations; activities aimed at companies ongoing capitalization;

access alleviating with respect to economic, geological, and other information, necessary in companies' production and commercial activities; informational transparency enhancement concerning NRM subjects' functioning. Toward opposite results lead actions, connected with companies' nationalizations, strengthening of state participation in companies' equity capital management, confidentiality regimes toughening with respect to corporate information, and others.

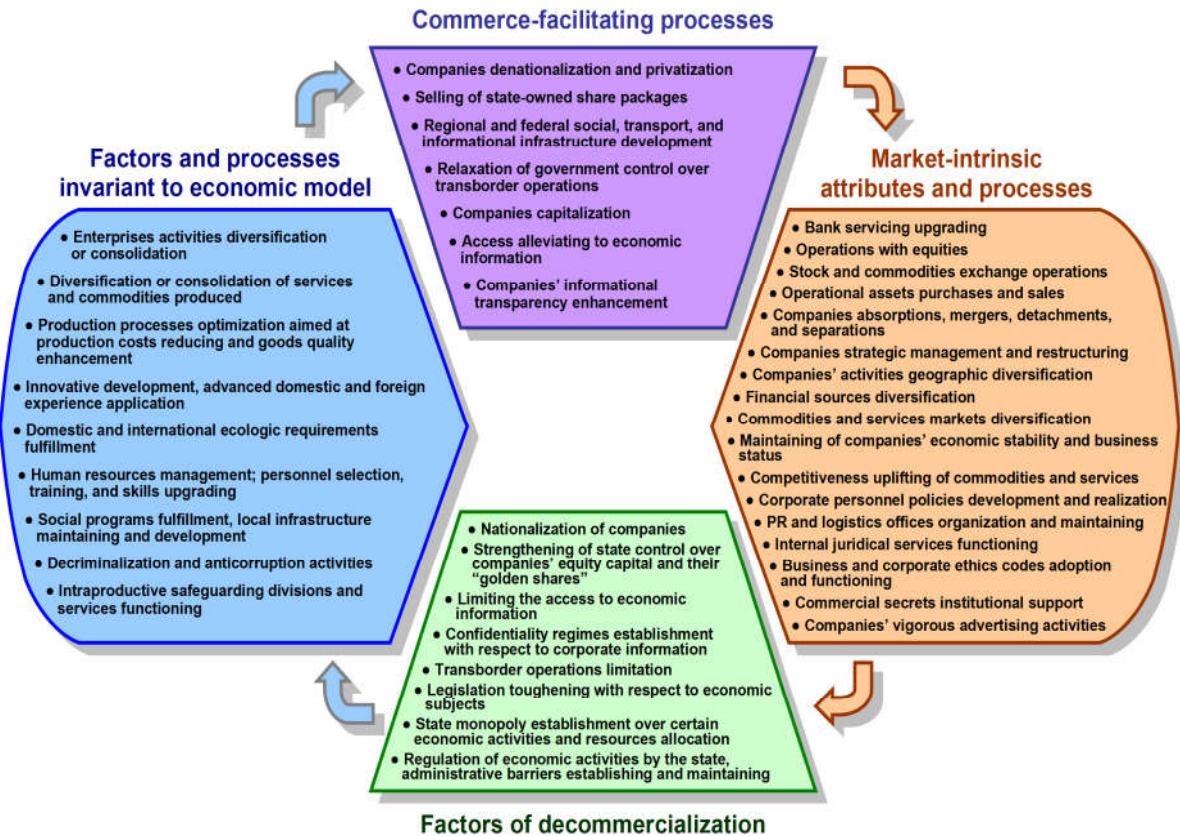


Figure 4 – Interrelations between factors and processes specific and invariant to planned/market economies' controversy [22]

Above specified multidirectional actions and events have also been traced at corporations and enterprises levels. At certain research stages chronologies were composed and arranged, relating to sufficiently lengthy periods and reflecting main actions performed by managements of some major Russian and multinational companies.

As an example, at fig. 5 statistical digest of one such chronology is presented. It depicts squeezed and reorganized chronological statistics of PJSC "MMC Norilsk Nickel" major actions and events [31], beginning from its registration within Russian Federation jurisdiction at 4.07.1997 and ending with agreement signing at 20.11.2006, concerning OM Group Inc's nickel business purchasing. Registered actions and events are presented in generalized form, which reflects their substantive specifics and enables classification according a few major consolidated categories.

Attention at fig. 5 is attracted by significantly prevailing amounts of events and related company's actions aimed at diversification of its various activities areas, and also by its widening and deepening presence in World's economy as active market relations participant. Most significant actions, connected with swapping of property forms, have been represented at analyzed period by four events, directed at public assets privatization in company's favor (item 1.1), whereas at the same time none of the reversely directed events has been fixed (item 1.2). This, as well as other similar comparisons, testifies in favor of company's steady adherence at that time to chosen course toward its market status upholding and strengthening.



Figure 5 – Statistics of PJSC “MMC Norilsk Nickel” major corporate activities and events in 1997–2006 fiscal years [31]

Generally, MMC Norilsk Nickel activities at analyzed period were characterized by corporation's clearly expressed commitment to completely integrate into market economy's environment, which was profoundly stimulated then by steady World economic development, prior to breaking out in 2008 of worldwide financial-economic crisis.

CONCLUSION

According to one of the confronting ideas, persistently advertised by unlimited liberal market advocates, any direct government meddling into companies' activities immediately or ultimately, but inevitably leads to slowing its economy's development and dropping down of its attained level. Their adversaries quite reasonably contend that all-embracing liberal

markets, first, never have been seen in history and, second, once being realized will unavoidably lead to destructive economic depressions, sectoral and overall crises, commercial, financial, inter-corporation and full-fledged wars, as well as other well-known and not less significant economic, social, and ecologic disasters.

Meanwhile, current popular apprehensions concerning market versus planned economic models' alternatives are as a rule far from adequate. For example, most modern economically developed countries, traditionally positioning themselves as "free market worship models", are once and again demonstrate their far from market behavior by applying various politically motivated sanctions against their unfavored market competitors, introducing restricting and forbidding measures concerning chosen groups of commodities and countries, ousting from their own territories toward so-called "third-world" countries those production facilities and whole industrial branches that are less profitable, more labor-intensive, and ecologically unsafe.

As far as primary economic sectors are concerned, practically in all appropriate countries, including market-oriented ones, states as a rule substantially intrude into market players' functions. Specifically, in governing bodies of above-mentioned countries at different administrative levels there are divisions, vested with managerial functions with respect to productive and commercial activities in various economic spheres. Most Western countries, unshakably accustomed to their self-esteemed market posture, financially and otherwise support their primary economic sectors, which takes shape in widespread patronizing or outright financially subsidizing their agricultural or mineral complexes, and so forth.

Two economic models effective joint functioning is clearly confirmed by China, Belarus, and other countries that adopted and are practically implementing the idea of "one state – two systems". In China, for example, this idea, alongside with socialist-market economics theory, became one of major components during national economy reforming in "socialism with China's specifics" direction [32, p.19]. Since the turn of the century up to now it procured 7-fold growth of China's economy, converting it into second most powerful World's economies.

One more graphic proof of plan and market economic models dynamic symbiotic coexistence are, perhaps, multidirectional property forms swappings that in last decades became quite common, particularly in mining industries of such countries, as Great Britain, Germany, SAR, and others. It's worthwhile to note that these swappings in most cases were made in accordance with appropriate governments' decisions, based on preliminary exhaustive calculations and wide public discussions. Excluding former Socialist countries and so called Peoples Democracies, swappings' directions were both "market-wise" as well as "plan-wise". There were some cases when opposing swapping directions sequentially changed places.

Confining analysis scope to those countries whose economies substantially rely on primary sectors, research results can be briefly expressed as follows.

1. Both market and plan economic models in their essence are theoretic abstractions, which were never seen in "pure" forms and are practically embodied now in multiple "meshed" realization versions that combine in various proportions universal and specific mutually opposing managerial mechanisms. In rough accordance with "market" versus "plan-oriented" mechanisms proportion, real economic entities at national, regional, or corporate levels are skewed predominantly towards "market" or "plan" overall economic patterns.

2. Existing national economies, at least those substantially dependant on their primary sectors, are without any exceptions essentially mixed ones, combining in various proportions specific plan and market-oriented managerial mechanisms. According to this, national economies are proposed here to be classified onto three main categories: predominantly or at least intentionally plan-oriented economies (POE), virtually balanced economies (VBE), and traditionally or circumstantially market-oriented ones (MOE).

3. According to rough preliminary estimates, MOE and to some extent VBE model types are most common in modern national economies. At the same time overall strategic development is being directed now to VBE and ultimately POE types. The later is particularly

necessitated by rapid and aggravated natural resources depleting, incompatible with the World's dashing population and consequent consumption growths.

4. "Plan vs. Market" economies controversy is to large extent irrelevant to "Capitalism vs. Socialism or Communism" one. The later is determined now, as it was in previous centuries, by the mode the surplus value, developed in production and commercial processes, is appropriated, distributed, and ultimately used. In both modern POE and MOE countries there are vast varieties of elaborated mechanisms, to large extent capable to properly arrange surplus value management, thus minimizing existing distance between two competing economic systems and enabling their smooth joint transition into forthcoming socio-economic formation, more socially just and simultaneously economically effective and stable.

5. As far as national primary economic sectors are concerned, both plan and market-oriented managerial mechanisms there are not only competing, but essentially serve as inseparable intrinsic parts of sectors' inner economic structures, enabling their stable functioning and successful development in competitive market environment. Consequently, one of the main tasks of every substantially developed company's and, moreover, national economic managements are timely adjustments of their plan-to-market mechanisms' balances so that they precisely and dynamically fit to current and anticipated forthcoming economic fluctuations and drifts.

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POLICY IMPLEMENTATION OF MASTERPLAN E-GOVERNMENT AT ADMINISTRATIVE VILLAGES IN PROBOLINGGO

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ABSTRACT

In order to realize good governance, public service execution is a primary indicator in assessing local government performance. To increase the quality of local government service, it needs to be accentuated facilities, efficiency, and effectiveness principle so the community can easily get a quality service. One of elements of public service quality improvement is the implementation of information technology-based E-Government. This study aims to describe and analyze policy implementation of Masterplan E-Government and supporting and barrier factors of E-Government implementation at administration villages in Probolinggo. This focuses on (1) Masterplan e-Government implementation in Probolinggo and (2) supporting and barrier factors in the E-government implementation in Probolinggo. The result shows that Masterplan implementation has been running on in Probolinggo including at an administration village with the supporting an barrier factors in its implementation.

KEY WORDS

Policy, implementation, masterplan, e-government.

Democracy and local autonomy establishment bring changes and claims on the government to always be able to answer a dare related to the public service. Through the improvement of public service and community participation empowerment, local government is expected able to increase creativity, innovation and with its commitment tries to improve the quality of public service. In order to realize good governance, public service execution is a primary indicator in assessing local government performance. One of elements of public service quality improvement is the implementation of information technology-based E-Government.

Information technology as an equipment in performing public service is right now needs and demands in each government agency giving public service. The purposes of E-Government-based service are the determination of time and low cost in its performance. E-Government performance in Probolinggo is actually started by being issued Presidential Instruction (Inpres) No. 3/2003 concerning National Policy on E-Government Development. After being issued the Inpres, Probolinggo government has been running its implementation. A number of efforts has been done in order to perform E-Government in Probolinggo like providing more network connectivity. But then information technology development related to the application and network provision to support Local government Organization (OPD) service performance is not maximal yet.

In 2010, Probolinggo government issued the Probolinggo Mayor Regulation No. 35/2010 on Masterplan E-Government in 2010-2029 as an effort to performance acceleration of E-Government with information technology development. This regulation is expected to encourage E-Government performance acceleration in providing public service. The same goes for the condition of Masterplan E-Government implementation supporting public service performance at administrative village level. An Administrative village as a unit of organization under the sub district or part of it has strategic positions and functions in performing public service executed by Probolinggo government. A lot of barriers faced by administrative village in executing Masterplan E-Government has to become a concern from Probolinggo government. Those barriers are a low means of support, there is no integrated data yet in the

integrated system and infrastructure at an administrative village which is not up to standard both software and hardware. Moreover, the executors are not suitable with the competency needed and there is not yet budgetary policy focused on the maintenance of information technology system that supports service in an administrative village.

METHODS OF RESEARCH

Perspective used in this research is qualitative descriptive research. This means to illustrate and dig into the facts that are not revealed yet along this time that is then explained and applied so known the real illustration. According to Patton (1980: 303) a case data (qualitative) is consisted of all information about the case owned by someone.

Description is an objective representation of captured phenomenon. This research focuses on (1) Policy implementation of Probolinggo related to the Masterplan E-government. The researchers try to see the policy implementation carried out is suitable with the Probolinggo Mayor regulation No. 35/2010 on Master plan e-Government in 2010-2019. Description and Analysis uses policy implementation model of Edward III, at which seen from the variable (a). An effective communication b) Sources (having been seen from strategic plans of district service units (Renstra SKPD), main duties and functions (Tupoksi) and cooperating with private sector); c) Disposition/executing agent attitude and d) bureaucratic structure (programs and activities performed), (2) supporting and barrier factors in the implementation.

This study was conducted at Information and Communications Agency, Kedungasem Administrative Village, Kedungasem Subdistrict Probolinggo and Curahgrinting Administrative Village Kanigaran Subdistrict Probolinggo. Type of data used are primary data which might take form of individual respondent and focus group, in addition internet can also be a data resource if the questionnaire is spread through internet (Uma Sekaran,2011) and secondary data from company's note or documentation, government publicity, industrial analysis from media, website, internet and etc. (Uma Sekaran, 2011). The data are collected from informant, social condition or circumstances and related document.

Data collection techniques used are deep interview, observation, documentation. To decide trustworthiness is needed data checking methods based on the several criteria. According to bachri (2010:55) there are four kinds of criteria, namely (1) credibility, performed by a) observational studies; b) improving persistence; c) Triangulation and d) references, (2) transferability, (3) dependability and (4) confirm ability. Data analysis techniques in this study consisted of data collection, condensation, data presentation, and conclusion by Miles and Huberman's model

RESULTS AND DISCUSSION

Policy Implementation of Masterplan E-Government in Probolinggo. Masterplan E-Government performance in Probolinggo is being performed based on the probolinggo Mayor Regulation No.35/2010. Variable used in this implementation process is accordance with the implementation model of Edward III, they are as follows.

Communication. Communication is a process of delivering information from communicator to communicant. This is related to the substance of the policy that has to be implemented. Policy information needs to be delivered to the policy executing agent to make his/him know, understand what becomes content, goal, direction, target group so the policy executing agent can prepare correctly what has to prepare and do to perform public service so that the result is like what expected. Communication performed may take form of consultation or coordination meeting. It has been running by Probolinggo Communication and Information agency, but consultation and coordination executed is not performed yet. It causes since the subordinates cannot perform yet commandments and clues delivered by the supervisor. In addition, the leader often misses coordination meeting so the strategic decision in the Masterplan E-Government cannot be made. Commitment is truly important in the implementation of appointed policy.

Resources. Such a resource is the authority owned by Communication and Information agency. It is related to the renstra, tupoksi, and cooperation with private sector. There have been contents in the Renstra arranged of a implementation framework of Masterplan E-Government policy in Probolinggo. However, it needs reinforcements on a field directly handling the implementation of Masterplan E-government, so that in the future budgetary plans, activity and program can be arranged with the needs in the E-Government development framework. For that reason strategy and well-arranged target is needed. Strategy that has been there in the renstra of Communication and information agency should be able to implement in order to overcome barriers in the implementation of Masterplan e-Government. For that reason, management in performing arranged Renstra is needed so can be realized purpose and target of policy especially in term of implementing Masterplan e-Government.

Determination of jobs and responsibilities (called as “*tupoksi*”) of a unit of organization becomes legal framework of the organization itself in performing activity and at the same time is as the warning signs in the performance of duties and coordination of an application at field. *Tupoksi* has been performing by Communication and Information agency, but not all related to the implementation of Masterplan E-Government can be performed in the program and activity. This is much influenced by several factors in the process of planning and budgetary ceiling. For that reason, performance of main duties and functions in an organizational chart has to be realized into activity that will help organization reaches vision, mission, goal and target has been decided. While in its authority to perform cooperation with private sector in order to Masterplan E-Government acceleration, Communication and Information agency has performed strategic cooperation with PT.INDOSAT Tbk. Yet, the cooperation was just started at the end of 2016, so that cooperation with private sector in term of accelerating Masterplan E-Government performance is performed after waiting for 6 years and evaluation cannot be performed yet since the cooperation runs less than one year.

Disposition/Attitude. Personnel positive attitude performing activity in term of implementing masterplan E-Government extremely helps in performing duties. This positive attitude is formed through staff meeting held routinely and group discussion held in order to find a solution. However, high work motivation cooperation among personnel has to be balanced by giving reward to the personnel of high performance so positive attitude can be kept up.

Organizational Chart. The result discussed above shows that organizational chart related to the program and activity performed in term of implementing Masterplan e-Government policy. With the organizational chart owned, programs and activities executed in term of implementation have been carried out from 2013 until 2016. Probolinggo local budget is getting increase, this shows commitment and consistency of probolinggo government in implementing Masterplan e-Government. However, it needs a program evaluation and performance-based activity.

Supporting and Barrier Factors in Implementing Masterplan E-Government Policy. In this research, supporting factor of Masterplan E-Government implementation is the existence of an institution specially performs Masterplan E-government implementation at administrative village namely Communication and Information agency. This is important since through the institution or organization, duties or function to develop E-Government at administrative villages in probolinggo can be handled. Institutional existence factor playing role as an executing agent in the implementation of a policy gives an important meaning since through the institutional specially performing particular function will accelerate the process of goal achievement from appointed policy. Barrier factors consisted of:

Inadequate facilities and infrastructure. This factor includes network used in the connectivity is not maximal enough, while the equipment used on information system-based service is not accordance with needed specification. It needs a discourse related to the network while considering areal typology and document arrangement of expenditure plan and maintenance plan.

Inadequate human resources. From the quality and quantity side, the existence of human resources is inadequate. It must have a base location system and administrative

village's employment transfer managed well. The existence system does not take administrative village side yet so the administrative villages' personnel are able to run its function in providing service to the community. Supervision to the administrative village's personnel also needs to do periodically through technical mentoring session (*Bimtek*) and education and training (*Diklat*).

Inadequate Budgetary. Having position under the subdistrict, administrative village budget is a part of sadistic budget and it is only office and operations budget. There is no technical and synergies budget with program and activity budget of technical agencies. Adequate budget allocation will help administrative village in performing public service function-based information technology development. It needs a policy related to the existing budget in the administrative village, so that it can synergize with technical agencies in the implementation of E-Government Masterplan policy.

CONCLUSION AND SUGGESTIONS

Based on the research, it can be concluded as follows:

Policy implementation of Masterplan E-Government at administrative village has been performing if seen from the existing focus: effective communication, sources available, disposition or attitude and organizational chart. But then in the performing stage it is not maximal yet. Several reasons are communication performed cannot be followed up by subordinates, the lack of commitment, vision/mission related is not all performed, cooperation carried out is not maximal yet, there is no clear reward system yet to the personnel of high achievement, program and activity executed is evaluated based on the performance.

Communication and Information agency is the organization which executes Masterplan E-Government performance. A lot of factors who becomes barrier in the implementation of Masterplan E-Government policy at administrative village level are facilities and infrastructure, which are not supported yet, the lack of quality and the number of human resources, and there is no budgetary support.

This program needs network mapping document, synchronization and synergy of program and activity, evaluating and monitoring program and activity periodically, discourse on areal typology-based network, human resources planning at administrative villages and budgetary planning took administrative village side.

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DOI <https://doi.org/10.18551/rjoas.2017-06.12>

INFRASTRUCTURE, REGIONAL ECONOMIC GROWTH AND POVERTY: GERBANGKERTASUSILA EAST JAVA PROVINCE, INDONESIA

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ABSTRACT

This study is aimed to identify the direct effect of government spending (education, health, and infrastructure) towards poverty, as well as indirect effect towards government spending and poverty through regional economic growth in Gerbangkertasusila, East Java Province. This study utilized path analysis during the 2009-2015 research period. Research result exhibits that government spending in education, health, and infrastructure sector tends to give direct impact to poverty scale, in particular, direct government spending on infrastructure contributes significantly to poverty scale in the Gerbangkertasusila region.

KEY WORDS

Government spending, regional economic growth, poverty scale, path analysis.

Economy growth is an appropriate indicator to describe development progress in a territory. Government policy was made to encourage economic growth, among others is investing in a variety of the public's capital. One of them is the form of development called infrastructure. Other than that, human capital such as science through education. Education plays an important role in reflecting the quality of a human being. Education is capable of broadening one's view, mindset, and creativity. In producing qualified human being, health plays an important role, therefore human can perform its activity productively. In enhancing quality, health is one of the human capital spendings to substantiate the development of human being, all at once has indirectly had an important role in public economic growth condition. In economic activities, economic growth indicates physical production and service development applied in one country, such as the increase in the total production of industrial goods, infrastructure development, the number of schools, production of the service sector and capital goods (Sadono, 2010).

The government's role, such as government expenses in the form of spending and investment, are the government's tool of intervention to economic development which is considered effective.

Established Fiscal Decentralisation aimed to enhance and leveling the public welfare. As well as enhancing regional autonomy, minimizing government subsidies, and performing equitable development for each region. By applying the regional autonomy system and fiscal decentralization, the central government authorizes the regional government to manage the regional revenues independently, to increase public welfare by developing its regional economic development. This is in line with Sulistyowati (2013) stating that policy in increasing spending in education, health, and infrastructure in the same value will increase employment in all sectors, thus reducing poverty. The government's policy in increasing its spending caused significant impacts, such as in healthcare and infrastructure.

In other words, the government spending is not only to determine poverty issues but also become an incentive to economic growth prospect in the region. The routine budget plays an important role in supporting government mechanism system to run well, as well as for as an effort to enhance efficiency and productivity possessing goals and objectives at the development level.

Economic growth and poverty are important indicators to determine the success of development in a region which endeavor to achieve economic growth without prejudice to discourse such as priorities on education, health, and infrastructure spending. In development matters, the government needs to consider how important it is to develop

infrastructure sector, particularly in Java territory to support the sustainability of spending and balanced development throughout the country. Mankiw (2003) stated that economic growth will result in additional public income in one certain period because economic activity is a process of using production factors to produce output, then this process will, in turn, produce a flow of remuneration to production factors owned by the society.

Infrastructure spending is government capital spending in the form of budget expenditure for fixed and other assets acquisition that provide multipliers on fiscal benefits to anticipate a wider impact of regional economic growth. Correlated to public welfare, high economic growth and low poverty reflect better public welfare rate. According to Keynesian stream, economic development exhibits existence of mutual economic growth and government spending. This is due to the improvement of economic performance by increasing the infrastructure budget, the development of megapolitan transportation, which aims to manifest equal development distribution between the regions, especially in East Java, and generally in eastern Indonesia. By increasing public welfare and life quality, higher and proper level of education is needed, encouraged by a secured health and infrastructure development will carry economic development well and lower poverty level.

This study explains the direct and indirect effect of government spending to poverty level through regional economic development. This study aims to direct analyze government spending in the education, health, and infrastructure sectors towards regional economic growth. Secondly, indirectly analyze government spending education, health, and infrastructure sectors to poverty level through regional economic growth in Gerbangkertasusila in East Java.

LITERATURE REVIEW

This study is focused on the fiscal decentralization theory, based on the *fiscal federalism theory* developed by (Hayek, 1945), his theory emphasizes that economic growth can be achieved by way of decentralization, by delegating authority of the central government to local governments to regulate their own territory or commonly called regional autonomy (*otda*).

Development aims to accelerate regional economic growth and encourage the improvement of public's welfare and accelerate fiscal incentive given to the society (Shah, 1994). By accelerating public welfare it is expected that it will affect poverty level, thus enabling the region/territory to be self-supporting. To that end, the government creates policy to achieve success in regional development, exhibited through government spending in education, health, and infrastructure expenditure.

According to Keynes, the government policy may affect aggregate demand (thus affecting the macro situation) approaching full employment position, formulated in formula:

$$Y = C + I + G,$$

Where: Y = revenue, C = Household Consumption, I = Companies Spending, G = Government Spending.

It is explained that to achieve an economic growth level in one country, the Government intervention is needed in the form of government spending. Where the government spending may be allocated to many sectors, either in the form of routine expenditure or even development expenditure. To avoid stagnation in the economy, the government strives to enhance the total number of government spending (G) to a more higher level than the national income until it could compensate the tendency to consume (C) in the economy (Dumairy, 1997)

Generally, economic growth rests on the PDRB, recent economic growth is directly based on government policy through fiscal decentralization utility program. Where the said government program promotes poverty reduction, reducing inequality income distribution, and decreasing unemployment rates. Structural transformation is a provision to increase and

sustain growth, as well as reduce poverty rate and supporting sustainable development itself (Todaro, 1999).

By allocating government spending, it is expected that it will increase the regional economic growth as well as decrease the poverty level in Gerbangkertasusila area. Todaro and Smith (2010) stated that health and education are inputs for national production function in its role as the human capital component, meaning that productive spending in human resources, has its own target to increase growth and economic development to reduce the poverty rate. (Monday et.al 2014) Similarly stated that government spending on infrastructure sectors such as roads, communications, electricity, etc. can reduce production costs all at once increasing private sector spending and the probability that companies are able to boost economic growth and reduce the poverty rate.

Economic growth and the low poverty rate is not development's final goal. Instead, its priority is to prepare the people as qualified human resources by establishing *inclusive growth* program (Tambunan, 2016), becoming a more inclusive economic development. Opening access to every member of society to all available opportunity, until regional income or regional welfare are increased, as well as lowering poverty rate.

Sennoga (2010) states that the composition of public spending and its aim in increasing economic growth and reducing the poverty rate in developed countries, requires decreased efficiency in public sector by reallocating non-productive public expenditure such as public administration and security, giving more emphasize in productive sectors causing high GDP growth rates and accelerating poverty reduction.

Menyah (2013) stated proof of long term relation between government spending and PDB, to support Wagner's hypothesis from public sector development. Development of government spending towards income proofs exhibiting Keynesian view on "*expenditure can be an effective policy instrument to accelerate economic growth*" until it is suggested to form a fiscal policy as the stabilizer to enhance the economic growth. Osundina (2014) claimed that government expenditure on infrastructures such as buildings and construction caused a negative effect but significant to reducing poverty.

An empirical study of Khan's case (2015), requires a promotion to social expenditure such as for education health and social with great portion allocation from budget needed for public welfare for the sake of equal development.

METHODS OF RESEARCH

This study utilized path analysis method. This method was used to analyze both direct and indirect relation. Path analysis technique was used to test large contribution shown at path coefficient at path diagram based on a causal relation between variables. The direct impact which is the direction of the relation between two variables without a go-between of another variable (Pardede & Manurung, 2014).

This study utilized secondary data from 2009 – 2015. Data used is a panel data in Gerbangkertasusila area covering 7 Regencies/Provincial Cities in East Java: Gresik Regency, Bangkalan Regency, Mojokerto Regency, Mojokerto City, Surabaya City, Sidoarjo Regency and Lamongan Regency.

This study utilized different t-test independent sample to prove that each group is statistically different. Chow test and Hausman test were used to identify a precise regression. Normality test (Jarque-Bera) is used to ensure that data is normal in scale. This study involved classical test assumption in autocorrelation form (Durbin-Watson) and heteroscedasticity (Park test). This study utilized standard data with z-score. Regression Analysis is performed using Eviews7.

Based on diagram above, EDU is the ratio of government spending on education to total expenditure (in percentage); HLT is the ratio of government spending on health to total spending (in percentages); IF is the government spending ratio in infrastructure to the total spending (in percentage); EGR is a regional economic growth (in percentage); and PVT is the poverty level (in percentage). Below are research's structural equation.

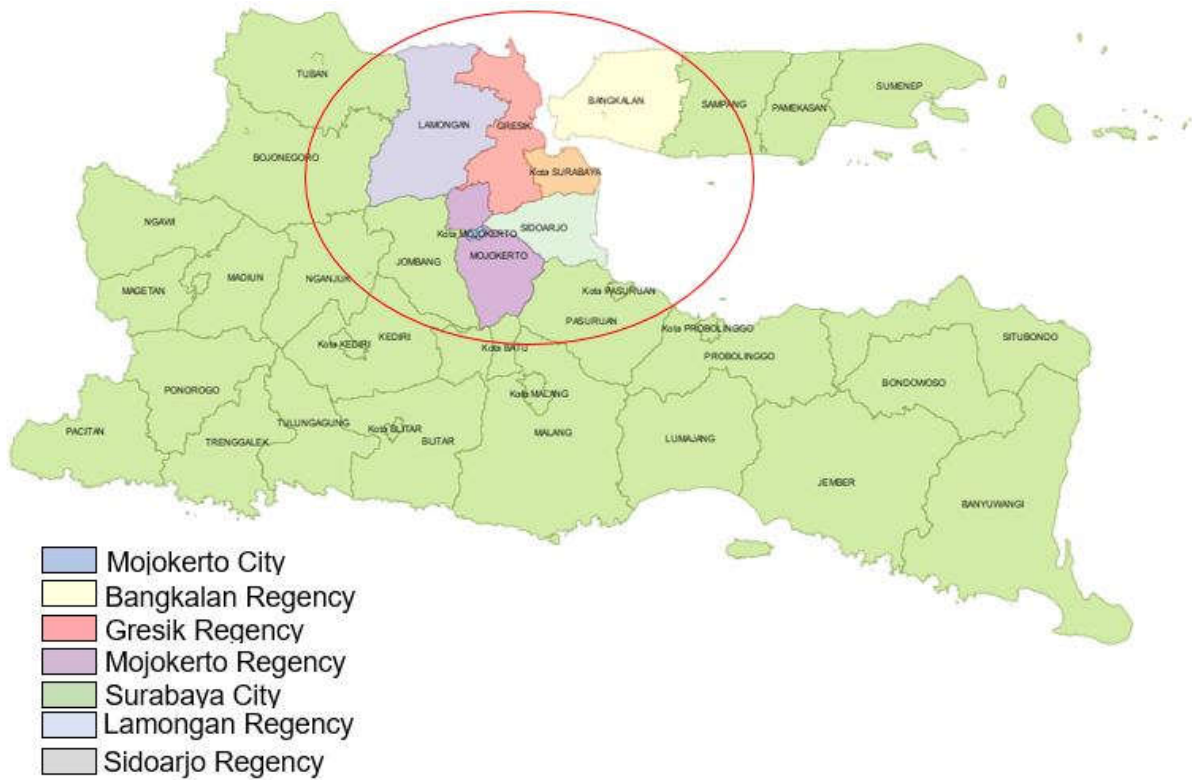


Figure 1 – Research Site

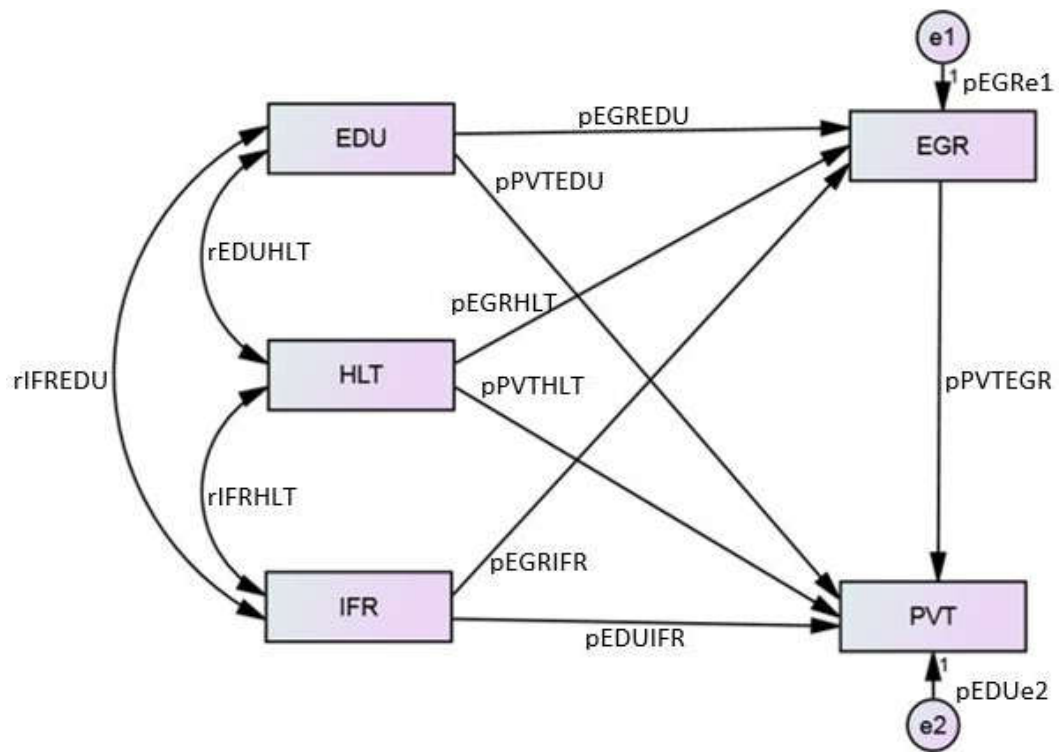


Figure 2 – Path Analysis Diagram Model

The substructure equation 1 of government spending directly affects regional economic growth:

$$\begin{aligned}
 EGR &= \rho EGREDU \text{ EDU} + pEGR e1 \\
 EGR &= \rho EGRHLT \text{ HLT} + pEGR e1 \\
 EGR &= \rho EGRIFR \text{ IFR} + pEGR e1
 \end{aligned}$$

The substructure equation 2 of the regional economic growth directly affects poverty level:

$$PVT = \rho PVTEGR EGR + \rho PVT e_2 e_2$$

The substructure equation 3 of the government spending affects directly poverty level:

$$PVT = \rho PVTEdu EDU + \rho PVT e_2 e_2$$

$$PVT = \rho PVTHLT HLT + \rho PVT e_2 e_2$$

$$PVT = \rho PVTIFR IFR + \rho PVT e_2 e_2$$

The substructure equation 4 of the government spending affects indirectly poverty level through regional economic growth:

$$PVT = (\rho EGREDU EDU \times \rho PVTEGR EGR) + \rho PVT e_2 e_2$$

$$PVT = (\rho EGRHLT HLT \times \rho PVTEGR EGR) + \rho PVT e_2 e_2$$

$$PVT = (\rho EGRIFR IFR \times \rho PVTEGR EGR) + \rho PVT e_2 e_2$$

RESULTS AND DISCUSSION

Data Description. By using poverty (PVT) and regional economic growth (EGR) as endogenous variables and ratio of government spending on education (EDU), health (HLT), and infrastructure (IFR) as exogenous variables. Table 4.1 exhibits average value of five variables in Gerbangkertasusila region. This indicates that the average value of all variables fluctuates. The decrease is in 2013-2015 for EGR, EDU, HLT variables while PVT increased in the same period.

Tabel 1 – Average PVT, EGR, EDU, HLT, and IFR in Gerbangkertasusila (2009-2015 period)

Territory	Year	PVT	EGR	EDU	HLT	IFR
Gerbangkertasusila	2009	14,90	5,00	12,69	11,68	11,57
	2010	13,90	6,60	12,82	11,78	11,40
	2011	12,97	7,03	12,78	11,95	11,67
	2012	12,19	7,23	12,85	11,54	12,03
	2013	11,96	6,77	13,26	12,03	12,42
	2014	11,52	6,58	13,06	12,52	11,88
	2015	12,16	5,92	13,00	12,49	12,85

Source: The Statistic Body for East Java Province and The Directorate General of Financial Balance 2009-2015 (processed data)

Tabel 2 – Regression results of substructures I to IV

n/n	Variable	Standardized Direct Effect	Standardized Indirect Effect
Substructure I	EDU → GER	0.069294	-
	HLT → GER	0.111448	-
	IFR → GER	0.154370	-
Substructure II	EDU → PVT	-0.026190	-
	HLT → PVT	-1.320888	-
	IFR → PVT	0.154370	-
Substructure III	GER → PVT	-1.880981	-
Substructure IV	EDU → PVT → GER	-	-0.130340
	HLT → PVT → GER	-	-0.209631
	IFR → PVT → GER	-	-0.290367

Note: significant $\alpha = 5\%$, Substructure I = direct effect; Substructure II = direct effect, Substructure III = direct effect, and IV = indirect affect.

The high and low level of data in the table exhibits that there are still many problems affecting public welfare in Gerbangkertasusila area, one of which is in 2014 due to presidential term change in the Republic of Indonesia. The event caused the government

budget expenditure spent more for the interest of the country than the public interest. Other than that it is also caused by the disturbance in the global economy, but Gerbangkertasusila is still above national average.

On different test using independent sample t-test with $\alpha = 5\%$. The results exhibit probability in each of the Regency /City groups is $0.000 < 0.05$. Examination utilized normality test Jarque-Bera with $\alpha = 5\%$. The result of each group exhibits probability is more than 0.05 . Autocorrelation test used Durbin-Watson test (DW) with $\alpha = 5\%$ resulted in each group exhibiting $DU < DW < 4 - DU$. It indicates that there is no autocorrelation. Heteroscedasticity test using Park test with $\alpha = 5\%$, the result in each group shows probability > 0.05 until there is no heteroscedasticity.

Direct Effect Of Government Spending to Poverty. The result of regression from the direct effect of government spending in the education sector, health and infrastructure to poverty, is exhibited in Table 1.2 (Substructure II). In Gerbangkertasusila, government spending affected directly and significantly. Government spending aimed at education and health sector when regional government budget is increased, resulted in decreased poverty level by 1%. Government expenditure on infrastructure sectors did not affect poverty level, but it is still in safe position.

This condition is caused by government spending on infrastructure sector which is a positive contribution for Gerbangkertasusila and is able to decrease the poverty level by 29%. Infrastructure plays an important role as public access for basic daily life needs. Especially with roads, bridges, access to clean water, electricity, and habitable housing facilities. In addition, infrastructure spending can be enjoyed directly by Gerbangkertasusila region population directly without waiting for a long time. A similar condition occurred to government spending in education and health sector.

Gerbangkertasusila infrastructure development, especially in East Java Province can be said to be developed evenly, it is proved by economic growth level which is increasing every year. The economy experienced equity. The result of this study substantiates Osundina Research (2014) in Nigeria, which stated that the government spending for infrastructures such as buildings and construction have a negative effect and significant in reducing poverty. The Nigerian government was suggested to keep on maintaining a stable government expenditure for buildings and construction to accelerate reducing poverty in the years to come.

Indirect Effect of Government Spending to Poverty through the Regional Economic Growth. The regression result of government spending's indirect effect on education, health and infrastructure sectors to poverty is exhibited in Table 1.2 (Substructure II, III and IV). Odhiambo's view (2015) stated that there is a causal relation between government spending and economic growth, such view is in line with Keynesian theory. To achieve good economic growth in a country, there are three mandatory sectors such as education, health, and infrastructure (public works and spatial planning) that ought to be well allocated. On the second point of view, he states that economic growth leads to government expenditure, which is connected to Wagner law, when regional economy per capita income increases, government spending will also increase relatively.

In Gerbangkertasusila region, government spending for education, health, and infrastructure sectors are more focused on needs parallel to the economy growth in East Java Province. Considering that the need for an adequate infrastructure requires a huge financing to improve every areas. Particularly in satellite/horseshoe areas for getting equitable economic activities in East Java Province, the government spending on infrastructure sector is more prioritized. Otherwise, the government ought to continue boosting the equity of infrastructure development and synergize the existence of infrastructure. The government should be coordinating and synergizing between districts/cities in developing aforementioned infrastructure. But at the time when the central government proclaimed Suramadu Bridge, where its construction planning aims to connect Surabaya and Bangkalan regency, with hope that factories and harbors would be built and development will be spread evenly between two aforementioned regions. But, its development does not occur until recently, which is caused by coordination and synergy

failure which has not been established strongly. Not only that, there are other cases such as decentralization issues, which is expected that every Regency/City possess the authority to regulate their respective territories.

Nevertheless, the biggest problem is egocentricity between territories. A good and intense communication is expected to be conducted between regional government and central government to create a synergy in developing infrastructure inter Gerbangkertasusila region, East Java province. There will not be an Inter-regional rivalry and no imbalances. It will result in an annual decrease of the poverty level, higher regional economic growth, and more adequate and equitable infrastructure development spread evenly to remote areas in Gerbangkertasusila.

CONCLUSION AND POLICY IMPLICATION

In direct relation to the government spending with poverty level in Gerbangkertasusila area exhibits government spending on education and health sectors having a significant negative effect on the poverty level. Government spending on infrastructure sector caused a significant positive effect. It indicates that poverty level is a stable situation and safe position. Regarding the indirect effect of government spending on poverty through regional economic growth caused significant negative effect. This is exhibited by increased government spending in education, health, and infrastructure sectors. The 1% effect tend to increase poverty level through the regional economic development.

Gerbangkertasusila area possesses significantly high contribution either direct effect or indirect to reduce poverty level, which is government spending in the infrastructure sector.

The development of education, health and infrastructure facilities must be prioritized in particular at Mojokerto City, Mojokerto Regency, Lamongan Regency, Gresik Regency and Bangkalan Regency especially in education sector. Government Spending on education sector must be directed to all programs that will enhance the academic quality, enhance non-academic quality, and competence of qualified educator. The health sector in Mojokerto City, Lamongan Regency, Bangkalan Regency, Gresik Regency and Mojokerja Regency ought to be improved in order to prevent diseases in public daily life. Improving toddlers and elderly people nutrition intake to improve their immune system, and providing more health access such as BPJS, health insurance with better classes and facilities.

Government spending on Infrastructure sector in Mojokerto City, Mojokerto Regency, Bangkalan, and Lamongan Regencies should be more enhanced and stabilize coordination and synergy function in infrastructure development planning in order to avoid inequality among regions in Gerbangkertasusila.

Egosectoral among central government and regional governments should be minimized to create continuity among regions. It will not only be enjoyed by Gerbangkertasusila region, but also by the whole East Java Province.

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DOI <https://doi.org/10.18551/rjoas.2017-06.13>

IMPLEMENTATION OF COMMUNITY DEVELOPMENT AND KNOWLEDGE SHARING IN IMPROVING THE QUALITY OF HUMAN RESOURCES

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ABSTRACT

The diversity of Indonesia's tourism is reflected in the natural and cultural tourism that has the potential to be offered to domestic and foreign tourists. With such great potential, long-term management is needed to maximize tourism development. This study aimed to reveal the implementation of Community Development and Knowledge Sharing in Improving the Quality of Human Resources, as well as any factors that affect the increase of tourism potential in Banyuwangi. Qualitative approach was used in this research to know more deeply about the phenomenon that occurs and find solutions in the management of tourism development.

KEY WORDS

Community development, knowledge sharing, human resources quality, community based tourism, Banyuwangi.

Tourism is one sector that has an important role in improving the economy of a country. The development of tourism can bring a broad impact for the economy in an area because tourism includes a variety of potential economic efforts that can be an economical generator in a city, province, and tourist destination areas (Goeldner et al., 2000). The large number of foreign and domestic tourists coming to a region becomes an opportunity for the tourism sector. Tourism products in Indonesia are mostly in the form of natural tourism presented with the concept of ecotourism. The ecotourism concept is considered appropriate with the current tourism industry that is popular among tourists. The concept of ecotourism does not only present the fun in a tourism activity, but also becomes a space of education for tourists about the importance of environmental sustainability.

The increasing number of tourists visiting Banyuwangi as a tourist destination requires direct involvement of local communities and private parties to actively participate in their development. This is in line with the concept of community development that comes side by side with the concept of ecotourism. Community Development is a development program for a community as an effort to develop a sustainable and active community condition based on the principles of social justice and mutual respect (Zubaidi, 2007). The concept of Community Development is the answer to the critics of the weakness of community empowerment at the low or local level. Empowering local communities to be able to sustain the development of the era while still maintaining the locality is one important thing.

In the process of empowering local elements through the community development, the activity of knowledge or insight exchange through interaction will occur. This exchange is then referred as Knowledge Sharing. Hansel and Avital (2005) suggested that Knowledge Sharing is a behavior owned by everyone in sharing his or her knowledge and experience with others voluntarily. Knowledge sharing can change the mindset or way of thinking of communities or groups to grow because of new insights that encourage members of tourism groups to think and act. An important point in the effectiveness of the implementation of knowledge sharing can be seen from the way of the organization in building a knowledge sharing culture within the organization or group. Through knowledge sharing, knowledge can be spread, implemented, and developed. Sharing will allow individuals within the organization to think creatively and critically (Lindsey, 2006), so that in the end it can generate new knowledge that is useful to improve the quality of human resources of the

members of the group. The challenges faced are how to prepare the ability and manage tourism well, and what factors are supporting and hindering tourism development.

LITERATURE REVIEW

Community Development is «an effort to develop sustainable and active community conditions based on the principles of social justice and mutual respect» (Zubaedi, 2007). Communities will actively participate on the basis of their own consciousness because the process of sustainable development will not be able to run without the active participation of the community. A regional tourism development requires the support of local community, which is not only as an object but also as a subject in every activity to develop local tourism. Community-based tourism can make local tourism as a local wisdom, community responsibility to the living environment, and the preservation of residential areas by participating in every activity.

The concept of community-based tourism development for the first time was popularized by Murphy. According to Murphy (1985), tourism products and consumers must be visible to local communities who are often very aware of the impact of tourism. There will be community activities undertaken on the basis of problem solving in the community. The problems that arise in rural or urban communities are related to development issues. BUNDER group is a form of community formed by the people around Bangsring Beach in the concept of community-based tourism development. Community activities were carried out by empowering the community to change the mindset of the surrounding community in developing tourism and preparing human resources or skills of the group members. Thus, it can improve the quality of human resources in tourism development. Community Based Tourism is a concept that is used as tools in community development (Community Development) in the field of tourism. This is in line with Suansri (2003) «Community Based Tourism as a tourism that takes into account environmental, social, and cultural sustainability aspects».

Knowledge sharing becomes one of the important things both in business and non-business organization. This happens because all human activities are organizing activities. Each organization has members working based on his or her knowledge. Therefore, managing knowledge is the same as managing members (Setiarso et al., 2009). Knowledge sharing provides an opportunity to members of the organization to share their knowledge such as techniques, ideas, and experiences they have to other group members. In the implementation of knowledge sharing in order to provide benefits in the long term, an organization must be aware of the existence of workers, knowledge creation, and users so that knowledge sharing can run effectively and the quality of human resources expected in the organization or group can be increased so it can bring new innovations in maintaining the sustainability of the group. In tourism, Knowledge Sharing can support the running of tourism development activities. Knowledge sharing becomes an activity to increase knowledge, experience, or communication with each other among group members. This is supported by the opinion of Riddings in Nezakati (2015) that in the tourism industry, knowledge sharing is the main point used in communication by exchanging experiences with members of tourism managers and tourists.

Tourism human resources according to the national conception is the tourism human resource as a regional asset that has the standard of ability (knowledge and skill) according to the competence of their expertise that is recognized and accepted by the tourism community and based on the high dedication of nationality so that it has competitive value and able to compete on a national and international scale. Every tourist destination is required to be able to improve the quality of human resources because actually the quality of human resources is what is believed to determine the quality of tourism products and services directly.

METHODS OF RESEARCH

This research used descriptive qualitative method. Qualitative research intended to understand or explain the phenomena or problems that exist and experienced by the subject of research (Sugiyono, 2008). The focus of this research were the implementation of Community Development in the BUNDER group as improving the quality of human resources, the implementation of Knowledge Sharing in the BUNDER group as an improvement of the quality of human resources as well as any supporting and inhibiting factors in the development of Bangsring Beach tourism, Banyuwangi. The key informants in this research were the Chairman of the BUNDER group, the vice chairman of the BUNDER group, and the fishermen. Meanwhile, the representatives of the Tourism Department provide additional information. The researcher also made observations and went directly to the field, so the observations made were participant or involvement observation (Salim, 2006). For data validity test, the researcher used triangulation method.

RESULTS AND DISCUSSION

The implementation of Community Development in the BUNDER group was very useful to improve the ability of BUNDER group in developing the tourism of Bangsring Beach and overcome the problems of the Bangsring Fishermen group. In this case, community development can help develop community's human resources because in this tourism local people play an active role in every tourism process, so that all policies and activities were organized by BUNDER group. Community development was embodied in the formation of the BUNDER group which was the first movement to raise awareness of local community. The BUNDER group was a group formed to develop the community, to increase participation, and to change the people's mindset that become destructors in the past to be preservers today to improve their region. The establishment of a community or group of BUNDER was a proof of implementation in community development to develop the community to be more developed in taking advantage of the natural potential of the region and also to better improve the ability of local community in developing tourism. The participation was always emphasized to the local community so that the local community (BUNDER group) is all involved and participate directly in managing tourism. In addition, the existence of tourism with the concept of ecotourism was a form of community development to make members of the group to further develop the capabilities in developing tourism while maintaining and preserving the surrounding environment.

Implementation of Knowledge Sharing in this BUNDER group has been applied and indeed was needed to be applied from the beginning of BUNDER group formation. The education level of Bangsring community which was mostly low and the habits of slum fishing community, initially became an obstacle in the process of tourism development, but the BUNDER group did not make it a constraint, but a challenge to change it. Knowledge Sharing activities in the BUNDER group were evidenced in meetings or regular meetings held once every 3 months. In the meeting, group members can discuss and exchange knowledge or experience and there was also an evaluation that made the marking better for the future. Apart from meetings, BUNDER group also shared knowledge by establishing mutual visit that was commonly called *door to door* to the house of group members or to the house of the group leader. In visiting, members of the BUNDER group shared their knowledges or experiences. Knowledge Sharing was also not only applied in the BUNDER group but also in the Tourism Department, which provided training or workshops on foreign language (English) training, guide training, and marine science training because tourism that was formed in Bangsring area was marine tourism. Foreign languages were needed for tourism activities because tourist guests who come were not only from domestic but also from abroad. Since Bangsring community education was low and education on language was also less, so foreign language training was chosen to prepare human resources and improve the quality or ability of human resources group BUNDER in serving foreign tourists.

The supporting factors in the process of tourism development of Bangsring Beach were managed by the BUNDER group that was the tourism potential owned by Bangsring Beach. The potential owned by Bangsring Beach can indeed be the attraction of tourists, the potential of this tourism had begun to appear when the local community began to improve the condition of marine ecology that has been destroyed. With the community development and the existence of knowledge sharing in developing this tourism, it could make the tourism as an attraction for the tourists. There was also a support from local government in tourism development. Meanwhile, the inhibiting factors that were found were the lack of capabilities possessed by the group, transportation access was not maximized.

CONCLUSION

Tour manager was a new job for some people in Bangsring Village because the potential in the form of beach beauty can attract tourists to visit. This was what made Bangsring Village people have to learn how to manage and develop tourism on an ongoing basis. To improve the quality of human resources, BUNDER group should always increase their community participation and always apply knowledge sharing culture in every activity in their group. However, the BUNDER group should be able to get closer to the local people who have not joined the BUNDER group yet. Due to the increasing participation and the level of awareness of local people in managing tourism, the development of tourism could run according to organizational or group goals and could survive in the long term. With the existence of community development, knowledge sharing, and support of the local government, the tourism potential should be managed maximally and better in the future.

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DOI <https://doi.org/10.18551/rjoas.2017-06.14>

**ПРИМЕНЕНИЕ МЕТОДА ЛАТЕНТНЫХ ПЕРЕМЕННЫХ В УПРАВЛЕНИИ
ПЕРСОНАЛОМ**

THE USE OF LATENT VARIABLE METHOD IN HUMAN RESOURCE MANAGEMENT

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АННОТАЦИЯ

В статье предлагается оригинальная модель к оценке степени конкурентоспособности, успешности субъектов на рынке труда. Авторы указывают, что универсальный комплексный показатель конкурентоспособности индивида на рынке труда не выделяется. Однако оценку такой конкурентоспособности можно достаточно точно провести на основании некоторых переменных, различающихся для внутреннего и внешнего рынка труда. Предложенная авторами модель позволяет ввести в качестве переменной любую количественную характеристику конкурентоспособности после анализа факторов, влияющих на нее. В результате сфера применения метода латентных переменных в области управления персоналом оказывается весьма широкой.

ABSTRACT

The article suggests innovative model for assessment of labour market subjects' competitiveness, or successfulness. The authors state that general complex indicator for individual competitiveness within the labour market cannot be identified. Instead, precise enough assessment of such competitiveness can be based on some variables, though different for in-house and external labour market. The model suggested by the authors can introduce any quantitative parameter of competitiveness as a variable after analysis of the factors affecting it. As the result the scope of using the latent variable method in human resource management is vast enough.

КЛЮЧЕВЫЕ СЛОВА

Рынок труда, конкурентоспособность индивида, математическая модель, латентная переменная, метод Раша.

KEY WORDS

Labour market, individual competitiveness, mathematical model, latent variable, Rasch method.

В теории и практике экономической науки «конкурентоспособность» является одним из ключевых понятий, которая наряду с другими аналогичными ему по степени обобщения, уровням соподчинения, взаимосвязям и т.п., такими как «полезность», «эффективность», «ценность» и др., является конкретной формой выражения более общего понятия «результативность». Очевидно, что носителем способностей и их самовыражения является только человек, живая материя.

Степень изученности проблемы. Проблемы конкурентоспособности персонала исследовались в трудах многих отечественных и иностранных учёных-экономистов: Я. Базилюк, Д. Богини, С. Бандур, Н. Глевацкой, О. Гришновой, Н. Дудиной, Г. Крысина, А. Кибанова, Э. Либановой, Л. Лисогор, Ю. Одегова, М. Семикиной, С. Пирожкова, Р. Фатхутдинова, Т. Хлоповой, С. Цимбалюк, С. Шекшня и других.

Постановка проблемы. Мы уже делали выводы о том, что о конкурентоспособности индивидов на рынке труда можно подчеркнуть следующее:

1. Она предполагает наличие у индивида определенных способностей, которые могут быть личностными или профессиональными.

2. Указанные способности могут быть реализованными или не реализованными на момент исследования, однако они обязательно должны сопровождаться наличием внутренних возможностей индивида по их реализации в определенных условиях.

3. Не любые черты индивида или его способности составляют его конкурентоспособность, а лишь те, которые отвечают потребностям реально существующих или потенциальных работодателей.

4. Из предшествующего утверждения следует, что индивид не может быть абсолютно конкурентоспособным в рамках рынка труда в целом, его конкурентоспособность существует лишь на отдельных сегментах рынка труда.

5. Конкурентоспособность работника на рынке труда является частным и единственным экономическим случаем проявления конкурентоспособности личности.

6. Оценить степень конкурентоспособности индивида можно лишь при сопоставлении его характеристик с другими индивидами, абсолютного выражения конкурентоспособности существовать не может.

Мы указываем на то, что в зависимости от специфики конкурентной ситуации на рынке труда конкурентоспособность его субъектов может существовать в разных состояниях и по-разному проявляться. Мы ввели термины «проявленная» и «непроявленная», или потенциальная, конкурентоспособность индивида – участника рынка труда.

Проявленная конкурентоспособность выражается в фактических успехах по занятию наиболее выгодного (соответствующего целям индивида) положения по сравнению с реально существующими конкурентами, в достижении индивидом своих целей, толкнувших его к участию в рынке труда. Как видим, у проявленной конкурентоспособности могут быть два варианта проявления: экономический и неэкономический. Они зависят от преследуемых носителем конкурентоспособности целей. Если поставленные и эффективно достигнутые цели индивида носили экономический характер, то и проявление конкурентоспособности следует считать экономическим. Вне зависимости от конкретных целей индивида (обеспечить средства к существованию, купить личный остров, гарантировать стабильный доход и т.д.) экономически проявленную конкурентоспособность можно оценить и по объективным критериям, в частности:

- оплата труда;
- продолжительность безработицы при возникновении необходимости смены места работы;
- предоставление монетарных бонусов и льгот работодателем.

Следует особо подчеркнуть, что данные параметры технически возможно сопоставлять, сравнивая степень успешности конкурентов, которые непосредственно на рынке труда никогда не сталкивались (допустим, не участвовали в конкурсе на замещение одной и той же вакансии). С другой стороны, применять их для сравнений между разными сегментами рынка труда представляется бессмысленным. Ярким примером может служить показатель размера оплаты труда: использовать его при сопоставлении участников разных профессиональных, отраслевых и географических сегментов рынка абсолютно неправомерно из-за огромного разрыва в средних условиях по таким сегментам.

Оценить неэкономическое проявление конкурентоспособности сложнее количественно и практически невозможно сделать это объективно. Неэкономические цели субъектов крайне разнообразны и, в отличие от экономических, зачастую не выражаются в денежном эквиваленте и не коррелируют с доходами.

Как мы уже указали, конкурентоспособность может и не проявляться как в определенный момент времени, так и в течение достаточно длительного периода. В это время оценить степень конкурентоспособности индивида можно лишь по

косвенным и наиболее общим признакам: полу, возрасту, образованию, опыту, состоянию здоровья, семейному положению. Сопоставляться эти характеристики будут со средними требованиями рынка или его сегмента, что, конечно, не отражает истинной сути конкурентных отношений на рынке труда. Также при данном способе оценки невозможно применение компетентностного подхода, так как компетенций, значимых для «рынка вообще», существует настолько мало, что оценка по ним работника будет до крайности приблизительной.

Обсуждение результатов. Для решения задач, в которых нет единого критерия или формулы, но можно выделить определенные переменные, которые в достаточной степени приближения позволяют оценить объект, в различных отраслях научных исследований в последнее время используют математический подход, основанный на теории латентных переменных.

Латентная переменная - такой вид переменных, которые в явном виде измерить невозможно. Такие переменные могут быть оценены только с помощью некоторых математических моделей как функции от ряда наблюдаемых переменных. Эти наблюдаемые переменные, которые можно измерить непосредственно, и на основании которых происходит оценка латентных переменных, называются индикаторными переменными.

Основоположником современной теории измерения латентных переменных стал Георг Раш. Модель Раша, в отличие от других подходов измерения латентных переменных, позволяет получать оценки по линейной шкале в безразмерных единицах, называемых логитами, что делает ее наиболее приемлемой в управлении персоналом, где очень многие показатели ни имеют чистового выражения и тем более – наименования единиц измерения.

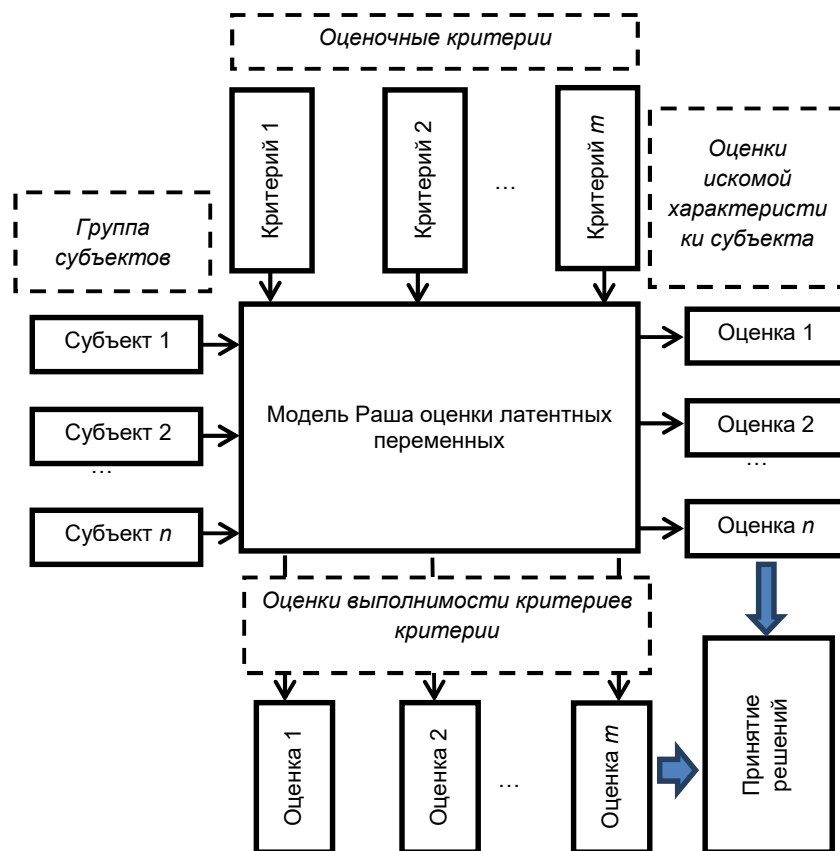


Рисунок 1 – Структурная схема оценки характеристик субъектов

Модель имеет ряд преимуществ:

1. Модель Раша позволяет преобразовать измерения индикаторных переменных, сделанные в дихотомических, атрибутивных или непрерывных шкалах, в линейные измерения, в результате чего качественные данные можно анализировать с помощью количественных методов.

2. Ввиду того, что шкала измерения оценок, полученных на основании модели Раша, является линейной и безразмерной, то к полученным результатам можно применять широкий спектр статистических процедур и методов обработки.

3. Оценки латентных показателей субъектов не зависят от индикаторных переменных и является индивидуальной характеристикой каждого субъекта.

4. Наряду с оценками субъектов, модель позволяет получать оценки свойств самих индикаторных переменных, причем эти оценки также не зависят от множества оцениваемых субъектов и являются их индивидуальными характеристиками.

5. Благодаря достаточно простой структуры модели оценивания, существуют удобные вычислительные процедуры для получения оценок, которые могут быть реализованы на ЭВМ в рамках доступных программных продуктов.

Структурная схема работы модели приведена на рис. 1.

Как видно из общей структуры модели, важнейшей ее стороной является выбор оценочных критериев. Их подбор осуществляется исходя из цели исследования. Модель можно использовать, например, для решения множества задач, предполагающих необходимость ранжирования субъектов одновременно по множеству признаков, особенно если присудить этим признакам веса оказывается затруднительно, и даже если признаки измеряются различными единицами. Среди примеров решаемых задач можно указать (в таблицах представлены образцы набора критериев, единиц и шкал оценки для каждой задачи):

1. Определение степени конкурентоспособности лица, претендующего на некоторую вакансию (табл. 1);

2. Отбор сотрудников для карьерного продвижения, повышения (табл. 2), разового поощрения, награждения (табл. 3);

3. Обоснование отбора сотрудников при сокращении штатов (табл. 4) и т.п.

Таблица 1 – Критерии, единицы и шкалы оценки индивидуально-личностных факторов для определения степени претендента на должность (пример)

Критерий	Оценка	Шкала, единицы измерения
Уровень образования – «К1»	Баллы от 1 до 10	
	Магистр, специалист	10
	Бакалавр	9
	Среднее профессиональное	7
	Начальное профессиональное	5
	Нет профессионального	1
Соответствие образования профилю деятельности – «К2»	Баллы от 1 до 5	
	Точное соответствие	5
	Направление	4
	Группа специальностей / направлений	3
	Не соответствует	1
Стаж работы с аналогичными или подобными обязанностями – «К3»	0, 1, 2... n	Годы
Продолжительность безработицы до настоящего момента – «К4»	Баллы от 1 до 5	
	Никогда ранее не работал	2
	Более года	3
	Более 3 лет	1
	Менее года	5
Возраст – «К5»	Баллы от 1 до 5	
	До 30 лет	4
	30-40 лет	5
	40-50 лет	3
	Более 50 лет	1

Продолжение таблицы 1		
Степень трудоспособности – «К6»	Баллы от 1 до 10	
	Трудоспособный	10
	Пенсионер	4
	Подросток	1
	Инвалид	5
Демографический критерий – «К7»	Баллы от 1 до 10	
	Одинокий мужчина	9
	Женатый мужчина	10
	Женатый мужчина с малолетним ребенком/детьми	6
	Одинокaя женщина	10
	Замужняя женщина	8
	Замужняя женщина с ребенком/детьми	5
	Замужняя женщина с малолетним ребенком/детьми	1

Таблица 2 – Критерии, единицы и шкалы оценки для отбора сотрудника на вышестоящую должность (пример)

Критерий	Оценка	Шкала, единицы измерения
Уровень образования – «К1»	Баллы от 1 до 10	
	Магистр, специалист	10
	Бакалавр	7
	Среднее профессиональное	5
	Начальное профессиональное	3
	Нет профессионального	1
Соответствие образования профилю деятельности – «К2»	Баллы от 1 до 5	
	Точное соответствие	5
	Направление	5
	Группа специальностей / направлений	3
Не соответствует	1	
Проявление инициативы и самостоятельности за последний период – «К3»	0, 1, 2... n	Раз
Оценка работы непосредственным руководителем – «К4»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
Хорошо	3	
Возраст – «К5»	Баллы от 1 до 5	
	До 30 лет	1
	30-40 лет	5
	40-50 лет	4
Более 50 лет	3	
Проявление принятия на себя ответственности за последний период – «К6»	0, 1, 2... n	Раз
Оценка способности работать в команде – «К7»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
Хорошо	3	
Оценка организаторских способностей – «К8»	Баллы от 1 до 5	
	Неразвиты	1
	Ниже среднего	2
	Средние	3
	Выше средних	4
Выдающиеся	5	

Модель допускает замену или дополнение любого количества критериев без потери адекватности и точности оценки. При этом шкалы и единицы измерения

критериев также могут быть любыми, от натуральных или непрерывных величин до дихотомических или политомических шкал.

Таблица 3 – Критерии, единицы и шкалы оценки для отбора сотрудника для разового поощрения, награждения (пример)

Критерий	Оценка	Шкала, единицы измерения
Стаж работы в компании – «К1»	0, 1, 2... n	Лет
Наличие достижений, выделяемых непосредственным руководителем, за весь срок деятельности – «К2»	0, 1, 2... n	Штук
Наличие дисциплинарных взысканий за последний период – «К3»	Да	0
	Нет	1
Оценка работы непосредственным руководителем – «К4»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
	Хорошо	3
Оценка работы коллегами – «К5»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
	Хорошо	3
Наличие достижений, выделяемых вышестоящим руководством, за весь срок деятельности – «К6»	0, 1, 2... n	Штук
Оценка динамики показателей деятельности – «К7»	Баллы от 1 до 10	
	Показатели низкие, стабильно	2
	Показатели высокие, стабильно	5
	Показатели низкие, растут	5
	Показатели высокие, растут	10
	Показатели снижаются	1
Влияние стимулирования на работника – «К8»	Баллы от 1 до 10	
	Влияние не очевидно	1
	Влияет премирование	4
	Влияет похвала	8
	Влияет критика	2
	Влияет коллективное признание	10

Таблица 4 – Критерии, единицы и шкалы оценки для отбора сотрудников при необходимости увольнения по сокращению штатов (пример)

Критерий	Оценка	Шкала, единицы измерения
Стаж работы в компании – «К1»	0, 1, 2... n	Лет
Соответствие образования профилю деятельности – «К2»	Баллы от 1 до 5	
	Точное соответствие	5
	Направление	5
	Группа специальностей / направлений	3
	Не соответствует	1
Наличие дисциплинарных взысканий за последний период – «К3»	0, 1, 2... n	Штук
Оценка работы непосредственным руководителем – «К4»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
	Хорошо	3
Наличие компетенций, которые могут быть использованы на другой должности в той же компании – «К5»	Да	1
	Нет	0
Проявление лояльности за весь период работы – «К6»	0, 1, 2... n	Раз
Оценка способности работать в команде – «К7»	Баллы от 1 до 3	
	Неудовлетворительно	1
	Удовлетворительно	2
	Хорошо	3

Важно, что модель позволяет не только получить объективную оценку самого субъекта по всей совокупности выделенных критериев, но и оценить выполнимость критериев для всей группы субъектов. Это позволяет, решая параллельно другие задачи, выявлять, например, проблемы профпригодности, дисциплины труда, динамики качественных характеристик персонала в целом для предприятия или группы сотрудников внутри него или на внешнем рынке труда.

Объективной, всесторонней и точной количественной оценке участников как внутреннего, так и внешнего рынка труда препятствует целый ряд факторов, которые мы считаем возможным подразделять на 2 группы:

- факторы, искажающие конкуренцию на рынке труда, ее правила и процессы, связи между конкурентными силами;
- факторы, оказывающие искажающее воздействие непосредственно на оценку индивида (соискателя должности, работника, выпускника и т.д.).

Среди второй группы можно выделить личные особенности потребностей, системы ценностей индивидов; субъективный характер любых оценок индивида по поводу своих возможностей; а также низкую и неопределенную эффективность вложений индивидов в развитие профессиональных компетенций. Следует подчеркнуть, что модель Раша позволяет в существенной степени учесть и эти искажающие факторы, делая оценки более объективными и корректными.

Выводы. Обеспечивая объективную рейтинговую оценку участников различных процессов в сфере управления персоналом, данная модель:

- облегчает процесс принятия решений и их обоснования;
- выступает подтверждением правильности и непредвзятости решений в случае возникновения претензий;
- способствует улучшению мотивации за счет реализации принципов справедливости;
- критерии могут быть доведены до участников заблаговременно;
- позволяет сравнивать не контактирующих между собой участников и участвовать в процессе сравнения разным исполнителям.

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DOI <https://doi.org/10.18551/rjoas.2017-06.15>

**THE DETERMINANT OF PERCEIVED EASE OF USE AND ITS EFFECTS
ON THE INTENTION TO USE OF WEBSITE-BASED INFORMATION TECHNOLOGY
USER ON SMES OF FASHION SUB SECTOR CREATIVE INDUSTRY IN MALANG**

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ABSTRACT

This research aimed to find out to what extent the readiness of creative industrial UMKM of fashion sector in Malang on the use of website-based Information Technology. The model proposed in this research was a combination between technology readiness and technology acceptance model, along with perceived enjoyment. These three variables were arranged to be one model and tested using the basic theory on the previous research. Based on the appointed variables and the designed hypotheses, this research belonged to explanatory research. The research used 30 distros/clothing stores in Malang city as the samples and the data analysis was done by using GSCA. The analysis result indicated that variables of discomfort and insecurity had a negative impact on perceived ease of use.

KEY WORDS

SMEs, technology readiness, technology, acceptance model, perceived enjoyment.

Nowadays, the development of Information and Communication Technology (ICT) enables product promotion done more easily through viral. This is one of the important strategies to increase the promotion of the product/service produced by UMKM. ICT is a media that can be used to build business networks, expand the business scale, increase production efficiency, and lead companies to a larger business system. Furthermore, ICT has become a supporting tool in developing competitive advantages of companies. However, on another side, the IT level of UMKM is still relative low. This is not only due to the factor of limited capital and resource owned by UMKM but also because of the UMKM's unpreparedness to adopt it. In fact, as the information and communication technology continues to grow, business transaction via the internet has also developed in line with the increased ease, comfort, and security provided in communication and transaction (Thong, 1999). The problem on the readiness to adopt IT is expected to be one of the reasons causing the low adoption level by UMKM that leads to the low competitiveness in the global market.

The lack of understanding on the use and easiness of IT as well as the readiness in adopting it is thought to be the underlying reason for the low adoption level by UMKM that eventually results in a decreased competitiveness in the global market. The benefit of the use of IT has been much known by the actors of UMKM, although its benefit does not necessarily encourage the actors to apply it to their businesses. Besides, there has not been a few actors who fail in applying the use of IT on their businesses. This is due to the improper use that does not make any result or change on the businesses. The adoption of IT in UMKM is different from that in big industries because of the limited resource owned by the UMKM (Fink, 1998; Thong, 1999; Welsh and White, 1981). Hence, UMKM must be careful in deciding IT investment.

The competitiveness of UMKM actually can be realized by many ways, one of which is by the use of IT in improving the competitiveness of business transformation as well as the accuracy and efficiency of information exchange (Rahmana, 2009) for widening the marketing networks and market share. The benefit of IT use has been much known by the actors of UMKM, but it does not necessarily motivate the actors to use it on their businesses. Therefore, understanding the user readiness in adopting the new technology is highly

important to minimize the risk in the process of technology adoption. Several researchers stated a fact saying that IT adoption in UMKM has still been extremely low from what has been expected (Pavic, et al., 2007; Yu, 2006). Furthermore, according to a research done by Lefebvre, et. al. (1999), one of the determinants of new technology adoption by UMKM is the influence of internal and external parties in the process of adoption-decision taking. Grounding by that fact, this research was conducted in order to deepen on the effects of the adoption decision. Hence, this further research was carried out to examine the underlying reasons for the UMKM's low IT adoption by using Optimism, Innovativeness, Discomfort, Insecurity, and Perceived Enjoyment as the determinants of the readiness of IT adoption by UMKM.

The focus of this research is on the 'perceived ease of use'. This has become an interesting issue regarding what extent the users' perception of IT. Their perceptions on the ease of IT use are different and this results in the 'intention to use' on a technology through five influential factors. The existence of IT actually gives many benefits for the users, but the 'intention to use' IT cannot suddenly emerge in users' minds. The intention to use IT has encouraged the researchers to conduct an observation or examination on someone's intention in using IT.

Davis (1989) examined on the technology acceptance by using Technology Acceptance Model (TAM) which was learned from the Model Theory of Reasoned Action (TRA) developed by Ajzen (1980) as the grand model of TAM development. The model of TRA developed by Ajzen (1980) assumed that human behavior was encouraged by the intention, attitude, belief which were influenced by subjective norms for doing something consciously. Contrastly, David, et al. (1989) stated that, in TAM, the real use of the system on an individual was determined by behavioral intention, which was influenced by perceived usefulness and perceived ease of use. Based on the result of the development, Davis (1989) argued that the effect of other external variables on the behavioral intention was fully mediated by two convictions, namely usefulness and ease of use.

Up until now, the focus of TAM in completing tasks is only on the question about the effectiveness and utility of a system (Jogiyanto, 2007). The development on TAM is carried out by various ways, such as adding, reducing, changing with other variables or combining TAM with other theory models. This has given a variation on the technology acceptance model (TAM). By this fact, Kim, Chan, and Gupta (2007) conducted a research in which TAM was developed by including another variable in the form of perceived enjoyment, which determined the acceptance of a technology. In another side, a research done by Shin and Lee (2014) concerned on the TAM development which was made by combining TR and including some variables such as optimism, innovativeness, discomfort, insecurity, along with the variable of technology characteristic consisting of responsiveness and smartness. And it turns out that the result is better for measuring the acceptance of electronic service.

THEORETICAL REVIEW

Theory Acceptance Model (TAM). TAM is a theory related to the use of information technology system that can be applied to explain the individual acceptance toward the use of information technology system itself. The theory is firstly presented by Davis (1986), which basically is the development of Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1980). TAM adds two constructions of TRA model. The two construction are perceived usefulness and perceived ease of use. The argumentation of TAM is that the individual acceptance toward information technology system is determined by those two constructions. Both constructions will make attitude have an influence on behavior which then leads to behavioral intention – the basis of behavior done by an individual.

Technology Readiness (TR). TR is used to know a society tendency for having and using new technology in a house or workplace. Optimism and innovativeness are the contributors which can increase the readiness of technology application. Optimism is defined as a positive view of technology and positive perception of the utility of technology application in order to increase the work efficiency as well as to improve the user's

performance either in the workplace or house. Innovativeness refers to what extent someone excitedly does experiment with a technology and becomes a pioneer or forefront in a new technology-based product/service business. Meanwhile, discomfort and insecurity refer to inhibitors which can press the readiness of technology acceptance. Discomfort indicates a lack of mastery of technology application and lack of confidence in using new technology. Insecurity is a distrust of technology-based transaction and a doubt on the ability and security of a technology (Pasuraman and Colby, 2001).

Conceptual Model. The conception of this research is the result of the combination between TAM and TR or what, in several studies, has been called as TRAM, in which variable TR is put as the factor influencing and adding the variable of perceived enjoyment, and then simplified by emphasizing on the aspect of perceived ease of use in the context of TAM. Perceived ease of use concerns on to what extent someone believes that the use of technology is free from any efforts. Perceived ease of use establishes the relation of individual assessment on the efforts done in the process of using a system (Davis, 1989). Perceived ease of use is hereafter associated with the intention in TAM, which aims to predict the usage behavior.

TR has four sub-dimensions: optimism, innovativeness, discomfort, and insecurity (Parasuraman and Colby, 2000). In general, optimism and innovativeness are the contributors or positive motivators that can increase the readiness of technology use, while discomfort and insecurity are the inhibitors that can press the readiness of technology and as the hampering factors of new technology acceptance.

Perceived enjoyment, adopted from Davis, et al., (1992) refers to what extent the activity of a certain system application is considered enjoyable in an individual’s mind. And it has formed the model as seen from Figure 1.

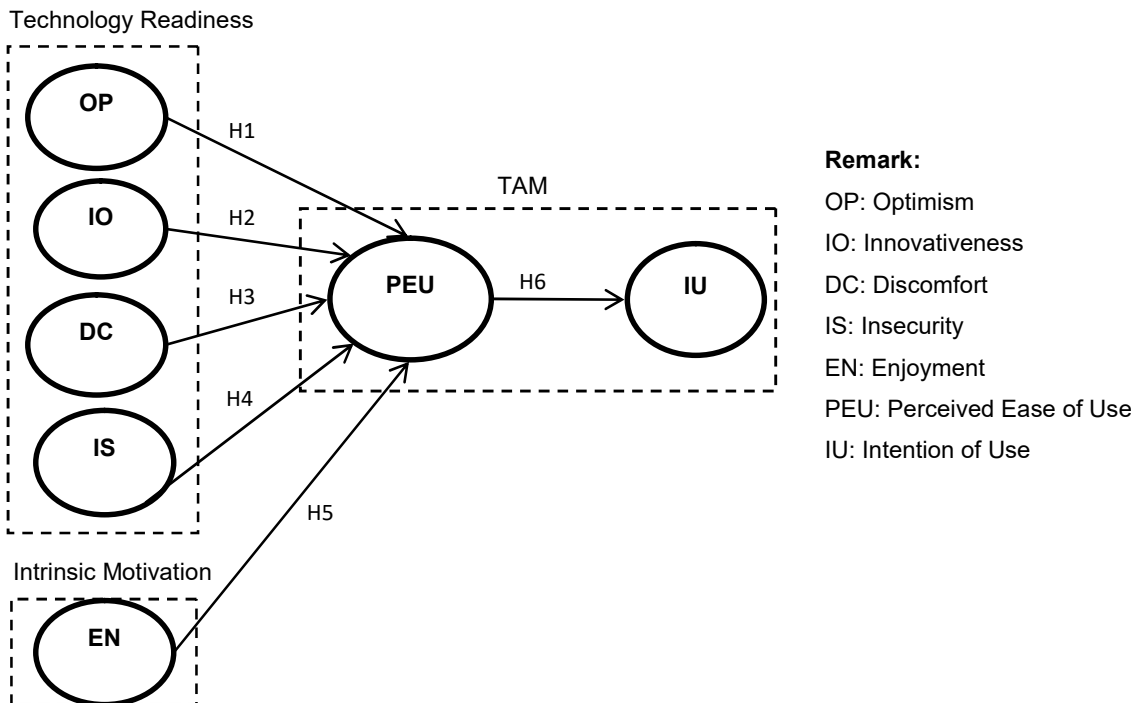


Figure 1 – The Schema of Research Model

Hypotheses. Optimism is an individual tendency in which a situation and condition are seen from its benefit or positive side that can bring out a more positive attitude on a computer. According to Walchuzh, et al. (2007), the employees’ optimism significantly had a positive impact on perceived ease of use.

H1. Optimism has a positive effect on perceived ease of use

It is known that a customer who thinks optimistically and innovatively on new technology has a tendency to express a positive attitude toward new technology. Lam, Chiang, and Parasuraman (2008) found that consumer's innovation and society behavior had a positive relation to the use of internet service. Moreover, Walchuzh, et al. (2007) stated that someone's innovativeness significantly had a good impact on the perceived ease of use. This research revealed that the managers or employees of creative industrial UMKMs who had innovative characteristic would perceive/assume the ease of IT use.

H2. Innovativeness has a positive effect on perceived ease of use

A user who feels uncomfortable (discomfort) in using a technology will think more complex when using it. Lam, et al. (2008) found that discomfort had a negative effect on the time span needed by a consumer to accept the internet and its ease of use. Similarly, Godoe and Johansen (2012) found that there was a negative relation between discomfort and perceived ease of use.

H3. Discomfort has a negative effect on perceived ease of use

Security is an essential matter for consumers who want to use new technology, particularly in a financial transaction. A user's insecurity commonly emerges due to the matter of his own security or privation. This will lead to an individual closed attitude toward a new technology and decrease the perceived ease of use in using technology. An empiric study done by Walchuzh, et al. (2007) found that security had a negative effect on perceived ease of use.

H4. Insecurity has a negative effect on perceived ease of use

Enjoyment is defined as the extent to which the activity of using a system or technology is considered enjoyable for the users. Hence, the perceived ease of use will certainly be influenced by the system on which users feel enjoyable when using it (Venkatesh, 2000; Venkatesh, et al., 2002). Furthermore, Venkatesh (2000) indicated that perceived ease of use was influenced by to what extent people perceive/assume that using a system was an enjoyable activity. Thus, it can be seen that perceived enjoyment can give a significant effect on users' perceived ease of use. It results in a hypothesis saying that:

H5. Enjoyment has a positive effect on perceived ease of use

In TAM, a behavioral intention to use a system is defined by the users' adoption attitude, including perceived ease of use and perceived usefulness. Perceived ease of use is also assumed to influence perceived usefulness, which is based on the idea saying that the increased ease of use can contribute to enhancing the usefulness (Davis, et al., 1989). An individual will have the intention to use IT when assuming that the IT is easy to use.

H6. Perceived ease of use has a positive effect on intention to use.

METHODS OF RESEARCH

This research used survey method by having questionnaires as the primary tool for data collecting with a quantitative approach. Viewed from the variables and hypotheses model used, it can be said that this research is an explanatory research. The number of the samples used is equal to the number of the population which was about 30 distros/clothing stores. The research location was in Malang city and the purposed objects were distros and clothing stores which either had used websites or not yet. GSCA was used for the testings of the instrument (construct validity and reliability) and hypotheses on the data that have been obtained through questionnaires.

RESULTS AND DISCUSSION

The Goodness Test Results of Fit Model. The structural model of this research was obtained from the result of data processing using the software of GeSCA. The goodness of Fit Model is beneficial for knowing whether a structural model is good or not, by seeing the value of FIT and AFIT as shown in Table 1.

Table 1 – Goodness of Fit Model

Fit Model	
FIT	0.735
AFIT	0.634
GFI	0.571
SRMR	0.621

FIT functioned to show the total variant of all variables used in the model of this research. The standardization of FIT value ranged from 0 up to 1. Based on the table above, the formed model was able to explain all the variables with a value of 0,735 (73,5%) and the rest 26,5% was explained by the other variables.

AFIT (Adjusted Fit) is almost similar to R-squared adjusted if done on regression analysis. AFIT functioned to show the model ratio. A model with the largest AFIT was the model that could be chosen among the better models. According to the table above, AFIT on the model of this research was known as much as 0,634 – meaning that the variety which could be explained by the model was 63,4%. It reflected that the value of AFIT obtained by the formed model has already been good.

Based on the test result, the feasibility of overall model in this research was measured by using GFI and SRMR, in which the GFI's value obtained was 0,571 and SRMR's value was 0,621. The used model was a good fit (fit model) if the GFI's value was more than 0,900 showed that) and the SRMR's value ranged from 0,05 – 0,08. Based on the empirical data resulted from the questionnaires fulfilled by respondents, the test of hypotheses could be conducted. The recapitulation of hypotheses test results in this research is shown in Table 2.

Table 2 – The Recapitulation Table of Hypotheses Test Results

Hypothesis	The Influence between Tables	Estimate	SE	CR	Decision on H0	Remark
H1	Optimism → PEOU	0.2046	0.0902	2.268*	Ditolak	Significant
H2	Innovativeness → PEOU	0.3603	0.165	2.1834*	Ditolak	Significant
H3	Discomfort → PEOU	0.0315	0.2051	0.1535	Diterima	Not Significant
H4	Insecurity → PEOU	0.0292	0.1064	0.2741	Diterima	Not Significant
H5	Enjoyment → PEOU	0.3978	0.1788	2.2252*	Ditolak	Significant
H6	PEoU → Intention to Use	0.8208	0.0621	13.2209*	Ditolak	Significant

*CR = significant at .05 level

According to Table 2 above, it was discovered that the total of the all hypotheses were 6 lines, covering 4 significant lines and 2 not-significant lines. The test result of hypotheses model is shown in Figure 2.

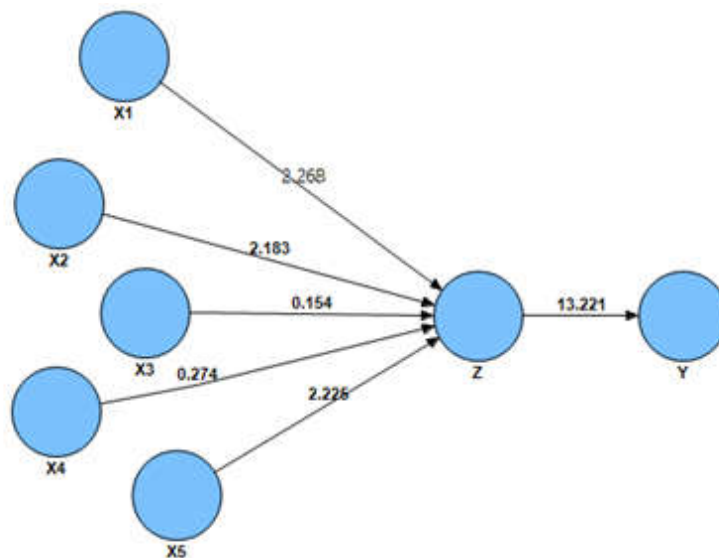


Figure 2 – The Test Result of Hypotheses Model

Limitation of research. The limitation of this research was to the number of samples, which was only 30 UMKMs. The samples taken had less variation because there was only one sector of UMKM. This research did not notice or distinguish the size and complexity of the businesses proceeded by the respondents. It is expected that the next research will use more various samples, which do not only have one sector of UMKM and concern on the competitor pressure in taking a business decision.

CONCLUSION

An optimistic attitude owned by an individual will lead to a perceived ease of technology use due to a lack of anxiety emerging on the possibility of negative results. The higher innovative character owned by the manager/organizer/owner of a distro will increase the perceived ease of use in applying website technology and increase the potency on its adoption. This research describes that the feeling of discomfort in using technology will lead to a perception of difficulty in using it. The user's insecurity usually emerges due to the matter of his own security or privation. This will lead to an individual closed attitude toward a new technology and decrease the perceived ease of use in using a technology. The research results showed that the variable of enjoyment significantly influences and becomes the determinant of perceived ease of use. In this research, it is discovered that the distro managers or owners who perceive or assume that it is easy to use technology will intend to adopt the technology. According to this research, it is concluded that the measurement of TAM model focuses on the acceptance of technology – on how the user's behavioral intention or attitude in using technology. An increase of IT adoption by a creative industrial UMKM can be created if the actors of UMKM perceive the ease of technology use. Hence, in TR model, the result refers to the user's tendency in using a new technology to achieve his goals, while the measurement of TAM model is primary on the user's behavioral intention and attitude in using a technology. Thus, these models cannot be compared directly, but both can complement each other.

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DOI <https://doi.org/10.18551/rjoas.2017-06.16>

СОДЕРЖАНИЕ СИСТЕМЫ УПРАВЛЕНИЯ ПРИБЫЛЬЮ НА ПРЕДПРИЯТИИ THE CONTENT OF PROFIT MANAGEMENT SYSTEM IN THE ENTERPRISE

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АННОТАЦИЯ

Развитие экономики и изменение условий функционирования предприятий требует тщательного исследования управления прибылью на предприятии. Для реализации действенной системы управления прибылью необходимо соблюдать следующие условия: интегрированность с общей системой управления предприятием, комплексный тип формирования управленческих решений, высокий динамизм управления, альтернативность направлений в процессе подготовки управленческих решений, нацеленность на общие принципы развития предприятия. Эффективная система управления прибылью реализуется посредством установленного механизма.

ABSTRACT

Economic development and changing conditions of functioning of enterprises requires a thorough study of profit management at the enterprise. To implement an effective system for managing profit you must meet the following criteria: integration with the general system of enterprise management, complex managerial decision-making, the high dynamism of management, alternative directions in the process of preparation of managerial decisions, focusing on the General principles of enterprise development. An effective system of profit management is implemented through the established mechanism.

КЛЮЧЕВЫЕ СЛОВА

Прибыль, система управления прибылью, эффективность, управленческие решения.

KEYWORDS

Profit, management system profit, efficiency, management decisions.

Прибыль играет важную роль в продуктивной деятельности предприятия и его развитии, что определяет необходимость эффективного и непрерывного управления ею. Управление прибылью представляет собой процесс разработки, одобрения и внедрения управленческих решений по всем ключевым направлениям ее формирования, распределения, использования и планирования на предприятии [1].

Исследованию системы управления прибылью на предприятии посвящены работы многих российских и зарубежных экономистов: М.А. Вахрушевой, В.В.Ковалева, М.В.Мячина, Г.В.Савицкой, А.Тюрго, А.Смита, П.Самуэльсона, И.Шумпетера и других. Однако условия функционирования и развития экономики изменяются, что требует дополнительного изучения и поиск новых взглядов на содержание системы управления прибылью предприятия [2].

Реализация эффективной системы управления прибылью предприятия требует соблюдения ряда условий, ключевыми из которых являются следующие:

1. Интегрированность с общей системой управления предприятием [3]. Вне зависимости от того, в какой области деятельности предприятия принимается

управленческое решение, оно всегда прямо или косвенно влияет на уровень прибыли [4]. Управление прибылью напрямую связано с управлением персоналом, инвестициями, финансовым менеджментом и др. Это указывает на потребность в интегрированности системы управления прибылью с общей системой управления предприятием [6].

2. Комплексный тип формирования управленческих решений. Все управленческие решения в сфере формирования и распределения прибыли непосредственным образом взаимосвязаны и оказывают прямое или косвенное влияние на окончательные итоги управления прибылью [7]. В некоторых случаях такое влияние может иметь противоречивый характер. Так, например, осуществление высокоприбыльных инвестиций может создать нехватку финансовых средств, которые обеспечивают производственную деятельность, и, следовательно, существенно снизить уровень операционной прибыли [8]. Это означает, что управление прибылью должно восприниматься как комплексная система мероприятий, которая обеспечивает реализацию взаимосвязанных управленческих решений, каждое из которых воздействует на общий итог формирования и использования прибыли по предприятию в целом [9].

3. Высокий динамизм управления. Даже самые результативные управленческие решения в сфере формирования и использования прибыли, созданные и осуществленные на предприятии в предыдущем периоде, не всякий раз могут быть вторично реализованы на дальнейших стадиях его функционирования [10].

4. Альтернативность направлений в процессе подготовки некоторых управленческих решений. Осуществление этого условия предполагает, что в процессе разработки любого управленческого решения в области формирования, распределения и использования прибыли необходимо рассматривать другие варианты действий [11].

5. Нацеленность на общие цели развития предприятия. Даже если разработанные схемы управленческих решений в текущем периоде являются достаточно прибыльными, от них необходимо отказаться, если они противоречат стратегической цели деятельности предприятия, направлению его развития и лишают возможности получения высокой прибыли в будущих периодах [12].

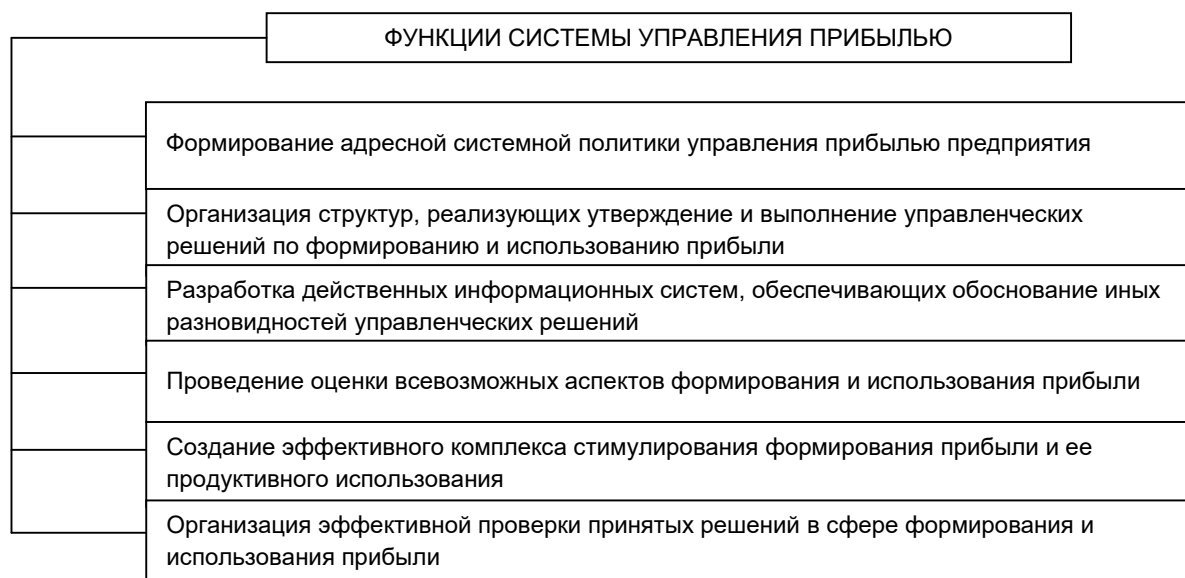


Рисунок 1 – Основные функции системы управления прибылью на предприятии

Важнейшая цель управления прибылью - обеспечение максимального уровня прибыли собственников предприятия в настоящем и будущем периоде [13]. Управление прибылью осуществляет свою главную цель и основные задачи

посредством исполнения конкретных функций. Состав таких функций системы управления прибылью предприятия можно увидеть на рисунке 1. На нем указаны только ключевые функции управления прибылью, присущие для предприятий абсолютно всех организационно-правовых форм деятельности и форм собственности. Уточнение функций управления прибылью в существенной степени диктуется отраслевой спецификой предприятия, его масштабом [14].

Процесс реализации системы управления прибылью предприятия основывается на установленном механизме. Этот механизм управления прибылью включает следующие составляющие:

Нормативно-правовое регулирование государством вопросов в области формирования и распределения прибыли предприятия [15]. Принятие нормативно-правовых актов, координирующих использование прибыли предприятия, является одним из направлений экономической политики государства [16]. Законодательные основы этой политики регулируют образование и распределение прибыли предприятий в разных формах. К числу основных из этих форм относятся: налоговое регулирование; регулирование методов амортизации основных фондов и нематериальных активов; регулирование величины отчислений прибыли в резервный фонд; регулирование минимального размера оплаты труда и другие [17].

Рыночный механизм регулирования формирования и использования прибыли предприятия. Спрос и предложение на рынке определяют уровень цен на товары, стоимость привлечения кредитов, прибыльность некоторых ценных бумаг, среднюю норму прибыльности капитала и т.д. [18]. Роль рыночного механизма регулирования формирования и распределения прибыли предприятия будет увеличиваться по мере углубления рыночных отношений [19].

Внутреннее устройство регулирования некоторых пунктов формирования, распределения и использования прибыли предприятия. Безусловно, структура этого регулирования организуется в пределах самого предприятия, корректируя текущие управленческие решения в области формирования, распределения и использования прибыли. Регулирование этих аспектов регламентируется правилами устава предприятия, целевой политикой управления прибылью, также разрабатывается и утверждается комплекс внутренних показателей и правил в сфере формирования, распределения и использования прибыли [20].

Комплекс определенных способов и мероприятий реализации процесса управления прибылью. При проведении оценки, планирования и контроля формирования и использования прибыли применяется широкий комплекс методов, посредством которых достигаются требуемый эффект. Основными из них являются методы: технико-экономических расчетов, балансовый, экономико-статистические, экономико-математические, сравнения и др. [21].

Таким образом, перечисленные выше требования и механизмы являются основой для реализации системы управления прибылью предприятия, однако, только четкая стратегия и адаптация к определенным условиям деятельности предприятия позволяет эффективно использовать вышеуказанные мероприятия.

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DOI <https://doi.org/10.18551/rjoas.2017-06.17>

DIAGNOSIS OF MIDDLE MANAGER'S INDIVIDUAL WORKING BEHAVIOR IN TURNOVER INTENTION TRANSITION PHASE

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ABSTRACT

The aim of this research was focused on voluntary turnover with the cause of pull factor's concept. This research is also aimed to set a recommendation in order to reduce the garment industry employee's turnover rates. This research discussed the pull factors of an employee to stay at a company after having a turnover intention. Process between employee's turnover intention and turnover which ends with the decision to leave or stay with the company is an important factor to be understood so that the company could give an appropriate policy. Employee who leaves the company will cause physical and psychological loss. This research used qualitative research method by deeply interviewing six supervisors as the key informant, a chief, and an HRD manager to complete the information and data triangulation. The research object was a garment company in Klari Sub District, Karawang, and West Java, Indonesia. Research results showed that the cause of turnover intention from the individual perspective consists of implementation success, responsibility, recognition, development, the work itself, and stress. Employee had a choice, after turnover intention came, it may become real turnover or not. Actually, there is a process in the transition time that makes a turnover could not happen suddenly.

KEY WORDS

Turnover intention, individual behavior, employee's pull factor, manager, voluntary turnover, garment industry.

Turnover problem involves psychological and physical aspects, which are not easily understood. Physical aspects can be easily felt or seen, for example, an employee cannot achieve a higher productivity level, decreasing contribution to the company, had a work accident, or cannot use the production tools effectively (Abbasi, 2008; Chawla and Sondhi, 2011; Jha, 2012; Yin-Fah, 2010). By the signs that could be seen, physical problems were easy to overcome by the company's policy. Turnovers that leads to psychological impacts are more difficult to be understood. For example, there is a satisfaction factor as the main reason of an employee to leave the company (Mobley et al., 1978; Mobley, 1982). This is because the measurement of satisfaction is different for every individual.

Employee turnover has an important implication for the individual who leaves the job. There is a significant energy that should be taken out to find a new job, and to adapt to a new situation. Besides that, adaptation and relationship to the abandoned group will cause a stress (Boswell et al, 2005). Therefore, employee turnover topic is clearly relevant to a manager, researcher, and individual (Zedeckand Mosier, 1990). Besides physical and psychological problems, high turnover is also viewed as the cause of low competitiveness (Bax, 2000; Palupi, 2011).

Employee turnover always is a dynamic field on the developmental research despite many academic studies already discussed the topic. There is strategic research on human resource that investigates the mechanism between human-resource practice and company performance (Collins and Clark, 2003; Hatch and Dyer, 2004). Variable related to working (such as role conflict and work partner support), environmental factor (such as the possibility of getting a job), and employee orientation (such as organizational commitment or turnover intention) (Iverson and Marguere, 2000).

It researches about voluntary turnover began in 1980 until 1995 (Holtom et al, 2008). This research offers a voluntary turnover model which is not only sought as the cause of turnover but also the process after turnover intention. Nevertheless, this model is not yet tested empirically. An empirical study stated that if someone leaves the organization, he will get involved to behavioral distortion and reduce the effort towards better performance (Sandep and Manjari, 2010). One of the factors that affect turnover is turnover intention (Jha, 2012; Kim, 2012). If the organization can predict the employee who has a turnover intention, management can determine the possibility of them leaving the organization. This will help the organization to reduce overall turnover and help the manager to make a suitable company policy for the employee who has turnover intention.

According to the problems stated before, clearly there is lacked of information in research on the effect of turnover intention. This research will offer a factor model as the pull of garment industry supervisors after having a turnover intention. This research will also study the effects to the individual, group, and the company.

The aim of this research was focused on voluntary turnover with the cause of pull factor's concept. This research is also aimed to set a recommendation in order to reduce the garment industry employee's turnover rates.

LITERATURE REVIEW

The Relationship of Turnover and Turnover Intention. The relationship between real turnover and turnover intention was stated by Henberger and Saosa-Poza (2004). In their research, turnover intention was 93, 43% and among them only 6, 57% that are realized into leaving the company. From that result, it can be interpreted that not every employee who has turnover intention will realize it into leaving the company. It takes different time in different individuals. Most studies focused on the turnover of an employee who had left the organization. The studies of turnover intention are mostly directed at the cause of turnover (Alkahtani, 2015; Lee and Huang, 2015; Saeed et al., 2014; Kim, 2012). Although the attention towards turnover intention keeps increasing and explains more about the cause of turnover, study that aimed to understand and explain the employee's behavior after the rise of turnover intention until the period of turnover is still rare to find (Johnston and Naiman, 1990).

Researchers had already shown that the order to a turnover process is from the cognition process to stop working, intention to seek a new job and intention to quit (Mobley et al., 1978; Mobley, 1982). Chandrasekhara (2000) gives a model which stated if affective commitment as the impact of sustainable organizational commitment is low, then it will affect the uncertainty of willing to quit the organization or stay. This will cause the intention and possibility to quit. The employee who quits from the company has many reasons to quit. The reason is not only because of unfavorable condition such as low satisfaction or changing commitment to the company, but also because of factors that indicate arising barriers such as work chances, unexpected offerings, or career aspirations (Lee and Mitchell, 1994; Maertz and Campion, 2004; Mobley, 1978).

It most researches focused on "push" model that caused the real turnover and the conceptualization of turnover behavior according to the attitude towards current job (Lee and Mitchell, 1994). A model from Ertmer and Newby (1993) was stated from the research on nurse's turnover intention. There are some variables that could be considered by a company to hold the employee before they make the real turnovers. This research stated that real turnover could be divided into some types, like based upon the length of employee's work. A new employee will be stressed by adaptation or in the locus of control, so he may decide to leave the company. However, there is still no researches that investigate what are the variables affecting the decision.

The research of Maertz and Campion (2004) gave a systematical explanation related with the type of turnover decision (impulsive, comparative, planned, and conditional quit), so that each group is having different motivation. They identified eight causes of turnover's proximal cognitions. The research of Krishnan and Singh (2010) explained that an employee

who has turnover intention will show organizational deviance (OD) behavior, organizational citizenship behaviors (OCB), and performance orientation (PO) as moderator variables. It researches about turnover intention are mostly done to the employee who has high education and position (Blommea, 2010; Chawla, 2011; Kim, 2012). Research in higher job position is considered more meaningful than in lower employee level. However, researches of Palupi (2011), Mbah and Ikemefuna (2012), Yuccell (2012), and Yin-Fah (2010) stated that employee with lower educational experience and lower job positions (supervisor, middle manager, household assistant, and factory workers) and laborers also have turnover intention. Research by Kim (2012) stated that gender and work were affecting turnover intention.

Middle employees are also needed to be concerned with the intention to leave the organization because in this level, the problem is much bigger (Mowday et al., 1984). Middle manager or administration manager, including division Manager is responsible for the implementation of the operational plan which set by the top manager. This is same with the employee in supervisor position (middle manager) of garment (textile) industry. If the middle manager left the organization, that will cause loss of time, knowledge, and disturb the production target.

This research was done in garment industry called Textile and Textile Product (TPT) in Klari Sub District, Karawang Regency, and East Java. As one of the industries that were long developed in Indonesia, TPT industry holds an important role in economic structure. Textile industry is actually included into high creation density industry with high contribution to the Gross Domestic Income (GDI) according to Wike (2014). Turnover level of the employee in this industry is always increasing each year. According to survey data by Tower Watson (2014), industrial company commonly has a high turnover rate.

Turnover Intention and Its Process. Employee turnover or the in and out of an employee within an organization is important phenomena. Before a turnover, an employee has a willing or intention to leave the company. Turnover intention (the willing to move) can lead directly to real turnover. Turnover is described by Price (1992) as the movement of individual to pass the limit of membership in a social system. According to this research, turnover is a dynamic process when an employee leaves the organization. Individual is no longer receiving money or something equal to the organization from which they stay.

Herbert Simon in Gudono (2014) is not fully agreed to the rationality concept. He proposes a theory called normative bounded rationality, which stated that human can be failed to be fully rational because of some factors such as: (1) limited ability to process information, (2) the use of judgmental heuristic, and (3) in complex situation people cannot maximize the objective but merely get into the satisfying objective. Heuristic is a role of thumb, a simple way in which someone processes the information simply in the brain. There is two way of heuristic: (1) tendency to be based upon available information in memory (availability heuristic) and (2) tendency to judge something based on what they know (representativeness heuristic).

The result from this process of evaluation is that employee will decide to leave or stay. The final step of this alternative process is the decision to leave the current position. According to this model, decision to leave the position is the discussable process. Impulsive behavior is in the form of thought of quit, but it is not always thought about (Mobley, 1977).

METHODS OF RESEARCH

This research used qualitative method in collecting data. The researcher aimed to understand the social situation deeply, find a pattern, hypothesis, and a theory (Sugiyono, 2008). This research was done in a garment factory in Klari, Karawang. Interview had been done openly. Informants had been chosen purposively based upon the mastery over the problem. The informants were supervisors of garment industry in Klari Karawang. Informants and key informants in this research were: supervisor of garment industry, chief, HRD manager, and employee (supervisor) with turnover intention. Informant was chosen with snowball sampling technique. Employee with turnover intention was known through deep

observation and interview with chief and HRD manager. The suggestions from an interview will be helping to choose the key informants. This is important so that the key informants can give the information openly. As we know, people tend not to tell bad thing about themselves. Interviews were done outside the working hour in order to make the data natural and not disturbing the work because each interview needs an hour. Data was analyzed by triangulation and comparison to other sources (chief, other supervisors, and HRD manager). There are six supervisors as an informant. Supervisor 1, 2, and 3 are supervisors who are still staying with the company, meanwhile supervisor 4, 5, and 6 are supervisors who are used to work in the position and currently left the company. There is a company's chief, and a HRD manager. Two-faced interview was done in order to get enough information and data triangulation. The research was done in 2014-2015.

According to the introduction, the model plan as this research's base could be shown in Figure 1.

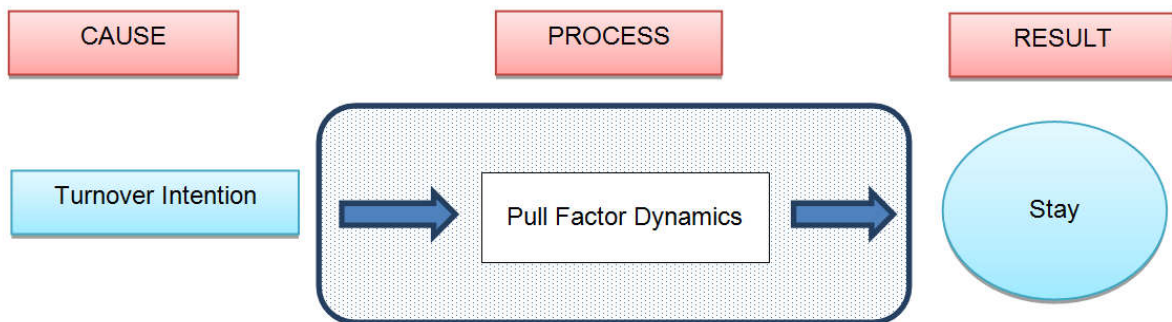


Figure 1 – Research Model Plan

RESULTS AND DISCUSSION

Individual Responsibilities. Supervisor is the first-line manager (middle manager) who needs to be responsible to the line member (operator). In working position, employee as personal tends to have creativity, imagination, spirit, and self-achievement. Employee shows the ability of self-control and initiative responsibility so that the operator will be more motivated. After the employee has turnover intention, the responsibility is still being carried out because the supervisor feels that the responsibility to line member is not only as work relationship but also as a sympathetic person. The form of responsibilities is: presence, finishing the assignments, not to talk back, and not to give bad examples to the line members.

Individual Competency. Competency can be defined as ability and characteristics of somebody, in form of knowledge, skill, and behavioral attitude needed for the implementation of job. A supervisor should have spirit, willing, and strong personality related in the field of work. A supervisor should believe that the competency in his field is acknowledged by other companies. By such self esteem, a supervisor can do the job well. If the competency is being acknowledged by the company, the employee will stay at the company.

The characteristics of employee's competency are having knowledge, capability, initiative and innovative attitude in every dimension of work: (1) Skill and attitude to solve the problem with orientation to efficiency, productivity, quality, and care to the environmental effect. (2) Skill and attitude in horizontal and vertical communication in building internal network.(3) Skill and attitude in self-emotional management, building friendship and perceptual objective.(4) Sustainable willing to study. (5) Skill and attitude on self-development related to the competency. (6) Skill and attitude of synergy between employees. The competencies that should be possessed by garment supervisor are: competency as a supervisor, understanding of sewing procedure, skill of clothing design, skill of cutting, skill of sewing, skill of finishing, and the knowledge of quality control. If a

supervisor doesn't have those competencies the intention to leave the company will get stronger, because they are not feeling comfortable working for the garment company.

Individual Belief. A supervisor has a self-belief about the job he is working on. Belief is an attitude shown by people if he knows enough and concludes that he is reaching the truth. Because belief is an attitude, it is not always right and cannot be the guarantee of truth. Belief should always be tested and evaluated so that it will not lead to wrong attitude, action, or decision. Sometime, we are facing a situation which could not be easily decided, for example, the decision to move the town, to change the job, or to choose a work partner. But it should be remembered that we can choose emotion and certainly belief. Once the belief is set, it will focus on what could be done and what could happen. In growing positive belief, obstacles and deviations will occur as the part of a challenge. Employee's argument could be under estimated by the superiors and could also be rejected. But if there is a belief that the idea could lead to good advantages, the employee will hold on, stay strong and behave positively. Negative beliefs will slowly affect the intention to change. This may be the point where the failure to make a change occurs.

Praise for Individuals. Everyone is glad to be praised. The right words of praise will give working spirit and motivate the employees to do better job. Some simple words could motivate the employee in working, such as "you have done a great job and it fulfills my and company's expectation, «you are helpful and ease the load of my job» etc.

Bonus. Bonus is a good thing for an employee. However, it should be noted that too many expectations of bonus will lead to quick despair and lack of happiness. Therefore, leaders should inform the employees not to see the "amount" of bonus, but instead think that the bonus is a form of company's appreciation for their performance and productivity.

Individual Spirit. Working spirit is a condition that supports an employee to do the faster and better job at a company. This condition is an early depiction of one's productivity. It could be said that there is a tendency of direct relationship between high productivity and spirit. In bad condition of spirit, long-term productivity is hard to be achieved. Low spirit could decrease productivity. Lower profits can lead to fewer salary earnings in the future. A full and cumulative environment then occurs, because salary can affect the spirit. However, high spirits do not necessarily lead to high productivity; it is merely an influence even though it is important to the overall production. A workgroup can be happy as a result of the social relationship in work, but they may be so busy with themselves that their productivity is low. Employee's spirit is low in the absence of effective leadership. Because high spirit affects productivity profitably, it must be accompanied by management guidance and supervision.

Individual Training. Training is often regarded as the most visible and most common activity of all staffing activities. Superiors encourage training because through training the employees will become more skilled, and employees are expected to be more productive, but training time should also be taken into account. This calculation is important so that the training will not disturb on-going work. Training provided by the company, can generate the ability and confidence of employees who receive training. The training methods should be tailored to the conditions of employees and company. Human Resources training methods that are often used for the garment industry include on-the-job training method in which the employees learn through their work by observing other workers who are working, and then observe his behavior, and there is also Off the Job Training, which is to learn something outside his working hours. This is usually when there is a new model change that should be given to the supervisor and then the supervisor will train the line member (operator).

Good training and work ability can also support the success in a company in achieving its goals. Because these two factors will create a high level of work productivity and can support the success with the company. Conversely, if the level of work ability decreases, it will hinder the company in achieving its goals. The ability of employees within the organization is needed, to answer the competition with the company, where the changes in all fields occur very quickly, the development of increasingly complex and dynamic problems, and uncertain future in the life of society. Training as a motivational tool will encourage employees to work in optimum ability and to improve their performance. The training is

intended to meet the work standards set by the company. From the above description, we can describe the pull factor model of individual turnover intention.



Figure 2 – Pull Factor of Individual Turnover Intention

The result of an individual pull factors is the factors become attractiveness to the employee, so that they will choose to stay and self controlled. Table 1 shows the research result about pull factors of employees to stay in the company.

Table 1 – Attractiveness Factors that Caused the Employees to Stay in the Company

Adaptation	<p>From the above statement, stress at the workplace can be overcome with time and the level of supervisor's adaptation when working. After the trial period, there is an award to the supervisor in form of a certificate that causes the employee to stay and expect to get the certificate. Employee who has an intention to quit is usually triggered by personal stress about making mistakes or by difficulty to face members on the line. This stress can be contagious if not properly controlled.</p> <p><i>«At the time I worked, about the first up to the third month there was a change in work patterns. The pattern changed because I needed to learn so many things about the new task»</i></p>
Motivation	<p>Attention, encouragement, and the understanding of behavior will make the employee more willing to stay in the current company. Personal proximity and routines meet each other causing close relationships among employees. Mutual support among employees can support their work.</p> <p><i>«Problems in the work will be solved if there is communication and mutual encouragement of each other in all things, both in and outside the work, the aim is that the expected target can be achieved»</i></p>
Locus of Control	<p>Supervisors in garment industry have internal locus of control, because they are confident that the success and what is achieved today are because of their own efforts. They do not believe that the fate caused them all.</p> <p><i>«If we want to be success we had to work hard, support from family and close persons is important, but most of all it comes from within ourselves»</i></p>
Work Satisfaction	<p>Sometimes, employee joins the organization because of colleagues' invitation, and if the co-workers leave the companies it will cause the invited employee want to follow the decision. If the employee who invites stays at the company then the invited employee will also be at ease and not willing to leave the company.</p> <p><i>«My responsibility as a supervisor is not just for myself, but also to the company and to my line members. Because the results of this work is not depend on me only, but depends on the group (line members). If the results could be achieved then a sense of satisfaction will also be achieved»</i></p>
Work Discipline	<p>Garment industry employees have work routines in working hours. The time is determined by the company in order to achieve the goals of the organization. Discipline of working hours and strict work methods caused the employees to only focus and think about the work and achievement of targets set by the company. The meeting routine will affect each other.</p> <p><i>«... Working in the garment industry requires high discipline because we as employees are required to achieve the target that has been determined, if the line member is often absent then the delay could occur and harm the company».</i></p>
Family Friendly	<p>Garment employees in Indonesia are predominantly female. Therefore, sociological and stereotyped roles affect their view on the type of work and sex. Event facilities to support togetherness also become an interesting place for them to comfort in work.</p> <p><i>«We should be able to share the time between work and the family, I hope the company continues to pay attention to our needs as women»</i></p>

CONCLUSION

The cause of turnover intention of an individual perspective consists of successful implementation, responsibility, recognition, development, work itself and stress. Attitude is a response of like and dislike to objects. Job satisfaction is basically something that is personal. Each individual has a different level of satisfaction in accordance with the value system that applies to him. The higher the assessment of the perceived activity in accordance to the wishes of the individual is, the higher his satisfaction in the activity. Thus, satisfaction is an evaluation that describes a person for his feeling and attitude, such as happy or not happy, satisfied or dissatisfied in work. Satisfaction is because of an exciting job that full of challenges, and opportunities for achievement and promotion.

From the Individual side, an employee stays in the company because of responsibility, competence, confidence, praise, passion, training, and opportunities. Responsibility is a thing that is realized by the supervisor. The load on the line members is big enough so that if the achievement of the target has not been achieved it will cause the supervisor to survive. The supervisor's competencies that the company needs can be the supervisor's pull factor not to quit or moving jobs. Praise will cause the employee to feel satisfied and recognized by the leadership. Meanwhile, the spirit of survival can be obtained from the recognition of employees. Furthermore, training gives supervisors the opportunity to increase their ability to create new models. Finally, opportunities within the company to improve the position or career can still be achieved and will hold the supervisor in the company.

Employee has a choice after turnover intention to become a real turnover or not, even among the process. there is a process that causes the turnover does not occur directly or suddenly. This is because the intention can be strengthened or weakened not only from within the individual but also from external factors, such as: company policy or group work. This means that companies should be prepared to deal with these conditions by providing policies that can keep employees staying in the company. Maintaining employees needed to be done due to consideration of physical and psychological consequences of turnover. Based on the research result, the following suggestions are proposed: Company management and human-resource department should periodically conduct an evaluation or detection of turnover intention symptoms by working as a psychologist and/or human resources specialist. This is necessary so that the company can make early action plan if turnover intention becomes turnover. Future research may be possible to add time-control variables in the decision-making process that can lead to turnover intention of the employee/supervisor.

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DOI <https://doi.org/10.18551/rjoas.2017-06.18>

SAFETY MANAGEMENT ON LOADING PROCESS WITH RUBBER TYRED GANTRY CRANE: CASE STUDY AT PORT OF TANJUNG PRIOK

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ABSTRACT

Loading and unloading process are the main activity that operated by PT. Pelabuhan Tanjung Priok. The operational activity occurs during fully 24 hours with very high flows. This condition affects the accident level of the area, the accident report of PT. Pelabuhan Tanjung Priok shows there are 75 case of accident by December 2015 and 45 % of the accident took place in container yard. Rubber tyred gantry crane is a tool operates in the container yard . The mobility of this tool is quite high due to wear rubber tires Thus, to prevent the study of risk assesment and its control plan of lift off process using ruberr tyred gantry crane are needed by using fault tree analysis to trace the root of the problems of each risk. the results obtained that there main activity have a highest risk, the risk is sling broken with value about 300, because of that the Lift off activities having A class from qualitative risk assesment. researcher making management recommendations of recruitment , training , tools, testing and commissioning tools, then recommendations to RTGC safety features Standard and Chart of safety report.

KEY WORDS

Risk assesment, safety management, fault tree analysis, port, loading, rubber tyred gantry crane.

Safety performance has traditionally been measured by 'after the loss' type of measurements such as accident and injury rates, incidents and dollar costs. However, there is a growing consensus among safety professionals and researchers that these "lagging" indicators, which means that an accident must occur or a person must get injured before a measure can be made, may not provide the necessary insights for avoiding future accidents. A low reported accident rate, even over a period of years, is no guarantee that risks are being effectively controlled, nor will it ensure the absence of injuries or accidents in the future (Lindsay, 1992). Moreover, in many safety-critical settings, the likelihood of catastrophic events or accidents is low; thus, the absence of unlikely events is not, of itself, an indicator of good management (Van Steen, 1996).

Safety has often been considered as a critical feature in almost all marine operations. The hostile environment set many challenges not only to the ship itself, as a technical artefact, and the people onboard, but also to the higher levels of safety management. The management of an organization should be arranged to be able to keep sufficient control of the safety and make plans to overcome the hazards, i.e. be prepared for all foreseeable situations that can be encountered and that may possibly cause harm to the organization, to its customers and other stakeholders. The risk should be below the limits set by the regulators and concurrently as low as reasonably acceptable, taking into account the relevant stakeholders (Jalonon et al, 2009).

In this case the factors not only provided accessible information, costs, facilities for consumers used container loading services but amount of accident and extent of damage to materials that happened in the work area, to prevent emerging risk and loss it required a system that can control the risk (i.e risk management) (Wang, 2008). Leading indicators, one type of risk management activity, are conditions, events or measures that precede an undesirable event, and that have some value in predicting the arrival of the event, whether it is an accident, incident, near miss, or undesirable safety state (Grabowski, Et al).

Leading indicators are associated with proactive activities that identify hazards and assess, eliminate, minimize and control risk. Lagging indicators, in contrast, are measures of a system that are taken after events and assess outcomes and occurrences. Examples of leading indicator measurement programs include near hit reporting in anesthesia management (Pate-Cornell, 2003).

Operational activity in PT. Pelabuhan Tanjung Priok runs for 24 hours with fairly high unloading traffic. This high traffic of unloading affects to the high risk of safety of the Port of Tanjung Priok working area. This can be seen from the accidents report owned by the Port of Tanjung Priok in 2015 up to September where 98 cases were recorded. Most of the accidents happened in container yard CY. One of the activities in CY is unloading using Rubber-Tyred Gantry Crane (RTGC), a heavy equipment to load with flexible mobility.

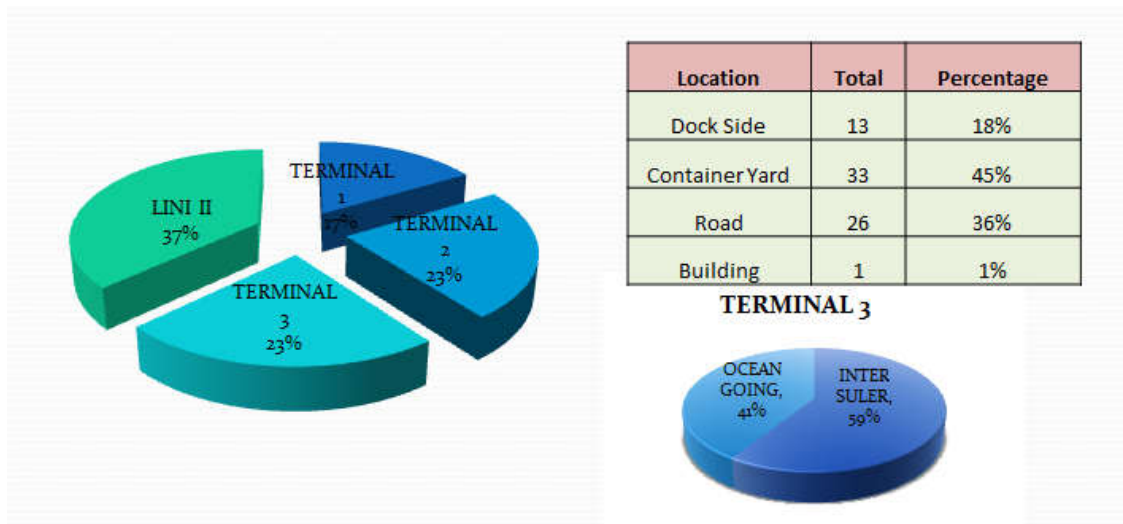


Figure 1 – Number of Accident Cases Based on The Area
Source: Accident Report PT. Pelabuhan Tanjung Priok

If it is seen from the number of accidents data based on the location, it can be seen that terminal 3 has the most accidents, however if it is seen from the area, activities in hoarding field shows the biggest number of percentage as many of 45%.

Table 1 – Accidents Data Based on the Damage Inflicted

Damage to	Total	Percentage
Environment	5	7%
IPC Property	19	26%
Client Facility	36	49%
Cargo	12	16%
No Damage	5	7%

Source: Accident Report PT. Pelabuhan Tanjung Priok.

The table above shows that the partners' facility have 36 facility damage from 75 accidents happened and this can cause the increase of dwelling time and also causes the excess of operational spending during the activity. It can be seen also from the data that the accident impacts that is not causing accident is only about 5%.

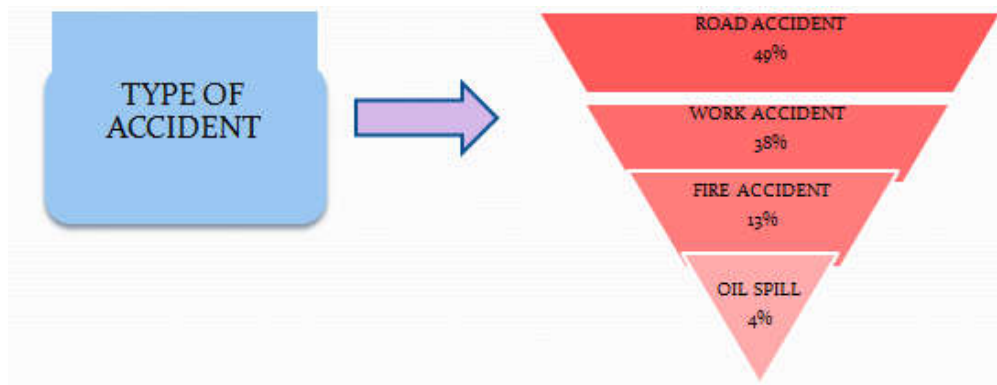


Figure 2 – Number of Accidents Based on The Accident Types
Source: Accident Report PT. Pelabuhan Tanjung Priok

From the type of accidents, the biggest accident in the Port of Tanjung Priok is a traffic accident where inside the terminal, this activity often happened in the hoarding field, which involves drivers and customers and also unloading factory. This can change the stereotype of citizen outside that assume that the accidents were caused by the people of PT. Pelabuhan Tanjung Priok.

Now, the Port of Tanjung Priok have had risk management system for their operational activity. However, the problems based on the accident report shows that there are still many infringements such as the use of non-standardized equipments, unlicensed RTGC operators who do not have operator licensed, and also unclear warning sign mainly in RTGC operation area in container yard. Many non-internal guests of PT Pelabuhan Tanjung Priok and non-loading contractors that are coming in and go out the areas without complete personal safety equipment. That indicates the problems in the implementation of risk-management system in the Port of Tanjung Priok which will cause loss if it is not addressed properly.

This research aims to find out the accident risk in all activities in container yard of PT. Pelabuhan Tanjung Priok by designing risk management system after knowing the core of the problems from the risks that later can be the recommendations for the betterment of safety management system in unloading process using RTGC.

THEORETICAL FRAMEWORK

Container yard is a container hoarding field that contains FCL (Full Container Load, which all the containers owned by the sender and the load recipients) and the empty ones that are going to be shipped. The field is situated on the land and the surface has to be covered by pavements in order to be able to support the lifting gear or carrier and also the load of the container.

Risk and Hazard. Hazard is a potential source that endangers and harms the surroundings such as causing accidents, injury or illness to human, building damage, environmental damage, or the combination of them (Goestch, 2008). While risk is chance/possibility of the occurrence of something that causes impacts of something; incidents or events as well as the consequences that arise from them; is a combination from the consequence of an incident and possibility of the occurrences that have positive and negative impacts (Colling, 1990)

Semi-Quantitative Analysis. Semi-quantitative analysis uses qualitative scale that has been given a value that has meaning of the degree of consequences and probability from the risk (Chybowski .2012).

After existing hazards are identified and given scoring based on the tables above, Probability, Consequence, and Exposure components are multiplied to calculate the risk level that can be beneficial to help overcome the risks.

Table 2 – Semi-Quantitative Probability Table

Factor	Levels	Description	Rating
Probability	Almost Certain	The most common occurrence	10
	Likely	The change of an accident 50% - 50%	6
	Unusual but Possible	Unusual but possible	3
	Remotely Possible	Very small possibility of incident	1
	Conceivable	No accident in years of exposure but may occur	0.5
	Practically impossible	Very unlikely to happen	0.1

Table 3 – Semi-Quantitative Factor Consequence Table

Factor	Levels	Description	Rating
Consequence	Catastrophic	Discontinued activities, irreversible damage to the environment	100
	Disaster	Death, permanent damage that is local to the environment	50
	Very Serious	Permanent disability, non-permanent environmental damage	25
	Serious	Serious but resulted in non-permanent disability or morbidity, adverse effects on the environment	15
	Important	Medical treatment needed, exhaust emission occurs in the location but resulting in damage	5
	Noticeable	Injuries or minor illness, a little production loss, small loss or interruption of working process	1

Table 4 – Semi-Quantitative Factor Exposure Table

Factor	Levels	Description	Rating
Exposure	Continuously	Often occurs in a day	10
	Frequently	About once a day	6
	Occasionally	Once a week to once a month	3
	Infrequent	Once a month to once a year	2
	Rare	Known the occurrence	1
	Very Rare	Not known occurrence	0.5

After the value of hazard level is found, the comparison between hazard level criteria is done.

METHODS OF RESEARCH

This research is a Semi-Quantitative Risk Assessment that is a development of risk assessment by using a modeling to particular event to obtain rate event. The modeling aims to obtain data accuracy based on initial information that is processed by considering existing parameters.



Figure 3 – Operation Terminal III Location of PT. Pelabuhan Tanjung Priok
Source: Terminal III Profile (2016)

This research was done in PT. Pelabuhan Indonesia II, PT. Pelabuhan Tanjung Priok, precisely in Ocean Going Operational Terminal III sailing area that in Figure 3 is marked with blue, the location is in Jl Raya Pelabuhan, Tanjung Priok, Jakarta Utara 14310.

Data Collecting. From the observation and the data collection from the research location, the scheme of unloading operation in RTGC process in order are as follows: truck obtains permission to enter; truck is guided by the system to enter into CY; truck parks by the guidance of the staffs; RTGC operator is guided by the staffs; RTGC performs container lift off from the hoarding field (container on the deck above the hatch); RTGC's hoist locks the container; RTGC performs container lift on to the top of the trailer; truck from CY goes to the check point; from the check point, truck goes to the gate out; repositioning of RTGC if needed.

RESULTS AND DISCUSSION

Risk Control. From the result of fault tree analysis, the basic event for each hazard has been specified and therefore the researcher was helped in making corrective and preventive actions in order to prevent the danger from the biggest risk, which is the off sling of trucks. The corrective and preventive ways can be seen in Table 5.

Table 5 – Risk Control Hierarchy Based on AS/NZS 4360, Year 2004

No	Risk Control Hierarchy
5	Eliminate Source a Hazard
4	Change the Device/Machine/Methods
3	Modify the Device/Machine/Methods
2	Procedure, Rules, Training, Working Hours, Alarms, Signs, Labels
1	Personal Protective Equipment

Risk Assessment and Control. Risk assessment was done by using qualitative method and semi-quantitative method where the researcher would interview the operators and made the result of interviews as a value that can be used as a guidance to understand various activities that can be controlled. The activities that the cause and the safety management would be made were determined through qualitative method based on the interview using HIRAC method Based on the field observation and the result of interviews, the researcher only took the samples that have A class so that the research would only be focused on the danger and the corrective and preventive actions for the obtained risks can relate to one another in which it can help reducing the potential danger from the activities. The researcher sees that lift off has the highest risk because there are still worries from the operator regarding the conditions applied from top management that lead to the unsafe actions and are possible to cause human error accusation to the operators' side if the accidents happen.

Seeking for Root Cause through Fault Tree Analysis Method (FTA). In off-sling case, the hazard was caused by 3 conditions namely, the lifting equipment tools, work and human environment, several root cause from the problems were obtained from the FTA, for the RTGC, the basic event was the sling which was fragile, the leaking oil from the pulley, and the strong winds that cause shaking spreader. The basic event from human condition were illness, fatigue, and disobedience to regulations due to productivity reason, lack of knowledge and experience and also lack of additional features of RTGC that provide specific information for the operators.

For the off-sling case, the corrective action is to do the checking using visualization during the shift change and make sure that the load that is being lifted is less than SWL, whereas the preventive action is to conduct training for operators and also conducting maintenance and treatment for RTGC.

Table 6 – Risk Assessment of Loading Activity

No	Activity	Hazard	Consequence	Probability	Exposure	Risk Score	Priority	Number Of Hierarchy
1	Lift off	Risk of hoist falls	50	0,5	1	25	priority 3	1,2
		Risk of container dislodged from the twist lock hoist	25	1	1	25	priority 3	1,2
		Risk of transported containers crashed into piles of containers	50	0,5	1	25	priority 3	1,2
		Risk of broken sling	50	0,5	1	25	priority 3	1,2
		Risk of container fall on the truck	50	1	1	50	priority 3	1,2
		Risk of container fall on a person	50	1	3	150	substantial	1,2, 3
		Risk of RTG with excessive voltage on the column	50	0,5	1	25	priority 3	1,2
		Risk of lift off container not fit with the trailer	25	1	3	75	priority 3	1,2
		Risk of broken sling	50	2	3	300	priority 1	1,2, 3, 4
2	Operation in The Cabin	Risk of sudden illness attack on the operator	25	0,5	1	12,5	acceptable	1
		Risk of burning cabin	25	0,5	1	12,5	acceptable	1
		Risk of high temperatures during the day in the cabin	1	6	10	60	priority 3	1,2
		Risk of falling cabin	50	0,5	0,1	2,5	acceptable	1
3	RTGC Maneuver	Risk of RTG crashed into four-wheeled vehicle	25	1	1	25	priority 3	1,2
		Risk of RTG crashed into two-wheeled vehicle	50	1	1	50	priority 3	1,2
		Risk of RTG crashed into RTG	50	1	0,1	5	acceptable	1
		Risk of RTG crashed into piles of container	50	1	1	50	priority 3	1,2
		Risk of RTG run over people	50	1	1	50	priority 3	1,2
		Risk of RTG crashed into rmbc	50	1	0,1	5	acceptable	1
		Risk of RTG crashed into container office	50	1	0,1	5	acceptable	1
4	Employees Go Up to The Cabin	Risk of falling lift	50	1	1	50	priority 3	1,2
		Risk of shut down lift	15	3	1	45	priority 3	1,2
		Risk of employee falling from RTG	50	1	1	50	priority 3	1,2
		Risk of jammed lift	50	1	1	50	priority 3	1,2
		Risk of employee falling down from the RTG stairs	50	1	1	50	priority 3	1,2
5	Maintenance Activities	Risk of mechanic being electrocuted	50	1	1	50	priority 3	1,2
		Risk of mechanic slipped	15	1	1	15	acceptable	1

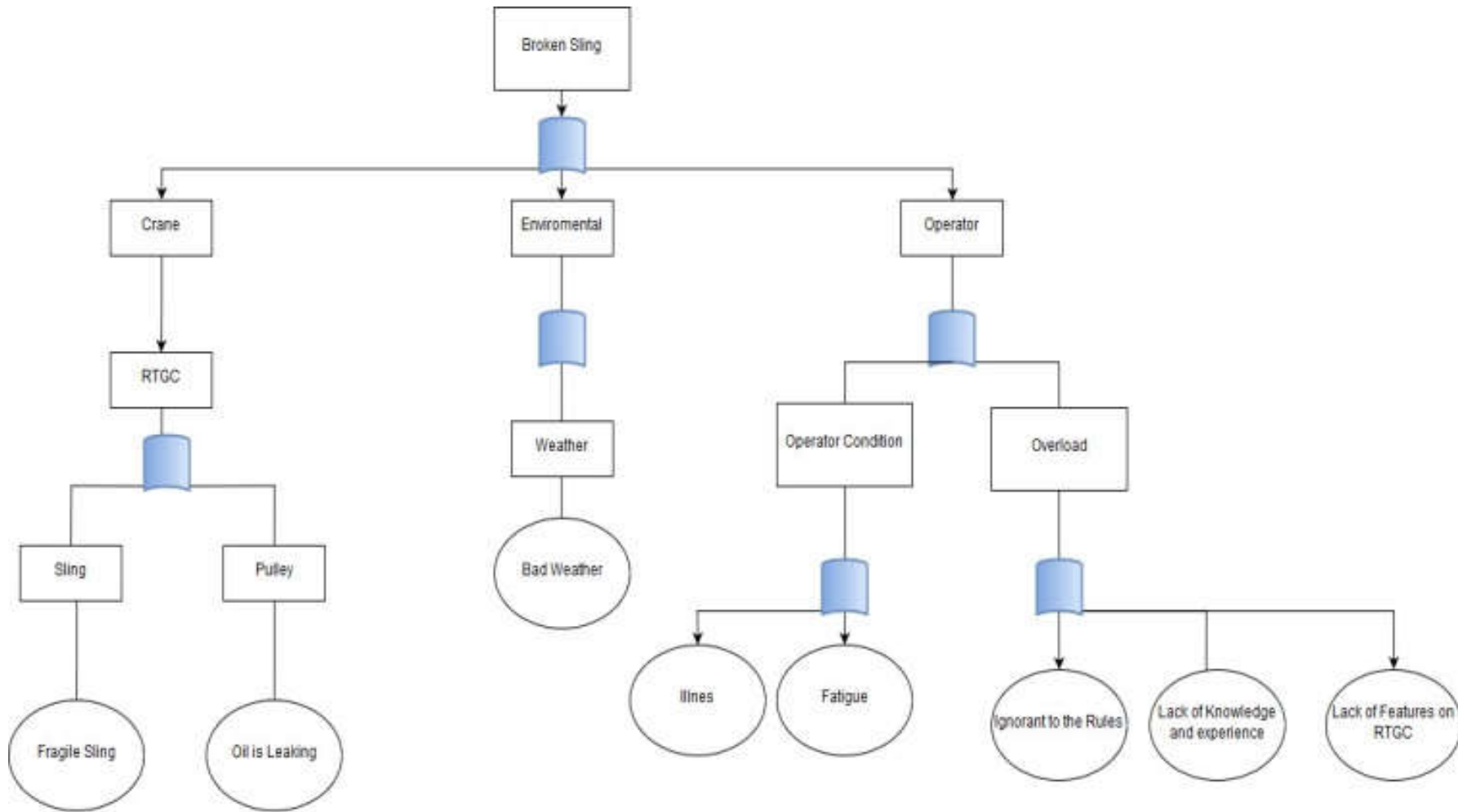


Figure 4 – Off- Sling FTA

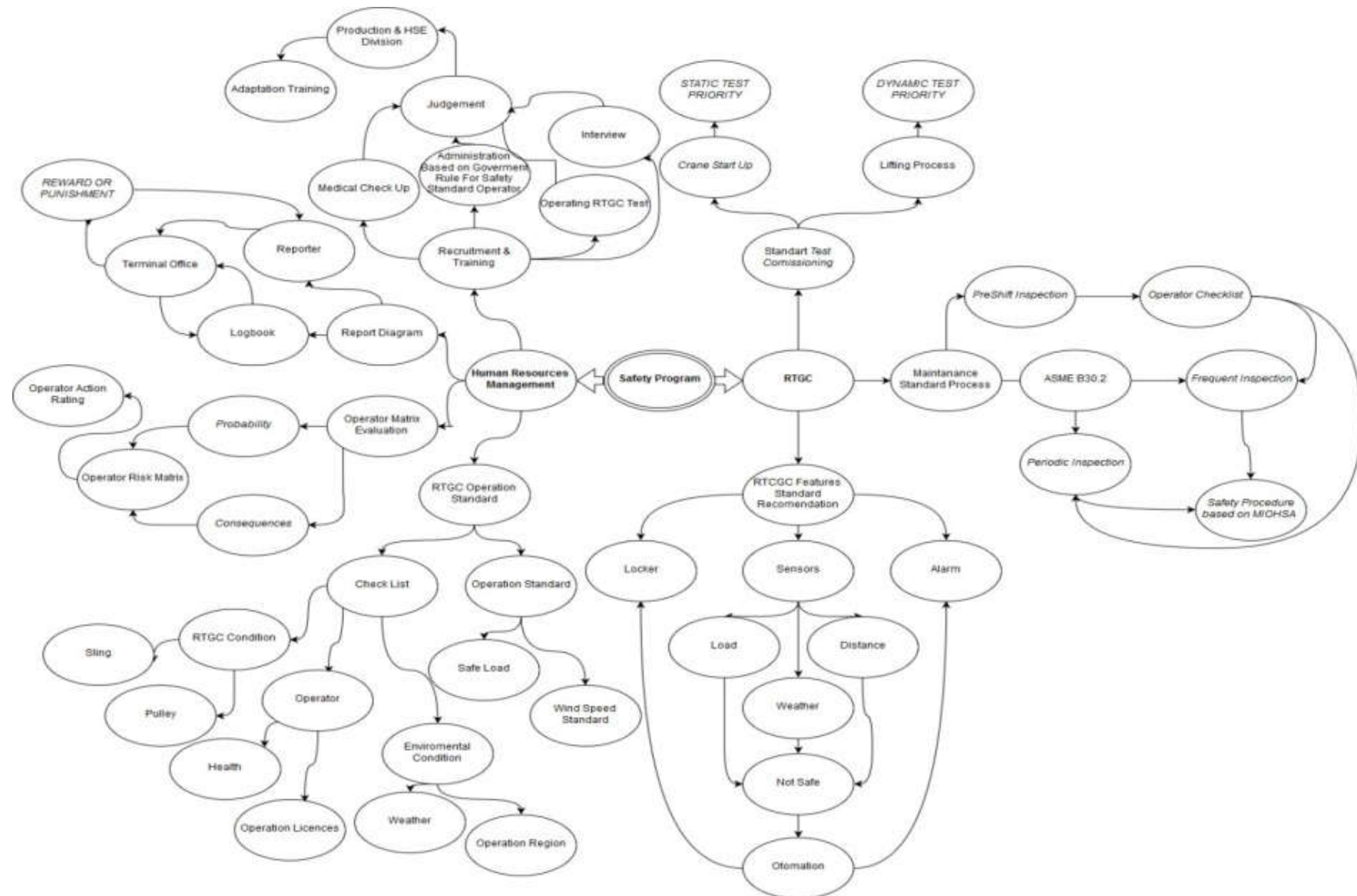


Figure 5 – The Establishment of Safety Management Diagram

Safety Management of Unloading Process Using RTGC. This work safety management is in the form of suggestions that will be proposed to the authority of the port, the suggestion will be divided into two categories: suggestion for human resource management and suggestion for the RTGC itself. For human resource management, the proposed things are: operating process standard, recruitment and training standard, and reporting flows. Then, for the RTGC there are 3 (three) suggestions namely: test commissioning process suggestion, maintenance process standard, and the additional safety features for RTGC.

Safety management for lifting process will be divided into two kinds: for operator and for RTGC. For RTGC, the researcher will make standard operational procedure for test commissioning and for maintenance, and for the operator, the researcher will set standard operational procedure for shift change, as well as setting protection ways correctively while the operational activity is running. Other than two things above, the researcher will also make recruitment standard for RTGC operators and the development of knowledge of the RTGC operators.

Standard Operational Process of RTGC. The lifting process using RTGC has high risk for failure that will be causing fatality, property damage and also environment pollution. According to Brinkmann (2011), there are two system disadvantage factors that can cause failure in lifting process specifically:

1. Container transports between STS crane and yard area require two handover procedures due to the use of different terminal equipment for transport and stacking Tasks
2. Disturbance of TTU operations by trucks being also loaded/unloaded in the stacking area (mixed traffic).

Lifting Plan. The researcher create an outline for the standard operating procedures in the plan of unloading using RTGC into six phases namely: Operator Examination; Tool Condition Checking; Lifting Operations; Termination of Operations; Equipment Testing by Mechanics; Substitute Operator Stands-by.

Operator Examination includes:

1. Identity Checks;
2. Is not under the influence of alcohol and drugs;
3. Checking of dangerous goods in operator's pocket;
4. Checking of Personal Protection Equipment.

At start-up condition, the operator is recommended to perform a technical inspection such as:

1. Make sure the work site is safe and comfortable, never operate the appliance when danger is visible;
2. Perform a visual inspection to ensure a safe operating condition of the tire gantry and ensure that each holder of tires is removed from under the wheels of the gantry;
3. Make sure the E-stop is in the reset state (not pressed/ locked);
4. Ensure there is no door panel in an open state;
5. Make sure the entrance to the cabin (the walkway) is closed;
6. Make sure the engine oil level, radiator and hydraulic oil "OK" and the volume of fuel sufficient for operations;
7. Ensure anti-collision Crane-to-Crane or Crane-to-Container is in perfect condition.

In lifting operations there are some things that must be considered by the operator, namely;

1. Sling;
2. Wind velocity;
3. The poor condition of the engine/crane;
4. Machine configuration is not in accordance with specifications;
5. The suitability between RTGC with loads that are being lifted;

Termination of the operation needs to be done if:

1. Shift of the operator on duty has been completed;
2. The occurrence of a problem in the equipment to prevent an imminent danger, the dismissal of the operation can be done as well;

3. When there is work accident while operating RTGC;
4. The weather is not friendly during operation.

At the time of the termination, the operator must fill in the check list provided by PT. Pelabuhan Tanjung Priok Operation Terminal 3 so that at a later stage the mechanic who will be checking on the tools can give appropriate and efficient action in improving the tools.

After the operator goes down, the mechanic will check on RTGC's condition very thoroughly either through a check list or through the standard procedure set by the company.

Based on MIOHSA Standard Safety officer is required to perform pre-lift meeting prior to the execution on the field, do a brief meeting with the crane operator, rigger, and all involved parties such as area supervisors and security. In this meeting, give directions regarding safety procedures in the appointment process, appeals on security to provide information on any person associated with the process of the lifting in the area or even shut down the driveway area of lifting, and checked the mental health condition of operator is required before the operation, this is already done by the employees of the operating terminal 3 when the shift change starts.

Recruitment and Training Process of Operator. The researcher creates an outline for the standard operating procedures in the plan of loading using RTGC into six phases namely:

1. Spreading the job vacancy;
2. Administration selection;
3. Tool operation test;
4. User & HRD Interview;
5. Medical checkup;
6. Operator acceptance;
7. Training;
8. Operator is ready to work.

The Risk Matrix for Crane Operator. Special risks matrix for operator is made to set the standard treatment given to operators in the lifting process using the RTGC, these numbers are based on probability and consequences of accidents that have been experienced by operator.

The consequence is the impact of hazards that have been carried out by the operator, consisting of five kinds of very high, high, medium, low, negligible, while the frequency is a level of frequency that occurs in accidents.

All officers including the operator should be aware of the risk matrix because it can increase the sense of attention and caution on work safety in the operating area of loading process (Gamboa, 2011)

Punishment Reward Overview System. Review system is created and recommended so that the relevant parties in unloading position of port can provide a sense of attention to hazardous conditions in the area of operations, as well as the review system and reward and punishment given which is described in the figure below. Reported party is a source of risk which will be reported to the hotline number, the source of risk can be human factor and non-human factors such as equipment or infrastructure damage located around the location as well as in the form of particular conditions. Concerning safety management, no matter the reward or punishment, the safety professional must be committed to fulfill their task successfully because it can avoid an accident on the operation area (Calixto, 2015).

RTGC: Standard Test Commissioning. As we know, this phase must be led by the commissioning engineer and also a very important phase in the manufacturing of RTG by suppliers before they are handed over to the customers. According to Olufuwa (2013), commissioning phase involves two major steps which is the start-up and testing phase as seen in the picture above. Inspection activities carried out during the commissioning phase is divided into two types: start up check and lifting process check:

1. Static checking: RTGC checking on the conditions in which no energy is channeled into RTGC so RTGC does not move at all;
2. Dynamic checking: RTGC checking on the conditions in which the energy is supplied to the engine so that all partitions of RTGC can move.

Start-up phase which is the first phase of commissioning tests involved activities like checking and turning the RTG on. During this stage, the activities carried out in most of the static checking type is already mentioned earlier. According to Olufuwa (2013), Start-up phase consists of several steps that can also be done in parallel with others. During start-up, activities undertaken are: examination of the pre-start-up, RTG power-up, fiber connections and program download.

The second phase of the commissioning phases is testing the lifting process that can also be referred to internal testing phase. According to Olufuwa (2013), the main activity during this stage includes: operational testing, set-up and interlock and safety test. The main objective of this phase is to examine and standardize the commissioning phase to improve product quality and safety standards that are owned by RTGC.

Table 7 – Description Table





Consequences	
Very High	Death, irreversible damage to the environment
High	Severe loss of operational capability highly damaging and extremely costly but survivable
Medium	Operational impact very costly
Low	Noticeable But Limited Operational Impact
Negligible	minimal if any operational impact, negligible cost
Frequency	
Rare	No accident report
Unlikely	once every two year
Possible	once every one year
Likely	once every six month
Certain	once every one month
Color Explanation	
	= Reasonable Action
	= Caution
	= Alert
	= Fired

Table 8 – Risk Matrix for Operators

Probability	Consequences			
	Low	Medium	High	Very High
Rare	2x1	3x1	4x1	5x1
Unlikely	2x2	3x2	4x2	5x2
Possible	2x3	3x3	4x3	5x3
Likely	2x4	3x4	4x4	5x4
Certain	2x5	4x4	4x5	5x5

Maintenance. According to the ASME B30.2 (2005) regulations, inspection and maintenance on Gantry Crane is divided into three kinds:

- Frequent inspections: performed once a month
- Periodic inspections: performed once a year

Inspections are carried out with a standard that is owned by the manufacturing industry that produces the Rubber Tyred Gantry Crane.

The Recommendations of Minimum Additional Features on RTGC. Recommendations of these features is a list of additional equipment that are required based on the observation, interviews with operators, and hazard identification which were done on the lifting process using RTGC.

Based on recommendations are placed in positions that support the RTGC function, for example, in measuring wind speed, anemometer position is placed on the RTGC bridge to determine the maximum wind conditions which exerts a force on RTGC, because if the position of the anemometer is on the bottom part, the measured wind will be restrained by piles of container. Results of fault tree analysis show the presence of some event that trigger the accident scene: overload; physical factors of operator; fragile sling; oil leaking on pulley; weather conditions.

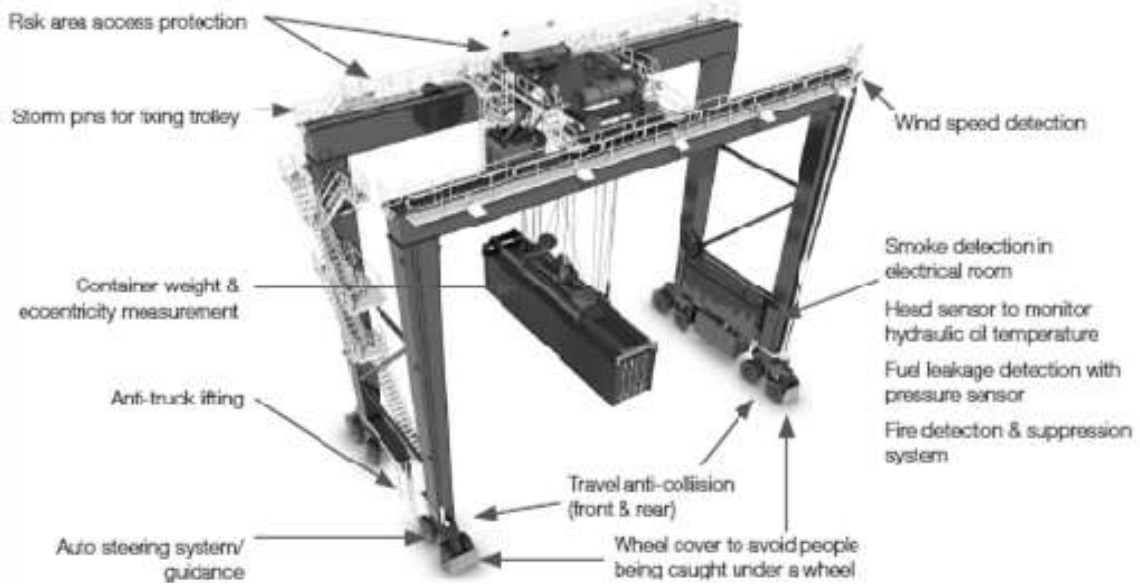


Figure 6 – Recommendations of Safety Features (Source: Port Equipment Manufacturers Association, TT Club and ICHCA International)

From these conditions, the event simulation will be created using ETA to find the worst possibility that would happen if the management suggestions are executed or not executed, This Technique may be applied to a system early in the design process to identify potential issues that may arise rather than correcting the issues after they occur (Ericson, 2005). Supported by the calculation of fuzzy logic on ETA, so that it can determine the numerical value of the likelihood of the initiating event's greatest consequences up to the hazard probability consequence.

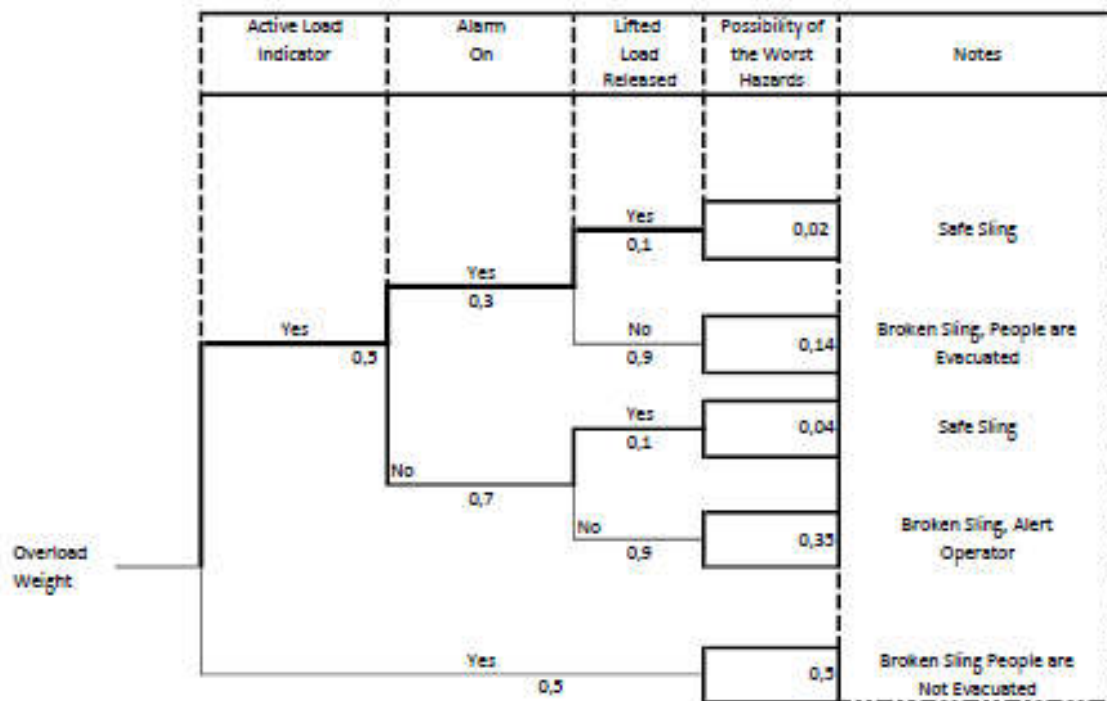


Figure 7 – ETA with Overload Initiating Event

Figure 7 shows that if there is excess in the load on the sling, then if the safety features proposed in the proposed safety management is implemented, it can reduce the possibility of danger up to 0.02.

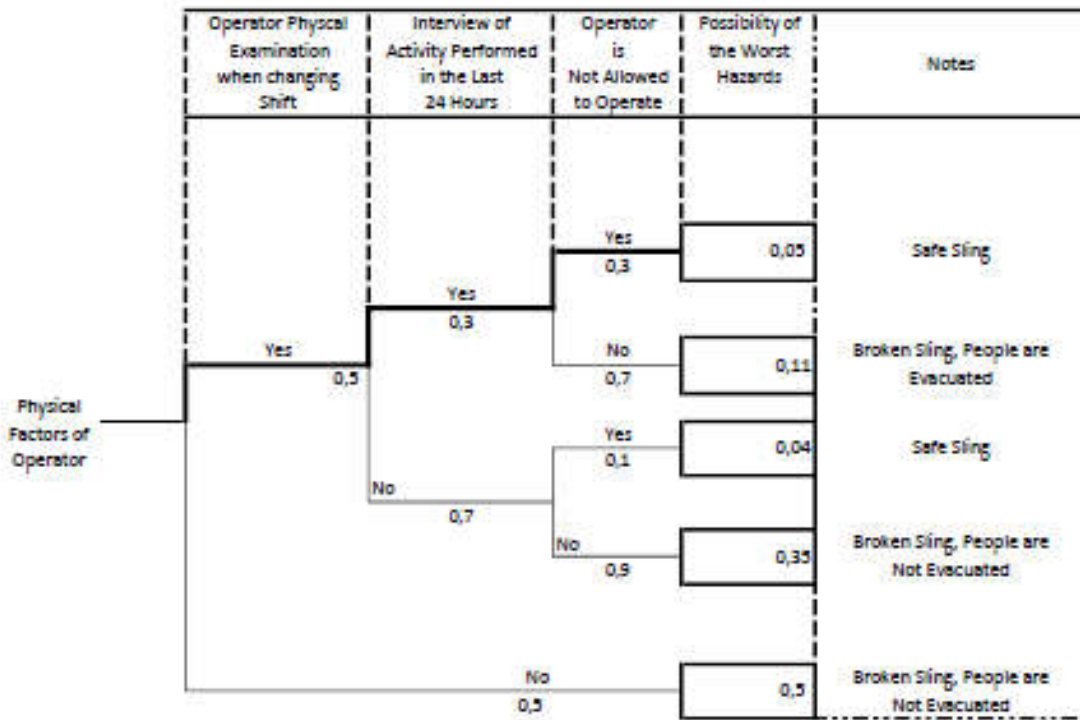


Figure 8 – ETA with Operator's Physical Factor Initiating Event

Figure 8 shows that if the operator experiences pain or fatigue, then if the proposed safety management is implemented, it can reduce the possibility of danger up to 0.05/year.

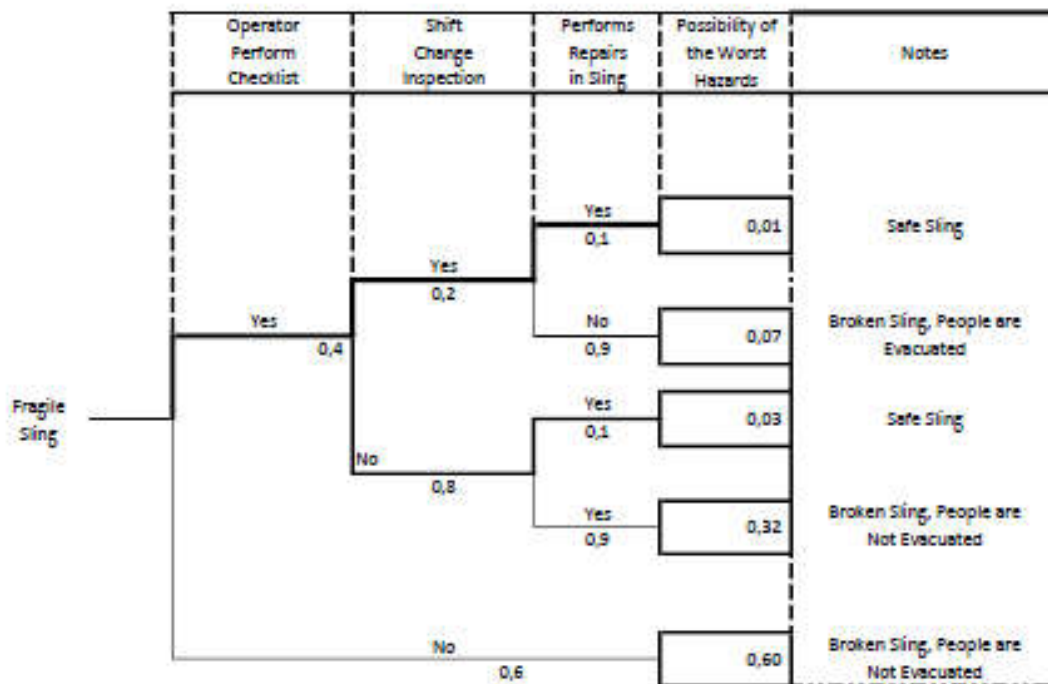


Figure 9 – ETA with Fragile Sling Initiating Event

Figure 9 shows that if the sling is fragile and if the proposed safety management is implemented, it can reduce the possibility of danger up to 0.01.

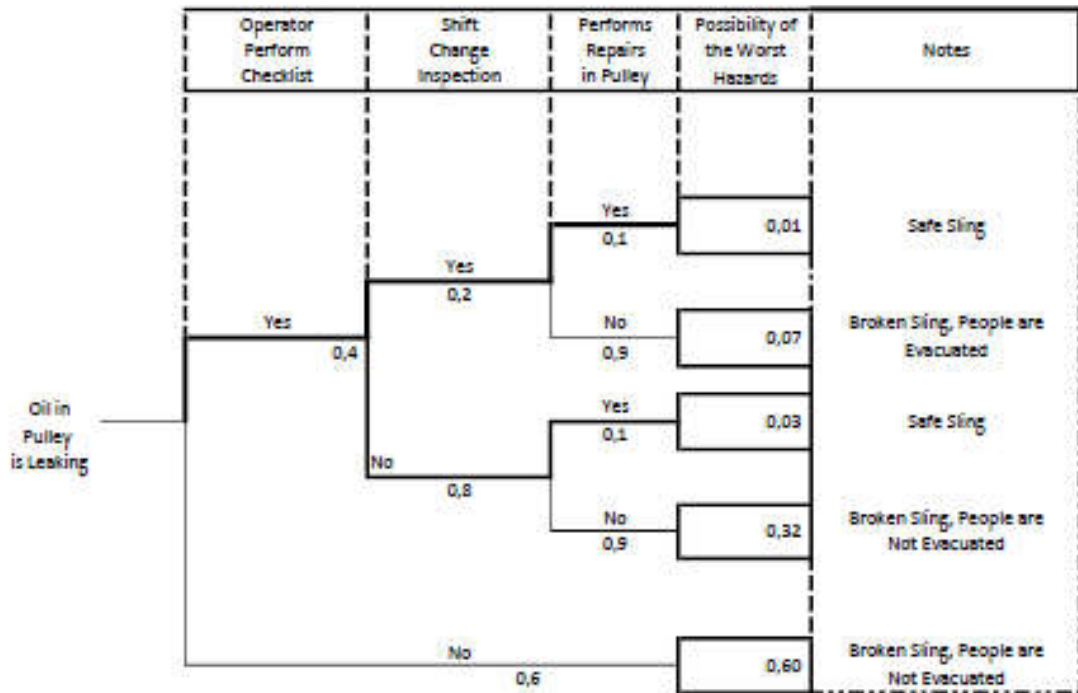


Figure 10 – ETA with Oil Leaking on Pulley Initiating Event

Figure 10 shows that if there is oil leaking on the pulley system and if the proposed safety management is implemented, it can reduce the possibility of danger up to 0.01.

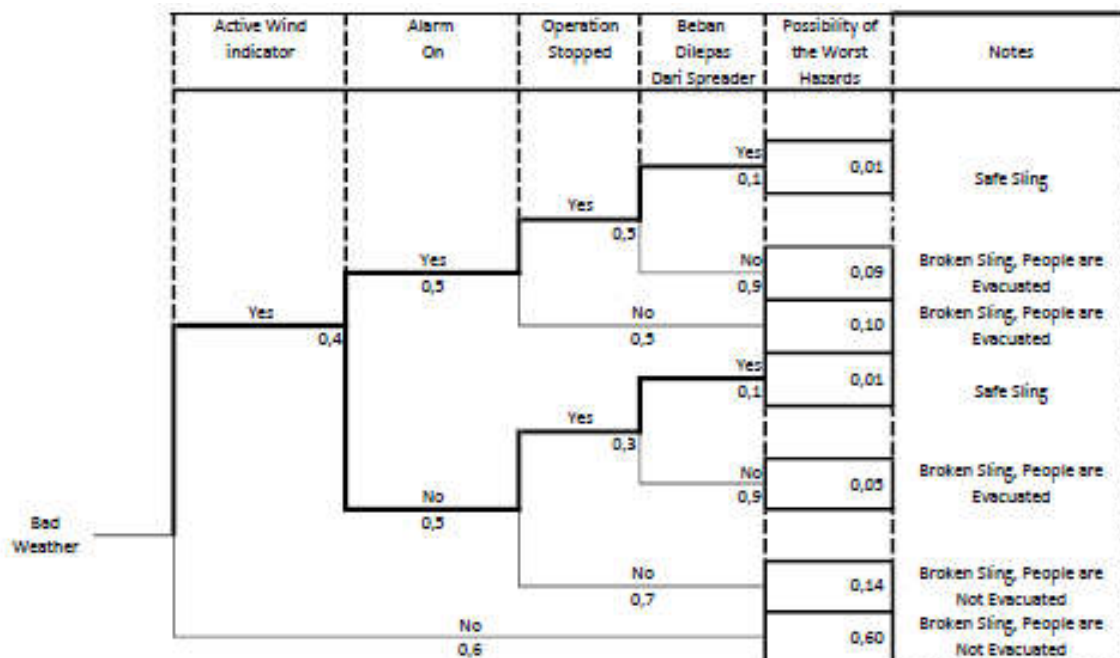


Figure 11 – ETA with Bad Weather Initiating Event

Figure 11 shows that in case of bad weather in the area of operation, with the implementation of proposed conditions of safety features on the safety management proposal, it can reduce the possibility of danger up to 0.01.

CONCLUSION

The proposed safety management system to decrease hazard risk of RGTC operations is divided into two main of standardization, i.e. standardized treatments on RTGCs and operators, for RTGC standards test commissioning, standards of maintenance, standards of safety feature on RTGC and for operators are operator acceptance standards, reporting flow standards, recruitment standards and operator assessment matrix standards. Simulation analysis of field conditions using ETA simulation shows if the proposed safety management system is well implemented then the worst state possibility of top event can be reduced to <0.003/year.

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DOI <https://doi.org/10.18551/rjoas.2017-06.19>

**THE ANTECEDENTS OF DEVIANT WORKPLACE BEHAVIORS
ON THE EMPLOYEES OF REGIONAL APPARATUS ORGANIZATION (ODP)
IN MALUKU PROVINCE, INDONESIA**

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ABSTRACT

The phenomenon of deviant workplace behavior has become increasingly interesting to be examined. Many studies have much more seen this by focusing on the employees of private sectors rather than on those of public sectors. This study believes that it is seriously important to examine the factors influencing deviant behaviors for the employees of Regional Apparatus Organization (OPD) in Maluku Province. The emerging phenomenon was that deviant behavior, either internal or organizational deviance, mostly occurred among the employees. Hence, this study tried to analyze the variables of ethical climate, national culture, workplace spirituality, along with the organizational commitment and its effect on deviant behavior, either directly or indirectly.

KEY WORDS

Ethical climate, national culture, workplace spirituality, organizational commitment, deviant behavior.

Regional Apparatus Organization (OPD) is a state apparatus, which has an important role in servicing public or society. As the public demands for service quality continue to grow, the function of regional apparatus as a public servant is to fulfill the needs of the service recipients or to conduct the legislative provision.

The employees of regional apparatus, either in the level of province or city/regency, should commit public service as mentioned in Law No.5 of 2014 – that Civil State Apparatus (ASN) is a profession based on principles such as being committed, having moral integrity and being responsible for the public. However, the fact often suggests that civil servants conduct less-committed attitude on the works and organizations. The low commitment may become the reason of the existing deviant workplace behavior. According to Dalal (2005) or Spector & Fox (2002), an employee who has a strong commitment to an organization tends to have a relatively small negative attitude.

One of the regions in Indonesia, which continuously try to increase public service quality, is Maluku Province. In general, there are 11 regencies/cities located in the region of Maluku Province. In the government implementation/administration, the phenomenon of deviant workplace behavior is also often found in the Regional Apparatus Organizations (OPD) which exist either on the level of regency/city or province of Maluku. Based on the result of the survey, it was found that the violation trends were mostly still carried out by the employees. It covered from the small ones such as being late to work, going home earlier or entering without permission, working not maximally, playing truant and relaxing out during office hours, until the big ones including sexual deviance cases and organizational harming behaviors such as the use of state funds due to a consumptive lifestyle, authority abusing, even manipulation and corruption that were mostly done by the government employees or officials. This has greatly influenced the performance of public service. Those deviant behaviors also have resulted in economic losses and hampered the effort of improved public service.

The awareness as Civil State Apparatus (ASN) that has not been completely owned was influenced by either internal or external organizational factor. The work attitude in relation to public service was incompatible with the ethical standards of PNS (civil servants) and the applicable rules or law of employment. It led to the occurrences of deviance

practices in the workplace. As mentioned in the 8th, 9th, and 10th articles of Government Regulation No.42 of 2004 that the code of ethics of civil servants must be accountable in carrying out the function of administering a government that is clean, authoritative, responsive, open, honest, accurate, and always on time in conducting all government policies and programs, using or utilizing all the state resources efficiently and effectively.

Deviant behavior (*workplace deviance*) is defined as a behavior carried out intentionally and in opposition to the applicable norms in an organization that can threaten the organizational or member sustainability, even both of the two (Bennett & Robinson, 2000). Deviant behaviors give negative impact on the organizational sustainability. In the context of government organizations, deviant behaviors can trigger the emergence of public mistrust, economic resources losses, and failure in achieving development purpose that has been determined by the government and even affect the *PDB* (Gross Domestic Product) or manpower. Deviant workplace behaviors are also closely related to the norms and values believed in an organizational culture. Cultures become an important thing that needs to be implemented by an organization to overcome the problems of deviant workplace behaviors (Appelbaum, 2005). Those norms not only include the company policy that bans specific behaviors such as stealing, but also constitute unwritten rules (Robbin,2008:39). The implementation of cultural values (either organizational or national culture) on the employees of regional apparatus that has not been maximum could influence the employees' work attitudes. Cultures become a norm that should be followed although the tendency to bring a personal culture is still attributed to an employee. Additionally, the values of workplace spirituality have not fully become a real part of employees.

If internal problems of an organization including ethical climate, national culture, and workplace spirituality cannot be settled well, deviant behaviors then may occur. This is because the employees lose their commitment to the organization they work in. The civil servants who commit to their organization can be seen from their work behaviors and attitudes. Their big intention or willingness to serve the organization has made them uphold the values of being an employee. Furthermore, an attitude of unconditional loyalty will be the characteristic of employees who make commitments. The employees will also have high work ethos to make a performance through work quality, quantity, and punctuality.

By grounding to the background above, the statements of problems of this study are:

- Does ethical climate influence deviant behavior?
- Does ethical climate influence workplace spirituality?
- Does workplace spirituality influence deviant behavior?
- Does workplace spirituality mediate the influence of ethical climate on deviant behavior?
- Does national culture influence deviant behavior?
- Does national culture influence workplace spirituality?
- Does workplace spirituality mediate the influence of national culture on deviant behavior?
- Does ethical climate influence organizational commitment?
- Does organizational commitment influence deviant behavior?
- Does organizational commitment mediate the influence of ethical climate on deviant behavior?
- Does national culture influence organizational commitment?
- Does organizational commitment mediate the influence of national culture on deviant behavior?
- Does workplace spirituality influence organizational commitment?

THEORETICAL REVIEW

Deviant Behavior. Robinson and Bennet (1997) explained that there are 3 different trend areas of study in examining deviant behavior. The first area includes the studies in which deviant behavior is conceptualized as a reaction to the experience in workplace. The

second area refers to the studies that examine deviant behavior as the reflection of employees' personalities, while the third area includes the studies that predict the combination between individual character and organizational situation. Bruursema (2004) and Mount *et al.* (2006) stated that the studies on deviant behaviors were mostly learned in various perceptions, ones of which were *outcome* variable and *predictor* variable. There are some terms often used in any kinds of literature to define a deviant behavior such as counterproductive behavior, antisocial behavior, misconduct, or workplace incivility (Caroline, 2015). Although it has been mentioned in different perspectives, the definitions of deviant behavior are relative the same. Robinson & Bennet (1997) defined a deviant behavior as a behavior that is intentionally and consciously conducted in contrast with the norms ruled by an organization and it threatens the condition of the organization and the other members. Fieldman (1984) added that what the organizational norms mean is consisted of basic moral standards and the traditional standards of other communities, including formal and informal written policies, rules, and procedures of other organizers. Another definition was also revealed by Vardi & Weiner (1996), saying that a deviant workplace behavior refers to a behavior resulting in the emergence of danger or having a possibility to endanger the social norms that have been precisely designed. The behaviors are aimed at individual and organization.

Although defined differently, the behaviors lead to negative impacts for individual or organization performance in general (Judge & Scott, 1995; Maufi, 2011) as well as trigger members' intention to exit, members' satisfaction, a decreased organizational power, stealing, etc. (Bollin & Heatherly, 2001). Furthermore, Zribi & Souai (2013) explained that there are 3 essential principles that can be used to characterize deviant behaviors. First, deviant behaviors systematically bring destructive impacts to an organization. Second, the behaviors must be conducted consciously and not a coincidence. That is, the individuals who behave in distorted ways intentionally oppose the norms that have been determined by an organization. Third, the behaviors are conducted in an organization either directly (sabotage) or indirectly (verbal, physical, moral abuses and sexual disorder). Olabimitan & Alausa (2014) also stated that there are two ways to distinguish deviant workplace behaviors from any other behaviors, consisting of (1) the volisi, dan (2) the dangerous goals. Thus, accidental deviant behaviors or *out-of-control* behaviors are not included in the category of deviant workplace behavior. This study would make a further examination regarding the deviant behaviors according to Robinson & Bennett (1997) in which there are two kinds of deviant behaviors, namely interpersonal deviance, and organizational deviance.

Ethical Climates. The researchers emphasized the importance of studying the ethical climates of the organization because it greatly influences the employees' attitudes and behaviors as well as organization achievement. Schwepker (2001) and Wirawan (2007) defined ethical climate as a perception in organization influencing ethical-contained decisions. This ethical climate then may affect the organization members' behaviors in performing their duties. According to Victor and Cullen (1988), an organizational ethical climate is a perception and an acceptance of individuals on the practices and procedures of an organization. The emerging ethical practices will highly influence the individuals' behaviors and knowledge in reaching good performances. According to Fisher and Lovell (2003), the organization management, nowadays, demands an available change in which the traditional becomes modern. The modern not only refers to the use of new technologies but also the involvement of ethical practices (either on the level of managerial or operational) and the practices and procedures in relation to the attitude of an organization to the employees. Appelbaum *et al.* (2005) then developed the ethical practices in an organization with the statement saying that the ethical climate of organization gives significant contributions to the working relationship and good behavior formation because it includes a set of values and norms that can guide the employees' actions. The organizational ethical climate can encourage the existence of ethical behaviors and conversely may result in the ethical behaviors in the organization. Based on the three ethical criteria above, Victor, Bart and Jhon B. Cullen (1988) then found that there are five dimensions to measure the organizational ethical climate, which is described in Ethical Climate Questionnaire, namely *caring, law and*

code, independence, instrumentalism, and rule. Hence, this study examined the ethical climate based on the dimensions mentioned by Victor and Cullen (1988).

National Cultures. In relation to deviant workplace behaviors, Nasurdin *et al.* (2014) explained that there are many studies following West tradition. In fact, regional differences will cause varied cultures and influence the organizational behaviors (Rompenaars & Hampden-Turner, 1993; Trompenaars, 1993; and Globe Project, 2003. National or social culture is the highest level of culture and related to socialization. National cultures consist of the values and beliefs that have been obtained since childhood and it continuously develops. Up until now, some different types of the framework (based on the dimensions) are often used in studying national cultures. According to Nazarian *et al.* (2012), the currently available framework is what has been developed by Kluckhohn & Strodtbeck (1961), Hall (1976), Hofstede (1983). Hofstede (2011) defined cultures as a mind program that collectively distinguishes the members of a group from other groups, also known as a national cultural concept. The emergence of the concept of a national culture very influences the individuals within a state or an organization. Kirkman *et al.* (2006) explained that the emergence of various empirical studies regarding the effect of national cultures on the workplace attitudes and behaviors is initiated by the public (Geert Hofstede's study entitled *Culture's Consequences: International Differences in Work-Related Values*, the 1980s).

This study also examined the issue of national culture in relation to deviant behaviors. Hofstede (2001) has divided the cultural dimension into 4 sections:

1. Individualism (the opposite of collectivism):

Individualism reflects what extent an individual expects personal freedom. This is against collectivism (group) which is defined as the acceptance of responsibility from family, community group (tribe, etc.).

2. Power Distance:

Power distance is defined as a space or distance between the powers of *Boss* (B) with the *Subordinate* (S). In the organization hierarchy, the distance refers to the difference between to what extent B can determine the behavior of S and the vice versa.

3. Uncertainty Avoidance:

Future uncertainty is defined as the principle of people's lives. People with a higher future uncertainty level will reduce the impacts of the uncertainty toward technologies, rules, and rituals. Conversely, people with a lower uncertainty avoidance level will be more relaxed so that the practice much more depends on the principle, and their deviation can be more tolerated.

4. Masculinity (the opposite of femininity):

Masculinity emphasizes on the performance and achievement values, while femininity much more refers to the preference of life quality, fraternal relation, fashion, and care to the weak ones.

Workplace Spirituality. Workplace diversities and individual dissimilarities can shape a variety of dimensions including spirituality dimension. The practice of workplace spirituality must base on the principles of respecting the different, unique, and individual perceptive values (Krishnakumar and Neck, 2002). An organization cannot apply the same principles of spirituality for all employees. Krishnakumar .S. and CP Neck (2002) developed an individual-leveled spirituality enrichment model called as '*spiritual freedom model*'. In this model, the workplace spirituality enrichment is supported and ensured freely, along with the open expression, intuition, creativity, honesty, authenticity, reliance, and personal fulfillment that are in the positive atmosphere. Milliman *et al.* (2003) stated that some leading business magazines, such as *Bussiness Week* and *Fortune*, have workplace spirituality theme as *the cover story*. The primary reason as proposed by Chand & Koul (2012) is that, in the continuous dynamic condition and change happening today, a manager is challenged to create a comfortable workplace environment. Robbins (2005) defined *workplace spirituality* as follow:

"Workplace spirituality recognizes that people have an inner life that nourishes and is nourished by meaningful work that takes place in the context of community. Organizations that promote a spiritual culture recognize that people have both mind and spirit, seek to find

the meaning and purpose in their work, and desire to connect with other human being and be part of a community”.

Highlighting the hierarchy of workplace spirituality has become one of the focuses of this study. There were three key dimensions of workplace spirituality used (adopted from Milliman *et al.*, 2003), including *purpose in one’s work or “meaningful work”, having a “sense of community”, and being in “alignment with the organization’s values” and mission.* Each of those dimensions represented three levels of workplace spirituality, namely individual, group, and organizational levels. Additionally, according to Wainana *et al.* (2014), if employees are allowed to bring spirituality attributes to a workplace, it will greatly help in giving motivation. Conversely, if they are not allowed, it will result in various problems such as low morale factor, low productivity, and no commitment to an organization.

Organizational Commitments. A commitment is a term that has wide enough meaning and gets much concern in the context of organization or sociology. Luthans (2001) stated that an organizational commitment is often defined as: (1) a strong willingness to keep being the member of a certain organization, (2) a willingness to conduct all efforts on behalf of the organization, (3) a strong belief and acceptance of the values and goals of organization. In other words, those attitudes reflect the employees’ loyalty to their organizations and refer to a continuous process in which the participants of organization express their concern on the organization, their successes, and viabilities. Robbins (2008) defined a commitment to an organization as the employees’ feelings to stay in the organization. This feeling is created through the internalization of normative pressure put on an individual before or after he enters an organization. This study examined the organizational commitment by using the theory of Allen and Meyer (1990), covering affective, normative and continuous commitments.

CONCEPTUAL FRAMEWORK

A conceptual framework is proposed to explain the phenomena of deviance behavior on regional government instance/Institute, which is influenced by ethical climate, national culture, workplace spirituality and organizational commitment. The conceptual framework shows a support to the previous studies’ results regarding the relation between the examined variables.

Ethical Climates and Deviant Behaviors. There were some previous studies discussing the relevance between ethical climates and deviant behaviors. Some of those studies showed that organizational ethical climates significantly have influenced employees’ ethical behaviors (Deshpande *et al.*, 2000; Fritzche, 2000; Trevino *et al.*, 1998). In another side, Wimbush and Shepard (1994) stated that organizational ethical climates couldn’t only be related to employees’ ethical behaviors, but also to a variety of behaviors including counterproductive behaviors such as delay, absence, and weak performance. This supports the result of the study done by Bulutler and Oz (2009) stating that ethical climates are related to counterproductive or deviant behaviors such as intimidation actions. The other result of the study on ethical climates and deviant behaviors by Mayer *et al.* (2010) found that ethical climates have a negative relation to employees’ negative behaviors, whereas a study done by Vardi (2001) revealed that there is a significant negative relation between organizational ethical climates and organizational deviant behaviors. Meanwhile, Peterson (2002) discovered some relations between deviance types and ethical climates in an organization, in which organizational production deviance has a negative relation to instrumental ethical climate, the climate of independence, and climate of concern. The deviance on organizational wealth significantly relates to the rules and laws of ethical climates as well as the professionalism of ethical climates. As for the personal deviance, it does not relate to organizational ethical climate but tends to relate to an individual characteristic.

Ethical Climates and Workplace Spirituality. The relation of ethical climates and workplace spirituality has also been examined directly by Golestanipour (2016) in which it was found that ethical climates have a correlation with workplace spirituality. Additionally, Cullen. J.B *et al* (2003), which is basically discovered that ethical climates positively correlate

with organizational spirituality, revealed that ethical climates on individual and local levels, namely *ethical benevolence* and *ethical principle*, is highly influential in developing organizational spirituality, instead of *ethical egoism*. Mathew I. Sheep (2006) in his study explained that the two ethical dilemmas relate to workplace spirituality.

Workplace Spirituality and Deviant Behaviors. The placement of workplace spirituality variable as one of the mediation variables between ethical climates and deviant behaviors was based on the results of previous studies stating that ethical climates have a correlation with workplace spirituality and workplace spirituality relates to deviant behaviors. According to Wainana *et al.* (2014), if employees are allowed to bring spirituality attributes to a workplace, it will greatly help in giving motivation. Conversely, if they are not allowed, it will result in various problems such as low morale factor, low productivity, and no commitment to an organization. Furthermore, Asrun (2012) explained that workplace spirituality influences the deviant behaviors of local government officials. In linear, Rahman *et al.* (2014) stated that the employees/officials who have high spirituality level will show less workplace deviant behavior.

Workplace Spirituality Mediating Ethical Climates and Deviant Behaviors. The variable of ethical climates can directly influence deviant behaviors or else mediated by other factors such as workplace spirituality. The basis of this premise is the former studies done partially, regarding (1) The Effect of Ethical Climate on Workplace Spirituality, and (2) The Effect of Workplace Spirituality on Deviant Behavior. McGhee and Grant (2008) explained that spirituality and ethics are strongly related. Similarly, the study done by Golestanipour (2016) found that ethical climates positively correlate with organizational spirituality. Moreover, Ahmad & Omar (2014), Rahim *et al.* (2014), Asrun *et al.* (2012) discovered that there is a negative correlation between workplace spirituality and deviant behaviors.

National Cultures and Deviant Behaviors. The impact of national cultures on deviant behaviors has not been much examined empirically. In fact, some literature suggested that cultural factors, including national cultures, seriously have influenced a variety of activities, products, and services resulted by organizations. Dewi Faikhotul (2000) in her study found that national cultures together have an effect on deviant behaviors. However, in partial, it was concluded that the dimension of power distance does not influence deviant behaviors. Additionally, the study by K. Praven *et al.* (2005) discovered that the culture of Hofstede has a negative impact on the deviant behavior of absenteeism, while Bocher and Beril (1994) stated that the cultural dimensions of Hofstede, namely power distance, individualism, and collectivism, have a relation to discrimination and also non-normative behaviors.

National Cultures and Workplace Spirituality. In addition, to be influenced by ethical climate factor, workplace spirituality is also highly influenced by the factor of national culture. Campesino & Schwartz (2006) did one of the previous empirical studies on the relation between national cultures and spirituality. Sherafati *et al.* (2015) and Chaty Driscoll and Margareth McKes (2006) also revealed the statement saying that national cultures have a strong relation to workplace spirituality. In another side, Monthon Sorakraikitikul and Siengthai (2011) explained that the importance of learning organizational cultures closely relates to the development of workplace spirituality such as inner life, meaningful work, sense of community, and self-work integration. Another study was done by Sherafati *et al.* (2015) also found that cultures (which according to Denisson include adaptability and respectability) have a significant relation to workplace spirituality, especially to the dimension of meaningful work.

Workplace Spirituality Mediating National Cultures and Deviant Behaviors. Other than ethical climates, national cultures can also influence deviant behaviors. The basis of the premise is the previous studies stating that (1) national cultures influence spirituality, and (2) spirituality influences deviant workplace behaviors. The result of the study done by Campesino & Schwartz (2006) concluded that the conceptualization of spirituality must be done in the context of natural reality so that it can give a comprehensive explanation regarding the spiritual experiences of different groups. Mc.Ghee & Grant (2008) clarified that spirituality and ethics are strongly related each other, and Golestanipour (2006) indicated that ethics positively correlate with organizational spirituality. Furthermore, Ahmad & Omar

(2014), Rahim *et al.* (2014) and Asrun (2012) found that there is a negative correlation between workplace spirituality and deviant behaviors.

Ethical Climates and Organizational Commitments. The placement of organizational commitment variable as one of the mediation variables (in addition to workplace spirituality) was also based on the result of the previous studies stating that ethical climates have a strong correlation with organizational commitments (Shafer, 2009; Valentine *et al.*, 2002; Fu, 2014; Borhani *et al.* 2014) and that organizational commitments strongly relate to deviant behaviors. The result of the study done by Shafer (2009) discovered that there is a negative effect of the ethical climates of egoism and principle on affective commitments, while the relation between the ethical climates of both benevolence and principle has a positive impact. Meanwhile, Fahriba Bohani (2000) stated that there are both positive and negative relations between ethical climates and organizational commitments.

Organizational Commitments and Deviant Behaviors. Organizational commitments also have a correlation with deviant behaviors. Gill *et al.* (2011) found that not all dimensions of commitment positively relates to deviant behaviors. Affective commitments are known to have a negative relation to deviant behaviors. Dalal (2005) and Spector & Fox (2002) clarified that employees who have a strong commitment to an organization tend to have relatively few negative attitudes. Furthermore, Gill *et al.* (2000) stated that affective commitments negatively correlate with deviant behaviors, whereas sustainability commitments have a positive relation to deviant behaviors.

Organization Commitments Mediating Ethical Climates and Deviant Behaviors. The variable, which is able to mediate the relation ethical climates and deviant behaviors, is organizational commitments. That is, ethical climates correlate with organizational commitments, and then organizational commitments are also related to deviant workplace behaviors. The empirical evidence of the relation between ethical climates and organizational commitments is what Borhani *et al.* (2013) have done. The study was done to the nurses working in the hospital in Iran. The result of the study showed that there is a positive correlation between ethical climates and organizational commitments. The relation between both variables is either symmetrical or reversible. Fu (2014) also examined the relation between organizational commitments and ethical behaviors. Moreover, the result proved that there is a positive relation between both variables. In another side, the results of some studies also discovered that there is a significant correlation between organizational commitments and deviant workplace behaviors. Additionally, Gill *et al.* (2011) defined that affective commitments are a very strong predictor of deviant workplace behaviors. Thus, organizational commitments can mediate ethical climates and deviant behaviors.

National Cultures and Organizational Commitments. Some studies finding the relation between national cultures and organizational commitments are Gelade *et al.* (2006), Randall (1993) and Kirkman. B.L, dan DL Shapiro (2001), Hamed & MdSaaid (2012) . Besides, cultures generally have a relation to employees' work satisfaction and organizational commitments. An appropriate application of cultures will result in work satisfaction and influence employees' commitments to an organization. Some studies focusing on the relation between organizational commitments and deviant behaviors were conducted by Harginder *et al.* (2009), Dallat (2005), Rego and Pina (2000), and Pawar (2009).

Organizational Commitments Mediating National Cultures and Deviant Behaviors. One of the variables, which can mediate the relation between national cultures and deviant behavior, is organizational commitments. That is, national cultures have a significant correlation with organizational commitments, and organizational commitments henceforth have a correlation with deviant behaviors. Gelade *et al.* (2006) developed a study on national cultures in relation to the organizational commitments on 49 states in which it turned out that, in general, national cultures have negative impacts on organizational commitments, particularly on affective commitments, because it is much related to personality dimension. In another side, organizational commitment also influences deviant workplace behaviors. Gill *et al.* (2011) found that affective commitments negatively correlate with deviant behaviors, while ongoing commitments positively and moderately correlate with deviant workplace behaviors.

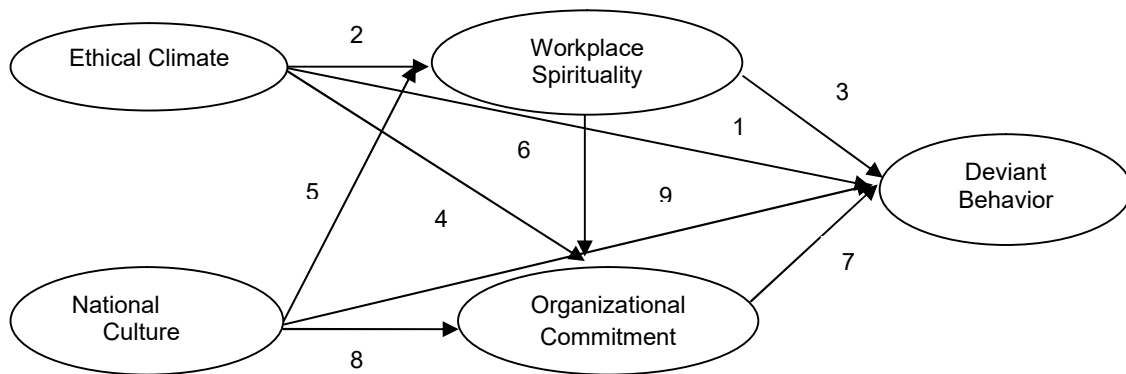


Figure 1 – The Conceptual Framework of the Study

Workplace Spirituality and Organizational Commitments. Jose and Ruth (2015) with the number of samples of 139 people in the US did a study on the relation between workplace spirituality and organizational commitments. In that study, it was found that workplace-individual spirituality has a relation to affective commitments and innovative behaviors. The other study was also done by Ehsan and Naeem (2010) to some faculties in Pakistan in which it was discovered that spirituality, particularly individual spirituality, has relations to organizational commitments and work satisfaction. Another study was done by Rego and Pina (2008) also found that workplace spirituality has a strong relation to affective commitments but has a weak relation to sustainability commitments. Similarly, Pawar (2009) stated that workplace spirituality correlates with work attitude, work involvement, and commitments.

CONCLUSION

Based on the theoretical review and the previous studies, it is found that Ethical Climates and National Cultures can directly influence deviant workplace behaviors. However, ethical climates and national cultures, which are the internal factors, will increasingly influence the deviant behaviors, by also including workplace spirituality and organizational commitments. The well-applied ethical values in Regional Apparatus Organization (*OPD*) will be able to improve the work spirituality and reduce the deviant behaviors of civil servants (*PNS*).

This study will be more contributive if the relation among ethical climates, national cultures, and workplace spirituality can increase the employees' commitments to the organization. The commitment of Civil State Apparatus (*ASN*) is very needed to generate employees with a good performance, good behavior, and good work productivity.

Because the focus of this study is on how to examine the important factors influencing deviant behaviors (either directly or indirectly), it is expected that the final result of this study can elicit what should be done to increase the function of appropriate ethical climate application by the organization, also on how to increase the values contained in national cultures. Indeed, it is also very important for the head of the organization to understand that the values of workplace spirituality should also have a space in the organization. Finally, all of those variables can give good impacts on the decreased deviant workplace behaviors.

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DOI <https://doi.org/10.18551/rjoas.2017-06.20>

**АНАЛИЗ ЭКОНОМИЧЕСКОГО ОПТИМИЗМА И ПЕССИМИЗМА
ИНСТИТУЦИОНАЛЬНЫХ ГРУПП РЕГИОНА**
ANALYSIS OF ECONOMIC OPTIMISM AND PESSIMISM OF INSTITUTIONAL
GROUPS IN THE REGION

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АННОТАЦИЯ

Цель статьи – формулирование общей концепции оценки уровня экономического оптимизма и пессимизма различных институциональных групп для планирования перспективных направлений развития социально-экономических систем. Для эффективного управления социально-экономическими процессами необходимо предвидеть возможную реакцию на изменение или сохранение ситуации различных институциональных групп. Авторами апробирован методический подход к оценке событийного и институционального оптимизма/пессимизма, который применим к любым социально-экономическим системам.

ABSTRACT

The purpose of the article is to formulate a general concept for assessing the level of economic optimism and pessimism of various institutional groups for planning promising areas of development of socio-economic systems. To effectively manage socio-economic processes, it is necessary to foresee a possible reaction to the change or preservation of the situation of various institutional groups. The authors have tested a methodical approach to the assessment of eventual and institutional optimism and pessimism, which is applicable to any socio-economic systems.

КЛЮЧЕВЫЕ СЛОВА

Экономический оптимизм, экономический пессимизм, социально-экономическая система, институциональная группа, экономическое событие.

KEY WORDS

Economic optimism, economic pessimism, socio-economic system, institutional group, economic event.

Разработку и реализацию программ развития социально-экономического административно-территориальных образований целесообразно осуществлять на основе интересов и ожиданий различных институциональных групп. Специфика институциональной принадлежности в значительной мере обуславливает экономическое поведение индивидов. Это положение доказано в работах различных исследователей (Ж. Бодрийяр, К. Ясперс [1], Дж. Гобсон [2], Дж. Гэлбрейт [3], Я. Корнаи [4], К. Маркс [5], И. Розмаинский [6], А. Тойнби [7], Дж. С. Милль [8]). Однако, измерение количественных параметров, характеризующих ту или иную институциональную группу, представляет большую проблему. В работах российских ученых расчет количественных параметров поведения институциональных групп представлен в работах ряда исследователей (В. Майорова, Л. Никитина и др.) [9].

Ранее мы публиковали результаты исследований относительно мнений представителей различных институциональных групп региона на перспективы его развития (И. Рисин, Ю. Трещевский, Г. Франовская, А. Плугатырева) [10].

Положения, характеризующие уровень экономического оптимизма применительно к различным экономическим событиям, опубликованы в работах И. Важениной [11], Р. Инглхарта [12], Л. Кесельмана, М. Мацкевича [13, 14], Ю. Левады [15], Т. Нестика [16], О. Базарновой [17], А. Полянина [18].

Л. Кесельман и М. Мацкевич [13] отмечают, что измерение оптимизма/пессимизма часто осуществляется с точки зрения видения современного состояния той или иной системы. Сами авторы полагают, что необходимо использовать не оценку текущей ситуации, а видение будущего. Мы солидарны с указанными авторами, поскольку оптимизм или пессимизм при оценке событий в текущем времени отражают, скорее, «сумму индивидуальных оптимизмов», чем социальное (институциональное) видение ситуации. Полученные показатели отражают не столько оптимизм / пессимизм, сколько умение приспособиться к каждой конкретной ситуации или не реагировать на нее. Однако, при планировании экономических процессов, лицо, принимающее решение, должно ориентироваться именно на возможные проявления оптимизма (пессимизма) и, соответственно, получение поддержки тех или иных институциональных групп.

Методика исследования. В данной статье мы представили методический подход, позволяющий определить уровень экономического оптимизма и пессимизма в отношении событий, которые рассматриваются как благоприятные или, соответственно, неблагоприятные. Трактовка прогнозируемого события как возможности, то есть, благоприятного события, свидетельствует о его оптимистичном видении. Напротив, все, что оценивается как угроза и подтверждается в качестве таковой экспертами, представляет собой пессимистичное видение. При этом не обязательно события являются объективно возможностями или угрозами. Представленный ниже перечень событий, включенный в перечень возможностей и угроз позволяет сделать вывод о неоднозначности их объективного влияния на социально-экономические процессы системы.

В качестве модельной системы выбран регион, поскольку он представляет достаточно сложную систему, включающую различные институциональные группы. Кроме того, события в регионе управляются относительно слабо (по сравнению, например, с организациями), что предполагает необходимость поиска субъектов, готовых сотрудничать в реализации планов и программ, и, следовательно, количественной оценки их взглядов на прогнозируемые события.

Исходным методом оценки проблем и перспектив региона является традиционный SWOT-анализ, в котором представлены возможности и угрозы функционированию региона. В данной статье анализируются возможности (благоприятные события) и угрозы (неблагоприятные события) отражающие степень оптимизма/пессимизма различных институциональных групп. На наш взгляд, пессимизм представляет не слабо выраженный оптимизм, а принципиально иную позицию – отрицательный вектор восприятия события, то есть, оценку его в качестве угроз.

Для выяснения мнений экспертов на перспективы развития региона было проведено анкетирование их представителей в рамках разработки Стратегии социально-экономического развития Воронежской области до 2035 года. Анкета включала 15 позиций, отражающих возможности, перспективы развития региона и 15 позиций, отражающих угрозы. Состав возможностей (благоприятных событий) сформирован и оценен экспертами, представляющими различные институциональные группы региона: органы власти (33 эксперта), органы местного самоуправления (26 экспертов), крупный бизнес (16 экспертов), малый бизнес (21 эксперт), руководители бюджетных организаций (28 экспертов), представители общественных организаций (11 экспертов). Каждую позицию оценивали по двум параметрам – силе влияния и вероятности реализации.

Сила влияния возможностей и угроз на социально-экономическое развитие региона оценивалась экспертами по пятибалльной шкале: сильное – 5 баллов, умеренное – 4 балла, малое – 3 балла, нет влияния – 2 балла. Вероятность использования возможности оценивалась следующим образом: высокая – «5», средняя – «4», низкая – «3». Отсутствие вероятности не входит в шкалу оценки, поскольку ее наличие зафиксировано самим фактом включения того или иного события в состав возможностей или угроз. При оценке вероятности реализации события авторы не использовали общепринятую шкалу в долях единицы для обеспечения сопоставимости результатов по обоим параметрам (силы влияния и вероятность события). Вполне понятно, что термин «вероятность» в данном случае имеет условное значение, удобное для использования в расчетах.

Обозначения и алгоритм расчетов. В качестве общей оценки возможностей по силе влияния и вероятности реализации приняты средние арифметические взвешенные значения по каждому пункту анкеты.

Для оценки мнений экспертов о возможностях (благоприятных событиях) и угрозах (неблагоприятных событиях) развития региона приняты следующие обозначения (косая черта имеет значение «или»):

j – события (планы, программы, прогнозируемые действия власти, бизнеса);
 i – эксперты (условные номера экспертов, представляющих различные институциональные группы);
 m – количество событий (в нашем расчете $m = 15$ как для благоприятных, так и неблагоприятных событий);

n_i – количество анкетированных экспертов по каждой институциональной группе;
 L_{ij} – балл, присвоенный i -м экспертом событию j по силе влияния либо вероятности наступления;

O_{i0}/O_{ip} – обобщающий показатель институционального оптимизма/пессимизма (оптимизма/пессимизма i -ой институциональной группы);

I_{i0}/I_{ip} – индекс институционального оптимизма/пессимизма (оптимизма/пессимизма институциональной группы);

O_{j0}/O_{jp} – обобщающий показатель событийного оптимизма/пессимизма по событию j ;

I_{j0}/I_{jp} – индекс событийного оптимизма/пессимизма.

Показатели, используемые в качестве промежуточных:

O_{j0i}/O_{jpi} – показатель событийного оптимизма/пессимизма ($j0/jp$) институциональной группы i ;

O_{i0j}/O_{ipj} – показатель институционального оптимизма/пессимизма ($i0/ip$) по событию j ;

I_{j0i}/I_{jpi} – индекс событийного оптимизма/пессимизма институциональной группы i .

Для компактного представления о мнениях представителей различных институциональных групп о возможностях развития региона проведено агрегирование результатов с учетом средних значений силы влияния, вероятности наступления события и индексов нечеткости по каждой позиции, по формуле 1:

$$O_{j0} = \frac{\bar{L}_{im} \times \bar{L}_{jm}}{1 + L_{jfs} \times L_{jpo}} \quad (1)$$

O_{j0} – обобщающий показатель событийного экономического оптимизма;

\bar{L}_{mfs} – среднее значение оценок силы влияния события;

\bar{L}_{mpo} – среднее значение оценок вероятности наступления события;

L_{jfs} – индекс нечеткости оценок силы влияния события;

L_{jpo} – индекс нечеткости оценок вероятности события.

Аналогичным образом рассчитан обобщающий показатель событийного экономического пессимизма.

Индекс нечеткости использован для оценки согласованности мнений экспертов по силе влияния и вероятности наступления события.

Метод нечетких множеств использован по работам Л. Кобышевой, Д. Назарова [19, 20]. Алгоритм метода включает следующие положения.

Построение функции принадлежности μ_A нечеткого множества оценок A осуществляем следующим образом:

Производится расчет частоты разных оценок предложенных альтернатив (баллов) по формуле 2:

$$Z_{k,j} := \sum_{i=1}^n \left[\left[(X_i^{\{j\}}) \right] = k \right] \quad (2)$$

где $X_i^{\{j\}}$ – i -й элемент подмножества j матрицы X (распределение баллов по вопросам и экспертам).

Z – матрица частоты оценок;

n – количество анкетированных экспертов по каждой группе;

$k := 1 \dots 5$ (баллы).

Для построенного нечеткого множества экспертных оценок определена степень принадлежности каждой из них к множеству оценок A . Для этого рассчитаны доли каждой оценки в ответах, по формуле 3:

$$G = \frac{1}{n} \times Z \quad (3)$$

В итоге расчетов получено нечеткое множество экспертных оценок G .

Для дальнейшей обработки результатов произведено нормирование полученных значений множества, необходимое для вычисления линейного расстояния по Хеммингу, посредством деления значений множества G на максимальное значение оценки каждой возможности, предложенное экспертами (максимальное значение степени принадлежности каждой оценки нечеткому множеству оценок при ответе экспертов на каждый вопрос равен единице). Определение значений экспертных оценок матриц группы L произведено по вышеуказанным работам Л. Кобышевой и Д. Назарова [17, 18].

Для вычисления индекса нечеткости использовано четкое множество L_0 , ближайшее к рассматриваемому нечеткому множеству с применением условной функции $if()$ (формула 4):

$$L_{0k,j} := if(L_{k,j} > 0,5,1,0) \quad (4)$$

Расчет индекса нечеткости произведен по линейной метрике (расстояние по Хеммингу) по формуле 5 [9, с. 186]:

$$I_A^L = \frac{2}{n} \sum_{i=1}^n |\mu_A(x_i) - \mu_{A_0}(x_i)|, \quad (5)$$

$\mu_A(x_i)$ – характеристическая функция нечеткого множества,

$\mu_{A_0}(x_i)$ – характеристическая функция четкого множества, ближайшего к рассматриваемому нечеткому множеству,

Вычисление модулей отклонений элементов нечеткого множества оценок от ближайшего к нему четкого множества произведено по формуле 6:

$$L_1 = |L - L_0| \quad (6)$$

Индекс нечеткости рассчитан по формуле 7:

$$L_3 = \frac{2}{n} \sum_{k=1}^n L_{1k,j} \quad (7)$$

В качестве событий, оцениваемых в качестве благоприятных, в анкетах были представлены следующие (в дальнейшем они представлены соответствующими номерами в таблицах 1 и 2): 1. Наличие на национальном и мировом рынках устойчивого спроса на никелевые руды; 2. Востребованность продукции воронежских предприятий для технической модернизации материально-технической базы экономики России; 3. Расширение масштабов бюджетного финансирования развития воронежских предприятий оборонно-промышленного комплекса; 4. Расширение масштабов финансирования развития экономики Воронежской области, осуществляемого частными инвесторами; 5. Расширение участия бизнеса в решении социальных проблем региона (в том числе посредством механизма ГЧП, развития социального предпринимательства); 6. Рост спроса на продукцию предприятий АПК Воронежской области на мировом рынке; 7. Рост спроса на образовательные услуги воронежских вузов со стороны зарубежных потребителей; 8. Реализация федеральных проектов развития транспортной инфраструктуры (высокоскоростная магистраль Москва – Сочи, платные автодороги, аэропорт); 9. Реализация федеральных программ развития перспективных направлений импортозамещения; 10. Реализация кластерных проектов в широком спектре отраслей экономики и социальной сферы; 11. Принятие федеральными властями решений о создании территорий с льготными условиями осуществления экономической деятельности (ОЭЗ, ТОР); 12. Использование незадействованных туристско-рекреационных ресурсов территории; 13. Вывод крупных компаний (или их подразделений) из столицы в регионы; 14. Рост транзитных потоков по транспортному коридору «Север – Юг», развитие «транзитной» экономики; 15. Конвертация доходов «ненаблюдаемой» экономики в открытые финансовые ресурсы.

В качестве примера расчета показателей событийного оптимизма в таблице 1 представлены данные по институциональной группе «региональные органы власти».

Таблица 1 – расчет показателей событийного экономического оптимизма региональных органов власти

События	Средние значения		Индексы нечеткости		Обобщающий показатель событийного оптимизма (O_{Jo})	Индекс событийного оптимизма институциональной группы (I_{JoI})
	Сила влияния события	Вероятность реализации события	Сила влияния события	Вероятность реализации события		
1	2	3	4	5	6	7
1.	3,45	3,42	0,4857	0,2600	10,48	0,588
2.	4,30	3,82	0,1750	0,2400	15,76	0,884
3.	4,33	4,03	0,2118	0,1000	17,09	0,959
4.	4,48	4,09	0,1111	0,2600	17,81	1,000
5.	4,18	3,76	0,2000	0,1867	15,15	0,850
6.	4,12	3,91	0,3143	0,1000	15,62	0,878
7.	3,58	3,64	0,3467	0,3250	11,71	0,657
8.	3,91	3,85	0,4250	0,3529	13,09	0,734
9.	4,21	3,73	0,1867	0,1750	15,21	0,854
10.	4,18	3,94	0,2600	0,1846	15,71	0,879
11.	4,24	3,70	0,2400	0,1333	15,20	0,853
12.	3,73	3,61	0,3765	0,2600	12,26	0,688
13.	4,06	3,67	0,3250	0,2000	13,99	0,785
14.	4,06	3,76	0,2933	0,2571	14,20	0,797
15.	3,91	3,33	0,3714	0,1739	12,23	0,686

Как видно из данных, представленных в таблице 1, представители одной и той же институциональной группы оценивают благоприятные события различным образом. Оценки колеблются в широком диапазоне. Наиболее высоки оценки по событиям «расширение масштабов бюджетного финансирования развития воронежских предприятий оборонно-промышленного комплекса» и «расширение масштабов финансирования развития экономики Воронежской области частными инвесторами». Очень низкое значение имеет индекс оптимизма по событию «наличие на

национальном и мировом рынках устойчивого спроса на никелевые руды» - пятнадцатая позиция во всей совокупности событий. В целом мнения представителей одной и той же институциональной группы колеблются весьма существенно – в пределах 41,2 %. Это подтверждает тот факт, что необходимо оценивать не только общий уровень оптимизма какой-либо группы, но и ее отношение к конкретным событиям (событийный оптимизм).

Аналогичным образом проведены расчеты по всем институциональным группам. Результаты использованы для расчетов показателей событийного и институционального оптимизма для региона в целом (таблица 2). Состав институциональных групп каждой системы достаточно стабилен и его структурные компоненты могут быть взяты за основу при выявлении уровня оптимизма любой страны или региона. Не исключена, конечно, иная классификация институциональных групп.

Таблица 2 – Показатели событийного и институционального оптимизма региона

События	Обобщающие показатели экономического оптимизма институциональных групп						$\sum O_{jo}$	I_{jo}
	Крупный бизнес	Малый бизнес	Региональные органы власти	Органы местного самоуправления	Общественные организации	Бюджетные организации		
1	2	3	4	5	6	7	8	9
1.	13,56	11,32	10,48	12,01	14,19	12,11	73,67	0,760
2.	15,95	12,52	15,76	15,12	13,68	13,66	86,69	0,894
3.	17,57	15,68	17,09	17,06	15,62	13,85	96,87	1,000
4.	15,50	15,33	17,81	12,76	13,21	12,59	87,2	0,900
5.	14,49	12,36	15,15	13,92	13,57	11,46	80,95	0,835
6.	15,68	15,63	15,62	13,87	14,29	12,19	87,28	0,901
7.	11,84	11,94	11,71	12,17	11,93	12,13	71,72	0,740
8.	17,39	16,57	13,09	13,00	16,62	13,15	89,82	0,927
9.	19,20	14,96	15,21	15,07	14,13	13,23	91,80	0,947
10.	13,72	14,88	15,71	12,62	14,06	12,07	83,06	0,857
11.	14,81	13,97	15,20	16,19	15,62	11,71	87,50	0,903
12.	12,12	12,58	12,26	11,50	14,23	11,69	74,38	0,767
13.	13,26	12,15	13,99	12,98	14,41	12,24	79,03	0,815
14.	13,23	13,96	14,20	13,21	13,54	12,22	80,36	0,829
15.	12,83	13,07	12,23	13,13	11,06	10,62	72,94	0,752
$\sum O_{io}$	221,15	206,92	215,51	204,61	210,16	184,92	-	-
I_{io}	1,0	0,935	0,974	0,925	0,950	0,836	-	-

Анализ данных, представленных в таблице 2, позволяет сделать относительно уровня экономического оптимизма ряд выводов.

1. Обращение к мнению различных институциональных групп может достаточно существенно изменить расстановку приоритетов, отмеченных одной из групп. Так, событие «наличие устойчивого спроса на никелевые руды» – безусловный аутсайдер по мнению представителей региональных органов власти, заняло тринадцатую позицию в общем «рейтинге событийного оптимизма». В целом иерархия оптимизма в системе в целом отличается от иерархии в отдельных институциональных группах.

2. Расхождение в значениях индексов событийного оптимизма существенно уменьшилось – с 41,2 % до 26,0 %. То есть, разнородность институциональных групп изменяет общее видение событий, целостная система в данном случае оказалась более консолидированной во мнении, чем отдельная институциональная группа.

3. Объективно влияние любого события на всю систему одинаково. Но по итогам расчетов каждая группа представила разные результаты как для каждого события в отдельности, так и для всей их совокупности. Таким образом, объективное содержание событий и их видение участниками не совпадают.

4. Сравнение значений показателей экономического оптимизма показало, что каждому событию соответствуют свои лидеры и аутсайдеры из состава институциональных групп. Так, в оценке перспектив, связанных с использованием

разведанных запасов никелевых руд, наиболее оптимистичны общественные организации и крупный бизнес, наименее оптимистичны – региональные органы власти и малый бизнес.

Интересно, что в наименьшей степени наименее выражен оптимизм в отношении конвертации доходов «ненаблюдаемой» экономики в открытые финансовые ресурсы. Сила его влияния и значимость, вообще, оцениваются весьма низко, и ожидать серьезной поддержки какой-либо институциональной группой не приходится.

5. Каждой институциональной группе свойственен свой уровень экономического оптимизма, позволяющий оценить в целом положение каждой из них в системе (в данном случае в регионе). Так, в представленной выше таблице 2 институциональные группы в порядке убывания оптимизма располагаются следующим образом: крупный бизнес, региональные органы власти, общественные организации, малый бизнес, органы местного самоуправления, работники бюджетных организаций.

Можно полагать, что вышеуказанная «иерархия оптимизма» отражает общее положение институциональных групп в системе.

6. Использование таблицы 2 в качестве «матрицы оптимизма» позволяет выявить состав участников событий, для которых требуется особый подход. Пример выделен полужирным шрифтом. Для реализации события 3 целесообразно использовать потенциал оптимизма крупного бизнеса, показавшего лучший результат среди всех институциональных групп. В процессе планирования мер по реализации события необходимо также проведение корректирующих мероприятий в отношении работников бюджетных организаций, оптимизм которых в отношении данного события минимален.

Таблица 3 – Расчет показателей событийного экономического пессимизма региональных органов власти

События	Средние значения		Индексы нечеткости		Обобщающий показатель событийного пессимизма (O_{jp})	Индекс событийного пессимизма институциональной группы (I_{jp})
	Сила влияния события	Вероятность реализации события	Сила влияния события	Вероятность реализации события		
1	2	3	4	5	6	7
1.	3,85	3,61	0,2571	0,1250	13,47	0,685
2.	3,88	3,67	0,2286	0,2250	13,54	0,689
3	3,76	3,58	0,3750	0,1647	12,68	0,645
4.	3,76	3,82	0,2316	0,2588	13,55	0,689
5.	3,67	3,55	0,1333	0,0800	12,89	0,656
6.	4,64	4,33	0,1739	0,1250	19,66	1,000
7.	4,42	4,12	0,0750	0,2933	17,82	0,906
8.	4,18	3,97	0,2400	0,1000	16,21	0,824
9.	4,15	3,94	0,3200	0,1000	15,84	0,806
10.	4,55	4,27	0,2286	0,2400	18,42	0,937
11.	3,79	3,70	0,2000	0,1867	13,52	0,687
12.	4,55	4,09	0,2286	0,1000	18,19	0,925
13.	4,39	4,09	0,2889	0,3250	16,41	0,835
14.	4,09	3,94	0,1846	0,1846	15,58	0,793
15.	3,94	3,85	0,1846	0,1846	14,67	0,746

Для оценки уровня экономического пессимизма нами использованы данные, полученные в результате экспертного опроса об угрозах Воронежской области.

В качестве угроз были указаны: 1. Перераспределение финансовых потоков в пользу внешних пользователей (в т.ч. аккумуляция сбережений населения и средств предприятий на расчетных счетах банков и их размещение на финансовых рынках других регионов); 2. Обострение межрегиональной конкуренции, предметом которой является мобильная и наиболее квалифицированная часть трудовых ресурсов региона; 3. Обострение межрегиональной конкуренции, предметом которой является традиционная продукция воронежских предприятий; 4. Влияние внешних экономических санкций; 5. Усиление глобальной конкуренции; 6. Нарастание социальной напряженности: ухудшение положения работников бюджетной сферы,

пенсионеров, увеличение дифференциации доходов населения; 7. Продолжающееся ухудшение качества «демографической пирамиды»; 8. Повышение напряженности на региональном рынке труда; 9. Нарастание дисбаланса системы расселения населения, не обеспеченного рабочими местами, необходимыми объектами социальной и инженерной инфраструктуры; 10. Уменьшение объема безвозмездных перечислений субъектам РФ из федерального бюджета; 11. Рост курса рубля по отношению к основным валютам, ведущий к утрате конкурентоспособности продукции воронежских предприятий на мировом рынке; 12. Уменьшение господдержки сельского хозяйства; 13. Сокращение бюджетного финансирования науки и образования; 14. «Утечка мозгов» за пределы страны; 15. Ухудшение экологической обстановки, связанное с изменением климата.

Как видно из данных, представленных в таблице 3, наиболее пессимистичны региональные органы власти в отношении возрастающей социальной напряженности, связанной с ухудшением положения работников бюджетной сферы, пенсионеров, увеличением дифференциации доходов населения. Довольно высоки опасения (индекс событийного пессимизма выше 0,9) в отношении ухудшающегося качества «демографической пирамиды», уменьшения безвозмездных перечислений субъектам РФ из федерального бюджета, уменьшения господдержки сельского хозяйства. Иначе говоря, экономический пессимизм органов власти связан с неблагоприятными демографическими процессами, социальным расслоением и взаимодействием с федеральными структурами.

Наименьшие опасения вызывает обострение межрегиональной конкуренции. Невысоки опасения в отношении внешнеэкономических связей, роста курса рубля, «утечки мозгов» за пределы страны, ухудшения экологической обстановки.

По остальным пяти институциональным группам проведена такая же обработка данных как для показателей экономического оптимизма (обобщенные результаты в таблице 4).

Таблица 4 – показатели событийного и институционального пессимизма региона

События	Обобщающие показатели экономического пессимизма институциональных групп						$\sum O_{ip}$	I_{ip}
	Крупный бизнес	Малый бизнес	Региональные органы власти	Органы местного самоуправления	Общественные организации	Бюджетные организации		
1	2	3	4	5	6	7	8	9
1.	15,13	15,04	13,47	15,82	16,94	12,83	89,23	0,773
2.	14,15	13,05	13,54	13,44	16,19	12,89	83,26	0,722
3.	13,25	13,12	12,68	14,18	16,91	12,02	82,16	0,712
4.	15,03	15,02	13,55	11,83	15,58	12,78	83,79	0,726
5.	14,68	12,63	12,89	12,13	13,23	12,81	78,37	0,679
6.	19,92	18,94	19,66	21,25	19,60	16,01	115,38	1,000
7.	19,68	14,81	17,82	13,41	17,80	12,68	96,2	0,834
8.	18,80	16,75	16,21	14,91	20,84	14,48	101,99	0,884
9.	16,02	13,15	15,84	13,85	18,72	14,71	92,29	0,800
10.	18,83	18,42	18,42	17,05	15,62	15,31	103,65	0,898
11.	12,58	11,59	13,52	14,89	15,15	13,61	81,34	0,705
12.	19,13	17,41	18,19	17,69	16,17	12,96	101,55	0,880
13.	18,27	18,53	16,41	19,17	19,12	16,50	108	0,936
14.	14,44	15,90	15,58	16,03	18,50	15,02	95,47	0,827
15.	11,55	13,16	14,67	13,73	16,30	12,79	82,2	0,712
$\sum O_{ip}$	241,46	227,52	232,45	229,38	256,67	207,4	-	-
I_{ip}	0,941	0,886	0,906	0,894	1,000	0,808	-	-

Данные, представленные в таблице 4, позволяют сделать следующие выводы:

Максимально высокий пессимизм в целом по всем институциональным группам проявляется в отношении угрозы нарастания социальной напряженности, связанной с ухудшением положения работников бюджетной сферы, пенсионеров, дифференциацией доходов населения. Весьма высокие значения уровня пессимизма

(более 0,9), в отношении сокращения бюджетного финансирования науки и образования. Достаточно высок уровень пессимизма (выше 0,8) в отношении ухудшающегося качества «демографической пирамиды»; повышения напряженности на рынке труда; нарастания дисбаланса системы расселения населения, не обеспеченного рабочими местами, объектами социальной и инженерной инфраструктуры; уменьшения безвозмездных перечислений субъектам РФ из федерального бюджета» уменьшения государственной поддержки сельского хозяйства» сокращения бюджетного финансирования науки и образования.

Выводы и предложения. Решения в области управления социально-экономическими системами необходимо принимать, исходя не только из объективного содержания, но и их видения различными институциональными группами, учет которого позволяет предвидеть их реакцию на предполагаемое изменение ситуации.

Для оценки степени экономического оптимизма/пессимизма предложено использовать опрос экспертов, представляющих различные институциональные группы региона: органы власти, органы местного самоуправления, крупный бизнес, малый бизнес, общественные организации, бюджетные организации.

Для обработки результатов анкетирования использован метод нечетких множеств, позволяющий определить не только средние оценки, но и степень согласованности мнений экспертов и экспертных групп. Рассчитанная данным методом степень согласованности использована в дальнейших расчетах для получения оценок благоприятных/неблагоприятных событий по средним значениям их силы, вероятности и индексам нечеткости экспертных оценок.

Расчеты показали, что можно различить два вида экономического оптимизма/пессимизма: институциональный, свойственный каждой институциональной группе в отношении всей совокупности благоприятных/неблагоприятных событий и каждого из них в отдельности; событийный, присущий каждому конкретному событию, и отраженный в оценках институциональных групп.

Согласно произведенным расчетам, уровень экономического оптимизма и пессимизма институциональных групп региона существенно различается по все совокупности событий и по каждому из них.

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DOI <https://doi.org/10.18551/rjoas.2017-06.21>

**СОСТОЯНИЕ ИНВЕСТИЦИОННОЙ ДЕЯТЕЛЬНОСТИ В СЕЛЬСКОМ ХОЗЯЙСТВЕ
ВОРОНЕЖСКОЙ ОБЛАСТИ**
THE INVESTMENT ACTIVITY STATE IN THE VORONEZH REGIONAL AGRICULTURE

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АННОТАЦИЯ

Статья посвящена проблеме инвестиционной деятельности в сельском хозяйстве. Воронежская область является индустриально-аграрным регионом, доля сельского хозяйства в создании валового регионального продукта Воронежской области устойчиво растет и в 2015 году составила 15,3%. Между тем, концентрация основных фондов в данной отрасли ниже – лишь 8,8%, а в сумме инвестиций в основной капитал на долю сельского хозяйства региона приходится 9,7%. Инвестиционные процессы в сельском хозяйстве области отличаются некоторыми особенностями, их состояние далеко от удовлетворительного. По наблюдениям автора, стоимость основных средств за последние 5 лет росла наиболее интенсивными темпами по тем их группам, которые получали государственную поддержку. Изменение наличия сельскохозяйственной техники демонстрирует неоднозначную динамику, особенно по основным ее группам – тракторы, комбайны, грузовые автомобили. Среди источников финансирования инвестиций доминируют собственные средства, причем их значение растет. Автор делает вывод о том, что увеличения притока инвестиций в сельское хозяйство можно ожидать лишь в случае реализации масштабной государственной поддержки.

ABSTRACT

The article concerns the problem of investment activity in agriculture. Voronezh region is an industrial-agrarian area; the share of agriculture in the gross regional product creation is steadily growing and reached 15.3% in 2015. Meanwhile, the concentration of the fixed assets in this branch is considerably lower – only 8.8%; agriculture has 9.7% on the total investments into the fixed capital of the region. Investment processes in agriculture are marked with specific features and their state is far from satisfactory. According to the author's observations, the amount of the fixed capital during the last 5 years was growing most intensively for those groups of them which received governmental support. The alterations in the numbers of agricultural machinery demonstrate ambiguous dynamics, especially in its key groups such as tractors, combine harvesters, cargo vehicles. Among the sources of financing the independent means prevail, and their importance is growing. The author concludes that one may only expect the increase of the investment inflow in the agriculture in case of implementation of large-scale governmental support.

КЛЮЧЕВЫЕ СЛОВА

Сельское хозяйство, инвестиции, источники финансирования, сельскохозяйственная техника, внеоборотные активы.

KEY WORDS

Agriculture, investments, sources of financing, agricultural machinery, fixed assets.

По данным Министерства сельского хозяйства Российской Федерации Воронежская область заняла второе место по объему инвестиций в основной капитал в аграрном секторе по итогам 2015 года с объемом частных вложений в 17,4 млрд. рублей, уступив только Краснодарскому краю, в АПК которого было вложено 21,1 млрд. рублей. В тройке лидеров также Тамбовская область с показателем в 15,8 млрд. рублей. В первом полугодии 2016 года инвестиции в сельское хозяйство Воронежской области уже составили 12 млрд. рублей, что позволяет судить об увеличении инвестиционной привлекательности и о благоприятном инвестиционном климате в регионе в целом.

Постановка проблемы. В таблице 1 представлены объем и доля инвестиций в основной капитал в сельском хозяйстве Воронежской области. Здесь мы не наблюдаем столь устойчивой тенденции к росту, как в целом по объему инвестиций в областной экономике.

Таблица 1 - Инвестиции в основной капитал по сельскому хозяйству

Показатели	Годы				
	2010	2012	2013	2014	2015
Инвестиции в основной капитал (в фактических ценах), млн. руб.	125825,5	182334,3	216983,0	243259,8	263622,2
в т.ч. в сельское хозяйство, млн. руб.	7801,2	28626,5	23217,2	23109,7	25571,4
в т.ч. в сельское хозяйство, %	6,2	15,7	10,7	9,5	9,7

Одновременно колеблется и доля инвестиций в основной капитал сельского хозяйства в общем объеме инвестиций, причем размах колебаний за период составил почти в три раза.

Исследование проблем инвестиций всегда находилось в центре внимания экономической науки, поскольку они затрагивают основы хозяйственной деятельности, определяя процесс расширенного воспроизводства и экономического роста в целом. Что же касается инвестиций в сельское хозяйство, то эти вопросы выходят далеко за рамки отраслевых проблем. Динамично растущие инвестиции, трансформирующиеся в инновации, в новые конкурентоспособные производства, повышают количественные и качественные показатели хозяйственной деятельности сельскохозяйственных организаций, всего аграрного комплекса в целом, решают вопросы продовольственной безопасности страны.

Роль инвестиций, как на уровне всего народнохозяйственного комплекса, так и на уровне отдельных субъектов хозяйствования весьма значительна. Что касается отдельных видов деятельности, то здесь имеются свои особенности. Например, в сельском хозяйстве в условиях формирования социально-ориентированной рыночной экономики центральное место должно отводиться человеку с его потребностями при одновременном сохранении и увеличении производительных свойств земли.

Результаты и их обсуждение. Оценить состояние инвестиционных процессов в сельском хозяйстве Воронежской области позволят следующие аспекты: объем и динамика внеоборотных активов на балансе аграрных предприятий области; динамика основных средств в разрезе их видов; источники финансирования инвестиций в сельскохозяйственных организациях области.

Рассмотрим эти аспекты. Объем и динамика внеоборотных активов на балансе аграрных предприятий Воронежской области представлены в таблице 2.

Как показывают данные таблицы 2, лишь основные средства аграрных предприятий области демонстрируют устойчивый рост. Следует отметить, что ежегодный рост достаточно существенен, и хотя мы оценивали все значения в текущих ценах, можно предположить, что в постоянных ценах динамика также была бы положительной.

С другой стороны, мы видим, что другие группы внеоборотных активов демонстрируют неустойчивую динамику, причем никак не коррелирующую с кризисными явлениями 2014-2016 гг. Снижение стоимости нематериальных активов на балансе началось уже в 2013 году, а доходных вложений – лишь в 2015 году. Если же

рассматривать динамику финансовых вложений, то они, напротив, росли ежегодно, начиная с 2013 года.

Таблица 2 - Внеоборотные активы, сельскохозяйственные предприятия (без КФХ) Воронежской области, всего, на конец года

Показатели	Годы				
	2011	2012	2013	2014	2015
Нематериальные активы, тыс. рублей	50537	58117	52325	48910	44906
Изменение, % к предыдущему периоду	-	115,0	90,0	93,5	91,8
Основные средства, тыс. рублей	36950457	45351141	55822933	69384968	80783778
Изменение, % к предыдущему периоду	-	122,7	123,1	124,3	116,4
Доходные вложения в материальные ценности, тыс. рублей	332203	214464	471316	521473	472015
Изменение, % к предыдущему периоду	-	64,6	219,8	110,6	90,5
Финансовые вложения, тыс. рублей	1704055	1297388	2906275	5128894	5653751
Изменение, % к предыдущему периоду	-	76,1	224,0	176,5	110,2

Динамика основных средств в разрезе их видов в совокупности по аграрным предприятиям Воронежской области представлена в таблице 3.

Таблица 3 - Динамика основных средств в разрезе их видов, сельскохозяйственные предприятия (без КФХ) Воронежской области, всего, на конец года, тыс. рублей

Показатели	Годы				
	2011	2012	2013	2014	2015
Основные средства всего, в т.ч.:	50270245	61730210	77503953	97607950	94852531
Здания, сооружения и передаточные устройства	14858527	20263015	24802330	32353069	38859944
Машины и оборудование	20886991	24485614	30338994	37728965	45295696
Транспортные средства	4532435	5216944	6091697	7268156	7803341
Производственный и хозяйственный инвентарь	352390	388987	445488	503097	594190
Рабочий скот	80131	121673	80160	153088	129898
Продуктивный скот	3551309	5994809	9695118	11623219	13838259
Многолетние насаждения	189828	306414	450768	559492	758697
Другие виды основных средств	566365	740026	469524	742928	921902

Исходя из данных таблицы 3 можно указать на значительную положительную динамику по всем группам основных средств.

За рассматриваемые пять лет суммарная стоимость основных средств в сельскохозяйственных организациях Воронежской области возросла почти на 89%, хотя рост этот неравномерно распределялся по отдельным группам основных средств.

Так, стоимость зданий и сооружений за рассматриваемый период выросла на 161%, машин и оборудования – на 117%. С другой стороны, стоимость транспортных средств увеличилась менее значительно, лишь на 72%, производственного и хозяйственного инвентаря – на 69%, рабочего скота – всего на 62%, хотя последнее вполне объяснимо в точки зрения замены использования гужевого транспорта и других способов использования животных машинами, которые, очевидно, стали несколько более доступными для предприятий. В наибольшей степени за период увеличилась стоимость продуктивного скота – на 290% и многолетних насаждений – на 300%, т.е. практически в 4 раза. Эти факты связаны с государственной поддержкой соответствующих отраслей сельского хозяйства, возможностями компенсации расходов на приобретение или создание именно этих групп основных средств.

Государственная поддержка инвестиционной деятельности может проводиться путем использования различных регуляторов – субсидирования процентной ставки по инвестиционным кредитам; возмещения части инвестиционных затрат; стимулирования привлечения средств частных инвесторов введением для них льготных условий деятельности; несвязанной поддержки всех инвестиций, включая собственные; проектного управления и финансирования.

В частности, мы можем указать, что за период с 2012 по 2015 годы совокупный объем государственного финансирования составил 33 985 756 тыс.рублей. За тот же период совокупная стоимость основных средств в собственности сельскохозяйственных организаций Воронежской области возросла на 44 582 286 тыс.рублей. Причем с момента начала сокращения объемов поддержки в 2014 году произошел перелом и в динамике стоимости основных средств.

В результате инвестиционной активности предприятий, в частности, сложилась динамика количества техники в сельскохозяйственных организациях, представленная в таблице 4.

Таблица 4 - Наличие техники в сельскохозяйственных предприятиях (без КФХ)
Воронежской области, всего, на конец года, ед.

Показатели	Годы					Базовый темп роста, %
	2011	2012	2013	2014	2015	
Тракторы всех марок	8864	9109	8571	8828	8658	97,7
Тракторные прицепы	2425	2515	2513	2625	2540	104,7
Сеялки и посевные комплексы	4341	4261	3866	3999	3912	90,1
Сенокосилки тракторные	913	970	923	1000	1009	110,5
Комбайны всего	2904	2881	2668	2739	2648	91,2
Дождевальные и поливальные машины	136	158	260	269	275	202,2
Жатки	897	824	751	906	948	105,7
Доильные установки и агрегаты	687	679	619	706	738	107,4
Кормораздатчики и смесители всего	480	519	571	614	548	114,2
Транспортеры для уборки навоза	1038	1092	969	963	933	89,9
Автомобили грузоперевозящие	5239	5382	20161	23187	4867	92,9

Данные таблицы 4 демонстрируют неоднозначные тенденции. Так, за рассматриваемый период в хозяйствах области возросло количество такой техники, как:

- тракторные прицепы – на 4,7%;
- сенокосилки тракторные – на 10,5%;
- жатки – на 5,7%;
- доильные установки и агрегаты – на 7,4%;
- кормораздатчики – на 14,2%;
- дождевальные и поливальные машины – на целых 102,2%.

С другой стороны, одновременно сократилась численность основных наименований техники хозяйств:

- тракторов всех марок – на 2,3%;
- сеялок – на 8,9%;
- комбайнов – на 8,8%;
- грузовых автомобилей – на 7,1%.

Отчасти такая замена связана с более рациональным использованием техники, ее заменой на более производительные экземпляры, что следует признать позитивной тенденцией. Однако если бы данный фактор отвечал за всю имеющуюся динамику, она была бы стабильно понижающейся, а подходящего тренда нет, пожалуй, ни по одной из названных групп.

Только по тракторам всех марок наблюдается тенденция, объяснимая с этой точки зрения: хозяйства приобретают новую технику, испытывают ее, наблюдают ее повышенную производительность, затем списывают старую технику, ставшую просто лишней. Результат – волнообразные колебания.

По всем остальным группам, где наблюдается общее снижение, очевидно, действуют и другие, неблагоприятные факторы.

Невозможность обеспечения сельскохозяйственных предприятий необходимой сельскохозяйственной техникой обусловлена двумя причинами:

- недостатком собственных финансовых ресурсов;
- труднодоступностью заемных средств.

В этих условиях, по мнению некоторых исследователей, одним из важнейших направлений решения проблемы оснащения предприятий сельскохозяйственной техникой является лизинг.

Заключение. Основным источником финансирования инвестиций в сельском хозяйстве региона, как и страны в целом, остаются собственные средства компаний, складывающиеся из накопленной амортизации (теоретически предназначенной лишь для простого воспроизводства основных средств) и нераспределенной прибыли. За пятилетний период объем собственных источников увеличился почти в три раза, долгосрочных заемных – на 71%, а привлеченных – на 96%.

Соотношение типов источников финансирования также изменилось таким образом, что повысилась роль именно собственных средств – их доля увеличилась в общей сумме, тогда как доли привлеченных и заемных – сократились (рис. 1).

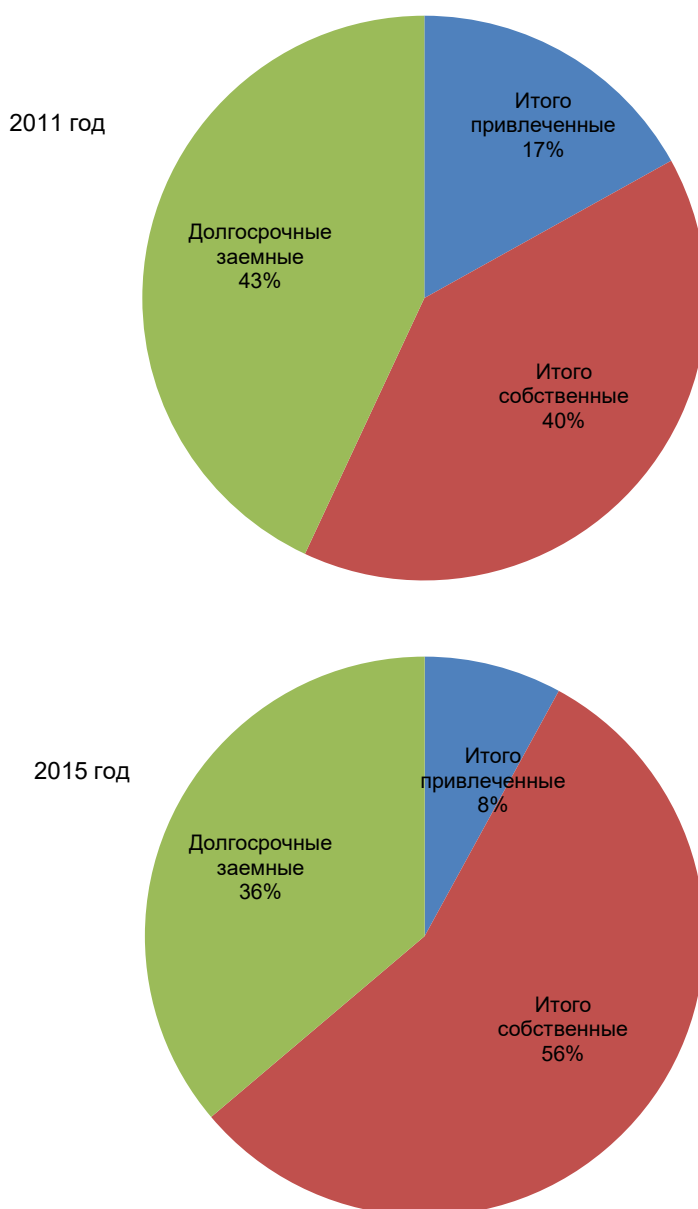


Рисунок 1 - Структура источников финансирования

Как видим из рисунка 1, на долю собственных средств приходилось уже почти 56% источников финансирования.

Роль собственных средств в финансировании инвестиций оказывается еще выше, так как краткосрочные займы и кредиторскую задолженность невозможно напрямую использовать для финансирования инвестиций, например, в средства производства, долгосрочных по самой своей природе.

Целью инвестиционной политики нашего региона является кратное увеличение объема инвестиций в экономику Воронежской области для обеспечения пропорционального ускоренного роста ВРП до 2020 года.

Одной из задач инвестиционной стратегии Воронежской области является обеспечение привлечения инвестиционных ресурсов для развития агропромышленных производств и предоставление инвесторам максимально широкого спектра мер государственной поддержки.

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DOI <https://doi.org/10.18551/rjoas.2017-06.22>

FOREIGN AND DOMESTIC INVESTOR BEHAVIOR: A SYNTHESIS OF BEHAVIORAL BIAS IN BEHAVIORAL FINANCE

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ABSTRACT

This literature review aims to synthesize various research findings studying the foreign investor's superiority to the domestic. This synthesis was conducted by combining numerous findings of the research that has been performed by specialty researchers relating to the investor behavior at capital market. There were four main articles that were ran into or contemplated with several behavioral biases in behavioral finance like self-attribution bias, illusion of control bias, conservative bias, ambiguity of eversion bias, and endowment bias. In addition, it was also connected to the phenomenon of the existence of foreign investor at capital market that is extremely dominant. However, the research findings of the cause of foreign investors' superiority to the domestic at capital market are not uniform among the researchers. It causes by several factors like the aggressiveness of investor, information superiority, poor timing, non-egalitarian investor distribution, and the power of psychological dimension of investment among the investors. For that reason, there is an opportunity to the next researchers to study this inconsistent result in advance.

KEY WORDS

Investor behavior, behavioral finance, behavioral bias.

Research result synthesis and this behavioral finance theory involve different finding why foreign and domestic investors' performance is different if related to the several kinds of prominent behavioral bias. This study refers to the four main articles pertaining to that bias that is consisted of one main journal and three complimentary journals. Every synthesis of this behavioral bias will be ran into the existing theory which is connected to the behavioral finance theory and the research finding from a well-known researcher, so that every discussion will be directly connected to the investor behavioral bias.

The study of investor behavior in the decision making of behavior and emotional-based investment (irrational perspective) start to get attention since 1979 when Kahnemen and Tversky through the prospect theory succeeded to shows empirical relations between the psychological and economics theory. Explicitly, they criticized the use of Expected Utility Theory as a mainstream in explaining the decision making process. The study conducted by Kahneman and Tversky (1979) then became a trigger for more advanced economics research that is based on the irrational perspective for the future development. The explanation above indicates that irrational perspective was developed to give better explanation and understanding of the psychological bias happens at capital market, which cannot be explained by rational perspective. This happens since in addition to using "ratio", investor also use "emotional" in making decision for investment. Both complete each other in order to form short-term reaction or long-term behavior of human being, at which at a particular time ratio would dominate investor in making decision of investment and in another way emotional would be possible to do (Wendy, 2012 and Asri, 2013) In line with this idea,

Schinckus (2011) stated that behavioral finance was a new approach that learnt financial reality by including investment psychological dimension.

The main article becoming reference of this finance behavioral synthesis is adapted from Agarwal et al. (2009) entitled "Why do foreign investors underperform domestic investors in trading activity? Evidence from Indonesia. And the others complementary journals are adapted from (1) Dvorak (2005) entitled "Do domestic investors have an information advantage? Evidence from Indonesia", (2) Choe et al.(2005) entitled "Do domestic investors have an edge? The trading experience of foreign investor in Korea"; and (3) Kalev et al. (2008) entitled "Foreign versus local investors: Who knows more? Who make more?".

Foreign and Domestic Investors' Performance. In this first article, Agarwal et al.(2009) examined why foreign investors' performance was lower than the domestic at the stock trading activity in Indonesia Stock Exchange (BEI). This study aims to deeply examine why foreign investors' performance are lower than the domestic. The main background of this study appears since the previous various research findings stating that foreign investor has lower position than the domestic like the study conducted by Dvorak (2005) and Choe (2005). According to Dvorak, previous researchers have found that local investors were more superior to the foreign since they get more information than the foreign. While Choe et al. said that mentioning domestic investor to be more superior at trading activity in Korea Exchange was since the poor timing of foreign investor trading. On the other hand, Agarwal (2009) stated that the aggressiveness of foreign investors has made them get higher price both when they buy and sell stock. For that reason, Agarwal interested in conducting research again in Indonesia Stock Exchange to find out what exactly make domestic investors more superior than the foreign since all this time can be known that foreign investor was more superior than the domestic, both technological sophistication and experience, but the previous findings shows the opposite that domestic investor was more superior, thus this becomes a trigger why Agarwal want to conduct a study again.

Self-Attribution Bias. Having been reviewed from the aspect of behavioral finance theory especially refers to the aspect of investor bias type from the behavioral finance book written by Pompian (2006), particularly for kind of behavioral bias, then the research result conducted by Agarwal further involves self-attribution bias, that is, making foreign investor more aggressive to perform trading. Aggressiveness of foreign investors points them to make a hasty decision to buy let alone the price can go down and sell whereas the price can go up, thus return they get is smaller than the domestic. Consequently, as what Pompian said that this bias results to the foreign investor that make them over confident in the trading behavior, thus this bias endanger the management of foreign investor's treasure itself as they are too aggressive, it is surely affected on their bad performance, thus the domestic investor was more superior since they are not as aggressive as foreign investor. Even though the term of self-attribution means to the individual (investor) tendency assuming that the success s/he gets comes from his/her ability in investment, and if it is fails s/he will search for scapegoat or blame someone or something else. However, a fact of behavioral aspect is that investors who are susceptible or experience this bias then become aggressive, according to Agarwal, this happens to the foreign investor. Pompian also stated to always remember old proverb applied in Wall Street investor, namely: "Don't confusing your mind with the market going up leaf" meaning that as an investor we are not allow to be over confident with market condition going up too higher as capital market is fluctuated. For that reason, being too aggressive like foreign investor is not good enough since foreign investor is under the domestic investor's performance in Indonesian Stock Exchange.

Technically, self-attribution concerns cognitive phenomenon at which people address failure to the factors of situation while their success is a factor that has been determined or dispositional. Self-attribution bias can be divided into two, firstly, self-irrational bias that shows people's tendency to claim the level of belief irrationality of their success. Secondly, self-protection bias shows a proper effect, proper denial and responsibility of failure. Yet, thing needs to pay attention is as this cognitive bias connected to the emotional explanation, then it will be hard to make sure which type of bias works on a particular situation.

Illusion of Control Bias. Like Pompian said, foreign investor behavior which is too aggressive relates to the illusion of control bias. Illusion of control bias illustrates a tendency of human being to believe that they can control something or influence a behavior, whereas in fact it cannot be controlled. This can be seen for instance at games or gambling in Las Vegas Casinos. For that reason, effect of this bias also causes foreign investors at Indonesia Stock Exchange becomes more aggressive, then they only put a little attention in stocks trading or it can be said that they are impatient compared to the domestic behavior. But then it does not mean that investor are not allowed to be aggressive, yet they should consider that capital market needs a timing strategy, it means that there is time when we have to go out of market (sell) and go in of market (buy).

Argarwal's finding is briefly explained follows. Agarwal's research comes between foreign and domestic investors' performance written in Journal of Financial Markets along with his team in 2009. In this research, Agarwal and his team studied much more issuers-i.e. 100 issuers white longer duration started from May 1995 to May 2003. Saying yes to the study conducted by Dvorak (2005), Agarwal stated that compared to domestic investor, the foreign pays 9% higher when buying and accepting 14% lower when selling.

Conservative Bias. The different of Dvorak and Argawal's finding is that Argawal does not agree about the information superiority becomes cause of difference. They said that foreign investors are more aggressive than the domestic. Foreign investors want to finish their transaction faster, and then they have to buy with higher price and sell with the lower price. This difference of cost makes their short-term performance worse than domestic investor. It is like runner illustrated that domestic investor is better at sprint (100 meters) while foreign investor good at marathon (5-10 km) this is similar to conservative bias. Conservative bias is kind of cognitive bias that is a mental process at which people put their previous views or estimation admitting new information. Having been estimated that an investor receives bad news about company profit and this news negatively opposite to another profit estimation issued previous month. Bias conservative can result investor have less reaction to new information, questioning about impression coming from previous estimation is better than acting to the updated information. It is important to note that conservative bias causes representativeness bias conflict. In this term, people act exaggeratedly to the new information. People obviously can show those two biases: If the data seems appropriate or represented and the model is based, then people can be overloaded with the data in conformity with the representativeness bias.

This is in line with the research results of Dvorak (2005), but he stated that the advantage of the domestic rather than foreign investors because domestic investors have information superiority compared to the foreign, which caused domestic investors in Indonesia Stock Exchange has no language and cultural constraints to invest shares. Brief research results conducted by Dvorak (2005) regarding information superiority. Emerging capital markets especially in developed countries, behavioral finance is an interesting study because it is often assumed that foreign investors are more skilled in investing because they have an advantage in their investment experience and skills. They are considered to have excellence information, so that it is more superior in assessing the prospect of a country as well as company fundamentals. In contrast, domestic investors are often considered less confident and often follow the strategy of foreign investors. As a result, foreign investors have the advantage of being able to enter and exit the stock first. However, there is a conflicting argument that domestic investors are more superior because they have local information unknown by foreign investors. In addition, they have no language and culture problem. In terms of digesting information, then these foreign investors are said to experience a conservative bias, in this conservative bias investors are reacting to new information, they often do it too slowly. For example, when stock prices are expected to fall, then we are too late to sell them because the conservative investor could have made it too slow to sell them.

Some scholars have tried to prove which opinions are more acceptable. From various research results, one of them can be seen in the article entitled Journal of Finance written by Tomas Dvorak (2005). The results of this study record every transaction on 30 shares of Indonesia Stock Exchange that is the most liquid during January 1998 until December 2001.

There are three important findings from this Dvorak study that uses 7.4 million transactions. Firstly, without distinguishing the brokerage firm used, domestic investors in Indonesia Stock Exchange is more superior. During the research period, they made a profit of Rp 4 trillion more than foreign investors. It means that domestic investors have superior information to the foreign. Secondly, there is a difference in performance between investors who use local and foreign brokers. Of the 200 brokerage firms surveyed by Dvorak, 179 are locally owned and the rest are foreign. In addition to run order from investor, brokerage firm also as an investment consultant to the client. In general, foreign investors at BEI use foreign brokers, while the domestic uses local brokers.

Dvorak also found that compared to the local brokerage clients, foreign brokerage clients enjoy higher long-term benefits, but medium-term profits (intramonth) and lower intraday. Meaning that local brokerage clients have short-lived information advantage, but foreign brokerage clients are smarter in choosing good fundamental stocks (long-term winners). Thirdly, domestic investors who use global brokers have the best performance among all investors. This identifies that the combination between local information superiority and the expertise of global brokers is able to create superior performance at BEI.

Detail information from the results of Dvorak's (2005) study explain that obtained the most powerful evidence that domestic investors have information superiority compared to the foreign in Indonesia stock exchange. The fact is that foreign investors are systematically trading at a daily price which is worse than domestic investors. It is also proved that domestic investors are encouraged to buy before the positive return (price goes up) of the information they get from the information revealed later. Finally, the purchase of domestic investors contains more information than the foreign.

Ambiguity of Aversion Bias. The direction of change in asymmetric information over time raises an ambiguity. This is what Pompian says as the ambiguity of aversion bias, at which attempts to buy shares that they know more than they do not yet know. Daily prices, at which foreign investors trade, have substantially deteriorated in recent years. In contrast, the superior ability of domestic investors to predict future returns has disappeared in the latest sub-period. The purchase of domestic investors more informed than the foreign is stable over time.

People do not like to gamble when probability distribution seems uncertain. In general, people hesitate in situations of confusion or tenderness, this trend is known as ambiguity aversion bias. Avoidance of ambiguity arises in a wide variety of contexts. For example, a researcher may ask a subject to estimate the probability that the team's certainty will win the next university's football competition. Subjects can estimate 50 percent chance of success.

Compared to Korea, asymmetric information in Indonesian capital market is not as severe as in Korea or also known as term home bias. In particular, it was not found that domestic investors bought 5 days before negative returns or sales of foreign investors were more informed than the domestic. Foreign investors in Indonesia trade when prices are worse than foreign investors in Korea.

As the results of research by Choe et al. (2005), found that foreign investors trade at an uglier price when they sell than when they buy. This finding is the same for both countries supporting that this reflects the general phenomenon better than the special features of a capital market or other.

Meanwhile, compared to the Sheasholes' (2000) towards data in Taiwan, it was found that foreign investors bought 22 days before the good news was positive but statistically weak. In contrast, the Sheaholes findings stated that foreign investors' purchases 22 days before bad news were positive and statistically significant. Therefore, domestic investors have superiority information. Both Choe and Sheasholes' methods from previous research have given the same conclusions when the data applied in Indonesia. This supports that asymmetric information in Taiwan may indeed be different from in Korea and Indonesia.

By considering the timing strategy, then what has been found by Choe et al. (2005) in a research conducted in Korea is true. It stated that investor in Korea, for instance domestic investor is more superior since the poor timing owned by the foreign in investing, meaning that exit and enter of the market is less appropriate than Korean investors itself, so foreign

investors in Korea are also under domestic investors. Choe's research aims to investigate whether domestic investors have more side to foreign investors in domestic share trading. His background in doing this research is due to inconsistent results /views from previous research where there is a view that domestic investors have superiority to trade their own shares in their own country over foreign investors because they have information superiority and other factors such as regulatory which is more tolerant to domestic investors, even bias against foreign investors happens. It is seen that domestic investors have a higher side than the foreign, or also known as a home bias.

Judging from the behavioral finance theory, home bias is related to ambiguity aversion bias. This behavioral bias is one's confusion in ambiguity situations, or a situation where if one investor is more competent about domestic share than the foreign, then s/he will buy more domestic stocks, because their knowledge of domestic stock is superior to the foreign. This is called the effect of competence in stock trading, and vice versa if a person feels unfamiliar about something investing the asset then he will reduce the purchase of the asset. Therefore, in this ambiguity aversion bias is known as "unknown, unloved". This study was conducted at Korea Exchange by taking all stock trading data from the period of 2nd December 1996 to 30th November 1999.

The findings of Choe et al stated that foreign investment managers pay more than the domestic when they buy stocks and have received less when they sell shares during big and medium trading. For the average sample of weighted average of medium-sized is obtained weakness on foreign investment managers of 21 percent for purchases, and 6 percent for sales. There is also some evidence that individual domestic investors have a side that exceeds foreign investors, due to the fact that prices move very opposite to foreign investors rather than the domestic before trading. This is in more detail due to three factors, namely: firstly, foreign investors are more impatient, or trade when liquidity is lower, so they pay more for provider liquidity. Secondly, foreign investors know better, so the influence of their trade has a bigger permanence. Thirdly, foreign investors trade after prices are ready to move against them.

The third complimentary journal synthesized was written by Kalev et al.(2008) entitled "Foreign versus local investors: Who knows more? Who makes more? Basically, the purpose of this study was to examine the asymmetric characteristics of information among foreign and domestic investors in Helsinki Stock Exchange (HEX) during the period 1994 -2004. Here Kalev et al. distinguishes the asymmetric characteristics of information by blocking shares of single listed (listed on only one exchange) and cross listed, and commonly known as either international/global stock. There are 35 samples from the best stocks in Finland which are sampled for this research. This third journal is more concerned with ambiguity bias or home bias, especially with regard to opinions in the literature review of a journal which says that there are two different literature explanations from this study originally started. Firstly, local investors prefer and claim that they have fewer hurdles than the foreign in accessing local company data about the company's specific information (Hau, 2001; Dvorak, 2005; Brennan and Cao, 1997; Parwada et al., 2007 in Kalev, 2008). Another explanation is that it supports the argument that says that foreign investors are more sophisticated investors with superior skills that can help to analyze market conditions and make more informed decisions.

The research results of Kalev et al (2008) found that the study supported empirically asymmetric hypotheses of information among local and foreign investors. It is found that shares listed on only one exchange (single listed) are exclusive to local investors and their ownership level is dominant. However, in cross-listed shares, foreign investors' ownership can be compared to their local partners. Internationally-renowned shares (such as Nokia) are the exception since they are owned by foreign investors which almost 90 percent of average is the sample period. The same pattern is also shown in trade statistics. Thus, foreign investors invest and trade further for more transparent shares of information as evidenced by earlier literature such as Dahluquist and Robertson (2001); Kang and Stulz (1997) in Kalev (2008).

While in terms of trade advantage, daily trading price analysis shows that local investors still have an advantage in their own short-term capital markets. This finding is related to the ambiguity bias which can cause investors to prefer companies that are geographically close to them and ignore investments that are apparently located far away from them.

Endowment Bias. The last is endowment bias. This is an emotional type of bias. Person who plays endowment bias judges an asset more when s/he holds property rights than does not hold it. Endowment bias is not inconsistent with standard economic theory in which the asset that a person wants to pay on an object must always be the same as the person's desire to accept the surrender of the object. When acceptance is taken into account in the form of compensation. Psychologists have found that the minimum sales price that people specify tends to exceed the maximum purchase price they want to pay on the same item. Endowment bias may affect attitudes toward self-owned items over long periods of time or may be brought up immediately as items obtained.

Endowment bias is described as a mental process, which comes from being placed against the value of an object. The value depends on whether an object's ownership is generated by its loss or whether it is one that the object does not own and has its potential result. If one loss of an object is one of the given, then an amount of the loss is received to be greater than the amount of the result obtained if the object is newly added to another endowment. According to Richard Thaler (in Phompian, 2006), endowment bias occurs when out-of-pocket costs are seen as a loss and opportunity costs are seen as a floating result, farmers will become heavier in accepting them. Furthermore, a certain level of the degree of the event is introduced in the consumer choice process because the goods included in the gift of the individual will become more valuable than those not included in grace.

The practical application of endowment bias can be seen in four investment options, i.e., moderate risk share, riskier shares, state secured securities, and local/city government securities. Another group of investors is to establish the same list of options. They imagine that they are ready to inherit a special item on the list. If interested, investors will say they will provide a derivative hypothesis supporting different options and will do so without penalties. Most wealth management practitioners have found clients who are reluctant to sell securities left behind by previous generations.

In the long term, local excellence helps local investors to provide better performance than the foreign in most shares, except for Nokia shares, as these international shares are listed in cross exchange and the ownership is about 90% of foreign ownership. In contrast, in the ambiguity bias, it is evident that foreign investors can only use their superior investment proficiency in their long-term advantage as long as the share is known as an international share such as Nokia. The result is striking even though there is only one share used as a sample and it becomes a major consideration in distinguishing share characteristics over the rest of the shares from 35 samples at Helsinki Stock Exchange, Finland.

Distribution of Investors. In addition, foreign investors are particularly dominant in Indonesia's capital market. Indonesia's capital market growth is still dominated by foreigner investors. This can be seen from the funds of foreign investors entering the capital market reached up to Rp 54 trillion. An amount of funds is a challenge for domestic investors. In terms of ownership, of the total shares traded at foreign investors share still have about 64 percent. Besides, uneven spread of investors becomes one of the challenges of Indonesia's capital market in the future. So far, most players in the capital market are domiciled in Jakarta and surrounding areas. "Investors are still concentrated in Great Jakarta. This is a challenge for all how to increase the number of domestic investors with approaches of outside Java. The number of domestic investors is not optimal yet. Currently the number of investors in Indonesia's capital market is still very small, which is about 0.2 percent of the 230 million people of Indonesia (BEI, 2014). Since the unbalanced of foreign and domestic investment and the number of domestic investors compared to the foreign, resulting in Indonesia's capital market is very sensitive to the movement of foreign investors. Therefore, the role of domestic investors is necessary for Indonesia's capital market to stabilize, and the role of fund manager to have a program in order to increase the number of investors. Thus,

in order to increase public participation in financial market especially in capital market, then capital market socialization in campus and community needs to be improved again.

Conclusion. Behavioral finance is a new approach that studies financial reality by incorporating the psychological dimension of investment. Based on the four research results synthesized here, each researcher has a different perspective on why foreign investors can be defeated by domestic investors. Foreign investors are less than the domestic because foreign investors are more aggressive, making them less patient in buying and selling stocks. Another finding is that domestic investors' performance is better than the foreign because domestic investors have information advantages compared to the foreign and bad poor timing, and it can also be attributed to asymmetric information between local investors and foreign investors caused by home bias, where domestic investors have fewer obstacles in accessing domestic company data about company-specific information except global shares.

With regard to behavioral bias, discrepancy of the findings above is certainly strongly influenced by the various behavioral biases occurring in capital markets such as self-attribution bias, illusion of control bias, conservative bias, ambiguity of aversion bias, and endowment bias. Much of the behavioral bias is closely related to the nature of investors as human beings where investment decision-making is influenced by their financial behavior, and unequal distribution of investors that are still concentrated in large cities only.

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DOI <https://doi.org/10.18551/rjoas.2017-06.23>

POLICY IMPLEMENTATION OF INTERNATIONAL UNDERGRADUATE PROGRAM IN INDONESIA'S HIGHER EDUCATION SYSTEM: A STUDY AT FACULTY OF ECONOMICS AND BUSINESS UNIVERSITY OF BRAWIJAYA

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ABSTRACT

This study aims to find out the success of policy implementation of international undergraduate program at FEB-UB by analyzing the influencing factors based on the theory of policy implementation Edward III, among others communication factor, resource, disposition and bureaucratic structure. This was qualitative descriptive research (case studies). The data were collected from interview, observation, and document study. This study was conducted at FEB-UB. The result of the study shows that: 1) Communication happens along this time both between Faculty and students mostly uses indirect communication since it feels more effective and efficient. However, direct communication is a routine activity at the first year by inviting parents. 2) Resource, support of international undergraduate program policy's executing agent at FEB-UB both human resources, budgetary resources, information and authority and facility and infrastructure is sufficient. But then there are several deficiencies like an amount of human resources needs to be added. 3) Disposition is measured from the policy's executing agent and student level of obedience. Policy's executing agent is measured to have been good. In line with the policy's executing agent, students' obedience is also measured to be good since their support in the policy of international undergraduate program. 4) Bureaucratic structures are measured from the availability of internal Standard Operating procedure (SOP) connected to the policy implementation of international undergraduate program at FEB-UB and its fragmentation. FEB-UB's international program unit has a complete SOP that rules plots of service performance at international undergraduate program. Coupled with the pattern of work relationship and distribution of duties (fragmentation), FEB-UB's international undergraduate program unit has good pattern of work relationship and is suitable for its respective field.

KEY WORDS

Policy implementation, international undergraduate program, higher education.

Education is a mandatory for every human being in the world. Since through education people will be able to face problem and challenge they will face. The big challenge in life also influences the level of knowledge which has to be owned by human being.

Indonesia is one of the countries with much more capacity of human resources. But in managing its human resource, Indonesia is still much more left behind from the neighboring countries like Malaysia, Thailand, Philippines, and other countries. This causes by the educational level in Indonesia which is low and inadequate facility so affecting on the low quality labor, jobless increases, productivity decreases, and competitiveness is low to be able to face competition between both local and foreign labor. For that reason it needs to improve the standard of education for all Indonesian.

Law no 20/2003 article 1 paragraph 1 on the national education system states that education is a conscious effort by human being to increase their potential through learning process. Education is a process that helps to form those receiving education to be a human resources having professional ability, productive, creative, independent, excellent and having noble character as the nation's asset in succeeding national development. Law on the National Education System (N0.20/2003)

University as the highest educational institution is expected to contribute as provider of educated and quality human resources. University in Indonesia as one of the drives of the

national development responsible to produce graduate who have deep and wide viewpoint and skill both local, national, and international as well as able to compete with graduate from foreign university.

In order to increase Indonesia's university competitiveness with foreign university, we need to pay attention quality improvement of university seriously. One of the ways to improve the quality of university quickly is through building cooperation with foreign universities having good reputation. Through the cooperation with foreign universities, universities in Indonesia can influence each other in several things, among others the improvement of academic talent quality, student, prestige, research, and another resource.

International undergraduate program is part of cooperation with foreign universities in term of improving and developing the university to face the challenge of global education and create an individual who really have quality and able to compete globally.

Definition of international class program at university refers to the decree of the Directorate General of Higher Education (Ditjen Dikti), Ministry of National Education No.61/DIKTI/Kep/2000 that the form of cooperation of Indonesia's universities with foreign university or other institutions is at one educational activity unit namely, (1) twinning, (2) lecture and student exchange to hold academic activity, (3) resource utilization in the implementation of academics activity, (4) credit transfer.

University of Brawijaya is one of the leading universities in Indonesia established in 1963 with its main campus located in Malang, East Java. In order to achieve World Class University status and coupled with its vision and mission as internationally-top university and competitive ASEAN university, University of Brawijaya tries to perform educational internalization by integrating international component into the purpose, function or educational explanation, then the step to do is opening international class program.

International class program at University of Brawijaya started by Faculty of Medicine in 2006 then followed by Faculty of Administrative Science and Faculty of Economics and Business in 2007. International class program owned by University of Brawijaya succeeds to improve the number of foreign student and cooperation with foreign universities.

International undergraduate program at several Faculties in University of Brawijaya has been running since 2006 but the others who initially seriously implement this program are now known to no longer exist. Faculty of Economics and Business University of Brawijaya (FEB-UB) is one of the faculties that are still consistent until today to run international undergraduate program and continuously develop it by opening the program at its departments.

This study aims to describe and analyze the success of policy implementation of international undergraduate program at FEB-UB by analyzing the influencing factors based on the theory of policy implementation Edward III, among others communication factor, resource, disposition and bureaucratic structure.

METHODS OF RESEARCH

This was descriptive qualitative research (case study). It focuses to 1) describe and analyze policy implementation of international undergraduate program at FEB-UB based on the perspective Edward III, i.e., (a) Communication performed at policy implementation of international class program at FEB-UB; (b) Human resources performing implementation process of international class program, both human resources, budgetary resources, information and authority and facilities and infrastructure; (c) Disposition in performing international class program consists of understanding of performance towards policy (policy's goal), referrals and respond (readiness and commitment) covers to acceptance and respond from executing agent; (d) bureaucratic structure of international class program covers to: organizational chart of program performance, setting work mechanism and rule or executing agent's obedience to the SOP fixed.

This study was conducted at University of Brawijaya, Malang, East Java Province, while the site of the research is at Faculty of Economics and Business. Data collection method uses case study approach from Robert K.Yin (Kusmarni, 2011 p.103) namely,

documentation, archives recording, interview, direct observation, participant observation and a set of physical or cultural with interview, observation, and documentation procedural. Research instrument is the researchers itself who goes directly into the field to collect data by holding an unstructured observation or interview by using note book. Data analysis used in this study is a case study conducted twice: firstly was analysis at field during the data collection (formulating idea and data review) and secondly after the data collected (data interpreting, data presentation and searching of literature) by Robert K.Yin (Kusmarni, 2011 p.118)

RESULTS AND DISCUSSION

Policy implementation of international undergraduate program at FEB-UB uses a model from the theory proposed by Edward III (1984:9) in which the success of policy implementation can be influenced by four critical factors, i.e. communication, resource, disposition and bureaucratic structure. Those four variables have indicator which can influence the success of policy implementation.

The first factor is communication from the policy implementation of international undergraduate program at FEB-UB namely, a). Information transformation (transmission), in term of policy implementation of international undergraduate program of FEB-UB, it is a form of delivering or sending information from the faculty then forwarded to the policy's executing agent which is the unit of international program (UPI) as the administrator of international undergraduate program of FEB-UB and the last is forwarded to students and public community that need the information like students and their parents. According to the result of interview conducted to the data resources, it is known that policy communication is directly performed by giving socialization. This is done to give information to students. Socialization is performed twice by implementing officer of international undergraduate program of FEB-UB, firstly is conducted with the applicant of international class during interview session and secondly is inviting parents at the first semester. Transformation desires information to not only delivers to the policy's executing agent but also target group and involved party (Purwanto, 2012). While transmission process from faculty as the policy maker to the policy's executing agent is executed by conducting monthly coordinating meeting. b) Clarity of information, communication accepted by policy's executing agencies has to be clear and easy to understand to facilitate in taking action (Agustino, 2006 h.150). Based on the result of field observation, clarity of policy reporting of international undergraduate program is in addition to direct socialization to students and parents, it also efficient enough to utilize printed media like academic guide book or electronic media. c) Consistency of information. Based on the interview and field observation, information delivery on the policy of international undergraduate program has been consistently performed; socialization is performed routinely by the management unit of international undergraduate program. Implementing officer is very active to use media to deliver the information.

The second factor is the condition of supporting resources. Resource here is related to the whole sources that can be used to support the success of policy implementation. This covers; a) human resources (staff), policy implementation really needs support from the availability of human resources which its quality and quantity is sufficient. Human resources quality is related to the skill, dedication, professionalism, and competence in its field. Based on the researchers' observation, educational background of international undergraduate program's staff at FEB-UB is mostly doctorate degree. Almost all of staff is foreign universities graduate while the administration staff has educational background in English. In addition to have English command, they are demanded to have professionalism. Such a demand makes faculty performs an effort in order to improve the quality of human resources. As what have been stated by administration officer of the unit of international undergraduate program FEB-UB that there has been training related to the program held by FEB. If seen from the quality side, human resources have been competent enough to execute the program. While from the quantity side, the number of staff is not sufficient enough yet so they have a double job. This has influence over the smooth of administration process and the

quality of service to the students. b) Budgetary, in relation to the financial resources of international undergraduate program at FEB-UB, it has been budgeted at department budget by the faculty. For that reason, it can be said that the aspect of budgetary resources of international undergraduate program gets adequate budgetary support. c) Information and authority, based on the field observation, then it is known that information given by the stakeholder has been performed and obeyed by policy's implementing agencies and is suitable with the employment contract of implementing agencies to the stakeholder. Such information is also important to bring someone back to consciousness involved in the implementation so they will implement and comply what become their task and obligation. On the other hand, the form of authority given to the implementing agencies of international undergraduate program FEB-UB can be seen from the Dean's decree No 046/J10.1.12/SK/2009 on the establishing of international undergraduate program officer of FEB-UB. d) Infrastructure and facility is one of the influencing factors in the policy implementation. The result of observation conducted by the researcher shows that facilities and infrastructure is a complimentary factor in the implementation of international undergraduate program. Facilities provided to this class is optimal enough and able to prop all the learning process up like the availability of a standard class completed with LCD, tutorial room and representative computer laboratory in the classroom.

Quantity and quality of media during the learning process is also providing optimally like digital library and the unit of business center and bank counter. Procurement of sufficient facility like mentioned above will support success of implementation of a program or policy.

The third factor is disposition, according to Eddward III in Winarno (2005 p.142) tendencies or disposition is one of the factors having important consequences for an effective implementation policy. Attitude and commitment from the policy's implementing agencies is a must they should have to be able to reach policy's goal expected. In relation to the implementation of international undergraduate program at university of Brawijaya, FEB's respond as the executing agent generally support the implementation of international undergraduate program at University of Brawijaya and has willingness and desire to execute this policy seriously. In performing the implementation of international undergraduate program, FEB establishes a special unit of management to manage international undergraduate program which is UPI. Having been seen from the students' point of view, international undergraduate program which also plays as an important executing agent in the policy performance, it is known that his/her attitude has been good. UPI or students really support this program implemented at FEB-UB.

The fourth factor that influences the success of public policy implementation is bureaucratic structure. According to Edwards III in Winarno (2005 p.150) there are two main indicators of bureaucracy:

a) SOP, according to Insani (2010 p.11) standard operational procedure is a document containing a series of standardized written instruction on various processes of administrative arrangements containing ways of doing work, regulations that contain internal coordination of the international undergraduate program unit as actors who play a role in activities. Service standards are used as guidelines of implementation and assessment guidance to provide quality, fast, easy, affordable and measurable services. SOP becomes the guideline for every executing agent in acting so that in the implementation of policy does not deviate from policy objectives and targets. In addition, by using SOPs, implementers can optimize the time available and can serve to uniform the actions of officials within a complex and widespread organization, thereby generating great flexibility and great similarity in the application of rules. Based on the observation and documentation, it is found that the management of International Class Program of Faculty of Economics and Business University of Brawijaya by International Program Unit (UPI) in carrying out its duties and functions has performed its duty in accordance with Standard Operational Procedure (SOP) and vision and mission from the Department. As a value that becomes the tendency of the implementers of International Class Program in FEB-UB in running the duties and functions of each part in achieving organizational goals in accordance with the expertise. Vision and mission for an organization is a bridge between dreams that want to be realized in the future. The existence of a vision-

mission for an organization to make what it wants to do to be directed. The effort to combine the desire to be achieved by the organization with the aspirations and demands of a dynamic public will make it easier for the organization in carrying out the work and tasks of the organization in accordance with the field or expertise. Implementation of duties and functions, especially for executing officers performed to implement the vision-mission of the organization is an effort to provide satisfaction of service to the community.

b) Fragmentation, according to George C Edward III in Agustino (2006 p.153) that fragmentation is an effort to disseminate the responsibility of activities or work activities to several employees in work units, to facilitate the work and improve service. The implementation of the policy of the International Class Program has been appropriate in the role and duties as well as the coordination between the implementing parties. The distribution of job description is intended to facilitate the implementation of this policy. Even though each policy's implementing officer has their own different duties, but coordination is required between them so that what becomes the objective of the international class program policy can be achieved. In relation to the staff's work culture and work ethic, they have been running this program well and it has been in accordance with the rules set by the faculty. The head of international Program of FEB-UB said that the staffs have implemented a work culture of participative management and work ethic according to the vision and mission which is expected by faculty. For that reason, implementation of the international undergraduate program at FEB-UB has fulfilled the structure in accordance with the theory of Edward III in Nugroho (2012 p.693) which affirms that the appropriateness of bureaucratic organization which turns into the executing agent of public policy implementation becoming the factor supporting the success of one policy. Likewise with the condition of human resources in the implementation of the international undergraduate program of FEB-UB is good enough, the conditions among the officers are also good, especially regarding the infrastructure and facilities and the consciousness of officers' performance in performing tasks that must be oriented to the needs of students, policy's executing agent selected is those who are competent in their field. It is like an idea of Sinambela in Pasoong (2008 p. 211) stating that the quality of service is reflected in transparency by which open and easy service as well as accessible to all parties who need and provided adequately and easily understood.

CONCLUSION

Communication occurred during this time between the management unit of international undergraduate program and student or parents mostly use indirect communication since it is more effective and efficient. However, direct communication is still a fixed routine. Effective communication in an organization is also performed to support the delivered of policy's goal.

Resource, support of international undergraduate program policy's executing agent at FEB-UB both human resources, budgetary resources, information and authority and facility and infrastructure is sufficient. But then there are several deficiencies like an amount of human resources needs to be added. The lack of executing agent causes load of work increases so that the staff have double job.

Disposition is measured from two aspects, they are policy's executing agent and students level of obedience. Executing agent's obedience is rated to be good since the employment contract between the head of department of international undergraduate program of FEB-UB and the dean as well as supportive attitude to the policy of international undergraduate program at FEB-UB. In line with the policy's executing agent, students' obedience is also measured to be good since their support in the policy of international undergraduate program.

Bureaucratic structures, rated from two aspects, i.e., availability of internal SOP related to the policy implementation of international undergraduate program at FEB-UB and the fragmentation, is a responsibility spread of a policy. FEB-UB's international program unit has a complete SOP that rules plots of service performance at international undergraduate

program. In relation to the work relationship and distribution of duties, unit of international undergraduate program of FEB-UB has good work relationship pattern and is suitable for respective field.

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DOI <https://doi.org/10.18551/rjoas.2017-06.24>

IMPACT OF AGRICULTURAL PROGRAMMES ON SMALLHOLDER FARMERS' INCLUSIVE GROWTH IN SOUTHWEST NIGERIA

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ABSTRACT

This study was conducted to examine inclusive growth in agricultural projects, among smallholder farmers in Southwest, Nigeria. The study specifically describes the socio-economic characteristics of the smallholder farmers, estimates the determinants of inclusiveness of smallholder farmers in agricultural projects, measures the effectiveness of the features of Agricultural projects in supporting inclusive growth, and determines the effects of growth in the projects on farmers' productivity. A multi-stage sampling technique was used. Primary data were collected with the aid of well-structured questionnaire from ninety (90) participants and ninety (90) non-participants of three agricultural projects (FADAMA, Root and Tuber Expansion Programme and National Programme for Food Security) with guided interview. Data were analyzed using descriptive analysis, tobit regression, social opportunity function and t-test analysis. It was gathered from the study that most of the smallholder farmers were male (72.8 percent) with mean age of 50.9 years, they have relatively high household size of 9.0. Over 80.0 percent of the smallholder farmers had access to primary education, the mean years spent in formal education was 7.5. They have spent average of 18.4 years in farming, with standard deviation of 9.1. It was also discovered that they have access to market (60.6 percent), agricultural information (66.1 percent) and credit (52.2 percent). Farm size, educational level, farm experience, access to market, agricultural income, access to credit, access to agricultural information have positive likelihood of increasing the level of inclusiveness. But age and farm distance were negatively related. Factors that significantly affect inclusiveness among smallholder farmers were access to market at 10 percent (co-efficient = 0.3), access to credit at 5 percent (co-efficient = 0.2), farm experience at 5 percent (co-efficient = 0.2), and agricultural income at 1 percent (co-efficient = 0.4). Most of the opportunities of agricultural projects were not inclusive, except increase in income and gender equity. There was significant effect of growth on farmers' productivity. It was recommended that bottom-top approach should be used in executing agricultural projects, also capacity building should be encouraged among smallholder farmers. Smallholder farmers should be given easy access to market and credit as this will increase their level of inclusiveness in agricultural projects. The youths should be encouraged to go into farming, because they have enough strength to be included in emerging poverty reduction projects.

KEY WORDS

Inclusive growth, agriculture, programmes, smallholding, farmer.

The agricultural sector is crucial to achieving Nigerian's objective of inclusive growth and poverty reduction. The Government of Nigeria is aware of this and has been implementing programmes that aims at increasing agricultural production and reduce rural poverty and rural-urban inequalities.

The Nigeria revolutions have called for economic inclusiveness and greater social justice. Achieving these objectives requires paying closer attention to poorer and less developed regions that mainly depend on agriculture (directly or indirectly) for livelihood. This is particularly relevant for Southwest, Nigeria where the majority of the rural poor depend on agriculture for their living.

In agriculture, inclusive growth means developing the agricultural sector in a way that generates broad-based benefits for rural populations while improving economic productivity and food security at the local and national levels (Dunn, 2014).

The basis for using inclusiveness in driving the welfare of smallholders is that better well-being can be realized through economic stability and capacity building which can be generated through inclusive growth. Southwest Nigeria, faces technical and institutional constraints, potentially limiting their inclusion in emerging projects. The growing importance of rural-urban linkages, structural change in many middle-income countries and overall increased demand for food and fodder globally manifest a big market opportunity for small producers (FAO,2009).

Smallholders are stakeholders with significant shares in agricultural resources, activities and outputs hence they should be included in growth (Hazell, *et al.*, 2007; World Bank, 2008; Pingali, 2010; Salami, *et al.*, 2010). In Southwest Nigeria, smallholders are targeted in new poverty alleviation programs because they own the bulk of production resources like land and livestock, they directly benefit from income and food supply growth; and they can efficiently use land and cheaper family labour. It is therefore inevitable for smallholders to be incorporated into growth in response to growing demand which current production cannot fulfill (Pinstrup-Andersen, *et al.*, 1997; IFPRI, 2005).

In Nigeria, the benefits of growth have not reached the poor, despite government spending a huge amount on various agricultural programmes including poverty eradication programmes. Also, Nigeria still faces an ongoing challenge of making its decade-long sustained growth more inclusive, even though the country is rich in land, human and natural resources, the people are still considered to be poor as the National Bureau of Statistics figures indicate that national poverty incidence reduced from approximately 65.6 percent to about 54.4 percent between 1996 and 2004. However, with increase in absolute population from an estimated 115 million to 140 million between the two periods, this actually amounts to an increase in the population in absolute poverty from 75.4 million to 76.2 million between the two periods. Income poverty moved up from 28.1 percent in 1980 to 65.6 percent in 1996 before it returned to 54.4 percent in 2004, and as high as 69 percent in 2010.

The State and Federal governments of Nigeria has embarked on various projects aimed at reducing poverty among the citizenry. Some of which are: Fadama programme, National Rice Expansion Programme (NERICA), National Programme for Food Security, Youth in Commercial Agriculture Development Root and Tuber Expansion Programme. The programmes however, have not significantly influenced the productivity and the well-being of smallholders (Umeh *et al.*, 2014). Reasons that could be adduced to this are poor project management, corruption in public offices, inconsistent and poor implementation of government policies, insufficient inclusiveness of smallholders, neglect of rural infrastructure, and rise of oil shipments (Sekumade, 2009).

The main objective of the study is to examine the inclusive growth in agricultural projects, among smallholder farmers in Southwest, Nigeria.

The specific objectives are to: describe the socio-economic characteristics of the smallholder farmers in Southwest Nigeria; estimate the determinants of inclusiveness of smallholder farmers in agricultural projects; determine the effectiveness of the features of the various agricultural projects in supporting inclusive growth among smallholders; determine the effects of growth in the projects on farmers' productivity.

MATERIALS AND METHOD OF RESEARCH

The Study Area. The study was carried out in Southwest Nigeria. The Southwest is made up of six states which are; Ekiti, Ondo, Osun, Ogun, Oyo and Lagos. There are two distinct seasons namely; rainy season (April-October) and dry season (November-March). The temperature ranges from 21-28 degree centigrade ($^{\circ}\text{C}$) with high humidity and 33°C in dry season. Although, some parts of the zone are fairly urbanized, the greater majority of the population still lives in the rural areas and their major occupation is farming.

Sampling techniques. A multi-stage sampling technique was employed to select the respondents. The first stage was the random selection of three states from the six states in Southwest Nigeria. The second stage involves the purposive selection of three (3) Local Governments Areas (LGAs) from each state. The third stage involves the purposive selection of two (2) communities from each LGA. The last stage involves the random selection of five (5) respondents that participated in the projects under review and five (5) respondents that did not participate in the projects, in a community making a total of twenty (20) respondents from each local government, sixty (60) respondents from each state and a total of one hundred and eighty (180) respondents from the three states. The purposive selections were made because, the Agricultural Programmes were executed out in certain farm settlements.

Analytical Techniques. Descriptive analysis was used to describe the socio-economic characteristics of smallholders. The descriptive analyses that were used include frequency count and percentages.

Tobit analysis was used to estimate the determinants of inclusiveness of smallholders in agricultural projects.

$$Y_i = X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11},$$

Where:

- Y_i = level of inclusiveness in agricultural programmes;
- X_1 = Gender of SH (male =1, female = 0);
- X_2 = Age of Smallholder farmer (SF) (years);
- X_3 = Education level of SF (years);
- X_4 = Household size (numbers);
- X_5 = Farm size (acres);
- X_6 = Marital status (single=1, married=2, divorced=3, widowed=4);
- X_7 = Access to Market (yes =1, otherwise =0);
- X_8 = Experience of the SH (years);
- X_9 = Access to Credit (yes =1, otherwise =0);
- X_{10} = Income;
- X_{11} = primary occupation.

Social opportunity function was used to determine the effectiveness of the features of the various agricultural projects in supporting inclusive growth among smallholder farmers in Southwest Nigeria.

$$dAO(p) = (EI)dY^*(p) + Y^*(p)d(EI),$$

Where:

- $AO(p)$ = Opportunity Index;
- EI = Equity Index;
- $Y^*(p)$ = Average opportunities.

T-test was used to determine the effect of inclusive growth in the projects on farmers' productivity.

The T-test Statistic was used to test the significant difference in the income between the participants and non-participants.

$$T = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Where:

- \bar{x}_1 = mean income of the projects participants;
- \bar{x}_2 = mean income of the projects non-participants;
- S_1^2 = standard deviation of the participants;

S_2^2 = standard deviation of the non-participants;

n_1 = sample size of the participants;

n_2 = sample size of non-participants.

Decision rule: there is no significant difference, if calculated T-value is less than table value of 1.96 at 5% level of significant in a two tailed T- test.

RESULTS AND DISCUSSION

Socio-Economic Characteristics:

Table 1 – Socio-economic Characteristics of Smallholder farmers

Socio-economic characteristics	Participants		Non-participants		Total
	Frequency	Percentage	Frequency	Percentage	
Gender					
Male	62	68.89	69	76.67	72.78
Female	28	31.11	21	23.33	27.22
Age (years)					
<31	5	5.55	3	3.33	4.44
31-40	15	16.67	18	20.00	18.34
41-50	22	24.44	14	15.56	20.00
51-60	27	30.00	22	24.44	27.22
61-70	14	15.56	32	35.56	25.56
>70	7	7.78	1	1.11	4.45
Marital Status					
Single	11	12.22	8	8.89	10.56
Married	57	63.33	66	73.33	68.33
Divorced	6	6.67	5	5.56	6.12
Widowed	14	15.56	11	12.22	13.89
Household Size					
≤5	14	15.56	11	12.22	13.89
6-10	42	46.56	32	35.55	41.16
11-15	30	33.33	39	43.33	38.33
>15	5	5.56	8	8.89	7.23
Educational level					
No formal	11	12.22	13	14.44	13.33
Primary	35	38.89	41	45.56	42.23
Secondary	38	42.22	34	37.78	40
Tertiary	6	6.67	2	2.22	4.45
Agricultural Enterprise					
Crops	43	47.78	35	38.89	43.34
Animal	22	24.44	24	26.67	25.5
Both	25	27.78	31	34.44	31.11
Farm Size (Hectare)					
0-1	25	27.78	44	48.89	38.34
1-2	33	36.67	27	30.00	33.34
2-3	32	35.55	19	21.10	28.33
Primary Occupation					
Farming	55.00	61.11	57.00	63.33	62.22
Civil service	15.00	16.67	12.00	13.33	15.00
Artisanship	8.00	8.89	18.00	20.00	14.45
Others	2.00	2.22	3.00	3.33	2.78
Farming experience (years)					
<10	12.00	16.33	23.00	25.56	20.95
11-20	46.00	51.11	43.00	47.78	49.45
21 -30	14.00	15.56	16.00	17.78	16.67
31- 40	12.00	10.33	5.00	5.56	7.95
>40	6.00	6.67	3.00	3.33	5.00
Types of labour					
Family	31	34.44	48	53.33	43.89
Hired	34	37.78	30	33.34	35.56
Both	25	27.78	12	13.33	20.56
Access to market					
Yes	62	68.89	47	52.22	60.56
No	28	31.11	43	47.78	39.45
Access to credit					
Yes	55.00	61.11	39.00	43.33	52.22
No	35.00	38.89	51.00	56.67	47.78
Access to extension					
Yes	44.00	48.89	29.00	32.22	40.5
No	46.00	51.11	61.00	67.78	59.45
Income (#)					
<100,000	30	33.33	54	59.89	46.11
100,001-200,000	45	50.00	25	27.78	38.89
200,001-300,000	8	9.17	9	10.00	9.59
300,001-400,000	5	5.55	3	3.30	4.43
>400,000	2	2.22	0	0.00	1.11

Source: Field Survey, 2016.

The socio-economic characteristics of smallholder farmers used in this study range from gender, age, marital status, household size, educational level, agricultural enterprise, primary occupation, farming experience, types of labour, access to market, access to credit, access to extension and income.

From Table 1, it is revealed the smallholder farmers were mainly male (72.78%) and they are between the ages of 51 and 70 (52.78%). This may be as a result that, the socio-economic and cultural environment of the southwest, Nigeria gives men major responsibilities of providing for the households. And as a reason of their age, they will be able to engage in various agricultural activities. This is consistent with the findings of Onyemauwa, *et.,al* (2013).

Most (68.33%) of the smallholder farmers were married with relatively large household size of 6-10. This is an indication that they will be willing and able to participate in Agricultural programme, since they have large family members to help them on the farm.

There is high literacy rate among the farmers, as indicated in Table 1, that 86.68% of the farmers had formal education. Their formal education is said to boost their participation in agricultural programmes.

Agricultural enterprises surveyed under this study were crop production and animal production. It is discovered from the study 43.34% of the smallholders farmers were into solely crop production. This may be as a result that 84.22% of the foods consumed by man are crop sources. The implication is that, they are more likely to participate in agricultural projects aimed at crop production.

A smallholder farm ranges from 0.1 to 3 Hectares (FAO, 2009). The distribution in Table 1, shows that majority (38.34%) of the farmers operated their farming activities on farmland less than 1 hectares. But, distinctively the participating farmers operated more on 1-2 hectares of farmland, while the non-participating farmers operated on 0-1 hectare of farmland.

The primary occupation engaged by the farmers was farming (62.22%). Though other farmers agreed that civil service, artisanship were their primary occupation. This is consistent with *a-prior* expectation that the major occupation in the rural areas is farming. The indication is that the smallholder farmers will be able to participate in the agricultural programmes, thus they will be included in growth.

It is revealed from this result that the modal years of farming experience is between 11 and 20. This is expected to positively influence their inclusiveness in Aps.

The type of labour used by the smallholder farmers was mainly family (43.89%). This implies that farmers prefer family labour to hired labour, and this is would make the farmers to participate in the projects, since the money that should be spent on hired labour will be used for more profitable venture.

The result further revealed that the smallholder farmers had access to market (60.56%), access to credit (52.22%), and no access to extension service (59.45%). The accessibility of the farmers to market and the credit are expected to improve their willingness and ability to participate in agricultural projects, thus, been included in growth. But, the smallholder farmers opined that they do not have access to extension services, this has a tendency of reducing their participatory ability in agricultural programmes.

The income of the smallholder farmers varied from <#100,000 to #>400,000. The half of the participating farmers had between #100,000 to #200,000, while 46.11% of the non-participating farmers had less than #100,000. The difference in their annual income is mainly because the participation in the agricultural programmes.

Determinants of Inclusiveness in Agricultural projects among Smallholder Farmers. The table 2 shows the determinants of inclusiveness in Agricultural projects. The R² value from the result showed that the predictors (independent variables) can account for 92% of the variation in the dependent variable (level of inclusiveness), while the unexplained variance (error term) can be accorded to 8%. It was gathered that all the independent variables had positive relationship with the level of inclusiveness among smallholder farmers, except for household size, age and farm distance.

The majority of the respondents for this study were males (Table 1). The result from Table 1 revealed that an increase in the number of males involved in production, will lead to 0.087 increase in the level of inclusiveness. Furthermore, a rise in the number of years the smallholder farmer spent in formal education will result to 0.009 increase in inclusiveness in the agricultural projects. This may be due to the fact that, as the farmers gain more knowledge and skills, it tends to increase their propensity to practice what they were taught and they are more likely to cope with new technologies that were provided by the projects. This is consistent with a-prior expectation, also Taiwo and Omifolaji (2015), reported that education positively affect the level of inclusiveness of farmers.

An increase in a hectare of farm will lead to 0.0459 increase in the level of inclusiveness, this conforms with the a-prior expectation. Access to agricultural information, access to extension, access to market and access to credit have been shown to positively influence the level of inclusiveness these are correct with the a-prior expectation. Access to market is significant at 10% level and access to credit is significant at 5% level. This finding is in line with that of Edi *et al.* (2007) who noted that access to credit, farm size and contact with extension influence inclusiveness in Agricultural programmes. Also, Etwire *et al.*, (2013) reported that credit access is one of the major factors influencing inclusion in agricultural projects.

Primary occupation, farming experience and income have also been revealed to have positive likelihood with level of inclusiveness in agricultural projects. The primary occupation was farming, and from table 10 it has positive likelihood with the level of inclusiveness having a co-efficient of 0.024, this is consistent with the expected relationship. This shows that an increase in the number of people primarily engaged in farming, there is maximum likelihood that the level of inclusiveness will increase by 0.024. Since, that is their main source of livelihood, they wish to expand it and increase their production, to create opportunities for themselves in order to meet their socio-economic needs.

Farming experience has been revealed to have positive likelihood with the level of inclusiveness of the smallholder farmers' and statistically significant at 5 percent. A rise in the number of years smallholder farmers spent in farming will raise the level of inclusiveness by 0.203. This may be because they have experienced the ups and downs in agriculture over the years, and thus have learnt from the experiences. And are now willing to expand the gain or mitigate the losses through inclusion in the projects. Also, Ugwoke *et al.*, (2015); Nwaobiala (2014), noted that farm experience is a significant factor, which positively relates to participation in agricultural project.

Table 2 – Determinants of Participation in Agricultural programmes among Smallholder Farmers

Variables	Co-efficient	Standard Error	T value
Gender	0.0871	0.0597	1.4590
Age	-0.0009	0.0030	-0.3000
Educational level	0.0094	0.0345	0.2725
Household size	-0.0008	0.0082	-0.0976
Farm size	0.0459	0.0376	1.2207
Marital status	0.0401	0.0333	1.3784
Access to market	0.2699*	0.1554	1.7368
Farm experience	0.2027**	0.0917	2.2105
Access to credit access	0.1603**	0.0750	2.1373
Income	0.4358***	1.58	2.7620
Primary occupation	0.0242	0.0307	0.7883
Constant	-0.5836	0.2574	-2.2673
/sigma	0.1934	1.2657	0.1529

Tobit regression result:

$R^2 = 0.9215$, No of observations= 90, LR Chi 2 (16) = 104.88, Prob. > chi2 = 0.0000.

***, ** and * represents 1%, 5% and 10% level of significance level.

Source: Field Survey, 2016.

From the result, an increase in agricultural income, indicate maximum likelihood to have 0.436 increases in the level of inclusiveness in agricultural projects and it is statistically

significant at 1 percent. This result conforms to the a-prior expectation and to the study of Bagherian *et al.*, (2009), who noted that income level is significant and has positive relationship with inclusiveness of farmers in agricultural programs.

On the other hand, an increase in the household size, will lead to 0.001 decrease in the level of inclusiveness, this may be because the household head focuses primarily on providing food for his family and having no or little thought about expansion of his enterprise. This result follows the a-prior expectation.

Age of the smallholder farmers, influences the level of inclusiveness with negative maximum likelihood of 0.001. An increase in the age of the farmer, there will be 0.001 decrease in the level of inclusiveness in agricultural projects. This may be because, the farmers will not want to stress himself or herself much, since he or she is getting older and only has a sole responsibility of providing food for his family. This is against the a-prior expectation, but in accordance with the studies of Bagherian *et al.*, (2009); Sulo *et al.*, (2012) who noted that age and household size have negative relationship with participation in agricultural projects.

Farm distance is said to be adversely related to the level of inclusiveness in agricultural projects. The farther the farm by 1 Kilometer, the more likelihood that the farmers level of inclusiveness in agricultural projects will be reduced by 0.004.

Effectiveness of the features of the various agricultural projects in supporting inclusive growth among smallholders. The features are grouped into three main opportunities namely; growth expansion and economic opportunities, social inclusion and access to basic infrastructural and human development opportunities, and social safety nets.

Growth Expansion and Economic Opportunities. Table 3, shows the inclusive growth expansion and economic features of the agricultural projects. This study reports that all these features are not inclusive except income, which recorded opportunity index of 93.20 and equity index of 1.03. This shows that increase in income is equal among the smallholder farmers. This equality in increase in income among smallholder farmers, is because the income-gap among them is minimal, they are majorly peasant farmers. But, for other economic growth and expansion features were majorly experienced by the smallholder farmers with higher income level. This is consistent with the *a-prior* expectation and with the study of Ali and Son (2007) who noted that economic growth has not be inclusive.

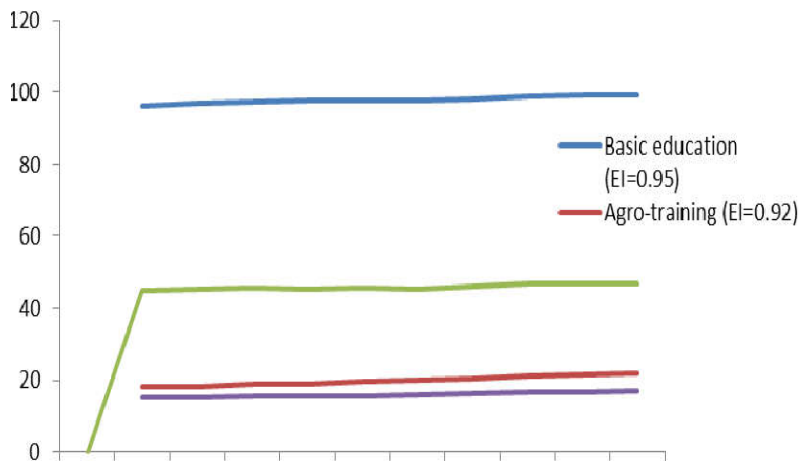


Figure 1 – Inclusive Report Based on Social inclusive and Access to Basic Opportunities
Source: Field Survey, 2016

Social Inclusion and Access to Basic Infrastructural and Human Development Opportunities. Social inclusion ensures that all sections of the population, including those disadvantaged due to their individual circumstances, have equal access to opportunities.

Figure 1 shows the inclusiveness of the features of the agricultural projects based on their social inclusion and access to basic opportunities. They include; access to basic education, agro-training, agro-technology and good water supply. The progressive

movement of the opportunity curve showed in figure 1 indicates that the opportunities were mainly enjoyed by the smallholders with higher income, that means it is not pro-poor. Though, they have access to these basic opportunities, but none is inclusive, the equity indices were lesser than 1. This is consistent with the findings of Ali and Son (2007) and Ajiboye and Osundare (2015).

Table 3 – Inclusive Report Based on Growth Expansion and Economic Opportunities

Population share/ features	Increase in income	Increase in savings	Increase in wages and salaries	Increase in Farm size	Increase in Farm output	Increase in Farm enterprise
10	95.75	89.08	30.80	45.72	55.6	37.38
20	95.36	91.49	33.39	46.25	61.1	37.14
30	94.91	92.71	35.07	46.73	63.0	38.19
40	94.42	93.57	36.81	46.97	61.1	39.37
50	93.95	94.24	38.06	47.52	62.2	40.60
60	93.31	94.96	38.86	47.88	63.0	41.38
70	92.76	95.39	39.89	47.97	65.1	42.27
80	91.78	95.80	41.27	48.32	64	43.23
90	90.45	96.16	42.62	49.43	65.4	44.15
100	89.39	96.14	44.31	51.02	68.9	45.60
OI	93.20	94.07	40.93	47.78	62.94	40.93
EI	1.03	0.97	0.90	0.96	0.88	0.90
Decision	I	NI	NI	NI	NI	NI

Source: Field Survey, 2016

Social Safety Nets. Social safety nets are required to protect the chronically poor and to mitigate the risks and vulnerabilities associated with transitory livelihood shocks, caused for example by ill health or economic crisis.

Figure 2, shows the opportunity curve for the features of agricultural projects based on their social safety nets. The features include gender equity, income class equity and proper organization. The downward slope of gender equity indicates that the opportunity is pro-poor (that is, it is more enjoyed by the poorer smallholders). While the upward slope of the income equity and proper organization means that the opportunities were not pro-poor. The equity index of gender equity is 1.37, implicating that it is inclusive. Income class equity and organization were not inclusive as indicated by the opportunity curve and the equity index. This may have been a result that the projects were gender sensitive, but for the income class and organization they were not, probably the projects were drifted mostly to those with higher income. Also, the organizations of the projects could be biased.

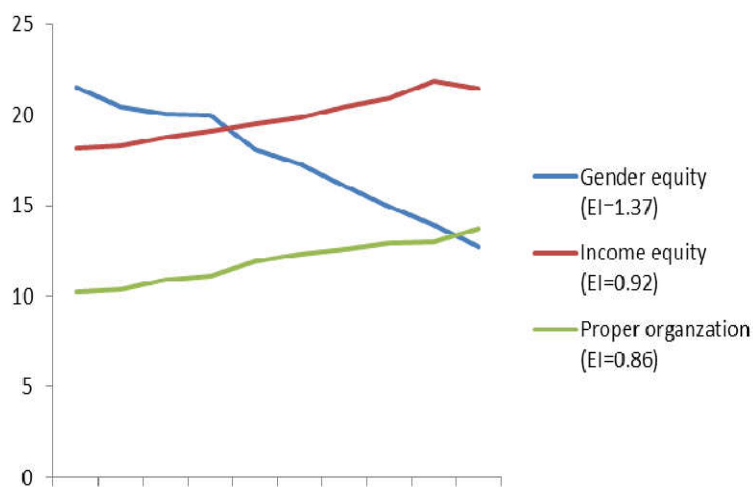


Figure 2 – Inclusive Report Based on Social Safety Nets
Source: Field Survey, 2016

The Effects of Inclusive Growth on Smallholder Farmers' Productivity. From table 4, Participants' income is significantly different from Non-Participants' income, t stat. = 2.96, $p < 0.01$. The result is 99% confident that the mean difference lies between 16233 and 239540. It is discovered that the mean income for the participants is ₦229,360, while for the non-participants is ₦117,707.

Table 4 – Effects of Inclusive growth in Agricultural Projects on Smallholder Farmers' Productivity

Descriptive Statistics			
n/n	Mean	Standard Deviation	Number
Participants	₦229,360	₦ 120,016	90
Non- Participants	₦117,707	₦ 83,754	90
Independent Samples t-Test			
t-Statistic	2.9547		
Critical Value	2.7633		
99% Confidence Interval	[-16233.1523, 239539.8189]		

Source: Field Survey, 2016

This shows that there is significant difference in their productivity as measured by their income. The result is statistically significant at 1% level, with confidence level of 99%. The critical value is 2.76 and since the calculated t value is 2.96, which is greater than 2.76, it implies that there is significant difference in the mean income of the participants and the non-participants and also the result can be relied upon. The significant difference can be due to access of agricultural information, market, extension services and credit. As Ekong (2003) rightly said that credit is a very important factor to increase and expand farm enterprise.

CONCLUSION AND RECOMMENDATIONS

Agricultural projects have been a welcome development by various governments at different stages as they were targeted to reduce poverty and increase the welfare of the rural populace especially the farmers. But, these goals and objectives have been dashed and have not been inclusive (in terms of opportunities they offered) among smallholder farmers in southwest Nigeria, as it has been indicated by the social opportunity function. Though the farmers experience growth and expansion in their enterprises, and they had access to basic infrastructure and human development opportunities, but the access and growth did not cut across all the smallholder farmers.

Also, there are differences between inclusiveness and non-inclusiveness in agricultural projects and the factors that influence their inclusion were known to be farm experience, access to market, access to credit facilities and income.

The study recommends:

Efforts should be intensified to enable more smallholder farmers benefit from the projects. One of the ways this can be done is to make the projects embrace a *bottom-top* approach that is farmers should be involved in planning and organization of the projects.

Basic infrastructure and human development, such as training and agro-technology have a great tendency in building the capacity of farmers, thus smallholder farmers should be allowed to have equal access to them.

Agricultural credit institutions should be localized in rural areas to increase accessibility to smallholder farmers.

Credit agencies and institutions should have flexible conducts to encourage the smallholder farmers to access credit for expanding their enterprises.

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DOI <https://doi.org/10.18551/rjoas.2017-06.25>

REGIONAL INNOVATION SYSTEM IN RURAL AREAS AND THE ROLE OF SMES AS COUNTERMEASURE FOR POVERTY: A CASE IN EAST JAVA, INDONESIA

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ABSTRACT

This study discusses the Regional Innovation System by identifying the policies that benefit the roles of SMEs in counter-measuring poverty in the region as well as the factors that are influencing the change pattern of policies for the roles of SMEs towards poverty alleviation. A qualitative method was used in the research by drawing cases from five different rural areas in East Java Province, Indonesia. The study concludes that Regional Innovation System as a joint regulation is still considered foreign by local governments. However, the study indicates a presence of different actors involved in synergizing the implementation of several MSMEs empowerment programs. Furthermore, four factors that influence the change pattern of policies for the roles of SMEs towards poverty alleviation were identified; however, RIS as a countermeasure for poverty has yet shown to be executed in a consistent, systematic and neat fashion. Recommendations from this study are that the needs for improvement in communication networks and distribution of equal information for each level of government agency are essential and so are the needs for improvement of the policies' evaluation system.

KEY WORDS

Regional innovation system, SMEs, poverty alleviation, policy.

In the case of developing countries, the level of innovation is not as broad as other nations. Despite the globalizing economy today, new radical innovations in terms of products or processes are yet scarce to be found. Radical innovation in new products or processes is considered valuable, although the concepts of incremental changes in products, processes and also management tools are imperative and apply to all regions (Lagendijk, 2000; Lundvall and Borrás, 1999; Maskell et al., 1998). However, to conclude that innovation activities for competitiveness are the same in all types of regions will be evasive (Todling & Trippel, 2005). A very important implication for policy makers is that there is no 'one fit for all practice' innovation policy approach which can be implemented to every type of region (see also Cooke et al., 2000; Isaksen, 2001; Nauwelaers and Wintjes, 2003; Todling & Trippel, 2005). Nevertheless, actions for more differentiated innovation policies are required and managing with specific innovation barriers for different types of regions is essential. The regional innovation system (RIS) approach (Autio, 1998; Braczyk et al., 1998; Cooke et al., 2000) provides a useful framework for such a differentiated approach. It draws attention to the firms, clusters and institutions of an innovation system to the interdependencies within the region and with higher spatial levels.

Undoubtedly, SMEs have risen to prominence, and this further support (Audretsch & Thurik, 2001) refers to a "fundamental shift from a managed economy to an entrepreneurial economy." Indonesia is also well-known for its SMEs resilience. According to Nasbit (1994), SMEs now constitute a dominant sector in the world economy, accounting for over 95% and up to 99% of the business population. In 2003, 99.8% of enterprises in the enlarged EU were SMEs. Companies in this category are bringing with them the entrepreneurial qualities of innovation, while risk-taking and pro-activeness have now gained worldwide recognition as a key source of dynamism and flexibility not just in advanced industrialized countries but also in emerging and developing economies. The SME sector has contributed significantly in terms of net job creation in OECD countries, consequently generating the important inputs

towards innovation, productivity and economic growth. The contribution of SMEs in the globalizing economy is definitely a key actor (e.g. Akhtar; CDASED, 1999; Mazzarol, et.al, 1999). SMEs are also known as strategic for the economy of many nations especially in the context of poverty alleviation (Indarti & Langenberg, 2004).

Due to globalization, SMEs are now battered from competitions especially from large and modern companies. Many SMEs in Indonesia are defenseless by operating with traditional management. According to many scholars, the problem with SMEs in many developing countries is their inability to network, which prevents access to markets, information, financial and other institutional supports (Mead & Liedholm, 1998; Swierczek & Ha, 2003). Furthermore, the Indonesian SMEs encounter the lack of capital, skills, as well as the ability for business development (Kementerian KUKM & BPS, 2004). SMEs in Indonesia are commonly found developing in clusters. SMEs clusters are established in all provinces in Indonesia and moreover located in rural areas. SMEs in rural areas are considered naturally part of the traditional activities of local communities by producing specific products that have been long existing. Nonetheless, these clustered SMEs are still managed traditionally, despite the abundance of local raw materials and having specialized skilled workers as a comparative advantage they have as the potential for growth (Tambunan, 2005). Further, many cases of cluster development policies in Indonesia have not been successful. Most of these failures come from the non-existence of the understanding of the key success factors in developing a successful cluster or how to govern it correctly. Neglecting the potential market linkage of SMEs cluster is one common failure. While policy makers are too centralized and policies are carried out using a standardized approach, this system is ignoring the specific diagnostic problems of SMEs. Based on that notion, the role of the local government here is essential. The potential of SMEs in East Java should be developed in order to support poverty alleviation. Although the poverty rate in East Java has always declined, the number of the poor remains high. This study aims to investigate the progress of SMEs and to find a solution for solving its problems through the lens of its competitiveness and social cohesion of countries, regions or other communities. This cohesion will be viewed through the development of its 'innovation system'. The dynamics of the innovation system indicates how a nation is mastering, utilizing and developing knowledge, innovating and diffusing innovation, and proceeding in learning and adapting to various changes. Therefore, this paper will address several questions as followings: 1) What policies benefit the roles of SMEs in counter-measuring poverty in the region? 2) What factors influence the change pattern of policy for SMEs that is oriented towards poverty alleviation? All cases are drawn from a case study of several regions in East Java Province, Indonesia.

LITERATURE REVIEW

Regional Innovation System. As a framework for explaining regional economic development, the Regional Innovation System (RIS) belongs to an explicitly spatial approach to the issue of innovation and technological change (Cooke et al., 1998; De la Mothe & Paquet, 1998; Fischer, 2001; Doloreux, 2002a). It blends elements of evolutionary economics (Nelson & Winter, 1982; Cooke et al., 1998), institutions' economics (Nelson, 1993), interactive learning (Lundvall, 1992), social theories (Grabher, 1993), and economic geography (Storper, 1997). RIS comprises a set of interacting private and public firms, institutions and other organizations functioning according to organizational and institutional arrangements and relationships conducive to the generation, use and dissemination of knowledge. Similarly, Cooke et al. (1998: 1581) suggest that RIS pertains to a system "in which firms and other organizations are systemically engaged in interactive learning through an institutional milieu characterized by embeddedness". Asheim and Isaksen (1997: 305) view RIS as the result of 'a production structure (techno-economic structures) and institutional infrastructures (political-institutional structures)'. As summarized by Landabaso et. al (2001: 250): "The regional innovation system in these regions does not have either the necessary interfaces and co-operation mechanisms for the supply-demand matching to happen, or the appropriate conditions for the exploitation of synergies and co-operation

among the scarce regional R&D actors that could eventually fill the gaps and avoid duplications”.

The Concept of SMEs and MSMEs. According to Smallbone, et. al (1995), in small firms, where ownership and management were typically combined in one or more individuals, future goals for the business might be determined as much by personal lifestyle and family factors as by commercial considerations. Further, one characteristic which did distinguish the best performing firms from other firms was their commitment to growth. Also, they found another characteristic that distinguished high growth firms from others was their inclination to acquire other businesses. Kristiansen, et. al (2003) found that the length of time in operation was significantly linked to business success. The size of enterprise reflects how large an enterprise in employment terms is. McMahon (2001) found that enterprise size significantly linked to better business performance. Larger enterprises were found to have a higher level of success. In a study in Australia, McMahon (2001) discovered that greater dependence upon external finance is associated with better business growth. In a more recent study, in Indonesia, Kristiansen, et. al (2003) found that financial flexibility was significantly correlated to business success. The SMEs that took advantage of family and third-party investment experienced higher level of success. Indonesian Micro, Small and Medium Enterprises (MSMEs) can be individual companies, partnerships, such as firms and as well as limited liability companies. Currently, there are 41,301,263 small and medium enterprises (SMEs) and among them 361,052 are medium enterprises. Further, the sum of these businesses is known as Small and Medium Enterprises (SMEs) contributed to 99.9% of the total number of businesses in Indonesia. SMEs are engaged in various economic sectors such as agriculture, fisheries, livestock, industry, trade and services. SMEs can also be classified into several stages in their lifecycle startups, growth and mature business (Hubeis, 2011).

Poverty Alleviation &The Reduction Policy. Sulistiyani (2004: 7) suggests that the concept of poverty is multidimensional, therefore the worldview that is used to solve the problem of poverty should also cover some aspects of poverty. Poverty is not only about welfare, but also concerns about vulnerability, powerlessness, closed access to employment opportunities, spending most of the income on consumption, high dependency rates, low access to markets and poverty reflected in a culture of poverty inherited from one generation to the next. On the other hand, Quibria, (1993: 7) suggests that poverty is more emphasized as a poor individual condition that distinguishes it from others who are not poor. In other words, poverty is used as a way to classify that an individual is said to be poor if he or she does not have the ability to meet his or her normal needs. Bakhit et al. (2001: 4) states that poverty is a very complex issue. Poverty can be viewed from a mechanical angle as a low-income level. However, in a subsistence economy, income levels alone cannot become a valid measure of poverty. Further, poverty can also be seen as deprivation in the sense of poor access to resources or because of an increasingly ugly or damaged nature, and an inability to meet basic needs. Furthermore, poverty can be seen from a mental or cultural perspective, eg. as a feeling of isolation, loss of direction, despair, apathy and a passive attitude towards suffering. All these are the stages of the same phenomenon commonly called poverty in the sense of ‘unable to live by human dignity’ or absolute poverty in the sense of not being able to simply survive. Poverty is also characterized by low levels of participation in decision-making processes and in civil, social and cultural life. Moreover, Srinivasan in Quibria (1993: 111) argues about the concept of poverty as ‘if one person is deemed poor, if he or she is exposed to his assets’. While De Wit (1996: 35), who is interested in conducting research on urban poverty in India, mentioned that a substantial reduction in poverty can be achieved if there is a determined effort at a significant redistribution of income and consumption in favor of the poor sections of the population. Isdjoyo (2010) in Maipita (2014) distinguishes the causes of poverty in rural and urban areas. Rural poverty is mainly caused by the following factors: 1) Powerlessness, this condition is caused by the lack of jobs, low prices for products produced, and the high cost education; 2) Isolation, i.e. the lack of education, lack of skills, lack of transportation, lack of access to credit that make them isolated and destitute; 3) Material poverty, this condition is caused by lack of capital and lack of agricultural land ownership. These causes their income to be

relatively low; 4) Vulnerability, the difficulty of getting jobs, seasonal jobs, and natural disasters, making them vulnerable and poor; 5) Attitude, accepting current condition and are less motivated to work hard, which makes them become poor. Sharp, et.al. in Kuncoro (2000) argued that to identify the causes of poverty can be seen from an economic standpoint. Firstly, at a micro lens, poverty arises because of the inequality of resource ownership patterns which lead to an unequal distribution of income. Poor people only have a limited number of resources and low quality. Secondly, poverty arises from differences in the quality of human resources.

According to the Presidential Regulation no. 15 of 2010 on the Acceleration of Poverty Reduction, it is stated that the policy direction of national poverty reduction is guided by the Long Term Development Plan of the Region, and the poverty reduction strategy is carried out by: 1) Reducing the burden of spending on the poor; 2) Improving the ability and income of the poor; 3) Developing and ensuring the sustainability of micro and small enterprises; and 4) Synergizing poverty reduction policies and programs. The acceleration of poverty reduction program in Indonesia consists of: 1) Integrated family-based assistance program groups, aimed at fulfilling basic rights, reducing the burden of life, and improving the quality of life of the poor; 2) Community-based poverty reduction program group, aimed at developing the potential and strengthening the capacity of poor communities to engage in development based on the principles of community empowerment; 3) Poverty reduction program groups based on empowerment of micro and small business enterprises, aimed at providing economic access and strengthening for micro and small scale business actors; 4) Other programs that either directly or indirectly can improve the economic activities and the welfare of the poor. The implementation of the poverty alleviation program nationally is coordinated by the *Tim Koordinasi Penanggulangan Kemiskinan* (Poverty Reduction Coordination Team), while the implementation in the region is coordinated by the *Tim Koordinasi Penanggulangan Kemiskinan Daerah* (Poverty Reduction Coordination Regional Team) at both the provincial and district/city levels.

METHODS OF RESEARCH

A qualitative research is used in this research by utilizing a case study approach. The method is suited to describe problems and phenomena recorded at the research location. The research design is tailored to the issues that has been raised. By using this research design, researcher will be able to capture vast information from different points of view. Qualitative research methods have become important in the social field studies and in the applications of such area as education and management (Marshall & Rossman, 1995). The data in this study are collected through the process of observation, in-depth interviews, and document review as well as from secondary data. Preliminary study was conducted before the field study to gather information from several sources to obtain elements as a focus which is then applied to the object of research. Five locations were chosen for the case study in East Java Province: Bangkalan District, Nganjuk District, Tulungagung District, Probolinggo District, and Malang District. A nine-steps process for analyzing qualitative data (McNabb, 2010:290) was used in analyzing the data.

RESULTS AND DISCUSSION

The Identification of policies that benefit the roles of SMEs in counter measuring poverty in the region. The welfare of the Indonesian people is embodied in the constitution of UUD 1945, which is the ultimate goal of the nation; however, the achievement of it, up until today, is far from success. The problem of poverty in many countries cannot be resolved instantly, especially in developing countries like Indonesia. Various programs have been initiated by the Indonesian government as an effort to alleviate poverty. The government had deployed several programs called 'the pro-people programs' such as Credit for People's Businesses (also known as *Kredit Usaha Rakyat* (KUR)), The National Program for Independent Community Empowerment (PNPM-Mandiri), various subsidies, School

Operational Aid (BOS), Rice for the Poor (also known as *Beras Miskin* (Raskin)), and other various programs. The Central Bureau of Statistics (BPS) recorded that the number of poor people as of September 2013 reached 28.55 million people, which increased by 480 thousand people compared to the numbers recorded in March 2013. The cause of increase in the numbers of the poor is due to the high inflation rate, resulting from the fuel price hike in 2013 which led to the rise of the national price of rice. However, of March 2014 BPS stated a decrease in the number of poor people to 28.28 million people, a reduction estimated about 0.27 million people. Several commodities that are very influential to the poverty line are: rice, cigarette, eggs chicken, meat, sugar, and instant noodles.

The problem of poverty cannot be resolved by a single actor only; on the contrary, it must come from various actors working side by side within their functions and synergizing with one another. The concept of 'Innovation Systems' according to Gregersen and Johnson (1996) suggests that innovation system is based on an interactive innovation model. A key feature in this concept is that economic (regional or national) ability to generate innovation depends not only on how individual actors (i.e. companies, universities, organizations, research institutions, government agencies etc.) act, but rather on how they interact as a part of a system. The Ministry of Research and Technology with The Ministry of Home Affairs issued a joint regulation number 3 of 2012 and number 36 of 2012 on strengthening the Regional Innovation System called the 'SIDa'. This joint regulation was established in order to improve the capacity of local government, regional competitiveness, and the implementation of The Acceleration and Expansion of Indonesia's Economic Development Masterplan 2011-2025. Further, recently the government of Indonesia has put a lot of attention on the development of Micro, Small, and Medium Enterprises (MSMEs). The development of local economy through MSMEs is believed to be a solution in alleviating unemployment problems which then contribute to the reduction of poverty. The implementation of Regional Innovation System is directed to the development of SMEs hoping to become a stepping stone for improvement in the economy and to create welfare of the Indonesian people. The nation's leading sector responsible for SMEs is signed by the Ministry of Cooperatives and SMEs. Various programs such as *PNPM-Mandiri* and *SCORE Program* are established as a concrete form of the government's attention and support towards MSMEs.

The Provincial Government's policy on MSMEs is a descendent policy from the Ministry of Cooperatives and SMEs. The policies for MSME's at the provincial level are innovated to suit its own unique regional condition. As for the city/ district level, the policy is also adjusted by each local government and suited to its conditions. One of the program initiated by the East Java Provincial Government considered to be successful is the Clinical Business Consultancy Program. The Business Consultancy Clinic Program aims to provide a tangible role in providing business development services for MSMEs entrepreneurs with the help from various experts in a particular business field. The initiative goal was to help facilitate the development of MSMEs in East Java Province. This initiative was created for free by the Government of East Java Province as an effort to help MSMEs. Until this study was conducted, the program has grown to a total of 12 different type of services for MSMEs, such as the followings: 1) Business Consulting; 2) Business Information; 3) Advocacy; 4) Short Courses; 5) Assistance; 6) Access and Marketing Financing; 7) Entrepreneurship Library; 8) Mobile Clinic; 9) IT-Entrepreneur Service; 10) TV-UKM Online; 11) Intellectual Property; and 12) Taxes.

However, not all programs are successful. The East Java Province Government seemed to fail to deploy its low interest credit loan for MSME's through its regional Bank, Bank of Jatim. The evidence shown from the study is that MSMEs are preferring much higher rate of interest loans from other private banks due to the easiness of disbursement and administration process even though the interest of credit loans offered to the MSMEs can be much higher (up to 15%) compared to the government loan scheme (up to 6%). MSMEs communities are ignoring the program even though the Cooperatives and MSEM's Government Agency (*Dinas Koperasi dan UMKM*) of several districts have helped in the socialization of the program. Furthermore, referring to the Joint Regulation of Ministry of

Home Affairs and Ministry of Research and Technology No. 36 of 2012 and No. 3 of 2012 from the five districts observed in the study, only Malang District had progressed by applying the concept of Regional Innovation System (SIDa). The Regional Innovation System in Malang District is shown by the issuance decree from the Mayor of Malang No 180/128/KEP/421/013/2013 in establishing a Coordinating Team for Strengthening Innovation System of Malang District. However, other districts such as Bangkalan and Tulungagung are found to be unaware of such related regulations.

Factors that affect the patterns of micro-sector-oriented policy changes on poverty alleviation. Based on the study, the direction of MSME policy in each observed region generally focuses on improving the quality of MSMEs through several strategies such as accessibility to market, improvement in the business ecosystem and reactivation of the roles of the cooperatives. All of these improvements are in line with the business development and policy directed towards strengthening the 'people's economy' by increasing the competence and competitiveness of Cooperatives and MSMEs. The form of improvement commitment can be seen in the Regional Medium-Term Development Plan. Several targets are set into the Regional Medium-Term Development Plan, and each district comprises an addition for MSMEs growth, especially in increasing the number of new entrepreneurs. Further, some districts have set initiative targets creating as many as one thousand new entrepreneurs a year.

The policies that have been implemented by the local government through its program and activities in relation to poverty eradication through MSMEs are in accordance with the strategy of accelerating poverty reduction that is constituted in Presidential Decree no. 15 of 2010. The strategies that have been practiced by the government in accelerating poverty reduction have focused on developing and ensuring the sustainability of MSMEs and synergizing poverty reduction policies through MSMEs. In addition, the factors that can lead to changes in policy patterns for poverty alleviation based on MSMEs are as followings: 1) The presence of the desire of local governments in improving the quality of MSMEs and increasing the quantity of new entrepreneurs in the region; 2) The increase of the opportunity of MSMEs to be well-developed in order to create positive impacts on the economy of the region; 3) MSMEs as a sector of great interest to the society, attracting the middle and low class income because it creates employment with minimum education requirements but is able to generate a steady income; 4) The growth of MSMEs that demonstrates that MSMEs can provide employment opportunities for all level in the community of the region, which provides benefits to employment assimilation and by which decreases the poverty level.

From these factors, each and every relevant actor should be aligned in the coordination and work in accordance with its established functions and provisions. Coordination becomes a key and important element, whereas policies will be acceptable and rightly targeted if supported by a systematic coordination system involving all actors. Only by a well systematic coordination system then the efforts to eradicate poverty based on MSMEs in the region will be successful. The actors involved in a poverty alleviation policy based on MSMEs are government agency, private sector, business actor and communities. Several local government functions also participate in the synergy efforts of poverty alleviation policies based on MSMEs; these functions are: *Bappeda, Balitbang, Disperindag, Bappemas, Dinsosnakertrans*, Animal Husbandry Department, Department of Agriculture, Licensing and Investment Office, Department of Tourism and Department of Cooperatives and UMKM.

CONCLUSION AND RECOMMENDATIONS

The Regional Innovation System in Rural East Java Province as a joint regulation is still considered foreign by local governments. Nevertheless, the different policies in each region, the drivers of such innovation system, are not from a single actor. The presence of many actors involved in synergizing the accordance with its own respective duties and function is shown as a positive sign. Four factors that influence the change pattern of policies of the roles of SMEs towards poverty alleviation as identified in the study are as the

followings: 1) The presence of the desire of the local governments in improving the quality of MSMEs and increasing the quantity of new entrepreneurs in the region; 2) The increase of the opportunity of MSMEs to be well-developed in order to create positive impacts on the economy of the region; 3) MSMEs as a sector of great interest to the society, attracting the middle and low class income because it creates employment with minimum education requirements but able to generate a steady income; 4) The growth of MSMEs that demonstrate that MSMEs can provide employment opportunities for all levels in the community of the region, which provide benefits to employment assimilation and by which decreases the poverty level. In addition, RIS as a countermeasure for poverty has not shown to be consistently executed systematically and neatly across the region. Despite all of that, the local governments must still immediately establish a system to strengthen the development of MSMEs towards poverty alleviation.

Several recommendations are concluded from this study: 1) The needs for improvement in communications networks and distribution of equal information for each level of government agency is essential; and 2) The need for improvement of the policy's evaluation system in order to see which program are run successfully and for those that are not must easily be identified and evaluated.

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DOI <https://doi.org/10.18551/rjoas.2017-06.26>

EFFECT OF SHARED LEADERSHIP, ENTREPRENEURSHIP ORIENTATION ON MEETINGS, INCENTIVES, CONFERENCES, EXHIBITION (MICE) PERFORMANCE IN JAKARTA

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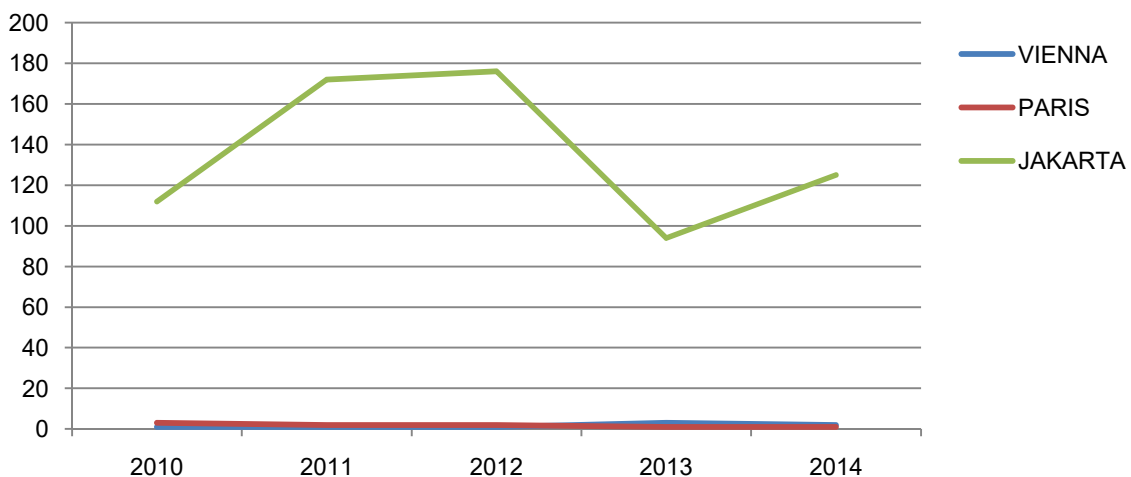
ABSTRACT

The purpose of this study is to measure and explain how shared leadership can improve MICE business performance in Jakarta. In addition, want to know also whether shared leadership is able to manage entrepreneurship in support of business performance. The research method used a quantitative approach. Data obtained from questionnaires distributed to 140 respondents with the category manager / supervisor representing 7 (seven) companies engaged in the field of MICE in Jakarta. Data analysis techniques were made using Warp Partial Least Square software. The reason for this PLS Warp is because this software is able to generate powerful output data. The results show that shared leadership significant effect on the MICE business performance. Shared leadership too can improve entrepreneurship which ultimately can improve MICE business performance in Jakarta.

KEY WORDS

Shared leadership, entrepreneurship, MICE, business performance.

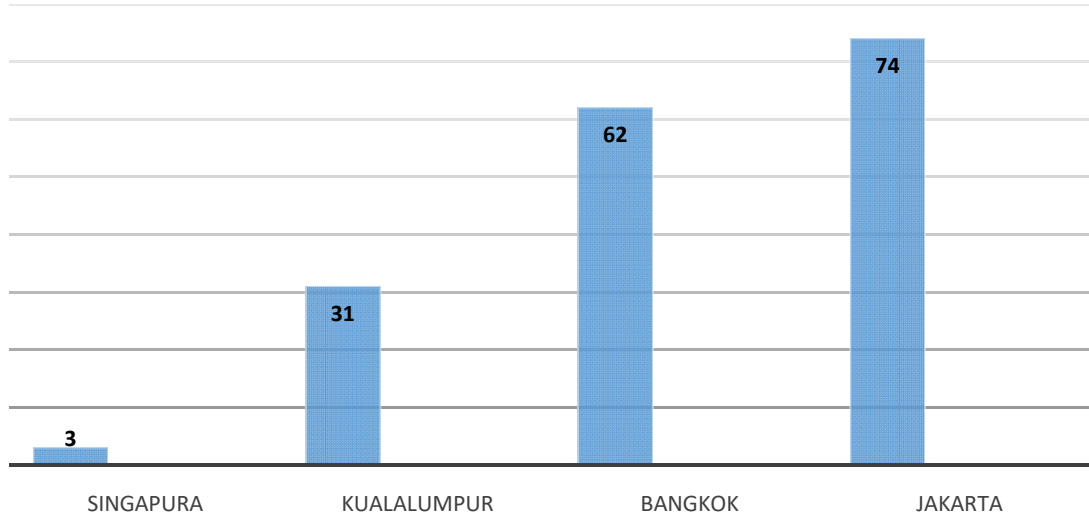
Indonesia is a country whose position is flanked by two continents of Asia and Australia consists of thousands of islands stretching from Sabang to Merouke. This geography aspect is God's grace given to the people of Indonesia and also as a valuable asset for the development of tourism in Indonesia. One element of Indonesian tourism is the MICE Industry (Meeting, Incentives, Conferences, Exhibition) whose development has not grown well. MICE service business performance is one of the fastest growing and highly important tourism sectors (Seebaluck, et al., 2013).



Source: International Congress & Convention Association, 2014

Figure 1 – Graph of MICE Ranking in the World

The development of the MICE services business in Jakarta in 2010 was ranked 112th, in 2011 it was ranked 172th. In 2012 it was again ranked 176. In 2013 it rose to the order of 94, and in 2014 fell Again in the order of 125. For more details the development of MICE in Jakarta when compared with the City of Vienna and Paris, can be illustrated with graphs as seen from Figure 1. Similarly, about the phenomenon that occurs in Asean occupies rank 74 as presented in Figure 2.



Source: World Economic Forum, 2015

Figure 2 – MICE Graph in Asean, 2015

Factors that make MICE Business performance in Jakarta lagging behind in regional and international are based on limited human resources on MICE and negative issues related to security situation in Jakarta (Warta Kota, 2015). Some solutions to improve company performance can be seen in the literature of Shared Leadership is very important in modern times because it is always focused and effective in improving company performance (Carson, et al., 2007).

Shared Leadership can provide a competitive advantage through organizational resources to assume complex tasks, ultimately improving company performance (Jackson and Denisi, 2003). The solution to organizational problem solving is the practice of Shared Leadership as it is very interesting and always identifies the potential of all members of the organization to work effectively and efficiently (Spisak. et al., 2015).

Zhou (2013) states that entrepreneurship is very important for the development of business today and the future. Shared Leadership and entrepreneurship are important concepts in academic research (Hunt & Dodge, 2000; Hitt & Ireland, 2000; Colbert, 2003). The study of entrepreneurial concepts associated with improving company performance has been disclosed by Wiklund & Shepherd (2005) that entrepreneurship orientation can improve business performance. Studies on Shared Leadership show mixed results.

In a study by Carte et al. (2006) that Shared Leadership does not improve the company's performance, but Boardman (2001) observed that Shared Leadership in Tasmania can improve company performance. Shared Leadership is very effective in improving company performance (Sally 2002). But O'Toole et al. (2002) observes that research on Shared Leadership is said to be ineffective in improving business performance.

Thus the research on shared leadership on business performance is inconsistent. Therefore, the researchers add entrepreneurial variables to support shared leadership can improve the performance of MICE in Jakarta. The purpose of this study is to know and measure the extent to which the influence of shared leadership on the performance of MICE Enterprises in Jakarta and whether shared leadership is able to utilize its entrepreneurship to improve its performance.

LITERATURE REVIEW

The MICE Business Performance Concept. The performance of a company is the productivity of a company in which there is a diversity of cultures and characteristics of its members, but has the same vision for achieving company goals (Richard, 2000; Richard, et al., 2003). With the diversity of characteristics and cultures within a company, the role of leadership sharing is important in bringing together a better corporate mission (Rosen, 1999). The importance of leadership and organizational strategy for realizing diversity in enhancing a resource oriented to competitive advantage (Richard, 2000). The company's reputation will increase if diversity can be controlled and manifested by sharing leadership so that the company runs in accordance with the company's goals (besides the company's performance always requires an entrepreneurial orientation to sustain whenever performance Companies face uncertain economic challenges (Frink et al., 2003).

Entrepreneurships Orientation Concept. Peter F. Drucker (1996) says that entrepreneurship is the ability to create new and different. Entrepreneurship is the process of creating something different to generate value by devoting time and effort, followed by the use of money, physical, risks, and then generate remuneration in the form of money and the satisfaction and personal freedom. Meanwhile, Robbins & Coulter (2007) suggest that entrepreneurship is the process whereby an individual or a group of individuals uses organized Efforts and means to pursue opportunities to create value and grow by fulfilling wants and need Yusof, Permula, and Pangil (2005) that there are four reasons why entrepreneurs is important in society, namely: to leverage factors produce such as land, capital, technology, information and a variety of human resources in producing effective tasks. Identifying opportunities in the environment by increasing the activity that will provide benefits to every person. To choose the best approach in the utilization of all factors of production in order to minimize waste in various entrepreneurial activities. For the benefit of future generations rough innovation and uniqueness, no matter what resources are currently controlled.

Shared Leadership Concept. Carson et al (2007) defines that share leadership is work together between leader and following. Worley & Lawler (2006) shows three advantages of shared leadership. First, spread knowledge, power, allowing a fast response organization. Secondly, with the approach of sharing, members can develop leadership and management skills through strategy, create value and other tasks in the organization. Third, leaders at different levels who have a grasp on the internal organization of the external environment is seen as an important trend to change the company.

White & Smith (2010) stated that the share leadership may be superior in improving the business performance. Several studies have shown a significant relationship between shared leadership and business performance. (Pearce & Barkus, 2004; Hiller, Day & Vance, 2006; Ishikawa (2012); Small & Rentsch (2010) Greenberg-Walt and Robertson (2001) described the share leadership is integrate of CEO should really work well.

Otherwise it will be difficult to improve performance. Holmberg and Söderlind (2004) suggest that share leadership is power and reliability together will can success in organization. Shared leadership is collective leadership and collaborative decision-making and have a sense of responsibility for improving performance (Hoch & Dulebohn, 2013; Sivasubramaniam, Murray, Avolio & Jung, 2002). Shared leadership is collective influence of the members share with each other in a team. To achieve an organization, leadership must interact and dynamic in improving the performance (Pearce & Conger, 2003).

METHODS OF RESEARCH

Companies included in this research are companies engaged in MICE located in the Province of Jakarta. MICE is a large business company oriented to meetings, incentives, conferences, exhibition (MICE). The perpetrators of MICE in Jakarta such as PT. RoyalindoExpoduta; PT. Pacto Convex; PT Tarsus Indonesia; Convex Panorama; PT. Team Asia tama; PT. Even Pro Asia; Even Overlay.

The main task of the company is to serve the tourists from abroad, and domestic tourists who want to hold meetings, conferences, travel tours and other events such as the implementation of music and exhibitions. This research was conducted in DKI Jakarta province.

This research was started from several phenomena related to MICE performance in Jakarta where this business is less competitive compared to other cities in ASEAN countries such as Singapore, Kuala Lumpur, and Bangkok. From the phenomenon can be drawn red thread that the cause is leadership and entrepreneurial orientation.

Data Collection Method. Data collected through primary data is the distribution of questionnaires to managers and supervisors scattered in seven MICE companies in Jakarta, while secondary data consists of documents and regulations in the field of tourism MICE. The population is 140 people with manager and supervisor capacity at 7 (seven) MICE companies in Jakarta. The sampling technique is a saturated sample where the population is sampled (Sugiono, 2009).

Data Analysis Technique. Descriptive analysis is used to determine the respondent's description of indicators every research variables. A description of each indicator is expressed in the value of the frequency and average values. Picture obtained respondents' perceptions of the indicators in reflecting a variable. Descriptive analysis was also intended to describe the tendency of respondents to the indicator statement relating to the research variables.

To test the hypothesis and build a model worthy (fit), this study uses data analysis methods warp PLS (Partial Least Square) software. This study aims to examine and analyze the causal relationship between exogenous and endogenous variables simultaneously check the validity and reliability of research instrument as a whole. Warp PLS techniques used to have powerful reasons to confirm the theory of the relationship between variables contained in the structural model. Analysis of mediating variables can be done through two approaches, differences in coefficients and multiplication coefficient.

Approach coefficient differences using the screening method to perform analysis with and without the involvement of mediating variables. Method of examination by means of two analyzes, the analysis involves mediating variables and analysis without involving the mediating variables.

Inspection methods mediating variables approach coefficient differences is done as follows: (a) examine the direct influence of Independent Variables on Dependent Variables in the model involving mediating variables, (b) examine the influence of Independent Variables on Dependent Variables on models without involving the mediating variables, (c) Independent variables examined the influence of the variable Mediation, and (d) examine the effect of mediation on variable Dependent variable (Solimun, 2011).

RESULTS AND DISCUSSION

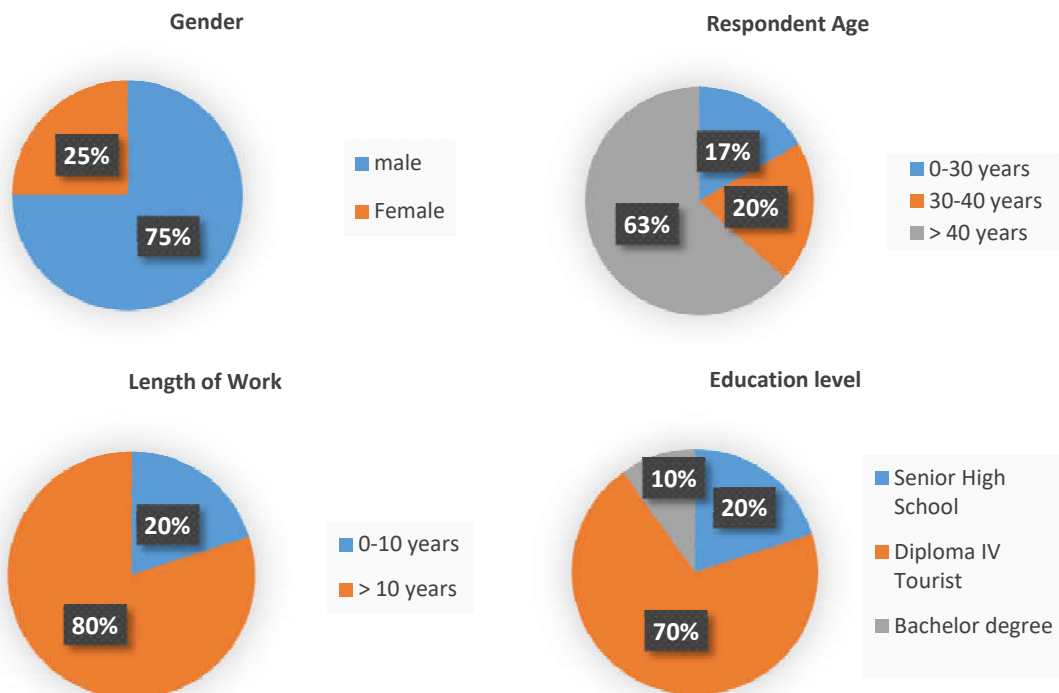
Description of Respondents by Age, gender and education, length of work. At this table will be explained in detail about the picture on gender, age, level of education, length of work so that the data collected can be grouped according to the number and percentage. The composition of the actors in the MICE business is dominated by men, based on the information that in conducting national and international events did not know when the job is done day and night.

Meanwhile, women as a minority is also in line with the findings Pulkinnen (1996) that women are generally docile, passive and prefer the family. Characters are owned by women are less suited to managing the MICE business in an increasingly competitive global competition. Therefore, the company MICE Services business is dominated by men as much as 75% and 25% of women.

It is generally known to correlate education with the knowledge and behavior of people so that the higher the level of education a person then the knowledge will be more extensive and more effective behavior. This also applies in managing this MICE business. MICE business leaders who have a relatively high level of education will manage the business

effectively, according to careful planning so that it can carry out activities both nationally and internationally.

Based on Table 1, it shows that the level of education the entrepreneurs' MICE is generally output School of Tourism Diploma IV finished 70 percent, while the level of undergraduate education is the education level minority of 10 percent, however, with the number of minimal expected that they can protect not yet scholar. Based on interviews with the respondents they do not continue their education because of busy business. The entrepreneurs generally are relatively aged over 40 years so think continuing education is not something that is important. The details can be seen in Figure 3.



Source: Research Result, 2016

Figure 3 – Characteristics of Respondents

In Berry's previous study in Matsumoto, (1996) found that, male superiority in certain spatial is found in a strict or relatively homogeneous culture, agriculture, while spatial women are commonly found in open, nomadic cultures and gathering and gathering societies. In that culture, the roles given to men and women apply relatively flexibly, as members of a culture form variations of tasks related to group survival.

Based on the opinion Goolsby (1992) explains that the longer the employment of employees, the employee has more experience that has the ability to solve problems that occur in the work environment. From these opinions can be concluded that MICE employees can be categorized as a reliable employee and able to handle problems and jobs that come sudden and urgent. Looking at the level of education respondents can be concluded that most respondents have special education level special for tourism but undergraduate educated respondents (S1) is still not much. The more highly educated employees the employee can overcome the problem of work and also problems in the work environment.

Description of Respondents. Table 2 shows the scores of Respondents' answers on Shared Leadership, entrepreneurial orientation and MICE Business Performance.

The average yield of respondents as in Table 2 above that most indicators reflect leadership role in sharing is an indicator of «self-development» at 4.10 this indicates that the development of self-appreciated by the respondents. According to their personal

development is very important because it should encourage shared leadership team to add insight, his education and encourage the mastery of information technology.

Table 2 – Scores of Respondents' Answers

Variable / Indicator/ Item	Respondents Score										Means
	STS		TS		N		ST		SS		
	f	%	f	%	f	%	f	%	f	%	
SHARED LEADERSHIP	-										-
Empowerment	-										3,89
X1.1	4	2,3	3	1,8	27	15,8	70	59,1	36	21,1	3,95
X1.2	4	2,3	-	-	37	21,6	78	63,7	21	12,3	3,84
Seek Opportunities	-										3,91
X1.3	3	1,8	5	2,9	26	15,2	69	58,5	37	21,6	3,95
X1.4	4	2,3	6	3,5	28	16,4	72	60,2	30	17,5	3,87
Self-Development	-										3,99
X1.5	3	1,8	1	0,6	18	10,5	68	57,9	50	29,3	4,13
X1.6	2	1,2	1	0,6	23	13,5	57	51,5	57	33,4	4,16
X1.7			1	0,6	38	22,2	59	52,6	40	23,4	4,02
Cooperation	-										4,10
X1.8	1	0,6	1	0,6	22	12,9	73	60,8	43	25,2	4,11
X1.9			3	1,8	29	17,0	70	59,1	38	22,3	4,03
ENTREPRENEURS ORIENTATION	-										3,88
Dare To Take Risks	-										3,61
OK.1	1	0,6	24	1,2	79	34,1	82	54,5	38	9,6	3,63
OK.2			28	3,6	74	31,1	100	60,5	30	4,8	3,60
New innovation	-										3,55
OK.3			28	3,6	88	39,5	74	49,7	37	7,2	3,59
OK.4			28	3,6	88	39,5	74	49,7	34	6,2	3,55
OK.5			27	3,0	78	33,5	86	56,9	33	6,6	3,61
BUSINESS PERFORMANCE	MEAN ENTREPRENEUR ORIENTATION										3,59
Quality	-										3,41
KU1			27	3,0	72	29,9	93	61,1	32	6,0	3,63
KU2			24	1,2	77	32,9	98	64,1	25	1,8	3,19
Quantity	-										3,60
KU3			27	3,0	59	22,2	103	67,1	35	7,8	3,70
KU4			26	2,4	68	25,1	106	68,9	28	3,6	4,00
KU5			23	0,6	62	24,0	106	68,9	33	6,6	3,10
	MEAN BUSINESS PERFORMANCE										3,52

Source: Research Result, 2016.

Indicators that reflect a lesser role in shared leadership is «empowerment» mean that the MICE sector is less likely to get special attention from various parties. In fact, every event has the potential to be developed, so that empowerment is an effort to build the power to encourage, motivate and raise awareness of the potential of the MICE Indonesia as well as to develop it.

Indicators whose role reflects the entrepreneurship orientation maintain quality (OK5). The quality of a very large influence on the activities of the company in order to achieve the goals that have been set. Indicators that reflect a lesser role in Entrepreneurship Orientation is to increase creativity. Creativity is a mental process that involves the appearance of an idea or draft (concept) new, or new connections between existing ideas.

Perceptions of respondents associated with the item «improving corporate profits» now occupies the position of greatest (4.00) for the MICE entrepreneurs want that MICE is a business. Indicators are not many reflection MICE business performance is an indicator of «Keeping the promise» Responder against this indicator has a mean value of 3.10 indicates that promise is a debt that they lack appreciation

Comparison between the load factor and average values This section describes the profile between the variable that contains the comparison between the load factors to an average value, is presented in Table 3 as follows.

Table 3 – The load factor comparison with the average value

No	Variable / Indicator	Loading factor	Means
Shared Leadership			
1	X1.1 Empowerment	0,726	3.89
2	X1.2 Seek Opportunity	0.760	3.91
3	X1.3 Self Development	0.619	3.99
4	X1.4 Corporation	0.591	4.10
Entrepreneurship Orientation			
7	Y2.1 Dare To Take Risks	0.801	3.61
8	Y2.2 New Innovation	0.802	3.55
MICE Business Performance			
9	Y3.1 quality	0.701	3.41
10	Y3.2 quantity	0.801	3.60

Source: Research Result, 2016.

Based on Table 3 above that the highest indicator in reflecting the shared leadership is an indicator of «look for opportunities» to have a charge factor of 0.760 or 76%. The respondents consider that seek opportunities is important for the company in the field of MICE. But in reality, these expectations are not met because the empirical mean value of this indicator cannot be said to be good (3.91) is still below the number four. 3.91 Figures indicate many respondents who disagree and neutral to the indicator seek these opportunities.

The lowest indicator in reflecting the shared leadership is an indicator of cooperation has a value of 0.591 or load factor of 59.1%. The respondents consider that cooperation very important. But some say no empirically what was expected by the majority of respondents related to the cooperation received good appreciation. Their mean value having four or more numbers (4.10).

Indicators that have a high value in reflecting the entrepreneurial orientation is an indicator of new innovations and value load factor of 0802 or 80%. The result of factor loadings is pretty high expectations on this indicator. The lowest indicator in reflecting the entrepreneurial orientation is indicator courage to take risks with the value of load factor of 0801 or 80%.

Courage to take risks according to respondents is absolutely necessary and very important for the development of entrepreneurial orientation. But in reality this indicator did not get a good average value of the respondents (3.61) means that there are still many who disagree and neutral of respondents.

The highest indicator in reflecting the variable MICE business performance is an indicator of the quantity. Quantity in performance is the amount of work performed by a person of employees in a given period. But in reality is not quite good because their mean value is still below the number four (3.60).

Indicators of the lowest in the MICE business performance reflects the value of the content is the quality factor of 0701 or 70% .but in practice is not yet good because the average value of this indicator is below the lift four (3.41). This indicates that respondents are still many who disagree have even stated strongly disagree and neutral against indicators.

Hypothesis Test Result. The hypothesis test result is meant to answer the questions related the relationship among variables that consists of shared leadership, entrepreneurship orientation, and MICE business performance variables. The hypothesis test result is presented in Table 4.

Table 4 – Result of Inner Weight

Variable relationship	Coefficient	P Values	Information
Shared leadership ->Business Performance	0.133	0.038	Significant
Shared leadership → entrepreneurship orientation	0.413	0.001	Significant
Entrepreneurship Orientation->Business Performance	0.593	0.001	Significant

Source: Research Result, 2016.

The first hypothesis proposed in the conceptual framework chapter states that «Shared Leadership significantly influences on the MICE business performance». The result of the calculation that apparently shared leadership have a significant effect on the business performance with a path coefficient of 0.133 and $p = 0.038$. Given p less than 0.05 then it is said to be significant, so the hypothesis is accepted. Path coefficient is positive (0.130) indicates that the better the leadership shared the growing MICE business performance.

The second hypothesis states that the Shared Leadership has significant effect on Entrepreneurship Orientation. The results showed that the shared leadership have significantly influence on entrepreneurial orientation with path coefficient of 0.413 and $p = 0.001$. Given p less than 0.05 then it is said to be significant. Marked lane positive coefficient (0.413) indicates that the better the shared leadership, then the better the entrepreneurial orientation.

The third hypothesis states that entrepreneurial orientation significantly influence on the MICE business performance. The result of calculation shows that the entrepreneurial orientation significantly influence the MICE business performance with a coefficient of 0.593 lines and $p = 0.001$. Given p less than 0.05 then it is said to be significant. Marked lane positive coefficient (0.593) indicates that the better the entrepreneurial orientation, then increasing the MICE business performance services.

Table 5 – Mediation Test

Variable relationship	Coefficient	P Values	Information
Shared Leadership -> MICE Business Performance	0,245	0,001	Weakly significant

Path coefficient indirect effect Shared Leadership (X) on the MICE business performance through entrepreneurial orientation amounted to 0.245, $p = p$ less than 0.10, then said weakly significant, so that the entrepreneurial orientation is mediation.

Table 6 – Effect of Total

Variable relationship	Coefficient	P Values	Information
Shared Leadership -> MICE Business Performance	0,378	0,001	$(0,378)^2 \times 100\% = 14,28\%$

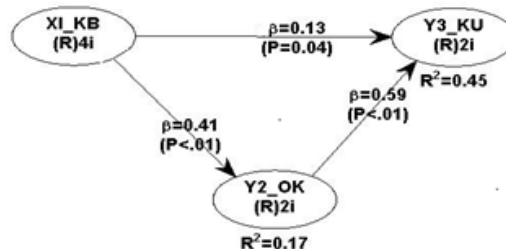


Figure 4 – Research Model

From Table 6 above, can be explained much influence total of a latent variable exogenous to endogenous latent variables. The total effect on entrepreneurial orientation that is equal to 0.378 or 14.28%. This means that the entrepreneurial orientation of latent variables provide a major contribution in influencing the MICE business performance in Jakarta. Further research model can be presented in Figure 4.

CONCLUSION

Based on the formulation of the problem, research objectives, hypothesis testing and discussion, can be summed up as follows:

Shared Leadership formed of empowerment indicators, looking for opportunities, self-development and co-operation related to MICE business performance in Jakarta.

Shared Leadership can be directly linked with the entrepreneurial orientation as reflected by the courage to take risks and new innovations.

Orientation entrepreneurship can improve the MICE business performance in Jakarta.

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DOI <https://doi.org/10.18551/rjoas.2017-06.27>

THE EFFECT OF ROLE AMBIGUITY TOWARDS THE PERFORMANCE OF NURSES THROUGH ORGANIZATIONAL COMMITMENT: A STUDY ON REGIONAL GENERAL HOSPITAL OF DR. SAIFUL ANWAR, MALANG, INDONESIA

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ABSTRACT

This study is aimed to analyze and test (1) role ambiguity towards Organizational Commitment and (2) the effect of role ambiguity towards the performance of nurses in Dr. Saiful Anwar Hospital, Malang, Indonesia, mediated with Organizational Commitment. The respondents of this research are all nurses in Emergency Room Installation of Dr. Saiful Anwar Hospital Malang. Eighty (100%) responses displayed on the questionnaires are prepared to measure the variables that were analyzed. In this study, quantitative analysis with structural equation modeling (SEM) based on variant or component that is PLS (Partial Least Square) is used to verify the relationship between the variables. The results of this study are as follows: (1) Role ambiguity has a significant effect on organizational commitment; and (2) Role ambiguity has a significant effect on the performance of nurses.

KEY WORDS

Role ambiguity, Organizational Commitment, Nurses Performance

A nurse is a caring professional who provide health services in the hospital with the approach of the bio-psycho-social and spiritual that is comprehensive. The service is intended for individuals, families, and communities whether they are sick or healthy in which it covers the whole process of human life. According to Swanson (1991), caring is a treatment technique in connection with the value of one's feelings about commitment and responsibility. Several cases related to the phenomenon of health services in the hospital are due to the low performance (productivity) of the nurses. Wirawan (2009) stated that 83% of nursing care services of one hospital in East Java is still low. The development of nursing services is currently left far behind compared to the development of other medical services. Nursing is the largest profession in the hospital. Over 75% of all service activities are performed by nurses and that nurses are actually a vital role compared to other medical personnel (Ministry of Health RI, 2001).

The level of nurses performance is influenced by factors from the nurse itself including knowledge and skills, competence, work motivation, and job satisfaction. Mangkunegara (2005) described that there are several factors in the achievement of the performance such as the ability and motivation. On the one hand, the nurse is responsible for the administrative, physical, anxiety, complaints, and self-defense mechanisms from illness, tension, and boredom in the patient. Regional General Hospital (RSUD) of Dr. Saiful Anwar Malang as one means of health services seeks to improve the quality of health services on an ongoing basis and can be accounted for a professional, effective, efficient, and modern hospital. According to Kahn *et al.* (1964), role conflict, role ambiguity, and role overload are conceptualized as a stressor that could impede a person's performance. The emergence of this role stressor is a matter of considerable influence, not only for nurses in relation to the pressure of work, organizational commitment, confidence, and a decline in performance but also for the organization that affect the quality of work that is not in line with expectations as proposed by Fogarty (2000) and Almer & Kaplan (2002).

The success of the work and performance of individuals in the field of employment is determined by the level of competence, professionalism, organizational commitment, and job satisfaction (Setyawan, 2008). Organizational commitment contributes greatly to both individuals and organizations in achieving success. There are many factors that play a role in encouraging the creation of organizational commitment. Helena and Praveen (2008) said that organizational commitment is an important factor to achieve maximum company goals. Khatibi *et al.*, (2009) believed that a conflict in an organization will happen if the organization has a low organizational commitment. Several things that can cause a failure in providing services within quality standards are role ambiguity, role conflict, and role overload. A dualism while performing different roles indirectly triggers a workload because nurses do not have sufficient time to display maximum performance for all roles.

Based on the explanation above, the problems of this research can be formulated as follows:

- Does role ambiguity affect the organizational commitment of nurses?
- Does role ambiguity affect the performance of nurses through organizational commitment?

LITERATURE REVIEW

Role theory is more focused on the relationship of people in work environment with three main dimensions, namely harmony in the role, alignment between roles, and role differences in the work (Solomon *et al.*, 2008). Kahn *et al.*, (1964); Viator (2001) suggested that the theory of role dynamics is based on the stages of the role such as the process between the role transmitter and the individual. Rizzo *et al.*, (1970) proposed that role ambiguity indicates an ambivalence of expectation ambiguity due to a lack of information about the roles and tools required to perform the task. Employees, in this case, do not understand the methods used to carry out the work. Role ambiguity may imply the absence of information relating to the evaluation of work monitoring, career advancement opportunities, the scope of responsibility, and individual's hopes (Katz & Kahn, 1978 in Viator 2001). The research of Hall (2004) explained that role ambiguity is regarded as the starting point of individual's psychological empowerment. Staw (1991) said that a work commitment can be defined "as a working definition, commitment is the binding of the individual to behavioral acts." The organizational commitment that shows the individual bond with the organization, its position is increasingly important because it has a macro impact on the organization and society (Mathieu and Zajac, 1990). The definition above illustrates that commitment is a bond to a particular action. Sukma (2012) wrote that nurses are someone who cares, nurtures, helps, and protects people from illness, injury, and aging process. According to Mangkunegara (2005: 67), work performance is the work of quality and quantity achieved by an employee in performing their duties in accordance with the responsibilities given to him.

CONCEPTUAL FRAMEWORK

Gibson *et al.* (1997) found that role ambiguity is the lack of understanding of the rights owned by the nurse, privileges, and obligations of a person to do the job. Individuals may experience role ambiguity if they feel the lack of clarity in accordance with the job expectations such as lack of information needed to complete a job or clarification of the work tasks. This is similar to role conflict, role ambiguity can also cause discomfort in the work and can lower the motivation to work because it has a negative impact on a person's behavior such as work stress, workers displacement, decreased job satisfaction in which it can degrade the overall performance.

The focus of this research is the behavior that appears to be a manifestation of commitment by using behavioral approaches. Salancik (2006) defined organizational commitment as a force that makes individuals encouraged to act on trust. The commitment of this organization is proved by the existence of activities and involvement. This research is

interesting because the impact of role stressors (role conflict, role ambiguity, and role overload) on the performance of nurses through organizational commitment and self-efficacy is still doubted. Through the mediation variables, it is expected that there is a treatment or repair so that the influence of role stressor towards the performance of the nurses can produce a positive and functional relationship (eustress).



Figure 1 – The Conceptual Framework

RESEARCH HYPOTHESES

The Influence of Role Ambiguity Towards Organizational Commitment. Ervina (2013) stated that in achieving its goals effectively and efficiently, an organization will require high levels of organizational commitment within its employer. Khatibi *et al.* (2009) added that a conflict in an organization will arise if the organization has a low organizational commitment. Fogarty *et al.* (2000) on the other hand proved that the organizational commitment variable is able to separate the aspects of functional (eustress) and dysfunctional (distress) from role stressors to job outcomes so that through the two aspects of role stressors and burnout, a remedial action is necessary to be done. Based on the above explanation, the research hypothesis is:

H₁: Role ambiguity has an effect on the organizational commitment of the nurses.

The Influence of Role Ambiguity on the Performance of Nurses through Organizational Commitment. The research of Vijaya and Hemamalini (2012) and Glissmeyer *et al.* (2012) showed a positive correlation between role conflict and role ambiguity towards the organization or job expectations. In contrast to the findings of Boles *et al.*, (2003), the role stressor is not significant as a predictor but it has a positive also insignificant effect. Stressor has an important position in relation to the productivity of human resources, funding, and materials. Besides influenced by factors that exist within the individual, stressors (role ambiguity, role conflict, and role overload) in this study are influenced by the mediating variables, namely, organizational commitment. Stressor on nurses as a result of the work need to be conditioned in the right position so that their performance is also in an expected position. Based on the explanation above, the second hypothesis of the study is:

H₂: Role ambiguity has an effect on the performance of nurses through organizational commitment

METHODS OF RESEARCH

The approach in this research is conducted by using positivism paradigm in terms of the analytical approach that is the quantitative research. Quantitative research is an appropriate research aimed to develop the knowledge through the test of proposed hypotheses, measurements, and observations, as well as to test the Creswell's theory (2006). The scope of the research is focused on the observation of various problems that arise and affect the performance of nurses in Regional General Hospital (RSUD) Dr. Saiful Anwar, Malang, East Java, especially the nurses who are placed in the Emergency Room Installation (IGD). The target population of this research is all nurses in the IGD of RSUD Dr. Saiful Anwar, Malang amounts to 80 people who are limited based on specified inclusion criteria. The samples are part of the population to be studied or part of the number of characteristics possessed by the population. In this study, the use of quantitative analysis by using structural equation modeling (SEM) based on variant or component which is PLS (Partial Least Square) is to verify the relationship between variables.

RESULTS AND DISCUSSION

The result of the first hypothesis is that the path coefficient of -0,401 from role ambiguity to organizational commitment is significant ($t=5,660$; $p=0,000$). Furthermore, role ambiguity has a high effect on organizational commitment so that hypothesis H2 in this study is accepted. High role ambiguity will have an impact on organizational commitment and also contribute to lower job satisfaction and organizational commitment. In the research of Fogarty *et al.*, (2000), it is explained that the organizational commitment variable is able to separate the aspects of functional (eustress) and dysfunctional (distress) of role stressors on job outcomes so that through this aspect of role stressors, remedial action is necessary. As found by Ho *et al.* (2009) and Christina *et al.* (2011), job rotation is one of the solutions to reduce stress as well as to increase job satisfaction and organizational commitment of the nurses. The issues relating to the stressor factors will gradually be increasingly recognized thus the adjustments will quickly be done.

The result of the second hypothesis is that the path coefficient of -0,401 from the role ambiguity to organizational commitment is significant ($t=5,660$; $p=0,000$). Means that the coefficient of 0,185 of the organizational commitment to the nurse's performance is significant ($t=6,332$; $p=0,000$). In several studies, there is a positive correlation between role conflict and role ambiguity towards the organization or job expectations. Specifically, in the studies involving nurses who averagely a civil servant (PNS), it is unlikely that nurses will decide to leave the hospital and move elsewhere because the procedure is not easy. However, please noted that role conflict, role ambiguity, and role overload has a negative effect on the nurses' performance when the two different roles are implemented at the same time. These results are in line with the research of Ahmad & Taylor (2009), Mathieu and Zajac (1990), Cohen (1992).

CONCLUSION AND SUGGESTIONS

From the research, it can be concluded as follows. First, individuals who are value committed can be expected to have the behavior that helps organizations pursue their goals no matter whether it is the role expected by the organizations or not.

Second, nurses who are able to complete and implement a variety of challenges and supported by the skills of the individual will commit a higher organizational commitment. Generally, role ambiguity has a highly negative impact on organizational commitment.

Based on the results of the research, the suggestions that can be proposed are:

Nurses who work in the Emergency Room Installation of RSUD Dr. Saiful Anwar, Malang is expected to continue to improve its performance by maintaining a balance of commitment and confidence so that the pressure or conflict remains at a low level. One of which is to make adjustments so that the conflict will have no effect on employment.

It is expected that the management role of RSUD Dr. Saiful Anwar would pay more attention and maintain the level of commitment and confidence of the nurses in Emergency Room Installation as well as the nurses in all sections or units so that optimal services can be delivered. One of the ways is by making regulations or policies related to the commitment and confidence of the nurses so that the stressor issues could be reduced massively.

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DOI <https://doi.org/10.18551/rjoas.2017-06.28>

AUDITOR ETHICS IN «KAIN POLENG» AND «MULAT SARIRA»: TREADING IDENTITY BETWEEN BLACK AND WHITE

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ABSTRACT

This study aims to reveal the independent auditor's way in applying personal ethics value and profession ethics code to the performance of auditing in two points between the right and wrong or similar to not stuck in the choices that destructive. Two cultures of Bali, Kain Poleng and Mulat Sarira, are used as a perspective to reveal how the auditors working in the good and bad spectrum as described by Kain Poleng which is still showed the identity. This study used qualitative approach with personal as a tool of analysis through data reduction and reflection methods. Triangulation data source was conducted on cases relating to the ethics auditor in order to get sufficient understanding. The interview result shows that the auditor who internalizes the concept of Kain Poleng and Mulat Sarira is stronger to face temptation from the outside because they are afraid of God reprisal which resulted in the application of responsible profession ethics code.

KEY WORDS

Ethics, auditor, kain poleng, mulat sarira.

This article is the result of study about the auditors ethics which uses qualitative approach by interviewing the informant and analyze by reflective analysis in the perspective of Bali spiritual culture, namely *Kain Poleng* and *Mulat Sarira*. Auditor ethics becomes crucial to be studied considering the auditor is important position in economic activity and the susceptibility to the deviating action. As a professional public accountant, the auditor's work become the basis of decision-making of various parties that concerned with the other companies or organisations. Accountants actually have the useful role for the public (Mardiasmo, 2014). The public believes on the auditor's work and relies on it, therefore the auditors are required to work ethically and professional with no particular interest. Therefore one of the most important aspects of the auditor's work is attitude and independent action (Ludigdo, 2007). At the same time, the independence is related to the ethics besides the auditor have to work based on the professional standard staged it. The auditor's position and performance could cause susceptibility to irregularities and breach of ethics.

The phenomenon of ethics breach by the auditor is not only micro but also macro-scale. Some of the ethics breach that can be found from the case of the international company namely "Enron" and the big five accounting firm, "Arthur Anderson" are accounting irregularities and auditing as well (Benston dan Hartgraves, 2002). The case is breach of ethics which done by cooperating. Some of the breach ethics in Indonesia can be found in the case of PT. Telkom, in one of the Public Accounting Office (KAP) and frozen bank cooperatives and business activities that involving 10 and several large Public Accounting Office (KAP). Suprisingly, the auditors suggest the clients to bribe government officials (Ludigdo, 2007). In addition, the collaboration of auditor and client interest in making audit reports becomes the object to be traded (Sinaga, 2015). Actually, after the large cases and

the freezing of Public Accounting Office (KAP), not eliminating the breach of ethics. This is because of individual desire and environmental pressures, which makes ethic irregularities are increasingly manifest in diverse forms.

In general, the diverse forms accompany the auditor's dilemma, either as individual and as the head of Public Accounting Office (KAP). Demands on auditors to keep independent, while at the same time they are depended on client because of fee, it often making the accountant is in a dilemmatic situation. This allows the auditor be dependent (Bazerman, Morgan, and Loewenstein, 1997; Finn, Chonko, and S.D., 1988). Especially if a Public Accounting Office (KAP) whose lives depend on fee from one of the client. It will provoke bad constructual obligations in giving the opinion for client's auditing and financial statements (Azis, Mangoting, and Lutfillah, 2015). The obligation containing of dilemma will be continue in the auditor work and the relationship with the client, which is vulnerable to the issue of conflict and ethics.

If there are auditors which are not inappropriate with the client's interest, it will generally continue in the audit conflict (Tsui and Gul, 1996). It develops into an ethical dilemma when the auditor are required to make decisions contrary with their independence and integrity with economic rewards (Windsor and Ashkanasy, 1995). Whereas, socially and institutionally the auditor should be responsible to the public and profession by not giving priority to private interests and pragmatic considerations, or the economic interests. The situations are very often faced by the auditor. The auditor often faced with ethical dilemma situation in making decision (Dillard and Yuthas, 2002; Larkin, 2000; Tsui, 1996). It turns out that this dilemma is not easy to be faced and solved. As a human being there are things which enclose the auditor through personal, social and professional life.

The auditor like any other businessman, is a human being with his humanity in which he has the willing to do his duties well and there is also the temptation to follow his desires. Any person in any profession tend to do breach of ethics if desire win. The existence of cases of irregularities and business chaos at the individual or institutional level is the result of ethical failure. Therefore ethics is relevant to be studied and noticed (Hartman and Desjardins, 2011). If there is a breach of ethics which done by the auditor, they are not alone. In other field, the incident is more widespread, so it can be said that the auditor is on the nature of humanity and the same environmental situation with other profession. This should not be used as a pretext to ignore ethics problem. Moreover, the ethics breach seems to appear only on the surface, related to the auditor as a human being, there are humanity dimensions in themselves that influence their decisions and actions.

Problem solving of ethics breach cannot be seen from a single point of view, by observing the cases that occur. The most intimate of humanity aspects are important to be studied, such as culture and spirituality. Dayakini and Yuniardi (2008: 59) state that culture greatly influences individual behavior, and on the level of individual culture influences individual life more than behavior. In practice, social norms always serve as guidance, guidance as well as indicators in assessing individual behavior or groups in the communities. The norm contains the values of the local culture wisdom. The local culture wisdom is a local knowledge that people use to survive in an environment, so they can integrate with belief, norm, culture systems and be expressed in tradition and myth adopted for long periods (Thontowi, 2007). Therefore, the individual who holds the wisdom of his local culture will also have a good control in his community. That wisdom is expected to be owned by a human cultural, especially in carrying out the audit activities in order to put the ethics and moral, so that rising the auditor's ethical awareness to maintain professionalism.

From the point of view as described previously and the phenomenon of ethics breach done by the auditor, the ethical problem can be observed from various aspects. One of them is interesting to be studied and expressed in the culture and spirituality perspective because culture and spirituality are forming and coloring human life. Starting from here, the idea of this research emerged to study the issues of auditor ethics with the controversial discussion of Cultural-Spiritual Ethics which researchers adopted from the wealth of culture-spiritual in Indonesia.

Indonesia is rich in culture and spiritual expressions. One of the most famous is the culture and spirituality in Bali. According to the researchers, all forms and expressions of culture and spirituality in Bali are related to ethics, but it is impossible to study the ethics of all existing cultural and spiritual forms and levels. The researcher chooses *Kain Poleng*, which illustrates the existence of goodness and badness in life that must be balance and *Mulat Sarira* which describes the self-introspection to reach the human identity as a perspective in reviewing the auditor ethics. The selection is based on the meaning and value of both spirituality forms with the position and the auditor duties.

From the point of view of the researcher, the two concepts of spirituality above will be used to reveal the phenomenon of ethics breach that reviewed from the Culture-Spirituality perspective of *Kain Poleng* and *Mulat Sarira*. This study uses a qualitative approach with a personal as a tool of analysis through data reduction and reflection methods. Because the auditor is at two points of position, the researchers attempt to reveal the reality and think of the way of solution by using the quadrant between position as individual and social and between normative and practice.

Based on the research background and approach chosen, the research problem is how the auditor applies the personal value and professional code of ethics in the implementation of auditing based on the Culture-Spirituality perspective of *Kain Poleng* and *Mulat Sarira*? The purpose of this research is to understand how the Culture-Spirituality of *Kain Poleng* and *Mulat Sarira* explain the auditor' way to apply the value of his personal spirituality in order to run the professional ethics in auditing. This study is expected to provide an elaboration of the cultural-spirituality value that is in the individual and social which can strength the implementation of ethics. From the perspective of *Kain Poleng* and *Mulat Sarira*, as well as a review from a normative-practical and personal-social perspective. This research is expected can provide an illustration about the concept of ethical strengthening and its implementation.

METHODS OF RESEARCH

The qualitative approach in this research is based on the objectives research and characteristic of the qualitative approach itself. In order to achieve the research objectives, the researcher analyze data logically and critically by expressing the meaning and value of existing phenomenon through reflection in the cultural-spirituality of *Kain Poleng* and *Mulat Sarira*.

In analysis data, the researchers conduct three steps as stated by Huberman and Miles (2009), namely: (1) data reduction, (2) data presentation, and (3) decision making, which researchers do through reflection. The researchers do not use the common method in qualitative research such as, phenomenology, ethnography or etnometodology. The researchers take the advantage of the elasticity characteristics of qualitative research. The flexibility of this design allows the researchers to negotiate and develop design according to research objective (Moleong, 2005: 33). In this research, the researchers try to observe the phenomenon of understanding, belief and ethics implementation of the auditor with the concept of cultural-spirituality of *Kain Poleng* and *Mulat Sarira*. Therefore, in Moleong's opinion (2005), this research takes the position that the values of cultural-spirituality of *Kain Poleng* and *Mulat Sarira* as choices ranging from the problem statement to the interpretation and context of this research.

Cultural-spirituality concepts of *Kain Poleng* and *Mulat Sarira* obtained from the website and interview with the Balinese while for the data, the researchers collect through interview methods with Balinese who work as a Public Accountant. The researchers also collected data on published ethical cases. From the data of interview and ethical cases, the researchers analyze in a culture-spirituality perspective of *Kain Poleng* and *Mulat Sarira*.

This research, as well as the qualitative research, has characteristics described by Denzin and Lincoln (2009: 3) as a bricolase and the researcher as a bricoleur. Analogous as a bricoleur, the researchers use their own methodological comprehension using existing empirical strategies, methods and data which in the process are characterized by pragmatic, strategic and self-reflection. This process produces brikolase, "the solution for the real

situation". As Denzin and Lincoln illustrate, this research is expected to reveal not only the ways in which the auditor apply the spiritual values with ethics, but also provides the concept of strengthening ethical comprehension and its implementation.

The researchers use two-point quadrant of the auditor's position to reveal how the auditor obey the ethics and strengthens ethical compliance, ie between personal and social positions and between normative and practical. It is illustrated in Table 1.

Table 1 – Auditor Ethics in Humanity and Professional Context

		HUMAN	
		PERSONAL	SOCIAL
P R O F E S S I O N	NORMATIVE	Ethical Self Belief	Ethical Profession Awareness
	PRACTICAL	Ethical Self Toughness	Compliance Code of Ethics

Thus the data will be analyzed through the cultural-spirituality perspective of *Kain Poleng* and *Mulat Sarira* through the quadrant to reveal how the auditor realizes and implements his personal spiritual values to do the professional ethics in his professional duties. In addition, the quadrant is also used as a model for strengthening ethical awareness and compliance to the professional code of ethics, both of which should be the attention of accountants and professional organizations.

RESULTS AND DISCUSSION

Auditor Position in Kain Poleng. One of the famous icon of Bali culture and strongly influencing the views and behavior of the Balinese is *Kain Poleng*. Described by *Kain Poleng* that there are two unavoidable realities in life: night and day, dark and light, water and fire, right and wrong, good and bad, etc. It is expressed by *Kain Poleng* in the black and white. *Kain Poleng* can be seen from the aspect of color, decoration, edge, material and the square size. Based on the color and motive aspects, there is a *Kain Poleng* that called *Rwabhineda* (black and white), which reflects both good and bad. Next, *Sudhamala* (white, gray and black), the meaning of gray is to harmonize between good and bad. The other is *Tridatu* (white, black and red), red as a symbol of *rajas* (the power) between laziness and wisdom (Anonim, 2014). The commonly form used is *Rwabhineda* which gives meaning to how people should look and live.

Kain Poleng is used by the figures such as Werkodoro and Anoman in the *Wayang*, because the character is honest, extrovert, straightforward, transparent, clear and natural (Windra, 2010). This means that human should be able to distinguish between good and bad and firmly choose the good one. The expression of that attitude still consider to balance and harmony.

In an interview with religious Balinese, the meaning of *Rwabhineda* is retrieved from a view of life. Here is the phrase.

Rwabhineda reflects that there is the opposite of character namely white-black, good-bad, bittersweet, etc. Rwabhineda shows the living ornament must know and wise... distinguish good and bad to achieve life balance. Therefore Rwabhineda is known as the symbol of the law of natural balance. The natural balance means eg... If there is a joy then there is also a sorrow, then it needs to be balancing... that is acting wisely with no exaggeration in times of joy or sorrow. Rwabhineda is closely related to the law of Karmaphala and fostering relationship that are in harmony with others, environment, and God.

From that perspective, the auditor in performing his professional duties can be seen as a figure that stands between two points, right and wrong, good and bad and follow and breach the ethics. With the nature of humanity that tends to violate if there is a chance, the auditor needs to aware and strengthen himself with the spiritual value to do good. However, this is not an easy thing because although there is a tendency to do good, the auditor as human beings also have a desire that always want to be obeyed. Living between the two points, the auditor is also in an environment that does not always support the good. Competition and attractiveness between good and bad as well as doing according to conscience and indulgence make the auditor need the power to control himself, which in the culture of Bali is called *Mulat Sarira*.

Auditor's Identity in Mulat Sarira. Another aspect of Balinese cultural-spirituality that also influences Balinese views and behavior is *Mulat Sarira*, which means introspection or return to the identity (Arimbawa, 2012). In terms of meaning, *Mulat Sarira* invites all human to «return to its roots and find yourselves» (Prasastra, 2010). Seeking and returning to the self in order to recognize oneself is the key for understanding and living *Mulat Sarira*, so that human can always introspect, get to know themselves before getting to know and judge others.

Furthermore, the meaning of *Mulat Sarira* is reflected in the results of further interviews as described below.

Mulat means seeing oneself. Sarira means body. Mulat Sarira is a way to understand yourself and self-control. The key to know yourself, being self-controlled, being responsible, and trying to make improvements. Mulat Sarira holds on to the conscience to conduct a good life activity and true and distanced themselves from the actions of harming others.

There are two important aspects in *Mulat Sarira*, that is finding themselves and what to do with them (Prasastra, 2010). Understanding and finding is not enough, there must be an action according to the them. So there must be efforts to increase understanding, awareness and behavior that is in accordance with the identity. From the description of *Mulat Sarira*, the researchers believe that the combination with *Kain Poleng* will be a cultural-spirituality effort that complements each other's understanding and the application.

Like other humans, as described in *Kain Poleng*, the auditors live and move on two points that can be in form; the necessity to do good-ethics with the force of insistence on bad-offenses, between individual interest and institution or profession, between short-lived interests with long-term interest and between normative and practical. This makes the auditors must have a real sense of self. For that, the auditors must always cultivate the awareness and strive toward the position of identity of human beings in order to be able to control themselves. This is emphasized in *Mulat Sarira* for the auditors.

From the perspective of the two spirituality concepts, the researchers consider that the auditors on duties are in *Kain Poleng*. For the sake of higher values and performing the duties well, the auditors should not choose the path of breach ethics. But this is not an easy thing, therefore auditors should always be in *Mulat Sarira*, a human identity that tends to do good and follow the ethics.

Decision Making and Ethical Dilemmas in Audit Activities. From the professional duties point of view, the auditor may be viewed from two practical aspects, as individual which perform their duties and as a professional community which bound by standard and regulation. Auditors often face ethical decision-making, a decision that is legally and morally acceptable to the public at large (Jones, 1991; Trevino, 1986). Ethical decision-making is a complex mental activity. Loe, Ferrell, and Mansfield (2000) and Paolillo and Vitell (2002) state that the important determinant aspects of ethical decision-making behavior are those that uniquely related to the individual in decision-making and factors as a result of the process of socialization and individual development. It is an innate trait, while the other is factors of organization, work environment, profession and so on.

Shareholders, prospective shareholders, financial advisors, underwriters, regulators, financial institutions, and creditors are users of audited financial statements. The user will make decisions in the financial statements presented by management, which will get incentives if the company's financial is in good position. Bonus compensation is often used to

pay management on the basis of reported financial performance. Management uses financial reports as a media, document or as a tool to influence external users of financial statements, so management is always motivated to present financial information that may be too optimistic and may even mislead users. In this situation, there are public accountants who are responsible for reviewing and arguing for financial statements. Technically, if the findings of a public accountant inappropriate with the client's expectations, it may lead to an audit conflict (Tsui, 1996; Tsui and Gul, 1996). It will raise the interest conflict and ethical dilemmas in the audit task.

The things mentioned previously show that the auditor can be in a very difficult situation and an ethical dilemma. In this situation, the auditor will consider its individual value and implication in its social or professional context. Unfortunately, the situation and dilemma often lead to the ethics breach, especially if the auditor is on the weak side. Further disclosure is how the auditor applies the personal values that he or she believes in dealing with such conflicts and dilemmas, and in their social context, especially when analyzed in the cultural-spiritual perspective of *Kain Poleng* and *Mulat Sarira*.

Based on the method that has described in research methods, this research will analyze according to the themes in the quadrant as shown in Table 1. Each theme can not be the same as a separate thing, but as a unified link in revealing and building the strengthening of awareness and its application. The whole discussion will be reviewed in a cultural-spirituality perspective of *Kain Poleng* and *Mulat Sarira*.

Ethical-Self Belief: The Value of Kain Poleng and Mulat Sarira in Personal. An auditor can be seen as an individual figure that certainly has a personal belief that will guide his/her life activities. One of the cause of phenomenon ethics breach by the auditor is the lesson has not been realized in his life. It has a value but not trusted and not internalized. This is revealed from the informant statement, a Balinese, an idealist who works as a Public Accountant, as follows.

The breach of ethics happen because Accountant is pragmatic not idealistic..., and... they do not have a good attitude as an accountant... Lack of their awareness to internalize the lesson that leads to identity... having a major contribution for a bad behavior.

There are four keywords from the result of interview, that are pragmatic, ignoble, the bad behavior and not internalized the value of identity. Those are may cause the ethics breach. So when viewed from Ethical-Self Belief, the rise of ethics breach by the auditor because of the lack of confidence that has been associated with the moral and internalization of good lesson, or even no awareness of the value in the environment that can direct itself to the identity. Internalization is very important, as can be found from the statement of Mansyur (2015) regarding to the case of *window dressing* Toshiba which published in Accounting Indonesia Magazine (Majalah Akuntan Indonesia) as follows.

We need to ask why Japan, an Asian Tiger with the pride of *harakiri* and *kamikaze*, pricely trapped and submissive with accounting 'art' strategy to financial statement, to look more sweet and charming in public.

We can imagine a very old company with a strong management tradition that stands in a nation that has a habit to follow a very strong cultural value can be helpless or defeated, especially a weak one. This is what Public Accountants or auditors are facing. As if facing a «giant magic» who can do whatever his will. The case of breach ethics by auditors in Indonesia as well as in Japan is one of them because of the fragility of Self-Ethical Belief faced with the power of the tendency of some bad businessman.

In the perspective of *Kain Poleng* and *Mulat Sarira*, an auditor should realize that he is at two points between good and bad, which in the context of audit tasks can following ethics and breach. These two things are the reality that can not be denied and auditors are in between the two points. On this side, the value of *Kain Poleng* can provide enlightenment to the auditor in order to realize that he needs to reinforce the belief that if he gives the balance of evil by always doing good then he will gain profit and give good to the world. The balance of life will be obtained by fostering a harmonious relationship with God, neighbor and the environment. This will be strongly imprinted in an auditor if the person concerned is always do self-introspection and self-control and always towards the identity (*Mulat Sarira*). Good

deeds and compliance to the ethics without compulsion. The auditor must always be true in black and white or good and bad, ethical or unethical.

Ethical-Profession Awareness: the Value of Kain Poleng and Mulat Sarira in Profession. In previous description, an auditor is viewed as an individual figure, in this discussion, the auditor is seen as a member of the professional organization that oversees and organizes his work. It is undeniable that the auditor is not a free individual, but related to its functions and responsibilities to assume professional duties that must always uphold the personal dignity and reputation of the professional organization because people put their trust in the accountant performance. Therefore, one of the functions of professional organizations is to maintain and ensure its members act in accordance with standardized code of ethics.

As a member of a professional organization, the auditor must obey with the professional code of ethics. Unfortunately, in some cases, professional codes of ethics by some auditors are just seen as a desultory copy. Let consider the title of the main report of Accounting Magazine Indonesia on August-September 2016 edition, namely 'Black Market' Business Accountant (TOM, 2015). This title wants to illustrate how «black» accounting profession is called «Black Market» and with the word «business». This is not without reason, because there is a phenomenon, a public official has read hundreds of audit reports that seem to be no problem. There are, however, anomalies as illustrated in the following quote, from the main report:

«...there are more than a hundred audit reports signed by the same KAP at the same time. Not as by the same level as «Big Four» that has tens of partner, but by small KAP with no more than two partners».

More surprisingly, they all get «Reasonable without Exception» opinion or WTP. How could it be that in just about two weeks, a KAP could check over a hundred clients, and everything were done on time?

Another story ... an office bravely offers licensed auditor stamp for anyone who needs a report with WTP opinion. ... they will bring a WTP opinion report without going through the audit process.

There are still some cases of breach ethics that mentioned in the report, the quote above can already show the faces of the current accounting profession. In the report also mentioned that events like this is not an Indonesian monopoly, in the USA and the UK only, which is well known as a country that organizes governance and transparency well, there is still a fraud audit. As the researchers explained in the previous sub the breach ethics is also happen in Japan. For this problem, the interesting question, what is the lack of USA, UK and Japan? ans also Indonesia? Has professional organization decided the Professional Code of Ethics? Even if viewed from the aspects, the code of ethics is a good rule because it includes integrity, objectivity, independence, professionalism and competence (TOM, 2015). From here, researchers try to analyze from cultural-spirituality factor, because it is rarely studied.

The local wisdom values of Kain Poleng and Mulat Sarira if actualized in everyday life can lead the auditor to act in accordance with professional code of ethics, so that breach of ethics that often struck the auditor can be overcome. The following is an excerpt of an interview with the informant when asked the response on whether it is sufficient only by the culture of Kain Poleng and Mulat Sarira to overcome the breaches of ethics by the auditor, without professional code of ethics?

Based on the practices that have occurred, may not overcome fully, but by adopting the philosophy of Kain Poleng and Mulat Sarira it will be better and internalized.

In practice, it is difficult to overcome the breaches of ethics, no matter what value the auditor holds, as has been exemplified in USA, UK and Japan. The answer above implies that professional codes of ethics are indispensable and local values need to be adopted for the internalization of values. According to the researchers, it is needed to absorb local values (*Kain Poleng and Mulat Sarira*) in the professional code of ethics. It is necessary that the auditor when understanding and applying the code of ethics does not feel that it is beyond of his/ his belief. So that the compliance to the code of ethics includes obedience to the culture-spiritual values.

The two analyzes above review the normative domain, whether consider to the auditor as an individual or as a social, especially as a member of a professional organization. The researcher will analyze from the practical side when the auditor as an individual perform the duties and when should make consideration as a member of the professional organization.

Ethical-Self Toughness: The Value of Kain Poleng and Mulat Sarira in the Application of Audit Tasks. In the personal and practical side, the researchers call it as Ethical-Self Toughness. In this position, the auditor faces the challenge of maintaining a belief in the value of his spirituality in carrying out his duties from the temptations of others who want the auditor following his destructive. When carrying out its profession duties, an auditor actually runs decisions personally, although the auditor is the part of the team and living in the community. In making the decision, the auditor in his mind is his personal expression. Therefore, the toughness here refers to the researchers as the strength of the auditor's resilience in dismissing the things that ask him to do unethical act.

Ethical-Self Toughness can fail with insistence and environmental circumstances. As stated by Michelle Bernardi from KAP. Bernardi & Partners give the response to «KAP mischief», especially small KAP. Here are the statements contained in Accounting Magazine Indonesia:

«...because the audit market is uneven, this causes the small KAP receiving the order of signatures trading».

The result is a fake audit. There are many small KAP playing in that segment. Only for tender then just signed.

An accountant, whatever his position in KAP requires the toughness to maintain the ethical values that his believes in. This is not owned by all accountants, who already have a vulnerability to temptation that is not internalized in itself by cultural-spirituality values. When the accountant faced with ethical decisions, they are often in the losing side, this is reflected and elaborated in an opinion entitled «Defeat of Accountant in Financial Scandal» (Mansyur, 2015). Therefore, Mansyur stated, «courage is very important, as important as agility and ingenuity. Accountants should bring inspiration for courage and victory». The interesting question is where did that courage or toughness come from?

As ethical decision-making, courage and ethical toughness are complex mental activities. Many things are pervading, one of them is culture-spirituality. The researchers analyze through the perspective of Kain Poleng and Mulat Sarira. The auditors who are aware of the value of *Kain Poleng* will understand that the contents of this world is black and white or a good and bad thing. Then it does not mean the auditor feels normal to do a bad thing with the reason it is the world. But this should give the strength to the auditor to do the good thing as a counterweight to the badness. the auditors who hold Mulat Sarira culture in carrying out the duties and face the temptation most likely will remain guided by the self ethics and professional code of ethics. This is shown by the interview quoted below.

The Hindus KAP or Auditor recognize the karma pala, where effect the actions of an individual in the future.

The most noticeable is the Mulat Sarira, if we do not introspect ourselves then we will fall into the black side (only partially of the Kain Poleng so it is not aligned). The implication is that we will feel guilty and ultimately fear of the karma pala.

The statement above contains a value that if linked to the ethical decision will be relevant when the auditor is faced with ethical dilemma that is to follow the client's intention. It means that the auditor had violated the professional ethics because it has acted independently or still uphold the professional code of ethics as the basis or guidance of the auditor in implementing the audit activities. The fear of God reprisal is a strong value as a controller for not doing unethical action.

The concept of Mulat Sarira has two values, i.e. self-introspection and what is done with it whose purpose is to provide guidance about the identity of a person who must uphold the ethics. As mentioned in the result and discussion sub. These values are highly respected by the Balinese. So that, it can be stated that *Mulat Sarira* in Balinese tradition is one of the guidelines in doing daily activities to act based on the ethics. If an auditor can control himself,

undoubtedly the breach of ethics can be avoided. Therefore, Ethical Self Thoughtness is required by the auditor and should continue to be applied to avoid breaches of ethics.

Compliance Code of Ethics: The Value of Kain Poleng and Mulat Sarira in the Guarantees of Ethics Implementation In the social and practical side, the researchers called as the Compliance Code of Ethics. In this side, the analysis is in the organization or institution context of the profession. The breach of ethics by auditors are not separated from things that are organizational. Professional organizations are the institutions that issue and establish codes of ethics and ensure that codes of ethics are implemented properly. In fact, the formulation and determination are not always the same as the application. Something written on paper is not necessarily run in accordance with the implementation. The range of control by the organization is not as far as the scope of the organization itself. Moreover, facing a fake KAP who practice without permission, but ironically can provide an official stamp from one of the KAP. This is what the Indonesia Accountants' Magazine Major Reports (Majalah Akuntan Indonesia) called «the KAP which if official» (TOM, 2015). There is an interesting statement to note about this, related to the small official KAP that violating the ethics, as published in the Indonesia Accounting Magazine (Majalah Akuntan Indonesia) in August-September 2015 edition.

There is no fear of investigation, both from the regulator and the profession under it.

«Occasionally, who investigated is the big KAP. We cannot be investigated», the perpetrator said.

This illustrates the limited range of professional organizations. There is a dilemma in the professional organization, on the one hand must ensure that the auditing of its members is in accordance with the ethics and standards of investigation, but on the other hand there are unoptimal tools in the organization itself. The members who have a mental force on the various compliance and the temptation of various parties for his personal gain. This is also reflected in the following quotation.

«The organization is impossible to eliminate total fraud, because it is clandestine. Not everyone has a clean, holy, and noble behaviour. It is precisely the accountants intense to intersect with deceitful and greedy people who want to win and a lot of profit» (Mansyur, 2015).

The reality that professional organizations have no outreach to all members and the organizational aspect requires a reinforcement of Ethical Self Belief and Ethical Self Resilience, as well as the absorption of the spirituality values of the professional code of ethics. These three things also require a strong professional organization to oversee the implementation of a code of ethics at a high level. Human in life cannot be separated from the values of culture and spirituality. Therefore, this cannot be only the attention of the auditor personally but the organization must facilitate this spirituality problem in policy product and its implementation, such as the value of *Kain Poleng* and *Mulat Sarira*.

This is possible as presented by the informant, a Balinese auditor when asked whether the value of *Kain Poleng* and *Mulat Sarira* can be manifested in the professional code of ethics. He briefly replied,

It is possible, but the term used is the universal term of Kain Poleng (Harmony), and Mulat Sarira (Identity).

The spiritual values must be the concern of accountants and professional organizations because the code of ethics and its implementation that is already exist cannot eliminate the breach of ethics. This is reflected in the informants' answer who hold onto spiritual values.

The average of clients in KAP Bali are not from a big company like companies in Jakarta or other big cities. Because we realize that, the auditor profession must hold onto the code of ethics and the Balinese auditors hold onto the Hindu (Kain Poleng and Mulat Sarira), desire or circumstances that force them to violate the ethics can be controlled.

Related to the environmental temptations and audit risks, the following answers can illustrate as follows:

The averages of clients are also Hindus, so we aware of the risks that contrary to the Hindu, so we avoid earlier.

Based on the interview, it can be said that the informant as the auditor has a stand on the need for ethics that is implemented in life and can be applied when doing the audit activity. The caused of ethics breach is the lack of an auditor's understanding of the ability to follow the lesson of beliefs. According to the researchers holding onto beliefs is the key of constancy. Violation is not simply because the client is a big company. Because in fact, Toshiba is a global company that implements a strong culture that is at the same time as a symbol of greatness and grandeur. It is also a «... reality of the fraud, and destruction of corporate ethics» (Mansyur, 2015).

Recognizing the things above, there should be adoption and adaptation of local values or culture-spirituality in the preparation, implementation and supervision of the professional code of ethics. This effort cannot run separately between members and their professional organizations. From the analysis, the aspects as shown in Fig. 1 in this article should be given a balanced attention. The values of culture-spirituality of Kain Poleng and Mulat Sarira in Balinese have an universal value that can be adopted by the accountant and professional organizations. Thus, the code of ethics that exists and the way of its implementation can be more applicable to reduce the breaches of ethics. Furthermore, the accounting profession organization will have the authority for its own members and in the presence of institutions and the people who exploiting for personal interests. In the end, the accounting profession will contribute to civilization and the good life.

CONCLUSION

In recently, there are many breaches of professional ethics which done by professional accountant or auditor. It is already at a very worrying and distressing level. The phrase that «the audit report becomes a sold object» is not a «figment». This is the reality. Actually it does not only happen in Indonesia. It also happen in USA, UK and the countries with strong cultures such as Japan with the large scales. This violation can not be seen from the visible or downstream, but must be traced to its root system.

It is rarely realized that the auditor as a human is a figure with a «mix» of various elements and complex aspects. There is a good tendency in itself, although there is also a bad tendency. In these circumstances, the auditor is in a world in which there is both good and bad. It is undeniable that the auditor has faith in the spiritual value that influences him in his life. The strength of the faith depends on the extent to live and internalize its beliefs.

Indonesia is rich in culture-spirituality. One of them is Kain Poleng and Mulat Sarira in Bali. From the perspective of two concepts, the auditor on duty is in Kain Poleng, between good and bad. Therefore, the auditor should always be in Mulat Sarira, which is in the identity of human beings who doing the duties based on the ethics. An important finding of this research is that the auditor who internalizes the values of both concepts is stronger to face the temptations from the outside.

To disclose the things related to ethical issues of auditors, analysis cannot simply «observing» from one side, because the auditor is both a personal and a part of his social life. While in terms of the profession, the auditor should understand and realize the normative and practical thing. Based on those sides, the disclosure of ethical issues of auditors and ways of strengthening in their implementation can be viewed from four aspects: Ethical-Self Belief, Ethical-Profession Awareness, Ethical Self Thoughtness and Compliance Code of Ethics. Thus in addition to the research findings mentioned earlier, this article succeeded in constructing a quadrant to find ways to eliminate breach of ethics. From the findings and constructions, that researchers offer are expected the auditors who are between the good and the bad can still tread the identity of human beings so can contribute for a better life.

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DOI <https://doi.org/10.18551/rjoas.2017-06.29>

STUDY ON AUDITOR'S ATTITUDE IN USING INFORMATION TECHNOLOGY FOR AUDITING: THEORY OF PLANNED BEHAVIOR AND SOCIAL COGNITIVE THEORY MODIFICATION

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ABSTRACT

The objective of the study was to evaluate the factors that influenced behavior intention in auditor's behavior in using information technology for auditing. This study was a combination between Theory of Planned Behavior (TPB) model and Social Cognitive Theory (SCT) from previous studies. The data collection method was survey and the samples were 102 auditors who worked in the big four Public Accounting Firm in Indonesia. Partial Least Square (PLS) was used to analyze the data. The findings were the construct of attitude, subjective norm, perception of behavioral control, and self-belief positively affected the behavior intention. Furthermore, the behavioral had positive influence towards the auditor's behavior in using information technology for auditing. The implications of this study are that providers of information technology for auditing and management should, again, pay attention to the attitudes, subjective norms, behavior control perceptions, self-beliefs, behavior intentions and behavior of auditors.

KEY WORDS

Auditor, information technology for auditing, theory of planned behavior, social cognitive theory.

Information technology is growing and getting more sophisticated from year to year. Information technology in the form of software can develop computerized system (Davis et al., 1989; Compeau & Higgins, 1995). This type of information technology is used in several organizations, both public and governmental organizations.

This study discussed how auditors use information technology for auditing (IT for auditing). Information technology for auditing is the application or software used during the auditing process (Damasiotis, 2015). Information technology for auditing can assist auditors in storing files, saving amount of paper used, costs, and time (Stoel, Havelka, & Merhout, 2012). In addition, the purpose the software or application is to detect an offense committed by an audited company (Stoel, Havelka, & Merhout, 2012).

According to the International Federation of Accountants or IFAC (2006a), auditor should have knowledge and competence in using information technology due to development of business owned by public institutions. A lot of foreign companies and auditors come to Indonesia and as the consequence; Indonesian auditor should be techno-savvy in order to compete. Pressure from the environment is another reason why auditors should be familiar with information technology for auditing (Stoel, Havelka, & Merhout, 2012; Havelka & Merhout, 2013).

Few years ago, a survey towards the implementation of information technology in Indonesia was conducted. Sugiwarsono (2003) stated that Indonesia failed to apply approximately 75% of the information technology. Sugiwarsono (2003) mentioned the failure stemmed from lack of planning and technical issues. Curry (2002) explained that human resource, process and work organization heavily influenced fail attempt to apply certain type of information technology. Ajzen (1991) postulated that poor implementation of information technology was the result of individual's hesitation to use information technology.

Behavior is a real action performed by individuals (Davis et al., 1989; Ajzen, 1991; Kim et al., 2016). If individuals accept the use of information technology, then it can be said that the information technology has successfully been applied; on the other hand, if the individual

refuses the use of information technology, the implementation of the technology failed (Ajzen, 1991). Once individual behavior has been described, we will figure out whether or not information technology has been applied successfully.

Several studies (Taylor & Todd, 1995; Chen et al., 2013; Jafarkarimi et al., 2016, Cheung & To, 2016) suggest that the main determinant of behavior is interest. Interest is an individual's desire to perform an action (Ajzen, 1991, Chen et al., 2013). Although interest is a key determinant of individual behavior, there are other factors that may affect interest, as described in Theory of Planned Behavior (TPB). Some studies on TPB (Armitage & Conner, 2001; Lam, Cho, & Qu, 2007; Baker & White, 2010; Jafarkarimi et al., 2016; Kim et al., 2016; Cheung & To, 2016) suggested that future studies added other variables that may affect the interests of individual behavior and they were supposed to be conducted in different settings and cultures.

Gap between the study and previous studies is, based on the suggestions above, the researchers added one variable from Social Cognitive Theory (SCT), namely self-efficacy. The study involved several auditors who worked in the Big Four Public, an accounting firm in Indonesia, as the samples. The researchers decided to add self-efficacy because one of the characteristics of an auditor was to have high confidence (Damasiotis et al., 2015; IFAC, 2006a).

The study is the combination between TPB and SCT theories. The purpose of the study is to predict individual behavior in using information technology, more particularly information technology for auditing.

LITERATURE REVIEW

Information technology for Auditing (IT for Auditing)

Information technology for auditing is a medium in the form of either software or application to use during auditing process (Kim, Maninno, & Nieschwietz, 2009). Information technology for auditing can integrate all information related to auditing (Havelka & Merhout, 2013). Some examples of information technology for auditing are Computer Assisted Audit Techniques (CAAT) including Audit Command Language (ACL) and Picalo, Powertech Compliance Assessment, and other softwares facilitating the auditing process.

Theory of Planned Behavior (TPB)

TPB is a theory of individual behavior that is influenced by behavior intention (Ajzen, 1985). The interest of individual behavior is influenced by three independent variables, attitude, subjective norm, and perception of behavioral control (Ajzen, 1991). TPB can be used to predict certain behaviors in various situations, situations and different forms of action (Beck & Ajzen, 1991). The basic assumption of TPB is that many behaviors are not all under the full control of the individual, so it is necessary to add the concept of behavioral perception control (Ajzen, 1991).

Social Cognitive Theory (SCT)

SCT is a theory based on the concept of mutual relationships of personal factors, environment and individual behavior (Bandura, 1986). These three factors are interrelated (Bandura, 1986). SCT suggests that individual motivation and self-regulatory processes are controlled through several self-regulating mechanisms (Bandura, 1986, Bandura, 1999). Self-confidence is a key factor in determining whether an individual has sufficient ability to accomplish and complete the task. The SCT model was then developed by Compeau & Higgins (1995). Compeau & Higgins (1995) indicate that self-belief influences individual behavior intentions before influencing behavior. In this study, self-efficacy is defined as the auditor's ability and conviction that he is capable of using information technology for auditing.

Research Model and Hypothesis Development:

Attitude is defined as a positive or negative feeling of an individual to perform the behavior (Davis et al., 1989; Ajzen, 1991; Kim et al., 2016; Cheung & To, 2016). Several studies (Davis et al, 1989, Ajzen, 1991, Baker & White, 2010, Jafarkarimi et al, 2016, Kim et al., 2016; Cheung & To, 2016) suggest that attitudes have a positive effect on behavior intention of an individual. Therefore, the first hypothesis is:

H₁: Attitude has positive influence towards behavior intention of auditor in using information technology for auditing

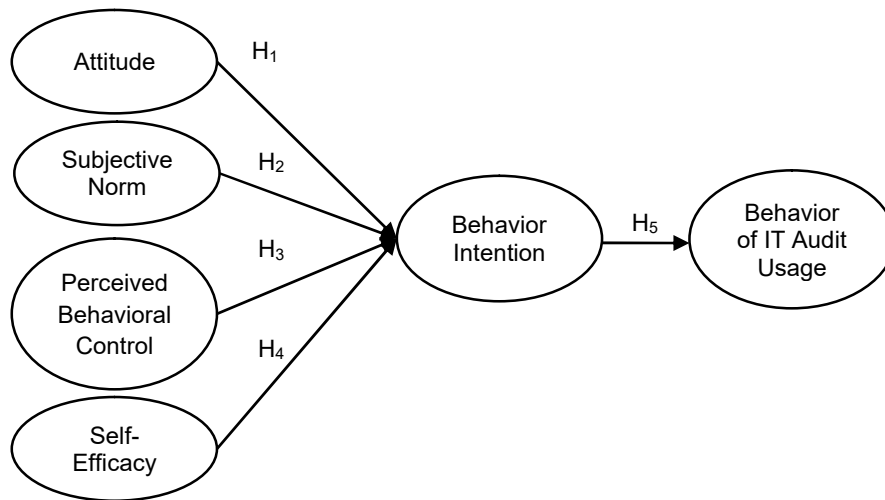


Figure 1 – Research Model

Subjective norm is defined as social norms or normative pressures that may affect the interests of individual behavior (Ajzen, 1991). Subjective norm also refers to the individual feeling that some of the important people around him or her can influence his or her behavior intention (Ajzen, 1991). Some studies (Ajzen, 1991, Armitage & Conner, 2001; Baker & White, 2010; Jafarkarimi et al., 2016; Kim et al., 2016; Cheung & To, 2016) suggest that subjective norms have a positive effect on interest Individual behavior. Therefore, the second hypothesis is:

H₂: Subjective norm has positive influence towards behavior intention of auditor in using information technology for auditing

Perceived behavior control is defined as how easy or difficult certain behavior is started (Ajzen, 1991; Kim et al., 2016). Perceived behavior control will then indicate ease or difficulty of a person in taking action and is considered as a reflection of past experiences in dealing with obstacles and problems that have been anticipated. The perceived behavior control of a person depends on the extent to which it experiences internal constraints, which are reflected and felt inside (Lin, 2006; Nasri & Charfeddin, 2012; Kim et al., 2016). Some studies (Armitage & Conner, 2001; Baker & White, 2010; Pavlou & Fygenson, 2013; Jafarkarimi et al., 2016; Kim et al., 2016; Cheung & To, 2016) suggest that perceived behavior control have positive influence towards behavior intention of an individual. Thus, the third hypothesis is:

H₃: Perceived Behavior Control has positive influence towards behavior intention of auditor in using information technology for auditing.

Self-efficacy is defined as a belief in one's ability to exert motivation, cognitive resources, and actions necessary to meet situational demands (Bandura, 1999). Such self-efficacy refers to beliefs about one's own ability to accomplish certain tasks with his or her own actions and resources amidst of obstacles or problems (Sniehotta, Scholz, and Schwarzer, 2005). Some studies (Compeau and Higgins 1995, Fu, Farn, and Chao, 2006; Lam, Cho, and Qu, 2007; Chen et al., 2013) suggest that there is positive relationship between self-efficacy and behavior intention of an individual. Thus, the fourth hypothesis is:

H₄: Self-efficacy has positive influence towards behavior intention of auditor in using information technology for auditing.

Davis, et. al (1989) explains that intention is a key indicator in the model of technology use. Ajzen (1991) assumes that intention is the factor of motivation that can influence a behavior through an indication of how hard an individual is willing to try, how much effort he or she planned to perform certain behavior. Several studies (Davis et al., 1989; Yilmaz & Ozer, 2008; Venkatesh & Davis, 2000; Kim et al., 2016) suggest that there is positive

relationship between behavior intention and individual behavior. Based on the theories, the fifth hypothesis is:

H₅: Behavior intention has positive influence towards behavioral interest of auditor in using information technology for auditing.

METHODS OF RESEARCH

Samples. The samples were 102 auditors working in Big Four, a public accounting firm in Indonesia. The data collection method was survey and the instrument was in the form of questionnaire. The data collection method took place in December 2016.

Procedures. The data collection methods adopted the convenience sampling technique, selecting samples that facilitated researchers and the snowball sampling conducted by collecting samples from respondents who came from a network (Hartono, 2010: 99-100). Based on the theories, the researcher made confirmation to one of the respondents one month before the questionnaire was distributed. The researchers called one of the respondents from each of the public accounting firms asking his or her willingness to be the samples and then asking him or her to spread the news to the respondents. Having got the approval, the researchers sent the soft-copied version of the questionnaire. The soft-copied version was in the form of google form link. The researchers sent different google form links to each accounting firm.

Measure and Research Instrument. The instrument used to analyze the data was the smartPLS. Previous research was used as reference to decide which instruments used to measure each of the variables. Attitude (AT) adopted the four indicators from Taylor & Todd (1995) and Bhattacharjee (2000)'s studies. Four indicators from Taylor & Todd (1995) and Bhattacharjee (2000)'s studies were used to measure subjective norm (SN). Four indicators from Taylor & Todd (1995) and Bhattacharjee (2000)'s studies were again used to measure Perceived Behavior Control (PBC). Three indicators of the instrument from the Taylor & Todd (1995) and Bhattacharjee (2000)'s studies were used to measure Self-Efficacy (SE). Four indicators of the instrument from the Venkatesh & Davis (2000)'s study were used to measure Behavior Intention (BI). Behavior (AB) was measured using three indicators of the instrument from the Kim, et. al (2016).

Each of them was measured using Likert scale from 1 (one) to 7 (seven). 1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neutral, 5= somewhat agree, 6= agree, 7= strongly agree.

RESULTS OF STUDY

Based on the position, most of the respondents (21%) were junior auditor. There were more male respondents compared to female ones; the percentage of the male respondents was 62%. The average respondents were between 20-30 years old. 76% of the respondents had bachelor degree and 47% of them had been working for more than five years. Finally, 39% of the respondents had more than 5 years of experience as auditor. Table 1 described the characteristics of the samples.

The loading factors of all constructs were higher than 0.7, and the AVE scores and communality were higher than 0.5. These showed that convergent validity showed all latent variables. The cronbach alpha scores was higher than 0.6 and the composite reliability was higher than 0.7. These showed that all constructs had passed the reliability testing. Furthermore, Table 3 mentioned that the AVE root was higher than the latent variable correlation and the cross-loading was higher than 0.7. These showed all constructs had passed the discriminant validity testing.

The hypotheses were accepted when the original sample or beta (β) value was positive and the t-statistic was higher than 1.64. H1 was accepted when attitudes had positive influence towards the auditor's behavior intention in using information technology for auditing ($\beta = 0.0819$; t-statistic $1.8617 > 1.64$).

Table 1 – Sample Demographics

No.	Description	Frequency	Percentage	
1	Position	Manager	10	10%
		Supervisor	24	23%
		Senior Auditor	22	21%
		Junior Auditor	48	46%
2	Sex	Male	65	62%
		Female	39	38%
3	Age	20-30 years old	61	59%
		31-40 years old	25	24%
		41-50 years old	18	17%
		51-60 years old	0	0%
		>60 years old	0	0%
4	Qualification	D3 (three-year diploma)	0	0%
		S1 (bachelor degree)	79	76%
		S2 (master's degree)	22	21%
		S3 (doctorate degree)	3	3%
5	Job Experience	<1 years	20	19%
		1 < x ≤ 3 years	29	28%
		3 < x ≤ 5 years	6	6%
		>5 years	49	47%
		>6 years	0	0%
6	Experience in Using Information Technology for Auditing	<2 years	25	24%
		2 < x ≤ 5 years	38	37%
		>5 years	41	39%

Table 2 – Confirmatory factor analysis results for measurement model

Constructs	Items	Original Sample	T Statistics	AVE	Communality	Cronbach Alpha	Composite Reliability
Attitude (AT)	AT1	0.7762	34.9957	0.6241	0.6241	0.8037	0.8685
	AT2	0.703	28.498				
	AT3	0.8184	60.5087				
	AT4	0.8543	64.9725				
Subjective Norm (SN)	SN1	0.8051	71.401	0.6865	0.6865	0.8474	0.8974
	SN2	0.8307	64.2162				
	SN3	0.8814	107.2005				
	SN4	0.7942	39.607				
Perceived Behavior Control (PBC)	PBC1	0.8304	88.1354	0.6907	0.6907	0.8504	0.8992
	PBC2	0.8408	73.112				
	PBC3	0.8569	85.7625				
	PBC4	0.7949	40.9952				
Self-efficacy (SE)	SE1	0.9035	118.9345	0.7878	0.7878	0.8686	0.9176
	SE2	0.8825	73.1332				
	SE3	0.8765	116.1874				
Behavior Intention (BI)	BI1	0.8658	104.4145	0.6711	0.6711	0.8371	0.8903
	BI2	0.8753	100.5478				
	BI3	0.8101	79.0104				
	BI4	0.7157	30.3849				
Actual Behavior (AB)	AB1	0.909	139.8361	0.7664	0.7664	0.8509	0.9075
	AB2	0.8095	59.0113				
	AB3	0.9042	106.2134				

Table 3 – AVE Root of Latent Variable Correlation

Constructs	AVE Root	1	2	3	4	5	6
1 Attitude	0.7900	1	0	0	0	0	0
2 Subjective Norm	0.8286	0.8565	1	0	0	0	0
3 Perceived Behavior Control	0.8311	0.8039	0.9618	1	0	0	0
4 Self-efficacy	0.8876	0.5651	0.495	0.4867	1	0	0
5 Behavior Intention	0.8192	0.5846	0.6319	0.619	0.4566	1	0
6 Actual Behavior	0.8754	0.4378	0.4302	0.4131	0.5279	0.4787	1

H2 was accepted when the subjective norm had positive influence towards the auditor's behavior intention in using information technology for auditing ($\beta = 0.3344$; t-statistic $6.0374 > 1.64$). H3 was accepted when the perceived behavior control had positive influence towards the auditor's behavior intention in using information technology for auditing ($\beta = 0.1473$; t-statistic $3.8617 > 1.64$). H4 was accepted when self-efficacy had positive influence towards the auditor's behavior intention in using information technology for auditing ($\beta = 0.173$; t-statistic $5.3843 > 1.64$). H5 was accepted when behavior intention had positive

influence towards auditor behavior in using information technology for auditing ($\beta = 0.4787$; t-statistic $13.3083 > 1.64$).

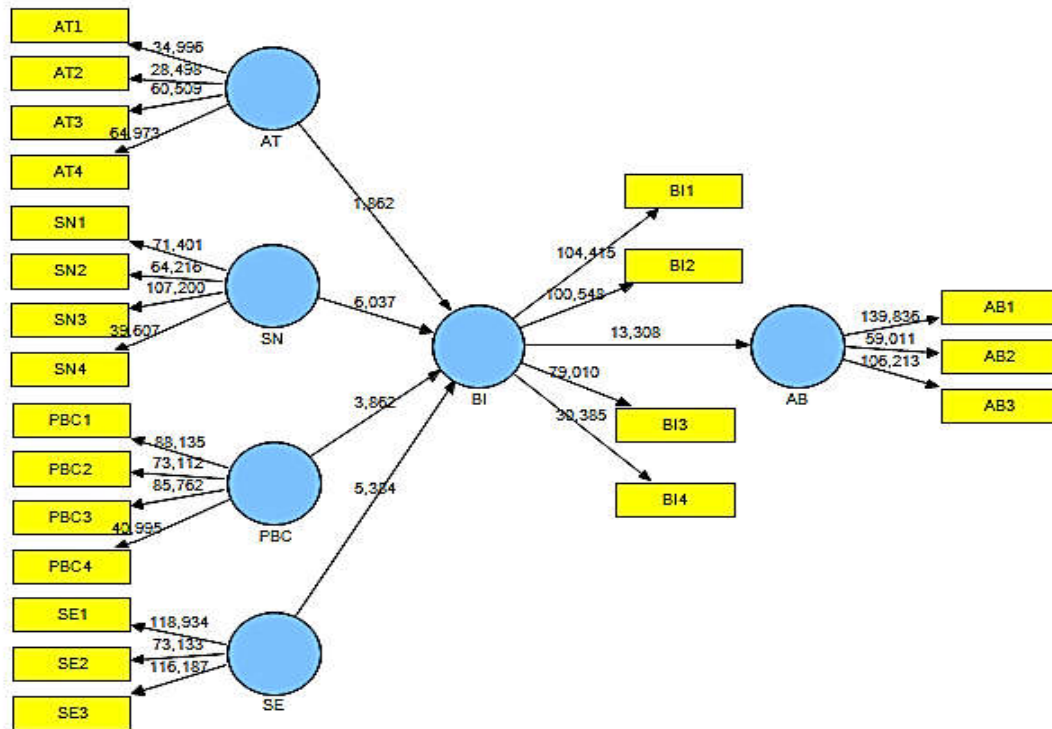


Figure 2 – Results of structural modeling analysis

Table 4 summarized the result of the hypothesis testing.

Table 4 – Hypothesis Testing Result

Hypothesis	Construct	Original Sample	T Statistics	Result
H1	Attitude -> Behavior Intention	0.0819	1.8617	Accepted
H2	Subjective Norm -> Behavior Intention	0.3344	6.0374	Accepted
H3	Perceived Behavior Control -> Behavior Intention	0.1473	3.8617	Accepted
H4	Self-efficacy -> Behavior Intention	0.173	5.3843	Accepted
H5	Behavior Intention -> Actual Behavior	0.4787	13.3083	Accepted

DISCUSSION OF RESULTS

The study adopted the TPB and SCT theories to explain the use of information technology for auditing by auditors in Indonesia. The findings showed that attitude had positive influence towards auditor’s behavior intention in using information technology for auditing. The findings corroborate to the previous studies conducted by Baker & White (2010), Jafarkarimi, et. al (2016), Kim, et. al (2016), Cheung & To (2016). The more positive attitude the auditors had, the higher their intention was and therefore the more likely he or she was in using information technology for auditing. The study also showed the subjective norm had positive influence towards the auditor’s behavior intention in using information technology for auditing. It is in line with the findings of Lam, Cho, & Qu (2007), Kim, et. al (2016), Armitage & Conner (2001), Baker & White (2010), Jafarkarimi, et. al (2016), Cheung & To (2016)’s studies. Social pressure from superintendents, head of accounting firm, colleagues or fellow auditor may influence the use of information technology for auditing. The study showed that perceived control behavior had positive influence towards the auditor’s behavior intention in using information technology for auditing. It is in line with the findings of the previous studies conducted by Pavlou & Fygenson (2013), Jafarkarimi, et. al (2016), Kim, et. al (2016), and Cheung & To (2016). The fact that the perceived behavior control also had

positive influence towards the auditor's behavior intention in using information technology for auditing may be stemmed from how easy and user-friendly an auditing software or application is.

Furthermore, the study also revealed that self-efficacy had positive influence towards the the auditor's behavior intention in using information technology for auditing. Self-efficacy is derived from SCT. The findings corroborate to those of Hsu & Chiu (2004), Fu, Farn, & Chao (2006), Lam, Cho, & Qu (2007), Sniehotta, Scholz, & Schwarzer (2005), Chen, et. a. (2013). When an auditor is certain that he or she is able to apply information technology, more particularly one for auditing, the auditor will use the software or application easily. As an addition, it also showed that behavior intention had positive influence towards auditor's behavior in using information technology for auditing. It is in line with Venkatesh & Davis (2000), Yilmaz and Ozer (2008), Cheng, Chen, & Yen (2015), Jafarkarimi, et. al (2016), and Kim, et. al (2016)'s studies. High behavior intention to use information technology for auditing will result in implementation of the technology in auditor's actual work.

Implications. The results of this study have two implications, theoretical implications and practical implications. The theoretical implications of this study are the results of this study support the Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) theories. Besides supporting both theories, the study is also able to develop the concept of acceptance or rejection of a technology by using attitude constructs, subjective norms, perceptions of behavioral control, self-belief, behavioral interests, and behavior. The behavior intention in the study functions as the mediating variable.

The practical implication is the study can be used as a reference in taking considering in designing and developing information technology in general and information technology for auditing in particular. Practitioners and developers of information technology for auditing who experience difficulties in designing and developing information technology for auditing can take the six factors above into account in evaluating auditor's behavior intention and eventually their behavior in using information technology for auditing. In addition, another implication is that the study can be used as reference for decision-making support or policies related to management and finance in public accounting firm related to the use of information technology for auditing. Public accounting firm may also use the study to motivate auditors that information technology for auditing improves their performance and ability to compete against foreign public accounting firm.

CONCLUSION

The study aims at examining the factors that influence behavior intention towards auditor behavior in using information technology for auditing using the TPB and SCT models. Survey is conducted and soft-copied version of the questionnaires in the form of google form links is distributed. The total respondents are 102 auditors working in The Big Four Public Accounting Firm.

The results of the study conclude that auditor's behavior in using information technology for auditing is determined by his or her behavior intention. Usefulness, attitudes, subjective norms, perceived behavior control, and self-efficacy have positive influence towards the auditor's behavior intention. In addition, subjective norms have a more dominant influence towards the auditor's behavior intention than attitudes, perceived behavior control, and self-efficacy. The result reveals that behavior intention is a major determinant of behavior and is a mediating variable. Behavioral intention indicates that the auditor has a positive evaluation towards the auditor's behavior in using information technology for auditing.

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APPENDIX – QUESTIONNAIRE

No.	Statement	SD	D	SwD	N	SwA	A	SA
Attitude								
AT1	Using information technology for auditing to complete auditing process is a good idea.	1	2	3	4	5	6	7
AT2	Using information technology for auditing to complete auditing process is a wise decision.	1	2	3	4	5	6	7
AT3	I like the idea of using information technology for auditing to complete auditing process.	1	2	3	4	5	6	7
AT4	Using information technology for auditing to complete auditing process may become a positive experience	1	2	3	4	5	6	7
Subjective Norm								
SN1	Superintendent thinks that I have to use information technology for auditing.	1	2	3	4	5	6	7
SN2	Decision-maker thinks that I have to use information technology.	1	2	3	4	5	6	7
SN3	Colleagues/ fellow auditors would favor me using information technology.	1	2	3	4	5	6	7
SN4	Superintendent thinks that using information technology is a good idea.	1	2	3	4	5	6	7
Perceived Behavior Control								
PBC1	I think I will be able to use information technology for auditing.	1	2	3	4	5	6	7
PBC2	I think I have full control in using information technology for auditing.	1	2	3	4	5	6	7
PBC3	I have resource in using information technology for auditing.	1	2	3	4	5	6	7
PBC4	I have competence and skills to use information technology for auditing.	1	2	3	4	5	6	7
Self-Efficacy								
SE1	I am comfortable of using my own information technology for auditing.	1	2	3	4	5	6	7
SE2	I will use and run my own information technology for auditing.	1	2	3	4	5	6	7
SE3	I have sufficient information for using/ running my own information technology for auditing.	1	2	3	4	5	6	7
Behavior Intention								
BI1	I want to keep using information technology for auditing in the future.	1	2	3	4	5	6	7
BI2	I hope I can keep using information technology for auditing in the future..	1	2	3	4	5	6	7
BI3	I will advise other people to use information technology for auditing.	1	2	3	4	5	6	7
BI4	I add information technology for auditing as facilities I prefer	1	2	3	4	5	6	7
Actual Behavior								
AB1	I frequently use information technology for auditing at work.	1	2	3	4	5	6	7
AB2	I always use information technology for auditing at work.	1	2	3	4	5	6	7
AB3	I use information technology for auditing once a day.	1	2	3	4	5	6	7

Description: SD = Strongly Disagree; D = Disagree; SwD = Somewhat Disagree; N = Neutral; SwA = Somewhat; A = Agree; SA = Strongly Agree.

DOI <https://doi.org/10.18551/rjoas.2017-06.30>

ANALYSIS OF REGIONAL FINANCE PERFORMANCE ON ECONOMIC GROWTH, POVERTY AND UNEMPLOYMENT IN WEST PAPUA PROVINCE, INDONESIA

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ABSTRACT

The present research intends to empirically reveal the relationship between regional finance performance and economic growth, poverty and unemployment in West Papua Province. Panel data regression model is applied to find out the effect of indicators composing Regional Finance Performance, namely Regional Real Income (RRI) Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness ratio and RRI Efficiency Ratio independent variables consisting of economic growth, poverty and unemployment. Panel data is combination between time series and (cross section). Simultaneous testing reveals no significant effects of RRI growth Ratio (X1), Fit Ratio (X2), independence ratio (X3), effectiveness ratio (X4), and efficiency ratio (X5) on economic growth (Y1). Partial testing reveals some significant effects of RRI growth ratio (X1) on economic growth (Y1), of Fit Ratio (X2) on economic growth (Y1), of independence ratio (X3) on economic growth (Y1), and of effectiveness ratio (X4) on economic growth (Y1).

KEY WORDS

Regional finance performance, economic growth, poverty.

The provision of decentralization and wide autonomy paves the way to regional governments for public interest-oriented regional finance administration. The economical, efficient, effective, transparent, accountable, and just management might drive economic growth of a certain region. A region's finance capability in autonomy era is measured by means of finance performance (Kuncoro, 2007). It is considered as the most crucial part of regional government administration. It is so due to the fact that regional governments can not enact their functions in an effective and efficient manner without a sufficient financial support. Thus finance is one indicator on which to find out regional governments capability to manage their region. Measurement to regional finance is instrumental to gauge transparency and accountability of regional budget. One instrument to do so is analysis of financial ratio against regional budgeting so-called APBD (Halim dan Kusufi, 2012).

APBD allocation for regional governments in West Papua during 2012-2014 pinpoints increasing trend. The largest is allocated by Teluk Bintuni regency in 2014 amounting to 2. trillion 400 billion rupiahs, and the least is allocated by Maybrat regency amounting to 300 billion rupiahs. There is expectancy that this increase be accompanied by regional finance performance as a foundation for *good governance*. UU No. 33 of 2004 stipulates that Regional Real Income (income autonomously raised or RRI) is intended to provide authority for a regional government to finance its own development as it suits to regional autonomy and decentralization in order to accommodate more for regional potentials. Its success can be detected from increased public welfare reflected in increased per capita income and Human Development Index (HDI) (Swandewi, 2012).

Infrastructure development is related to regional finance management. Regional budgeting or APBD as a yearly finance planning plays determining role for regional economy, as it involves the scale of income, expense, and funding on which a government bases its decision making and development planning, future expense, and standard to evaluate

performance and coordination of all sectors.

Unemployment in West Papua tended to be under national average during 2009-2014. For 2010-2012, unemployment in West Papua was above national average, which mostly had been due to the lack of skill and working experience. Since 2013, unemployment in West Papua is lower than national average, proving that increasing productive generation during 2013-2014 could be absorbed by working world available. The highest educated unemployment rate in 2014 was found in Teluk Bintuni regency which reached 8.25%, and the lowest found in Teluk Wondama regency which reached 0.98%. Economic growth should be followed by poverty alleviation, increased Human Development Index (HDI), and widened job opportunity. Research gap in the present research is the insertion the construct of fit ratio to find out whether regional government has striken an optimal and balanced point between direct and indirect expenses.

Based on the above background, statements of the problem are formulated as follows:

1. How are the effects of regional finance performance consisting of RRI Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness ratio and RRI Efficiency Ratio on economic growth in Regency/Municipality of West Papua Province?
2. How are the effects of regional finance performance consisting of RRI Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness and efficiency ratios on poverty in Regency/Municipality of West Papua Province?
3. How are the effects of regional finance performance consisting of RRI Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness and efficiency ratios on unemployment in Regency/Municipality of West Papua Province?

THEORETICAL REVIEW

Decentralization is a kind of transferring responsibility, authority and financial, personnel and other resources from central government to regional governments (Khusaini, 2006). Regulation No. 23 of 2014 at article 7 stipulates that Decentralization is the transfer of authority from central government to regional governments. Fiscal decentralization is the transfer of authority in fiscal sector (income and expense) from higher government to the lower. In theoretical review, decentralization will put government closer to its public (constituents) that leads to heightened efficiency.

Performance is a description on the extent to which a government has successfully achieved its objectives, goals, and missions and vision embodied in its planning strategy (Mahsun, 2012). Finance performance is the measurement performance applying finance indicators (Sularso dan Restianto, 2011). According to Halim (2001), to measure finance performance in government there are several regional budgeting-instruments available covering RRI growth Ratio, Fit Ratio, independence ratio, effectiveness ratio, and efficiency ratio.

Value for money is one definition for quality (Harvey & Green, 1993). Quality money value looks at quality in terms of high result from investment. If the same results could be acquired from lower cost or better result could be obtained from the same cost, a consumer has a quality product or service. Government accountability emphasizes value for money.

CONCEPTUAL FRAMEWORK

To describe the flow of problems and expected results and test model, this research can be described as in Figure 1.

Based on conceptual framework and previous researches, hypotheses are made as follows:

H₁ : It is assumed that Regional Finance Performance consisting of RRI Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness ratio and RRI Efficiency Ratio on economic growth in Regency/Municipality of West Papua Province

H₂: How are the effects of regional finance performance consisting of (RRI) Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness and efficiency ratios on poverty in Regency/Municipality of West Papua Province?

H₃: How are the effects of regional finance performance consisting of (RRI) Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness and efficiency ratios on unemployment in Regency/Municipality of West Papua Province?

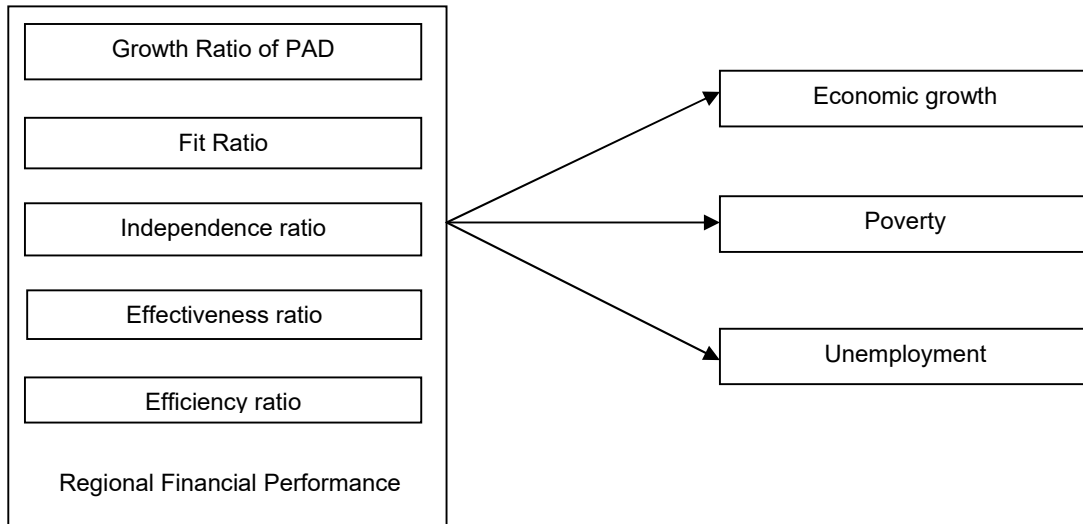


Figure 1 – Conceptual Framework

METHODS OF RESEARCH

Province of West Papua consists of 12 regencies and 1 municipality, but the present research uses 10 regencies and 1 municipality as its sample. The exclusion of 2 other regencies (MountainsArfak regency and Manokwari Selatan regency) is due to the fact that they just have had their status as New Autonomy Region (NAR) in 2013. The present research applies secondary data from BPS (*Badan Pusat Statistik* or Governmental Office for Statistics), *Direktorat Jenderal Perimbangan Keuangan* (DJPK), and the Government of West Papua Province. Panel data regression model is applied to find out the effect of indicators composing Regional Finance Performance, namely Regional Real Income (RRI) Growth Ratio, Fit Ratio, Independence Ratio, RRI Effectiveness ratio and RRI Efficiency Ratio independent variables consisting of economic growth, poverty and unemployment. Panel data is combination between *time series* and *cross section*.

RESULTS AND DISCUSSION

Simultaneous testing brings up $F_{stat} = 8.986$ with probability 0.000. It shows that probability $< \text{level of significance } (\alpha = 10\%)$. It means that there is no significant simultaneous effects of RRI growth Ratio (X1), Fit Ratio (X2), independence ratio (X3), effectiveness ratio (X4), and efficiency ratio on economic growth (Y1). Based on the results, RRI growth Ratio has a significant and negative effect on poverty. It is consistent with previous assumption and research of Haryanto (2007). The negative relationship implies that the increased RRI growth Ratio significantly reduce poverty. RRI is optimally allocated to direct expense covering program implementation for poverty alleviation such as health, education, and transportation infrastructures, a conducive business climate, and others.

The increased fit ratio significantly reduces poverty. It reveals that performance of regional governments in west Papua in allocating finance to direct expense has been optimal in line with well-planned programs that lead to increased public welfare. The programs include Infrastructure, opening access to isolated areas, multiplying job opportunity and

ensuring a conducive business climate that attract many investors. All of these contribute to the reduced poverty in West Papua.

The increased independence ratio significantly reduces poverty. This is in line with Abudzar's research (2010) that regional independence have a significant effect on decreased poverty in Middle Java. Regional Independence allows regional government to make a more suitable decision in allocating budget as local needs.

This condition proves that regional governments in West Papua have managed to finance themselves for administration, development and service delivery to public, where the finance comes from Regional Real Income.

Negative relationships prove that the increased effectiveness ratio significantly reduces poverty in West Papua. Increased effectiveness in making use of finance with greater results has determinant impact on poverty alleviation through less costly programs such as empowerment for the unfortunates, aid and social assurance programs, social welfare rehabilitation and social service.

Another negative relationship proves that increased efficiency ratio in regional finance reduces poverty. It shows that a regional government plays a significant part in raising income which is far larger than their expense target. This allows them to finance all programs and activities material in poverty alleviation in west Papua.

Partial testing of Regional Real Income (RRI) Growth Ratio (X1) on economic growth (Y1) brings up t stat = 1.895 with probability = 0.064. The results reveal that probability < *level of significance* ($\alpha=10\%$). It means that there is a significant partial effect of Regional Real Income (RRI) Growth Ratio on economic growth (Y1). Regional governments have managed to retain and even magnify regional real income (Halim, 2006), supporting expectation that it has a bigger effect on economic growth of west Papua in the future.

Partial testing of fit ratio (X2) on economic growth (Y1) brings up t stat = 3.465 with probability = 0.001. It shows that probability < *level of significance* ($\alpha=10\%$). It means that there is a significant partial effect of fit ratio (X2) on economic growth (Y1). This is congruent with previous assumption and researches of Zikriah (2008) and Yushkov (2015). This positive relationship proves that the increased fit ratio (direct expense) leads to increased economic growth in West Papua. The fact supports this relationship that during the conduct of research, almost all regions in West Papua enjoyed increased direct expense.

Partial testing of independence ratio (X3) on economic ratio (Y1) brings up t stat = 1.809 with probability = 0.077. The result shows probability < *level of significance* ($\alpha=10\%$). It means that there is a significant partial effect of independence ratio (X3) on economic growth (Y1). Theory put forward by Tiebout (1961) lends support for this. The gist is that fiscal decentralization systems where regional governments play a more decisive part than central government in public service delivery provide a chance to prove ability to raise a larger income. This ability assures independence.

Partial testing of effectiveness ratio (X4) on economic growth (Y1) produces t stat = 2.050 with probability = 0.046. It shows that probability < *level of significance* ($\alpha=10\%$). It means that there is a partial significant effect of effectiveness (X4) on economic growth (Y1). It reflects regional government's ability to make use of income optimally to finance programs and activities estimated to have a direct impact on public welfare. By doing so, regional governments in West Papua remove all business obstacles, heighten public's awareness of tax, conducive business climate that attracts investment important for increasing economic growth.

Partial testing of efficiency ratio (X5) on economic growth (Y1) produces t stat = 2.016 with probability = 0.049. It reveals that probability < *level of significance* ($\alpha=10\%$). It means that there is a partial significant effect of efficiency ratio (X5) on economic growth (Y1). This positive relationship proves that the increased efficiency ratio leads to economic growth. It might be due to the income is larger than the expense. Because of this efficiency, the surplus can be allocated to another expense posts that may drive economic growth such as education, health, infrastructure (high-ways, bridges, transportation, hospitals, schools, markets) and other supporting infrastructures sustaining public's economic faculty.

CONCLUSION AND SUGGESTIONS

The increased real income has an effect on regional governments in allocating their budgets on development programs of strengthening stable economic growth including sustaining tax awareness, retribution, a good feedback from society toward development financed from taxpayers money, people stable purchasing power, high sector contribution – priority sector (gas oil) on PDRB, conducive business climate that strongly attracts investors. The condition reveals that regional governments in west Papua have managed to maintain and heighten their success in terms independent real income.

Secondly, the larger income compared to the expense underlines the existence of effectiveness and absence of inefficiency, and as the result the surplus can be allocated to the programs that have direct impacts on poverty alleviation.

Finally, regional governments in West Papua have managed to finance themselves their governmental operations, development and service delivery from real income which are oriented to poverty alleviation.

For effectiveness ratio on unemployment, regional governments must able to exploit real income to develop infrastructures, to procure public structures that support productivity and sectors' added values that can provide job opportunity including agriculture, farming, maritime, fishery, gas and oil.

Moreover, the authors suggest for future research to include more relevant construct in terms of economic growth, poverty and unemployment, for instance investment, with different research time range and wider research location.

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DOI <https://doi.org/10.18551/rjoas.2017-06.31>

**ТЕНДЕНЦИИ И ВОЗМОЖНОСТИ РАЗВИТИЯ ЗЕРНОВОЙ ОТРАСЛИ
В ОРЛОВСКОЙ ОБЛАСТИ**
TENDENCIES AND OPPORTUNITIES FOR THE DEVELOPMENT OF GRAIN INDUSTRY
IN THE OREL REGION

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АННОТАЦИЯ

Зерновой комплекс имеет важное народнохозяйственное значение и является основой аграрного производства, определяя значительную долю в валовом национальном продукте. Основным регулятором развития этой отрасли является государственная поддержка, которая в настоящее время осуществляется на основе реализации федеральной и областной Государственной программы «Развитие сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2013-2020 годы». В статье приведен анализ посевной площади зерновых культур, их урожайности и выявлены количественно-качественные факторы, влияющие на объемы производства зерна. Сопоставлены авторский и стратегический прогноз, разработанный Правительством Российской Федерации и Орловской области в рамках Государственной программы развития сельского хозяйства.

ABSTRACT

The grain complex has an important economic importance as basis of agricultural production, determining a significant share in the gross national product. The main regulator of the development of this branch is state support, which is currently being implemented on the basis of the federal and regional state program «Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Foodstuffs for 2013-2020». The article gives an analysis of the sown area of grain crops, their yields and qualitative factors that affect the volumes of grain production. The author's and the strategic forecast, developed by the Government of the Russian Federation and the Orel region within the framework of the State Program for the Development of Agriculture, were compared.

КЛЮЧЕВЫЕ СЛОВА

Зерно, объемы производства, прогнозные сценарии, целевые индикаторы, урожайность, государственная программа.

KEY WORDS

Grain, production volumes, forecasted scenarios, target indicators, productivity, government program.

В настоящее время около половины всей пашни земли, а именно свыше 750 млн. га, занято посевами зерновых культур, они выращиваются на всех континентах. В Российской Федерации зерновыми культурами в 2015 г. засевают более 46,6 млн. га посевной площади, что составляет более 57% от общей площади посевов сельскохозяйственных культур.

Зерновое хозяйство составляет основу растениеводства и всего сельскохозяйственного производства. Это определяется многосторонними связями зернового производства с определенными отраслями сельского хозяйства и промышленности. Именно поэтому проблема экономической эффективности производства зерна является не только отраслевой, но и народнохозяйственной [16, с. 94].

В экономическом отношении зерно имеет ряд преимуществ перед другой сельскохозяйственной продукцией. Оно хорошо хранится (усушка не превышает 3% в год), поэтому особенно пригодно для создания государственных резервов продовольствия и кормов, необходимых в связи с колебаниями урожаев; легко перевозится на большие расстояния, в связи с чем широко используется в качестве привозного корма на птицефабриках и животноводческих комплексах [11, с. 60].

Основными продовольственными культурами являются пшеница и рожь, занимающие в структуре производства зерна примерно 58,4 %, ячмень и овес – главные фуражные культуры – 34,1% просо, гречиха – 2,1%, зернобобовые – 2 %. При этом 77% зерновых производится на сельскохозяйственных предприятиях. Подчеркнем, что достаточно большую долю стали занимать в структуре производства крестьянские (фермерские) хозяйства – 22%.

На это во многом повлияла активизация государственной поддержки развития малых форм хозяйствования на селе, в том числе и с зерновой специализацией, в результате которой выделяются гранты в рамках мероприятий «Поддержка начинающих фермеров» и «Государственная поддержка кредитования малых форм хозяйствования».

Необходимость государственного регулирования в АПК очевидна, так как преследуется цель обеспечения продовольственной безопасности и улучшения продовольственного снабжения населения страны [7, с.28]. А зерновое производство традиционно является основой агропромышленного комплекса России и наиболее крупной отраслью АПК. С учетом субсидий из бюджета уровень рентабельности зернового производства составляет порядка 40-60%. На зерновое производство приходится 1/4 часть стоимости основных производственных фондов и 15 % численности работников, занятых в агропромышленном комплексе, которые производят почти 10% его продукции. Эти показатели указывают на высокую значимость зернового хозяйства [3, с. 25].

Основным регулятором развития отрасли зернопроизводства считают государственную поддержку, которая в настоящее время осуществляется в первую очередь на основе реализации федеральной и областной Государственной программы развития сельского хозяйства и регулирования рынков сельскохозяйственной продукции, сырья и продовольствия на 2013-2020 гг. «Эффективная реализация этой программы создаст условия для увеличения темпов роста объемов производства на основе устойчивого развития сельскохозяйственных угодий, повышения экономической эффективности возделывания зерновых, а также функционирования рынка зерна» [4, с. 65].

Таблица 1 – Удельный вес посевной площади зерновых культур

Годы	Вся посевная площадь, тыс. га		Зерновые культуры, тыс. га		Удельный вес посевов зерновых в общей площади, %	
	Орловская область	Россия	Орловская область	Россия	Орловская область	Россия
2003	953,3	78297	641,6	42072	67,3	53,7
2004	1060,8	77323	711,8	43597	67,1	56,4
2005	1079,9	75837	717,8	43593	66,5	57,5
2006	996,0	75277	640,2	43174	64,3	57,4
2007	957,9	74759	629,4	44265	65,7	59,2
2008	1025,8	76923	746,9	46742	72,8	60,8
2009	1082,5	77805	796,2	47553	73,6	61,1
2010	1076,5	75188	781,8	43194	72,6	57,4
2011	1083,1	76662	764,7	43572	70,6	56,8
2012	1099,1	76325	774,4	44439	70,5	58,2
2013	1123,1	78057	805,5	45826	71,7	58,7
2014	1108,5	78525	791,1	46220	71,4	58,9
2015	1127,0	79290	779,3	46643	69,1	58,8

Рассчитано авторами [6, 7].

Орловская область располагает благоприятными агроклиматическими условиями для ведения устойчивого зернового производства: из полутора миллионов гектаров пашни, выщелоченные и оподзоленные черноземы, составляют 43%. В Российской Федерации эффективность зернового хозяйства во многом определяется территориально-отраслевым разделением труда.

Экстенсивным фактором, оказывающим непосредственное влияние на объем производства зерна, является площадь посева. Данный фактор зависит лишь от условий деятельности аграрных предприятий, так как каждый хозяйственный субъект самостоятельно определяет какие культуры выращивать и в каком объеме. Тенденция показывает, что в последние годы посевы зерновых наращивают свои площади (таблица 1) [17,18].

Однако, несмотря на достаточно устойчивую тенденцию роста федеральных и региональных посевных площадей зерновых культур, наблюдается заметные колебания в оценке движения данного показателя. Среднегодовой темп роста площади посева в Орловской области составляет 11,2%, в России остановился на 10,4%. На фоне этого происходит увеличение удельной доли посевов зерновых в общей площади, что обусловлено в основном ростом посевных площадей зерна в их совокупной структуре. По данным на 2014 г. характер распределения посевной площади зерна в среднем на двух уровнях почти пропорциональный – 52% занимают озимые зерновые, оставшиеся 48% принадлежат яровым культурам.

На объем производства зерна во многом оказывает влияние его качественный параметр – урожайность, изменение которой зависит от ряда факторов: погодные условия, качество почвы, агротехнология возделывания. Динамика урожайности зерновых культур в Орловской области и РФ представлена на рис. 1. В 2014 году уровень урожайности зерновых достиг 39,8 ц/га.

Статистические данные свидетельствуют, что хозяйства населения, к которым относятся, прежде всего, личные подсобные хозяйства, а также другие индивидуальные

хозяйства граждан и их сельскохозяйственные некоммерческие объединения, в 2015 году произвели 37,4% всей сельскохозяйственной продукции в России, что в 3,37 раза превышает долю крестьянских (фермерских) хозяйств и индивидуальных предпринимателей в сфере АПК [14, с.2].

Важным показателем динамики процессов является темп наращивания, который в условиях интенсификации зерновой отрасли измеряет наращивание во времени ее производственного потенциала. Он показывает, что тенденция ряда возрастающая, что свидетельствует об ускорении производства зерна в расчете на 1 га в Орловской области и России.

Большое влияние на урожайность зерновых с 1 га оказывает качество семян. В сельскохозяйственных организациях поля в основном засеивают семенами 1-го класса. Однако не менее 30 % семян относятся ко 2-му классу, обладающему более низкой всхожестью, примерно 92 %.

В результате низкой всхожести семена перерасходуются в размере 15-20 % от нормы высева. Посев только семенами высшего качества в будущем должен позволить сельхозтоваропроизводителям сократить их расход и повысит урожайность на 20 %.

Позитивные сдвиги в интенсификации зернопроизводства произошли главным образом за счет применения более эффективных средств производства, совершенных форм организации труда и технологических процессов, лучшего использования наличного производственного потенциала, внедрением инновационных и ресурсосберегающих технологий в сельскохозяйственных организациях. Целесообразно активное участие субъектов агробизнеса в реализации государственных программ развития сельского хозяйства с целью получения соответствующих субсидий и других рычагов господдержки на внедрение инноваций [5, с.22].

Максимальный прирост урожайности зерна по РФ наблюдается в 2011 г. (4,1 ц/га). В структуре региональной структуры высший рубеж достигнут в 2008 г. с уровнем прироста 8,4 ц/га. Природные катаклизмы в виде засухи, стойко сохранявшейся летом 2010 г., существенно повлияли на уровень урожайности зерна. Именно в этот период зафиксирован наивысший спад и в Орловской области, и в России – 4,4 и 9,1 ц/га соответственно.

Обещающим показателем производства зерна является валовой сбор, который представляет общее количество продукции зерна, собранной со всей площади ее посева (таблица 2).

Таблица 2 – Влияние основных количественно-качественных факторов на колеблемость валового сбора зерна в РФ и Орловской области

Годы	Валовой сбор, тыс. тонн		Отклонение от предшествующего периода, тыс. тонн (+/-)		в том числе за счет изменения:			
					структуры посевных площадей		урожайности	
	Орловская область	Россия	Орловская область	Россия	Орловская область	Россия	Орловская область	Россия
2003	1571,9	74888,2	–	–	-	-	-	–
2004	1658,5	81962,4	86,6	7074,2	172,0	2714,5	-85,4	4359,7
2005	1722,7	80647,1	64,2	-1315,3	14,0	-7,5	50,2	-1307,8
2006	1542,9	81598,9	-179,8	951,8	-186,2	-775,2	6,4	1727,0
2007	1447,6	87644,7	-95,3	6045,8	-26,0	2062,0	-69,2	3983,9
2008	2345,3	111246,0	897,7	23601,3	270,3	4904,5	627,4	18696,8
2009	2444,3	107945,3	99,0	-3300,7	154,8	1930,2	-55,7	-5230,8
2010	1688,7	79045,0	-755,6	-28900,3	-44,2	-9894,9	-711,4	-19005,4
2011	1712,9	97601,3	24,2	18556,3	-36,9	691,7	61,2	17864,5
2012	2106,4	81323,4	393,5	-16277,9	21,7	1942,1	371,7	-18220,0
2013	2625,9	100817,2	519,5	19493,8	84,6	2538,2	435,0	16955,6
2014	3136,9	105315,0	511	4497,8	-46,9	866,8	569,6	9706,2
2015	2505,9	104299,0	- 631	-1016	-47,0	1019,4	-545,5	-2332,2

Рассчитано автором [6, 7].

Несмотря на то, что урожайность зерна имеет тенденцию к росту колебания валового сбора очень существенны. Практически каждый год происходит чередование возрастания и снижения совокупного объема производства зерновых культур. Как показывает факторный анализ, рост валового сбора зерна из года в год обеспечивается количественным фактором – устойчивыми темпами увеличения площадей посева. При этом, невзирая на успешность интенсификации, урожайность пока не влечет к новым рубежам сбора зерносырья.

В процессе анализа тенденций производства зерновых необходимо рассмотреть один из показателей эффективности потребления ресурсов. Этим показателем является себестоимость 1 ц продукции, структура её отражает статьи затрат, которые формируют основную долю затрат (рис. 2).

Как показывает практика, сельскохозяйственные организации с более высокой обеспеченностью производственными ресурсами наиболее интенсивно используют землю, что ведет к снижению затрат в расчете на 1 га земельных угодий или 1 ц продукции. Основной путь повышения эффективности производства и доходности - это повышение уровня интенсификации производства, материальное стимулирование работников и на основе этого рост окупаемости затрат [12, с. 13].

Таким образом, сегодняшние тенденции производства зерна характеризуют больше положительную ситуацию в отрасли. Для дальнейшего увеличения объемов производства и повышения эффективности возделывания зерновых культур необходима последовательная интенсификация на базе развития химизации и мелиорации, внедрение прогрессивных технологий выращивания и уборки зерна, применение новых более продуктивных сортов и гибридов и зерновых культур [10, с. 70].

Особое значение для повышения эффективности зернового производства имеют выбранные каналы реализации, уровень качества продукции, а также

совершенствование механизма вознаграждения работников, ведущих трудовую деятельность в зерновом хозяйстве.

Формирование прогнозных сценариев развития зерновой отрасли. Выявление намечающихся тенденций, определяющих перспективы развития народного хозяйства, в том числе и зерновой отрасли, позволяет подготовиться к ним с целью обеспечения устойчивости планирования производства продукции и эффективности производства. Поэтому роль прогнозов в современном планировании в аграрном секторе становится актуальной [10, с. 64].

При формировании прогнозных сценариев производства зерна в Орловской области и РФ автором используется статистический метод прогнозирования. Главным преимуществом статистического прогноза является то, что наряду с достоверным качественным предсказанием удается получить и достаточно точное количественное измерение вероятных значений прогнозируемых признаков [8, с. 132].

В качестве инструментов прогнозирования в аграрной сфере преимущественно применяются статистические регрессионные модели двух типов:

– модели, построенные на основе статистического изучения динамики прогнозируемого показателя за предшествующий период и уровня его колеблемости (авторегрессионное прогнозирование);

– модели, построенные на основе статистического изучения и моделирования систем взаимосвязи прогнозируемого показателя и факторных признаков (корреляционно-регрессионный прогноз) [1, с. 12].

Для прогнозирования урожайности зерновых культур в работе решено использовать первый метод прогнозирования. Построение прогнозов развития зерновой отрасли производится на основе измерения тренда и колеблемости.

Для моделирования тенденции (тренда) временного ряда используют аналитическое выравнивание. Оно состоит в определении математического уравнения, отражающего тенденцию изменения признака [2, с. 50]. Проведем выравнивание урожайности зерна по уравнению прямой линии, поскольку в представленном ряду динамики наблюдается относительно постоянный абсолютный прирост (таблица 3).

Таблица 3 – Уравнение тренда и показатели колебаний урожайности зерновых культур в Орловской области и РФ

Территориальный уровень прогноза	Уравнение тренда	Коэффициент колеблемости	Коэффициент устойчивости	Коэффициент ранговой корреляции Спирмена
Орловская область	$\bar{Y}_t = 0,491_t + 22,945$	14,5	85,5	0,96
Российская Федерация	$\bar{Y}_t = 0,295_t + 18,351$	22,2	77,8	0,89

*Источник: рассчитано по данным Территориальной и Федеральной службы государственной статистики.

Расчетные уровни (\bar{Y}_t) показывают, какие изменения могли бы происходить при отсутствии колебаний. Сумма значений эмпирического ряда в идеальном варианте должна совпасть с суммой выровненных значений ряда, подобное равенство наблюдается в данном случае. На основании данных рисунка 2 определим фактическую и выровненную урожайность зерновых, как в Орловской области, так и в РФ за изучаемый период и на перспективу 2016 – 2017 гг. (рис. 3).

Колеблемость урожайности зерновых культур по годам не позволяет сделать вывод о наличии тенденции роста или сокращения. С целью установления тенденции нами было проведено аналитическое выравнивание по уравнению прямой линии методом наименьших квадратов. Получили следующее уравнение тренда по зерновым:

– Орловская область $\bar{Y}_t = 0,491_t + 22,945$;

– Российская Федерация $\hat{Y}_t = 0,295_t + 18,351$.

Выравнивание уровня урожайности по уравнению тренда показывает тенденцию роста за последние 13 лет. В сравнении с показателями в целом по России в Орловской области наблюдается наиболее высокие темпы роста урожая зерна. За период с 2003 г. по 2015 г. уровень урожайности зерна ежегодно увеличивался в регионе в среднем на 0,81 ц/г или 3%, на уровне страны меньшими темпами – 0,42 ц/га или 2%. Средняя урожайность составила 27,5 и 20,7 ц/га.

В целом колебания уровня урожайности зерна в Орловской области являются умеренными, при этом в Орловской области данный показатель гораздо стабильнее нежели чем в целом по России. Ежегодно уровень урожайности отклонялся от среднего многолетнего уровня в среднем на 15% в Орловской области и 22% в России.

Оценка устойчивости динамики раскрывается в двух вариантах – устойчивость как: категория противоположная колеблемости и показатель, показывающий устойчивость тенденции. В первом варианте устойчивость уровней ряда достигается при минимальных колебаниях фактических уровней от тренда. Представленные в таблице коэффициенты устойчивости указывают на то, что в целом по региональному АПК ввиду ежегодной колеблемости обеспечивается 85,5% урожайности, в целом по РФ ниже – 77,8%, рассчитанной по тренду. Это говорит о том, что в регионе установлена относительная близость фактических значений уровня к рассчитанным по тренду. При втором варианте устойчивость характеризует процесс эволюции уровней динамического ряда.

Обратимся к таблице, в которой представлены рассчитанные в разрезе РФ и в целом по области коэффициенты корреляции рангов Спирмена. Коэффициент корреляции рангов Спирмена в целом по Орловской области и РФ составили 0,96 и 0,89 соответственно, что характеризует устойчивость роста урожайности зерновых культур в период с 2003-2013 гг. в двух случаях как достаточно высокую.

Проведенные исследования тенденций динамики и оценка устойчивости урожайности зерновых дают возможность применить метод авторегрессионного прогнозирования по тренду и колеблемости и составить точечный и интервальный прогнозы урожайности зерна на 2015-2018 гг. В целом по области колеблемость незначительна, что является следствием корректирующего воздействия фактора интенсификации отрасли [9, с. 78].

Идея любого предпринимательского решения зарождается сначала на бумаге в виде тщательно разработанного плана и только потом реализуется в бизнесе. В связи с этим, в любой сфере малого предпринимательства для претворение в жизнь намеченных целей необходим конкретный план действий [13, с.5]. Данное обстоятельство позволяет достаточно точно составить точечный прогноз среднегодовой урожайности зерновых культур и валового сбора, с учетом изменения посевных площадей на 2016-2020 гг. (таблица 4).

Таблица 4 – Прогноз объемов производства зерна в Орловской области и РФ до 2020 г.

Период прогноза	Урожайность, ц/га		Посевная площадь, тыс. га		Валовой сбор, тыс. тонн	
	Орловская область	Россия	Орловская область	Россия	Орловская область	Россия
2016	29,8	22,5	864,1	46445,1	2575,0	104501,5
2017	30,3	22,8	879,2	46676,1	2663,9	106421,5
2018	30,8	23,1	894,3	46907,1	2754,4	108355,4
2019	31,3	23,4	909,4	47138,1	2846,4	110303,2
2020	31,8	23,7	924,5	47369,0	2939,9	112264,5
Среднегодовой темп роста (снижения) к 2014 г., %	9,9	103,8	-	-	-	-

Установлено, что в Орловской области урожайность зерна сократится с 32,5 до 31,8 ц/га. С учетом среднего размера посевной площади за 2016-2020 гг.

регионального АПК (886,7 тыс. га) и страны (46791,6 тыс. га), валовой сбор зерносырья может варьировать от 2487,3 до 2939,9 тыс. тонн от и 102595,3 до 112264,5 тыс. тонн соответственно.

Ошибка (прогноза) аппроксимации находится в пределах 5-7%, что свидетельствует о хорошем подборе уравнения тренда к исходным данным. Поскольку ошибка как по данным урожайности зерна в Орловской области (6,56%) так и по РФ (6,92%) меньше 7%, то данное уравнение можно использовать в качестве трендового прогноза. При соблюдении технологий возделывания можно получить рентабельность свыше 90%. Нарращивание объемов производства зерна для сельскохозяйственных организаций выгодное и перспективное направление в их деятельности [15, с.13].

Заключение. Сопоставим составленный нами прогноз со стратегическим, который разработан Правительство РФ и Орловской области в рамках Государственной программы развития сельского хозяйства. В разрезе вышеотмеченной программы имеется подпрограмма «Развитие подотрасли растениеводства, переработки и реализации продукции растениеводства» запланирован рост валового сбора зерна. В данном случае учитывается только произведенное зерно в сельском хозяйстве РФ, т.е. не учитывая его импорт (таблица 5).

Таблица 5 – Оценка выполнения целевого индикатора по производству зерна в 2020 г.

Территориальный уровень прогноза	Вид прогноза валового сбора, тыс. тонн		Отклонение прогнозов, (+/-)	
	Инерционный	Стратегический	Абсолютное, тыс. тонн	Относительное, %
Орловская область	2939,9	2364,9	+593	124,3
Россия	112264,5	115000,0	-2735,5	97,6

Экономическое благополучие каждой организации во многом зависит от качества товара, который пользуется спросом и приносит определенную массу прибыли, позволяющую осуществлять расширенное воспроизводство [19]. Ожидаемые результаты подпрограммы по зерну в РФ заключаются в получении валового сбора зерновых культур в размере 115 млн. тонн. В Орловской области данный показатель запланирован в пределах 2364,9 тыс. тонн. Как можно заметить, запланированный целевой индикатор в Орловской области будет перевыполнен. В абсолютном выражении валовой сбор зерновых культур превышает 593 тыс. тонн от планируемого показателя. В данном случае рост обусловлен в большей мере увеличением прогнозируемых посевных площадей, поскольку урожайность несколько снизится к 2020 г. [6].

При этом сравнение инерционного и стратегического прогноза производства зерна на уровне страны имеет менее позитивные результаты. Несмотря на более устойчивый рост урожайности зерна в РФ к 2020 г. и росту посевных площадей валовой сбор недополучен в относительной оценке более чем на 2,4%. Высокие темпы роста урожайности в сравнении с региональным АПК к сожалению не смогут обеспечить полного выполнения плана по производству зерновых.

Современные условия функционирования АПК приводят к необходимости создания предпосылок для обеспечения устойчивых темпов развития аграрной экономики, основой которых становится планирование и прогнозирование деятельности субъектов хозяйствования. При этом планирование объемов производства зерна является первостепенной и стратегически значимой задачей народного хозяйства, поскольку именно зерно является основной продовольственной безопасностью страны.

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DOI <https://doi.org/10.18551/rjoas.2017-06.32>

AN INVESTIGATION ON SPECIES COMPOSITION, CONSUMER'S PREFERENCES AND MARKETING CHANNEL OF HILSA IN TWO COASTAL DISTRICTS OF SOUTHERN BANGLADESH

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ABSTRACT

Hilsa is recognized as the national fish species of Bangladesh which has enormous significant to the socio-economy development of ultra-poor and poor fishermen. The present study assessed the species availability, prices, marketing channel and consumer's preferences of hilsa in two coastal districts namely Bhola and Patuakhali. Pertinent data were collected from hilsa fishermen by personal interviewing with a semi-structured questionnaire, focus group discussion, and crosscheck interviews with key informants during January 2015 to December 2015. Considerable differences in price were noticed between fishermen and consumers and this was happened due to the involvement of a number of middlemen in the marketing channel of hilsa. In the study area, wholesalers make a profit in the tune of 10-12% commission whereas commission agents take 2-5% commission for sending the fish to the markets. Consumer acceptance of *Tenualosa ilisha*, *Hilsa toli* and *Hilsa keele* was 39.83%, 43.50%, 16.67% in Bhola and in Patuakhali it was 40.42%, 43.50%, 16.80% respectively. It was observed that consumer acceptance of *T. ilisha* was same in Bhola and Patuakhali district. Safety, price, freshness, size, sources and taste are the main factors behind consumers' purchasing behavior. A number of constraints such as lack of storage facilities, poor supply of ice, exploitation by middlemen, lack of money and lack of infrastructure were reported by the retailers. It is therefore necessary to establish ice factory, improvement of transport facilities, provision of GO and NGO; introduction of quality control measures of hilsa market operators for improved their marketing system.

KEY WORDS

Hilsa, availability, species composition, consumers' preferences, distribution, marketing.

Bangladesh is a south Asian country located in between latitude 20°34' and 26°39' north and longitude 88°01' and 92°41' east. The country is crisscrossed with hundreds of rivers and blessed by rich marine and fresh water resources. All of these water resources are offering boundless scope and potentiality for augmenting fish production and socio-economic security of the people living around the villages of these inland water bodies (Ali, 1991). Fish is an essential foremost food for the people of Bangladesh and plays an important role in the economy of the country. Due to the plentiful availability of inland water, fish production increased significantly. Bengali people have been known to be fond of rice and fish (Ali, 1997). Fisheries sector represents one of the most productive and dynamic sectors in Bangladesh. This sector contributes about 60% of animal protein to the daily diets of consumers, contributes about 3.69% to GDP, 22.60% to agriculture GDP and accounts for

about 11% of the total employment of Bangladesh. In 2014-2015 economic year, we exported about 83,524 MT of fish and fishery products and earned 4,660 crore BDT (DoF, 2015). The manifold small and big rivers are the key harbors of variety of fish species of the country. Hilsa, locally known as "Ilish" constitutes the largest single species fishery of Bangladesh (FAO, 2004). Hilsa serves as a health-food for the affluent world owing to the fish oils which are rich in polyunsaturated fatty acids (PUFAs), especially omega-3 PUFAs and at the same time, it is a health-food for the people in other extreme of the nutritional scale due to its proteins, oils, vitamins and minerals (Mohanty *et al.*, 2011). With the protection of hilsa spawners, fries and other initiatives, the production of hilsa has gone up from 52000 tonnes to 350000 tonnes. Hilsa contributes about 1% to GDP and 11% of the total fish production in Bangladesh. Total annual hilsa production is about 3.85 Lakh MT; which has the market price of more than 17000 crore BDT (DoF, 2015). A large-sized hilsa weighs about 2.5 kg. Female hilsa grow faster and are usually larger than male hilsa. The hilsa is known to be a fast swimmer and attains maturity in one to two years. Though the hilsa is generally regarded as an anadromous fish, there is evidence that it is in fact a diadromous fish, which means it can migrate both ways between ocean and river. Hilsa shad (*Tenulosa ilisha*) lives in the sea for most of its life, but migrates at least 1,200-1,300 km upstream from estuarine region for spawning purpose and it also found about 250 km distance from coastal region (Halder and Islam, 2008).

The largest portion of hilsa is harvested from the coastal areas of Bangladesh, but 75% of total Ilish is consumed outside of the coastal areas (Ahmed, 2007). However, hilsa is one of the most expensive fish in Bangladesh. Its price varies region to region due to geographical location and species availability. So price of hilsa is high in northern region due to distance and transportation cost. In our country, most of the people are poverty-stricken. Economic condition of most of them is not so good. They can't afford surplus budget for purchasing such an expensive fish for consumption. Sometimes it becomes impossible to purchase large size hilsa for the middle or lower-middle class consumers because of its high price. The economy affects purchasing power of the consumers. For example, if prices collapse, consumers have greater purchasing power of that product. If the value of the dollar increases relative to foreign currency, consumers have greater purchasing power. When inflation occurs, consumers have less purchasing power. In case of volume, value and employment, the fish market in Bangladesh is large. A large number of people, whom live below the poverty line, find employment in the coastal fish marketing chain as fishermen, processors, assemblers, traders, transporters, intermediaries and day laborers, including children and women. Considerable differences in price were noticed between fishermen and consumers and this happened due to the involvement of a number of middlemen in the marketing chain of hilsa. The study was conducted in Bhola and Patuakhali district, situated in the southern part of Bangladesh. The study areas were selected because hilsa is more plentiful in southern part than northern part, especially in Bhola and Patuakhali district. Though hilsa is our national fish and holds great nutritional, cultural and economic significance, a continuous indiscriminate harvest of jatka may adversely affect the annual total shad catch in the fishery (Amin *et al.*, 2000). If these jatka were not harvested and instead grew to maturity, they would boost total production by an additional 0.2 million MT per year, double the present annual catch of hilsa. In the year 2014, abundance of jatka was found higher (CPUE 3.04 kg/100m net/hour) than previous years and it was 223% higher than base year 2005. The degenerating trend of catch per unit effort (CPUE) of hilsa fishing is threatening the existence of hilsa fishermen. The resource must be protected from irreversible damage and managed on a sustainable basis. The foremost objective of the study was to understand species availability, consumer's preferences and marketing channel of hilsa in southern part of Bangladesh. This study will provide baseline information about hilsa fishery in Bangladesh, especially its marketing channel and consumers' preferences in the study area.

MATERIALS AND METHODS OF RESEARCH

Study area and Duration. The study was carried out in different market of Bhola and Patuakhali district, Bangladesh. The geographical location of Bhola and Patuakhali are 22°30'N 90°45'E and 22.3542°N 90.3181°E respectively (Fig. 1). Study duration was one year from January to December 2015.

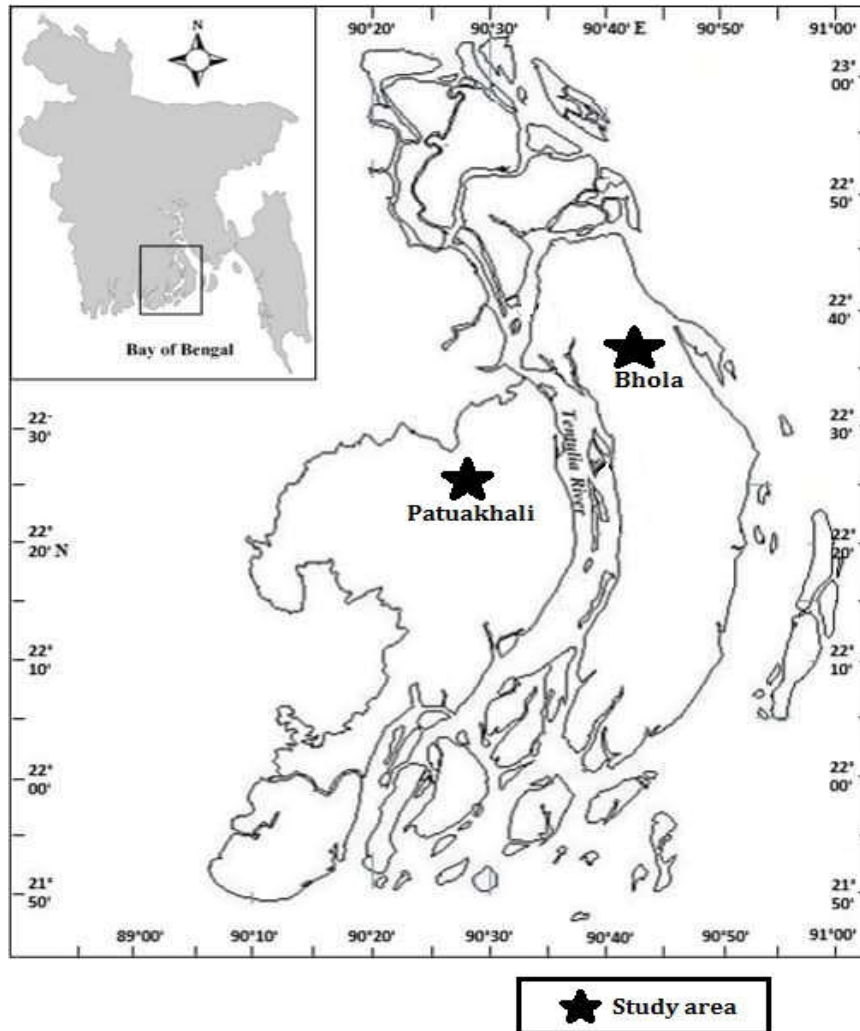


Figure 1 – Map showing the study area (indicating Bhola and Patuakhali district by star sign)

Data collection procedure. Data about species availability, market price, consumers' preferences and marketing channel of hilsa were collected by interviews and personal communication from the selected study areas. Interviews were conducted through face to face interview methods by using semi-structured open ended questions as well as Focus Group Discussions (FGD) with fishermen, market intermediaries and consumers. Cross-check Interviews (CI) were also conducted with key informants such as Upazila Fisheries Officer (UFO), District Fisheries Officers (DFO) and relevant GO and NGO officers and staffs.

Species identification. The species were identified with the help of standard taxonomic keys of Talwar and Jhingran, 1991; Rahman, 2005; Hossain *et al.*, 2007; Froese and Pauly, 2016.

Data processing and analysis. Data were processed and analyzed by using Microsoft Excel Software 2010 and SPSS 16.0.

RESULTS OF STUDY

Species availability of hilsa. There are 3 species were recorded from the study areas. Table 1 represent the available hilsa species in Bhola and Patuakhali district indentified during study period.

Table 1 – Availability of hilsa species in study areas

Sl. No.	EN ^a	SN ^b	Availability of hilsa species										
			Bhola				Patuakhali						
			MA ^c	A ^d	RA ^e	NA ^f	MA ^c	A ^d	RA ^e	NA ^f			
1.	Hilsa shad	<i>Tenualosa ilisha</i>	√					√					
2.	Toli shed	<i>Hilsa toli</i>	√					√					
3.	Keele shad	<i>Hilsa keele</i>			√					√			

a= English Name, b= Scientific Name, c= Mostly Available, d= Available, e= Rarely Available, f= Not Available.

Price of hilsa species at study period. The price of fish varied with availability, season, size and quality. Retailers also mentioned that price varied according to daily demand and supply of fish. Due to limited secondary data, it was difficult to do any proper price analysis but, nevertheless, a trend can be conducted for ranging the price of available hilsa fish species (Tables 2-3).

Table 2 – Price of different hilsa species in Bhola

Sp.	Wt. (Kg)	Price of hilsa species in different months (Tk/Kg)												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
<i>T. ilisha</i>	< ½	400	375	400	375	375	350	400	375	500	400	450	400	400
	½ -1	550	550	600	575	600	575	550	550	800	600	575	575	592
	>1	750	725	750	825	800	825	850	850	1000	800	800	800	815
<i>H. toli</i>	< ½	350	325	325	300	300	225	175	200	250	200	300	350	275
	½ -1	350	375	400	425	400	300	275	275	400	300	400	400	358
	>1	575	600	550	575	525	500	550	600	700	550	600	650	581
<i>H. keele</i>	< ½	375	350	325	350	300	275	350	325	400	350	325	350	340
	½ -1	425	425	400	375	400	425	475	450	500	450	425	450	433
	>1	500	500	475	500	475	500	600	550	700	600	700	650	563

Table 3 – Price of different hilsa species in Patuakhali

Sp.	Wt. (Kg)	Price of hilsa species in different months (Tk/Kg)												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
<i>T. ilisha</i>	< ½	550	550	525	550	500	525	500	500	600	550	600	550	542
	½ -1	775	750	750	725	750	725	700	700	1000	750	775	750	763
	>1	850	900	875	900	850	900	950	1000	1150	1000	1000	950	944
<i>H. toli</i>	< ½	275	300	300	275	300	275	250	300	400	350	325	350	308
	½ -1	450	475	450	450	425	450	400	400	550	500	500	450	458
	>1	675	650	650	625	650	650	700	700	800	700	725	750	690
<i>H. keele</i>	< ½	450	475	450	450	425	425	450	400	500	450	400	450	444
	½ -1	550	525	550	575	550	575	600	600	600	550	500	550	560
	>1	775	750	775	725	750	775	800	750	900	800	750	700	771

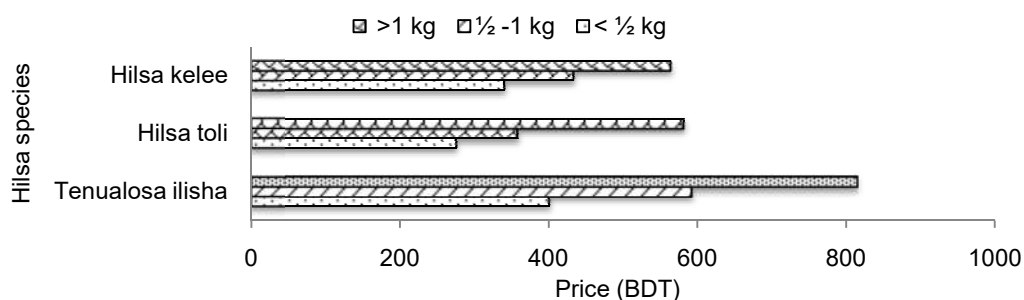


Figure 2 – Average Price (BDT) of different hilsa species in Bhola district

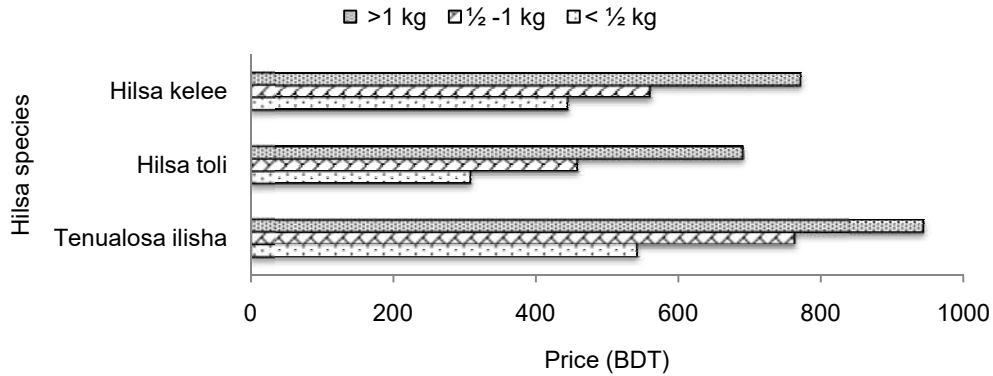


Figure 3 – Average Price (BDT) of different hilsa species in Patuakhali district

Socio-demographic characteristics of the sample. In this study, one hundred fifty respondents were interviewed with a structured questionnaire. Among them, half of the respondents were from Patuakhali district and rest half were from Bhola district. Several socio-demographic characteristics of the respondents is described below in Table 4.

Table 4 – Socio-demographic characteristics of the sample (% of respondents, n= 150)

Variable	%	Variable	%
Sex		Education level	
Male	53.7	Primary	27.5
Female	46.3	Secondary	37.8
Age		Tertiary	
21-30	22.5	Occupation	
31-40	45.6	Self employed	14.6
41-50	19.4	Private sector	32.9
>50	12.5	Government service	52.5
Marital status		Place of residence	
Single	23.8	Urban	36.8
Married	57.6	Semi-Urban	31.5
Separated / divorced	18.6	Rural	31.7

Consumers' preferences for different hilsa species. Purchasing capability of hilsa depends on the availability of species, price, taste of the species and income of the consumers. Preference also differs from area to area, person to person and species to species. Consumer's preferences for different hilsa species are shown below on a monthly basis (Fig. 4 & 5).

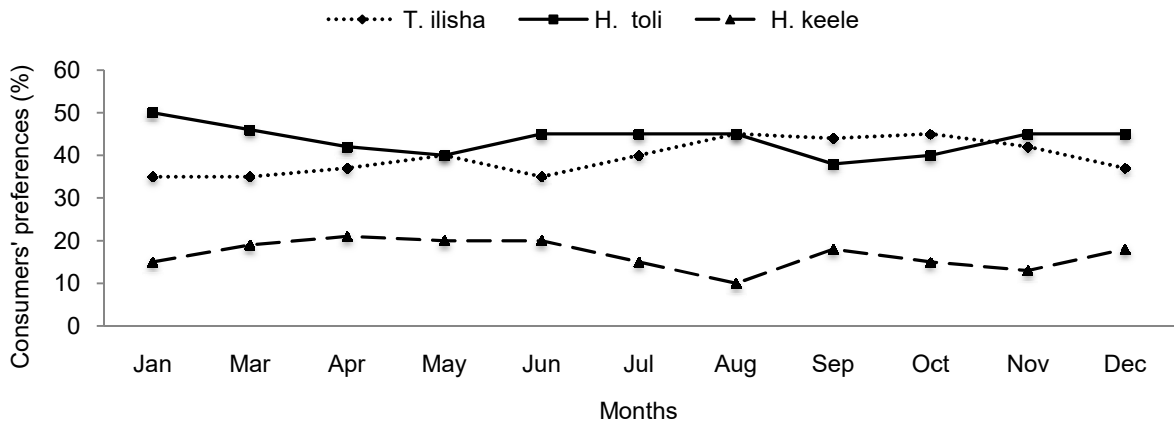


Figure 4 – Consumers' preferences for different hilsa species in Bhola district

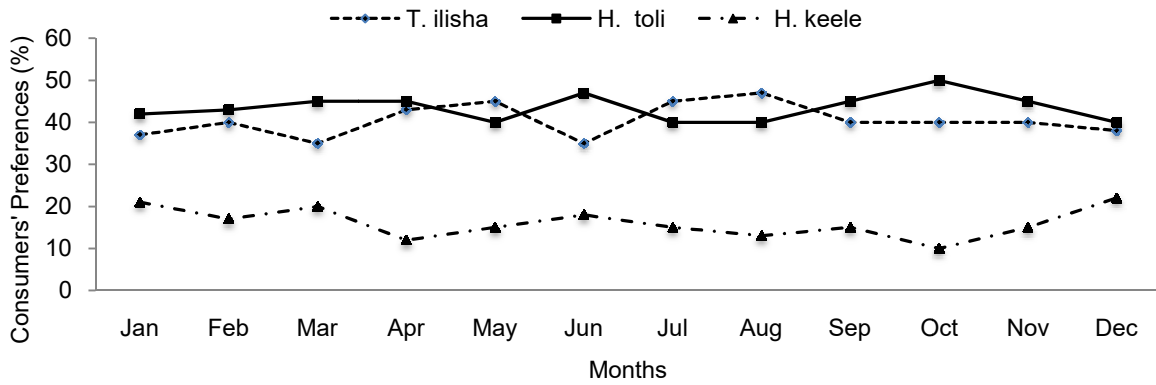


Figure 5 – Consumer’s preferences for different hilsa species in Patuakhali district

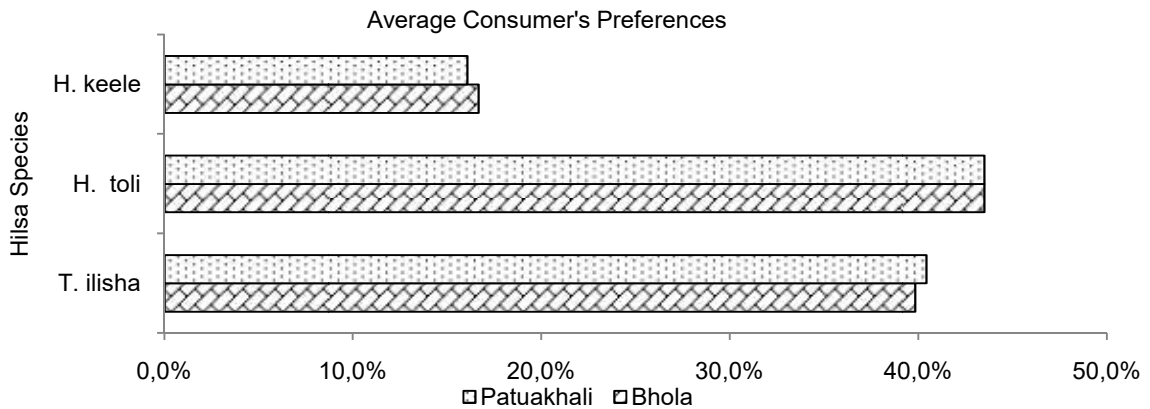


Figure 6 – Comparison of consumer’s preferences for different hilsa species of study area

Consumers’ hilsa consumption habits. Figure 7 presents consumers’ fish consumption habits described by where fish is consumed, how frequently fish is consumed and where fish is purchased.

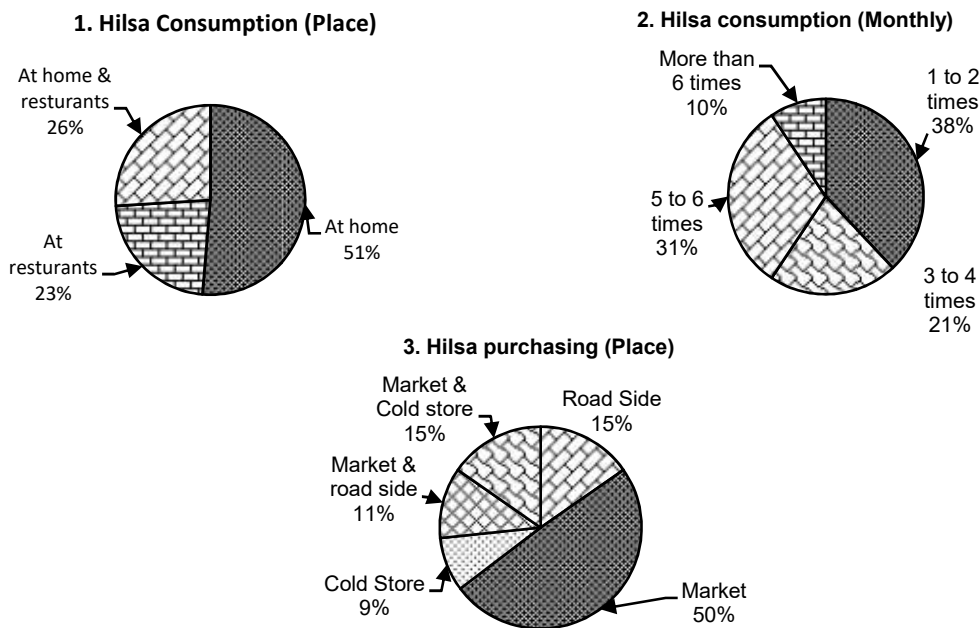


Figure 7 – Consumer’s habit for hilsa consumption and purchasing. (1) Hilsa consumption (Place); (2) Hilsa consumption (Frequency/month); (3) Hilsa purchasing (Place)

Consumers' hilsa purchasing behavior. The questionnaire also touched on the set of product attributes that were likely to have an influence on consumers' choice. To determine the most important factors that influence consumers' choice, consumers were asked to rate 6 product attributes – price, freshness, size, taste, source and safety. These product attributes were rated based on their level of importance prior to purchasing fish using a Likert scale ranging from 1 indicating strongly disagree to 5 indicating strongly agree. Product attributes were then ranked for their level of importance based on the number of consumers giving high scores (4-5) to each attribute.

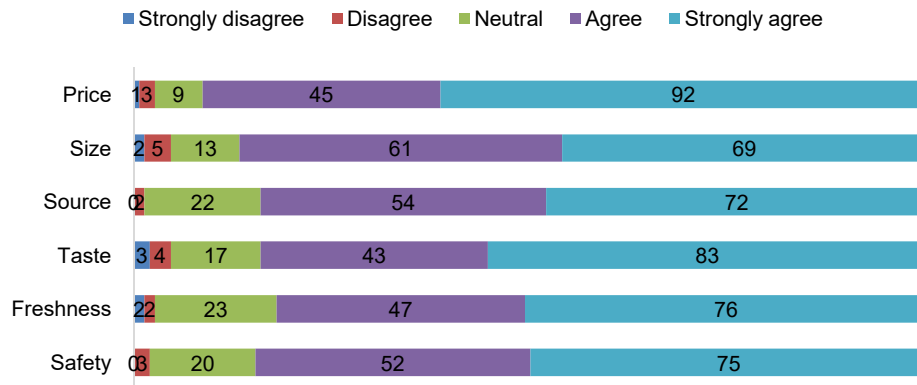


Figure 8 – Factors influencing consumers' hilsa purchasing behavior (%)

Distribution and marketing channel of hilsa. A number of middlemen are involved between hilsa fishermen and consumers in marketing system both in Bhola and Patuakhali district. The market chain from fishermen to consumers encircles mainly primary, secondary and retail markets, involving sales agents, wholesalers, suppliers and retailers (Fig. 7).

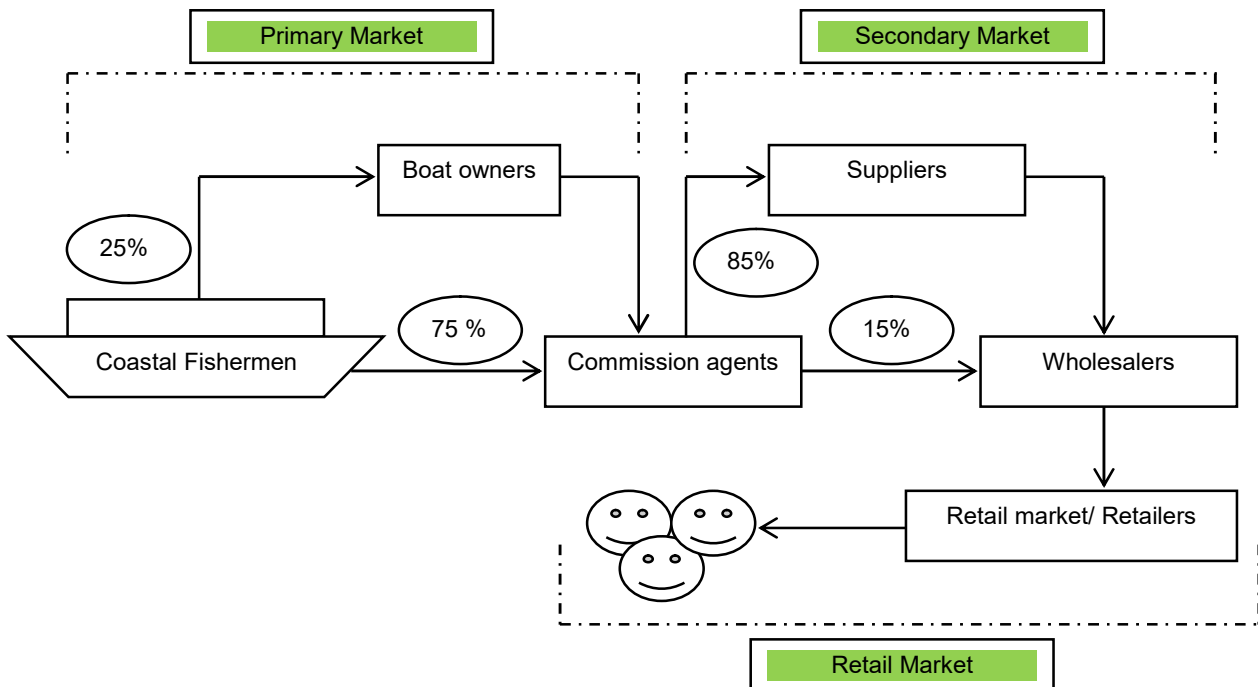


Figure 9 – Hilsa marketing channel from fishermen to consumers in Bhola and Patuakhali

Marketing constraints. In a word, facilities at fish markets are inconsiderable, with poor sanitation and hygiene. There are currently no norm practices for handling, washing, sorting, grading, cleaning and icing of fish. At the primary market level, the main constraints for

fishermen are a lack of market information and bargaining power. Political disturbances (i.e. strikes, road blocks, etc.) affect fish transportation as well as marketing. The marketing infrastructure, including ice, cold storage and transport facilities are fairly superfluous and unwholesome. Comparatively, wholesale markets have better facilities, but in general environment in primary and retail markets are far from favorable with regards to parking, stalls, spacing, sanitation, drainage and management.

DISCUSSION OF RESULTS

Species availability of hilsa. According to table.1, it was estimated that *Tenualosa ilisha* and *Hilsa toli* were mostly available hilsa species found in Bhola during study period. The other species *Hilsa keele* was rarely available and available in Bhola and Patuakhali district respectively. It is due to geographical location of Bhola. Among these three species availability was more or less same but exception was occurred in case of *H. keele*. It was found more in Patuakhali than Bhola.

Price of hilsa species. There was no previous information on literature about the price of hilsa and their purchasing capability in Bhola and Patuakhali district. So it is not possible to compare the present findings with previous one. However, price varied from species to species and district to district for any product especially for fish. Price of all hilsa species was found high in Patuakhali than Bhola (Tables 2 and 3). There are various reasons behind this problem. But the main reason behind this problem is the geographical location of Patuakhali district. There is no big river around Patuakhali district which is abundant with hilsa.

On the other hand, in Bhola there are two rivers named the Padma and Tatulia which is more abundant with hilsa than the small rivers around Patuakhali district. Sometimes considerable amount of hilsa were transported to Patuakhali from those district where hilsa was more available than Patuakhali. During transportation, it had to pass through a certain number of channel or intermediaries. As a result price of hilsa increased significantly in case of Patuakhali district. Fishermen of Bhola and Patuakhali also mentioned that hilsa fishing is profitable. Same finding was also observed in the river Meghna in Chandpur district (Sazzad, 1993). The present investigation revealed that price of different hilsa species differs from one another (Tables 2 & 3) significantly from month to month. Price variation depends on availability and consumer preference of the species. Among all available hilsa species *T. ilisha* and *H.toli* were the most available species of hilsa in both Bhola and Patuakhali district. But the price of *T.ilisha* was higher in all months in Bhola and Patuakhali than *H. toli* (Chandana ilish). It was because the taste of *T. ilisha* was more preferred by the consumers. Though the price was higher, it was found that consumer preferred *T. ilisha* much for its better taste than *H. toli*. The price of another species *H.keele* was found to be increased or decreased with the availability of them. Among all the species *T.ilisha* had the highest price and *H. toli* had the lowest price in all months.

According to Tables 2 & 3, it was estimated that the price of all hilsa species were more or less same in July and August. But the price of all species increased and decreased suddenly in September and October respectively. It was due to all types of fishing was prohibited in hilsa sanctuaries during 25 September to 5 October (DoF, 2015). At present Government banned Jatka fishing during November to January to increase the production of hilsa (DoF, 2013).

Consumer's preferences of hilsa. Hilsa is one of the most important tropical fishes of the Indo-Pacific region and has occupied a top position among the edible fishes owing to its taste, flavor and culinary properties (Nowsad *et al.*, 2012). Among the different species of hilsa consumer's preference depends on availability, size, flavor and more importantly on price. Purchasing capability is increased and decreased with the increased and decreased of income respectively. According to Figures 4 & 5, among those three available hilsa species *T. ilisha* and *H. toli* was more or less same accepted among the consumer of hilsa in both Bhola and Patuakhli district. For both Bhola and Patuakhali district *H. keele* was less accepted among the hilsa consumer.

Consumer acceptance of *T. ilisha*, *H. toli*, *H. keele* was 39.83%, 43.50%, 16.67% in Bhola and in Patuakhali it was 40.42%, 43.50%, 16.80% respectively (Fig. 6). It was estimated that consumer acceptance of *T. ilisha* was same in Bhola and Patuakhali district. In Bhola *T. ilisha* and *H. toli* in Patuakhali was more accepted hilsa species by the consumer. Though the price of *T. ilisha* was high but the consumer purchased it more due to its delicious taste. Consumer also purchased *H. toli* which is known as Chandana ilish for its availability and low price both in Bhola and Patuakhali district.

In September, the prices of all hilsa fish species were high compared to other months. It is due to all types of fishing was prohibited in Hilsa sanctuaries during last week of September and first week of October. Consumers purchasing capability also differed from September to October due to this reason. The price of all hilsa species remained more or less same in July and August. It was observed that the price of hilsa is higher than other fish species. Similar information was also found from the studied of fish availability and marketing system in shawrupkathi upazila, Pirojpur district, Bangladesh (Farzana, 2014).

Distribution and marketing channel of hilsa. Marketing channel includes the involvement of some intermediaries or middlemen through which transformation of hilsa take place from fishermen to consumer. Fishermen are the primary producers in the hilsa marketing systems. With a few exceptions, fishermen never directly communicate with the consumers. Presence of intermediaries has also been reported in Netrokona, Mymensingh and Gazipur district (Quddus, 1991; Mia, 1996; Rahman, 2003). In Bangladesh, fish marketing is almost exclusively preserved by the private sector where the livelihoods of a large number of people are associated with fish production and marketing systems (DFID, 1997). During the observation, it was found that the auctioneers get 3 to 5% commission by performing their activities. Aratdars also get 4 to 5% commission due to arrange auctioning activities and providing other facilities such as clean water supply, electricity, space, communication etc. which is called aratdary. Besides in some cases fishermen have to pay market tools that locally called khazna which vary from 5 to 10% depending on amount of sales (Fig. 9).

Hilsa market can be classified into 3 types; Primary market, Secondary market and retail market. In primary market, commission agents and boat owners get about 75% and 25% of hilsa respectively. But in secondary market commission agent sells their hilsa about 85% to the suppliers and only 15% to the wholesalers (Fig. 9). At last consumer gets hilsa from retail market or retailers. Similar result was found by (Neser, 2007).

Main problems of hilsa marketing were related to infrastructure, plant management and institutional management aspect. From the infrastructural problems lack of modern and hygienic landing centre; storage of adequate ice-plants with sufficient capacity, cold and freezer storage; lack of handling and preservation facilities; illiteracy, ignorance, lack of awareness of the fishermen etc. were the most severe. Similar fish marketing problems were found by (Mia, 1996; Parween *et al.*, 1996). Studies revealed very high level of post-harvest loss during pre-processing, processing, storage and transportation of fishery products (Nowsad, 2005).

RECOMMENDATIONS

Price of hilsa is very high due to various constrains such of transport cost, less availability compared to other fish species, long marketing chain, overfishing of immature hilsa locally named as "Jatka" in time of ban period, use of current jal etc.

GO and NGO should provide the necessary infrastructural, financial and technical assistance for the improvement of the livelihood of this fishing community.

Institutional credit system should be extended to the deserving fishermen on soft term basis.

By reducing the length of marketing channel, it will be possible to minimize the cost of transportation of hilsa from one district to another. Public awareness as well as fishermen awareness should be increased for catching of immature fish during ban period. It will maximize the production of hilsa and the price of hilsa will be low due to its availability.

The fishers do not have any alternate job opportunities during lean and ban fishing periods. Therefore, arrangement for alternate income generating activities should be made for the fishers during lean and ban fishing periods and also take step for sustainable fishing.

As well as public awareness is very much important in this case.

CONCLUSION

Fish is an important source of animal protein to the population of the South and South East Asian countries. Fish ranks second to rice as our staple diet and fisheries play the second important role next to agriculture in food production as well as in the country's economy. The contribution of fishery in the economy of Bangladesh and livelihood of her people is very important for creating job opportunities of unemployed people, earning foreign exchange, alleviating poverty and improving nutritional status of the people of Bangladesh. Instead of significance importance of fisheries sector, the fishermen had to lead subhuman life due to lack of awareness of sustainable fishing as well as poor income. Almost all fishermen mentioned lack of capital and lack of viable alternatives during banning period as their main problems. Government support to the affected fisher's community during ban period which quite insufficient and is not properly distributed. Urgent steps should be taken to provide alternate livelihood support to the hilsa fishers especially during ban and lean period.

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DOI <https://doi.org/10.18551/rjoas.2017-06.33>

**ANALYSIS OF THE INFLUENCE OF SERVICE QUALITY, SERVICE FAIRNESS
ON PUBLIC SATISFACTION AND TRUST: A STUDY ON THE USERS OF PUBLIC
SERVICES IN THE POPULATION AND CIVIL REGISTRATION DEPARTMENT
OF JAYAPURA CITY GOVERNMENT OF PAPUA PROVINCE**

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ABSTRACT

This research is to examine and prove empirically the influence of service quality and service fairness on public satisfaction and trust. This research is an explanatory research that aims to explain the causal relationship between the variables by using quantitative approach. The population of this research was all the public users or the public receiving services at the Department of Population and Civil Registration of Jayapura city government. The sampling was done by multiplying the number of variables with number 25. The analysis method used to answer the hypothesis in this research was GSCA (Generalized Structured Component Analysis). The results of the study showed that (1) the service quality and service fairness significantly influenced the public satisfaction, (2) the public satisfaction also had a significant influence on the public trust, (3) the service quality and (4) service fairness had no significant influence on the public trust, (5) The testing results of indirect relationship showed that the public satisfaction was significant as the mediation of the relationship between the service quality and public trust, and (6) the public satisfaction was the mediation of the relationship between the service fairness and public trust.

KEY WORDS

Service quality, service fairness, satisfaction, trust.

A qualified provision of public services is one of the obligations that must be conducted by a government, including the government of regency/city. The demand is increasingly enhanced by handing over a broader authority to the government of regency/city in line with the enactment of Law No.22 of 1999 on Local Government, which has been amended to be Law No.32 of 2004. The policy is much directed to develop a service system that is faster, more professional, accurate, and appropriate as well as prioritizing the protection of public civil rights in possession of the population documents. The enactment of Law No.21 of 2001 on Specialized Authonomy of Papua (*Otsus*) is merely the government policy in the framework of implementing a fair government and development, improving people's welfare, enforcing the law, respecting the protection of human rights, and reducing the gap between Papua Province and other regions.

There are five dimensions of bureaucracy to build a professional performance-based bureaucracy, that is: 1) institutionalization; 2) personnel device; 3) administration; 4) finance and equipment; and 5) management of government administration (Widodo, 2005). Furthermore, Ramli (2008) stated that the weakness of public service in Indonesia is not only on the consistency of SOPP (Standard Operational Procedure of Service) but also on the weak affirmation of SPM limit. The weakness of state administration generally involves the procedures and mechanisms of service that are convoluted, non-transparent, less

informative, less accommodative, and less consistent so as not to guarantee the certainty (in the terms of law, time, and cost) as well as still found many practices of illegal levies of some unscrupulous people who request liar compensations. The characteristics of government services that are largely monopolistic causing market competition have made the concern of public service managers on a qualified service provision become weak. According to Parasuraman *et al.* (1988), if the service received is in accordance with the expectation, then the service quality is perceived good and satisfying. In linear, if the service received exceeds the consumer expectation, the quality of service is perceived ideal. Otherwise, if the service received is lower than the expectation, the quality of service is perceived poor. Kotler (1997) added that consumer satisfaction is the level of one's feeling after comparing the performance or result of services to their expectations.

The fairness treatment received from the party who does an exchange also affects customer's satisfaction, loyalty, and purchase intention (Chiu *et al.*, 2009). This indicates that the buyer or the recipient of the service should obtain an appropriate service fairness, dealing just the same with one another. Distributive and procedural fairnesses influence the public trust in taking decisions (Folger and Konovsky, 1989). This suggests that public trust not only influences customer satisfaction but also customer trust. The Department of Population and Civil Registration of Jayapura City prior to 2012 has not provided good, transparent, professional services for the public, resulting in public dissatisfaction and decreased public trust to the state apparatus.

The research results of Zhu and Chen (2012), Wang and Mattila (2011), Consuegra *et al.* (2007), Guchait and Namasivayam (2012) indicated that there is a relation between service fairness and customer satisfaction. Conversely, the research results of Namkung and Jang (2010) showed that there are some dimensions of service fairness which have no relation to customer satisfaction and that there is an indirect relationship between service fairness and customer satisfaction. The various results of researches become a gap leading to re-examine the relationship between service fairness and customer satisfaction. Bigne and Blesa (2003) also conducted a research on the orientation, trust, and satisfaction of market. The result indicated that there is a significant relationship between satisfaction and trust.

Based on the background above, the statements of problem to be studied are as follows:

1. Does the quality of services significantly influence the users' satisfaction of public services in the Department of Population and Civil Registration of Jayapura city?
2. Does the fairness of services significantly influence the users' satisfaction of public services in the Department of Population and Civil Registration of Jayapura city?
3. Does the quality of services significantly influence the users' trust of public services in the Department of Population and Civil Registration of Jayapura city?
4. Does the fairness of services significantly influence the users' trust of public services in the Department of Population and Civil Registration of Jayapura city?
5. Does the users' satisfaction of public services significantly influence the users' trust of public services in the Department of Population and Civil Registration of Jayapura city?
6. Does the quality of services significantly influence the users' trust of public services in the Department of Population and Civil Registration of Jayapura city?
7. Does the fairness of services significantly influence the users' trust of public services in the Department of Population and Civil Registration of Jayapura city?

THEORETICAL REVIEW

Fitzsimmons and Fitzsimmons (2006) illustrated the role of services in economy sector as a complex phenomenon because the word of *service* itself has many meanings, ranging from '*service as a personal device*' to '*service as a product*'. Kotler (1997) defined *quality* as the totality of natures and characteristics of a product or service that is related to the ability to satisfy a stated or explicit need. The quality of service, according to Parasuraman *et al.* (1988), is built on the comparison of two main factors namely consumers' perceptions of the

services they receive/perceive (*perceived service*) and consumers' perceptions of the services they really expect/want (*expected service*). Parasuraman *et al.* (1985) conducted a specific research on some several types of service industries.

From that research, it was found that there are 10 main factors determining the quality of service, namely *access, communication, competence, courtesy, credibility, reliability, responsiveness, security, understanding, and tangibles*. Lind and Tyler (1988), Cohen Charash and Spector (2001), Greenberg (1993) stated that service fairness has four dimensions, including distributive, procedural, interpersonal and information fairnesses. Customer satisfaction is the overall goal of an organization (Winer, 2001). This indicates that customer satisfaction becomes the center of attention for an organization, particularly related to direct service provision to the customer. Seiders and Berry (1998) stated that service fairness is a necessary condition to generate the customer trust. Moreover, Singh and Sirdeshmukh (2000) revealed that consumers prefer to transact with service providers they trust the most and with whom they share an understanding of the obligation organizing their relationship. In addition, Cronin and Taylor (2000) argued that satisfaction is known as a thing closely related to "value" and "price" while quality service does not always depend on value and price.

THE CONCEPTUAL FRAMEWORK

The public perceptions on the uniformity of services received from service providers are the demands from the public to obtain an equal treatment (Chebata and Slusarczyk, 2005). The less appropriate treatment (fairness) from service providers is the main factor resulting in customer complaints (Ambrose *et al.*, 2007), indicating that an individual basically will feel comfortable if he gets similar services to others. Based on the theory of Equity, Carr (2007) formulated and proposed a dimension of service fairness called as FAIRSERV to evaluate the service provided by service providers to customers. Service fairness is an effort made by service providers to provide similar services to customers. Trust is an overall evaluation at a higher level of satisfaction, and satisfaction is actually an important source of trust (Ravald and Gronroos, 1996).

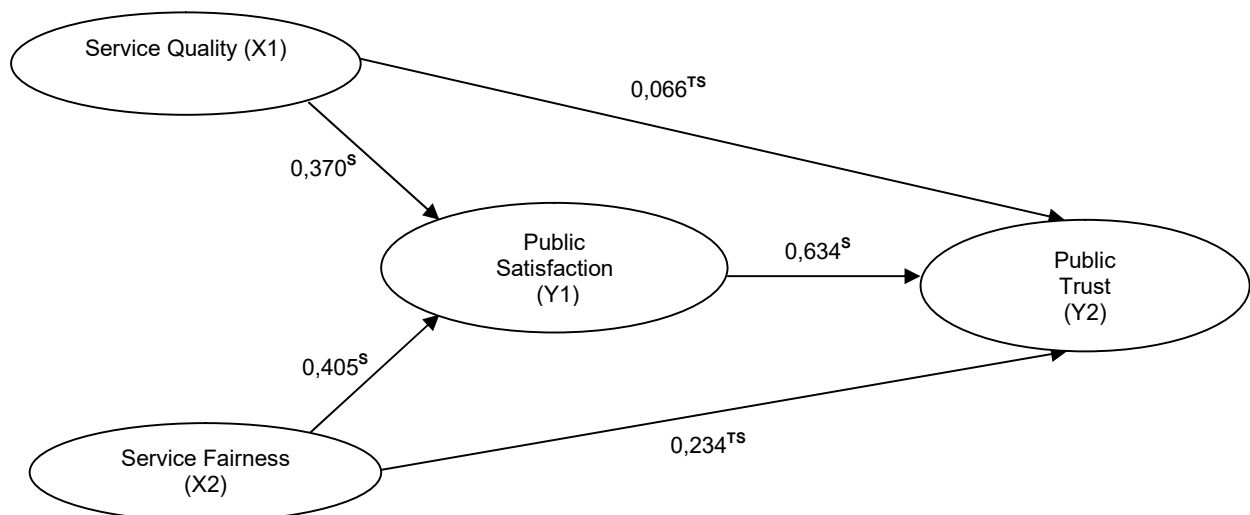


Figure 1 – The Conceptual Framework of Research

METHODS OF RESEARCH

Based on the research objectives that have been mentioned in the previous, this research belongs to an explanatory research. The research examined the hypothesis between the hypothesized variables with the aim to justify or reinforce the hypothesis and determine the nature of the relationship between the dependent variables and the

independent variables (Wiyono, 2011). The research was conducted at the Department of Population and Civil Registration of Jayapura City Government of Papua Province. The population of this research was all the public users or the public receiving services at the Department of Population and Civil Registration of Jayapura city government. The sampling was done by multiplying the number of variables with number 25.

The data analysis method used in this research was GSCA (*Generalized Structured Component Analysis*). The hypothesis testing on the mediation variables was conducted by using *Sobel Test* procedure. Sobel Test is concerned with testing the significance of the path coefficients of indirect effects.

RESULTS AND DISCUSSION

The better service quality will improve the users' satisfaction of services. The results of GSCA obtained a path coefficient of 0,370 and $p\text{-value} = 0,007$ (significant), thus the hypothesis is accepted. It indicates that the increased service quality can improve the service users satisfaction at the Department of Population and Civil Registration of Jayapura City Government of Papua Province. The indicators of service quality used in this research were obtained from the concept of service quality modified by Johnson (1998), Gronroos (1990), Parasuraman *et al.* (1985), consisting of: a) Access; b) Reliability; c) Responsiveness; d) Facilities; e) Convenience. The use of these indicators was based on the consideration that the Population and Civil Registration Department of Jayapura City Government of Papua Province is an organization that provides public services and not profit oriented.

The increased service fairness will improve the users' satisfaction of services. The results of GSCA obtained a path coefficient of 0,405 and $p\text{-value} = 0,006$ (significant), thus the hypothesis is accepted. This research results support the research conducted by Zhu and Chen (2012) stating that service fairness significantly has a positive correlation to users' satisfaction. Furthermore, service fairness has an important role in increasing the satisfaction of public service users in the Population and Civil Registration Department of Jayapura City Government of Papua Province.

The better service quality will also improve the users' trust of services. The results of GSCA obtained a path coefficient of 0,066 and $p\text{-value} = 0,511$ (not significant), thus the hypothesis is rejected. The research results do not support the previous research proposed by Chenet (2010) stating that service quality is positively correlated to users' trust. Similarly, Sultan and Wong (2013) stated that service quality has a positive relationship to satisfaction and trust. But, the quality of services provided by the Population and Civil Registration Department of Jayapura City Government of Papua Province did not directly influence the public trust, including consistency, competency, honesty, fairness, responsibility, help, and kindness.

The better service fairness will also increase the users' trust of services. The results of GSCA obtained a path coefficient of 0,234 and $p\text{-value} = 0,067$ (not significant), thus the hypothesis is rejected. These results suggest that the service fairness provided by the Population and Civil Registration Department of Jayapura City Government of Papua Province can not increase the public/users' trust. These research results do not support the research conducted by Herman *et al.* (2007) stating that price fairness positively correlates to public/users' satisfaction. Furthermore, Zhu and Chen (2012) argued that service fairness has a positive correlation to public/users' trust.

The increased service users satisfaction will also improve the users' trust of services. The results of GSCA obtained a path coefficient of 0,634 and $p\text{-value} = 0,000$ (significant), thus the hypothesis is accepted. Consumers satisfaction is the feeling of a person after comparing the performance or the result of services they receive to their expectations (Kotler, 2001). The indicators used to measure consumers/users' satisfaction in this research included: a) interaction, b) cost, c) security, d) office facilities; e) officers appearance; f) officers support. The use of these indicators was in accordance with the conditions existing on the subject of this research, namely the Population and Civil Registration Department of Jayapura City Government of Papua Province.

In the Sobel Test, the public satisfaction as the mediation of the effect of service quality on public trust obtained a *p-value* of 0,024 (significant), while the service users satisfaction as the mediation of the effect of service fairness on public trust obtained a *p-value* of 0,057 (significant).

CONCLUSION AND SUGGESTIONS

From the research, it can be concluded as follows:

The research results show that the service quality is able to give an impact to the public satisfaction, but it does not influence the public trust.

The service fairness can generate the public trust through the increased users' satisfaction of public services at the Population and Civil Registration Department of Jayapura City Government of Papua Province.

The society has a high level of satisfaction in administering their documents of population and civil registration to the Population and Civil Registration Department of Jayapura City Government of Papua Province.

The public trust is the willingness of the society to rely the services of population and civil registration on the Population and Civil Registration Department of Jayapura City Government of Papua Province.

Based on the results of the research, several suggestions can be made as follows:

The aspects needed to immediately be concerned on is the existing facilities at the Population and Civil Registration Department of Jayapura City Government of Papua Province.

The improvements needed to be conducted are related to the systematic fairness in which the officers are not always in the place they should be. The improvements need to be done by imposing a work rotation so that the employees do not feel bored in carrying out the tasks.

The increased interaction of the officers can be performed by providing a continuous training so that the quality of the employees in providing services to the society can well proceed.

RESEARCH LIMITATION

The selection of the respondents of this research used a convenience sampling. That was, the respondents were the society who came for administering their documents of population and civil registration. Thus, it could not be denied that the answers obtained from the respondents were less consistent.

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DOI <https://doi.org/10.18551/rjoas.2017-06.34>

**НАПРАВЛЕНИЯ ФОРМИРОВАНИЯ КОНКУРЕНТНОЙ СТРАТЕГИИ
ПРЕДПРИЯТИЙ НА РЫНКЕ РЫБНОЙ ПРОДУКЦИИ**
DIRECTIONS FOR DEVELOPMENT OF COMPETITIVE STRATEGY
FOR THE ENTERPRISES ON THE FISH PRODUCTS' MARKET

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АННОТАЦИЯ

В статье проведен анализ динамики развития и структуры международного рынка рыбной продукции. Выявлены страны-лидеры в производстве и в международной поставке рыбной продукции. Рассмотрены факторы, влияющие на формирование конкурентного поведения предприятий рыбного рынка Дальнего Востока. Научная новизна исследования заключается в разработке и систематизации направлений конкурентной стратегии предприятий на рынке рыбной продукции, необходимых для обеспечения предприятия конкурентными преимуществами.

ABSTRACT

The article analyzes the dynamics of development and structure of the international market of fish products. Leading countries have been identified in the production and international supply of fish products. Factors affecting the formation of competitive behavior of enterprises of the fish market of the Far East are considered. The scientific novelty of the research is to develop and systemize the directions of the competitive strategy of enterprises in the fish products market, which are necessary to provide the enterprise with competitive advantages.

КЛЮЧЕВЫЕ СЛОВА

Конкурентная стратегия, конкурентное поведение, рынок рыбной продукции, рыбохозяйственная деятельность, импорт и экспорт рыбных товаров.

KEY WORDS

Competitive strategy, competitive behavior, fish products market, fisheries activity, import and export of fish products.

В научных и методических разработках понятие конкурентного поведения активно используется в анализе теоретической и практической проблематики совершенствования управления субъектов хозяйствования на различных уровнях управления. Прагматический аспект любого понятия определяется, прежде всего тем, насколько его содержание, набор существенных признаков могут быть использованы как основа при разработке методов и средств решения практических задач управления и экономики. Вопросам управления конкурентоспособности продукции и ее производителя посвящены многочисленные научные труды отечественных и зарубежных авторов. Большой научный вклад в решение проблем конкурентоспособности сделали Й. Шумпетер [20], Друкер П. [2], Ж. -Ж. Ламбен, М. Портер [13-14], Э. Райхман Б. Базилевич[3], С. Мочерный[10], С.В. В. Герасимчук, А. Запунний, А. Кузьмин, Е. Крикавский, П. Перерва, И. Петрович, Я. Плоткин, А. Старостина, Ф. Хмель, В. Шинкаренко, Е. Голубков, Г. Азгальдов, Г. Багиев, Б. Берман, А. Гличев, П. Завьялов, Б. Карлофф, и другие. Процессы интеграционного взаимодействия рыбохозяйственных предпринимательских структур широко представлены в трудах О. Ворожбит [4-5], А. Латкина [8], О. Корнейко, Е. Носкова.

МЕТОДЫ ИССЛЕДОВАНИЙ

Работы этих экономистов, в которых определялись методы и условия обеспечения конкурентоспособности продукции и предприятия является научно-теоретической основой для углубления исследований. В статье использованы методы: научной абстракции, позволяющий, выявить сущность конкурентной стратегии как экономического явления; методы анализа и синтеза, которые были использованы при рассмотрении и выявлении факторов, влияющих на конкурентное поведение, а также раскрытии связей между элементами, их взаимодействие, противоречия в поведении предприятий, функционирующих на рынке рыбной продукции; методы количественной и качественной оценки, графический метод - при анализе структуры и динамики развития рынка рыбной продукции.

РЕЗУЛЬТАТЫ И ИХ ОБСУЖДЕНИЕ

Рассмотрение существующих концепций стратегии позволяет выделить несколько подходов к определению сущности конкурентной стратегии. Классическим подходом к определению стратегии является ее отождествление со средством достижения целей предприятия. Он основан на том, что формулировка стратегических целей предприятия неразрывно связана с разработкой путей их достижения и поэтому в данном понимании стратегия определяется как план или модель действий. Так А. Чандлер рассматривал стратегию как определение основных долгосрочных целей и ориентиров предприятия, определение курса действий и распределение ресурсов, необходимых для их достижения. При этом основным процессом в выборе и разработке стратегии он определял рациональное планирование [6].

Другим концептуальным подходом является понимание стратегии как набора правил принятия решений. Он связан с дальнейшими исследованиями в этой области таких ученых как Г. Минцберг, И. Ансофф, М. Портер[1].

Так, М. Портер, используя идею цепочки ценностей, предлагал стратегию рассматривать как анализ внутренних процессов и взаимодействий между различными составляющими организации для того чтобы определить, как и где добавляется ценность. При этом стратегия - это позиционирование организации в рамках отраслевого среды [13].

Под конкурентной стратегией в широком смысле понимают совокупность последовательных решений, подходов и взглядов на проблему конкурентоспособности, определяющих концептуальные модели и схемы теоретического понимания и прикладного применения. Управление конкурентоспособностью предприятия необходимо считать тем комплексным и системным направлением формирования стратегии, которая обеспечивает потенциал развития предприятия и реализации конкурентных преимуществ предприятия на рынке.

Система управления конкурентоспособностью представляет собой политику предприятия, которая состоит из ряда мероприятий по планированию, организации и контролю системы производства, реализации продукции, и включает систему эффективного управления ресурсами используемых для достижения целей стратегического планирования, управление затратами и доходами предприятия, обеспечения улучшения продукции и требований заказчиков. Системный подход в управлении конкурентоспособностью реализуется через формирование и обеспечение эффективного функционирования системы управления конкурентными преимуществами, которая реализуется совокупностью взаимосвязанных и взаимодействующих элементов, для направления и контроля деятельности организации по конкурентоспособности.

Разработка и формирование стратегии полно отражает особенности функционирования предприятия в динамичных условиях рыночной среды, позволяет оценить степень достижения, сохранения и увеличения конкурентных преимуществ

объекта управления. Конкурентные преимущества компании - это высокая компетентность предприятия в определенной сфере, что позволяет достигать стратегические цели деятельности. Стратегия по формированию конкурентоспособности предприятия представляет собой список действий, который осуществляет компания для получения более высокой прибыли, чем конкуренты [9].

Благодаря эффективной конкурентной стратегии компания привлекает потребителей более быстро, несет более низкие затраты на привлечение и удержание клиентов, получает более высокую норму рентабельности (маржинальности) с продаж.

Согласно модели Портера, выделяются 4 вида базовых конкурентных стратегий в отрасли. Выбор типа конкурентной стратегии зависит от возможностей, ресурсов и амбиций компании на рынке. Преимущественно, компании выбирают стратегии, базирующиеся на снижении издержек и дифференциации продукции для снижения рисков потерь [18].

Таблица 1 – Тип конкурентной стратегии

Тип конкурентной стратегии на основе конкурентных преимуществ	
Лидерство в издержках	Лидерство в продукте
Фокус на издержках	Фокус на дифференциацию

Тип конкурентного преимущества может быть двух вариантов: низкая стоимость товара (или высокая рентабельность продукции) или широкое разнообразие ассортимента. Конкурентоспособными следует считать те экономические объекты, обладающие высоким уровнем конкурентных преимуществ и высокой степенью их эффективного использования.

Конкурентные преимущества должны быть значительными относительно других участников рынка, устойчивыми к изменениям внешней среды, заметными для покупателей, влиятельными на результаты деятельности предприятия. На конкурентные преимущества предприятия влияют: структура стратегического потенциала; возможности расширения ресурсов предприятия; особенности отрасли и национальной экономики, в общем, и тому подобное. Конкурентные преимущества формируются в результате выбора целевого товарного рынка, идентификации конкурентов, определение стратегических активов и компетенции предприятия, обоснование методов и способов конкурентной борьбы. В случае завоевания конкурентного преимущества главное значение принадлежит самому предприятию, конкурентам и клиентам. Можно наблюдать рост важности трансформации внутренних ресурсов и возможностей предприятия преимущества, которые четко идентифицируют потребители. Все данные теоретические выкладки применимы для рынка рыбной отрасли промышленности [12].

Рынок рыбной продукции является в достаточной степени динамично растущим среди всех сегментов продовольственного рынка России. Однако темпы его развития не позволяют свидетельствовать о насыщении и удовлетворении спроса на данную продукцию по региону, а также возможностям экспортных направлений. Данное обстоятельство объясняет значительный интерес к динамике развития данного рынка достаточно большого количества действующих субъектов как со стороны коммерческих предприятий, научно-исследовательских институтов, так и со стороны государства [16].

Приморский край обладает одним из крупнейших комплексов рыбохозяйственной деятельности в системе рыбной промышленности России. В данном секторе насчитывается около 400 рыболовческих компаний, которые ведут промысел водных биологических ресурсов в море, в пресноводных водоемах. Результаты анализа социально-экономических показателей рыбохозяйственного комплекса позволяют сделать вывод, что потребление рыбопродуктов прямо пропорционально производству данной продукции.

По оценкам продовольственной и сельскохозяйственной организации ООН (FAO), зарегистрированный экспертами ежегодный уровень потребления рыбы на душу

населения выше 20 кг. Рекомендуемая Российской академией медицинских наук физиологическая норма потребления рыбы и рыбных продуктов – 24 килограмма в год на человека. Поэтому показателю потребление в нашей стране еще не соответствует норме: в целом по РФ в 2015 году оно не превысило 19 килограммов на человека. [7].

Больше всего рыбы потребляют жители дальневосточных регионов, в рационе которых она исторически играет большую роль, что во многом объясняется близостью мировых океанов, богатых ресурсами. Так, в Чукотском автономном округе среднедушевое потребление рыбы достигло 60 килограммов на человека в год, а в Сахалинской области и Хабаровском крае – соответственно, 34 и 33 килограммов. В Москве в среднем каждый житель за год съедает 30 килограммов всевозможной рыбной продукции, а в Санкт-Петербурге – 18 килограммов.

Рыбная продукция составляет один процент всей мировой международной торговли в стоимостном выражении и более 9% глобального сельскохозяйственного экспорта. В мире многие государства занимаются производством и реализацией продукции рыбного хозяйства. Среди мировых лидеров следует отметить двадцать государств-лидеров по объему экспорта

В общей сложности, эти 20 стран предоставили более двух третей (71,3%) мирового экспорта в течение 2016 года. Объемы мирового экспорта рыбной продукции представлены на рисунке 1.

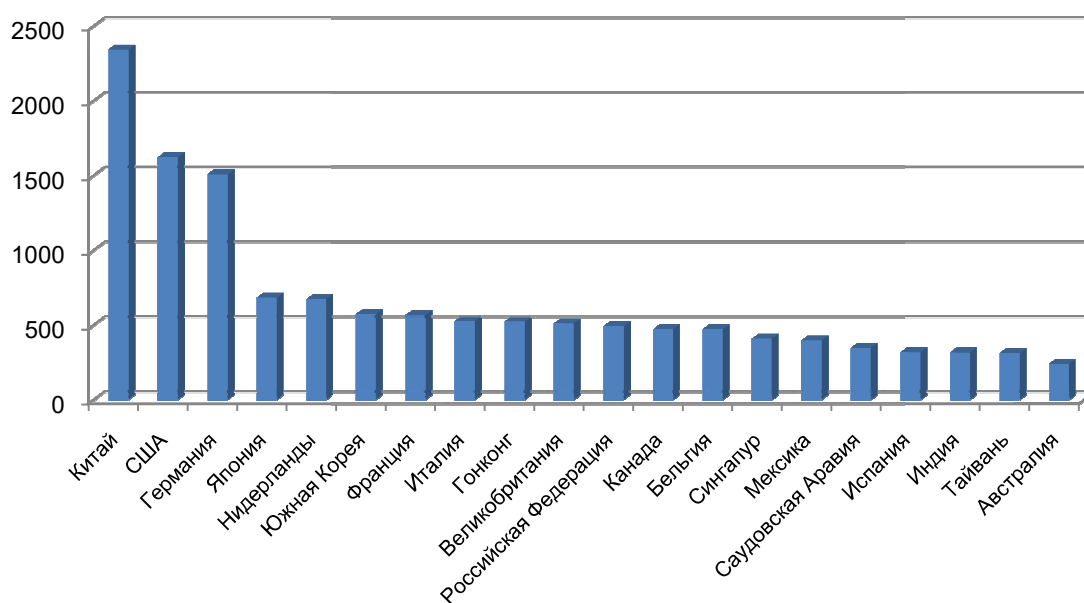


Рисунок 1 – Объем мирового экспорта рыбной продукции млрд. долларов, 2016 г. [15]

Согласно анализу исследователей Стокгольмского Университета, 10-15% мирового рынка добычи морской продукции контролируется всего тринадцатью крупными компаниями, деятельность которых оказывает непосредственное влияние на принятие отдельными правительствами и региональными организациями решений в сфере рыболовства и аквакультуры. Данные компании представляют собой холдинги, доминирующие во всех сегментах производства морепродуктов. Их работа развивается через обширную глобальную сеть дочерних предприятий и международных представительств, компаний.

Среди 20 ведущих экспортеров, пять увеличили свои значения экспорта на 30% или более по сравнению с 2015 с 2010г: Китай (до 48,5%); Индия (до 44,1%); Саудовская Аравия (до 38,9%); Мексика (до 33,3%); и Гонконг (до 30,8%). Только Япония уменьшила объем экспорта на 11,2% по сравнению с 2010 годом.

Таблица 1 – Компании-лидеры на рынке производства рыбной продукции [11]

Компании	Количество подразделений	Представительства в странах
Maruha Nichiro (базируется в Токио)	174	65
Nippon Suisan Kaisha (Nissui, Токио)	103	32
Kyokuyo (Токио)	26	15
Thai Union Frozen Products (Бангкок)	48	18
Charoen Pokphand Foods (Бангкок)	123	36
Marine Harvest (Осло)	108	25
Austevoll Seafood (Осло)	82	22
Dongwon Industries (Сеул)	25	10
Skretting (Норвегия)	16	30
Pescanova (Испания)	105	27
Pacific Andes International Holdings (Гонконг)	122	36
Ewos (Норвегия)	14	9
Trident Seafood (США)	6	4

Годовой оборот предприятий рыбной индустрии по финансовой отчетности полного круга компаний в 2014 году увеличился за год на 17,8%. Данный факт свидетельствует о реальном росте выручки компаний и благоприятной конъюнктуре продаж. По итогам 2015 года, в России было на 4,8% выше уровня 2014 года. Несмотря на гео-политические сложности в российской экономике, наблюдается достаточно существенное увеличение отраслевых показателей. Увеличение объемов внутреннего производства обусловлено главным образом ответными санкциями (запрет на поставку рыбной продукции из ЕС, Норвегии и Канады – традиционных рынков) и девальвацией рубля, что привело к значительному подорожанию привозной продукции.

Среди рыболовецких компаний, занимающих лидирующие позиции на российском рынке, можно выделить: Рыбопромышленный холдинг «Карат» (г. Мурманск), ООО «Русская рыбопромышленная компания» (Москва). В ряду крупнейших предприятий российской рыбной индустрии также необходимо отметить ЗАО «Балтийский берег» (Санкт-Петербург), ОАО «ПКП «Меридиан» (Москва), ПАО «Океанрыбфлот» (г. Владивосток), ЗАО «Русская рыбная компания» (Москва), входящее в структуру Группы «Русское море». На данный момент в состав РРПК входят крупные дальневосточные добывающие компании - ОАО «ТУРНИФ» (Тихоокеанское управление промысловой разведки и научно-исследовательского флота), ЗАО «ИНТРАРОС», ООО «Востокрыбпром» и ООО «Совгаваньрыба» ведущие промысел в экологически чистых морях Дальневосточного бассейна [10].

По приморскому краю функционируют более мелких десятка компаний,. Среди них: ООО «Дальвест», ООО «Дальрыбпром», ООО «Кроверк», ООО «СиГал», ООО «Софко», ЗАО «Интарос», ОАО «НБАМР», ООО «Ролиз», ОАО «Турниф» и АДМ[11].

Производство рыбной продукции в Приморском крае за период 2012 – 2015 гг. значительно сократилось, что свидетельствует о ряде непреодолимых на сегодняшний день сложностей в конкурентной среде предприятий рыбной отрасли производства и торговли, несмотря на реализуемую программу свободного порта «Владивосток».

Начиная с 2013 года, наблюдается падение промышленного производства рыбной продукции. Наличие указанных выше проблем подтверждается динамикой производства продукции рыболовства, которая отражена на рисунке 2.

Анализ уровня цен свидетельствует, что на розничном рынке они значительно выше, чем у производителей. Ориентация преимущественно на зарубежного покупателя обуславливает достаточно высокие цены на рыбную продукцию на внутреннем рынке, так как цены для отечественного рынка выставляются практически на том же уровне, что и для экспорта. Все это приводит к снижению внутреннего спроса и ставит в крайние сложные условия отечественную отрасль рыбной переработки. Переработчикам рыбы приходится сокращать производство в связи с падением спроса, а это, в свою очередь еще больше усложняет ситуацию – себестоимость

продукции существенно увеличивается, а рентабельность снижается. Аналогичная картина наблюдается и в других сегментах рыбной продукции.

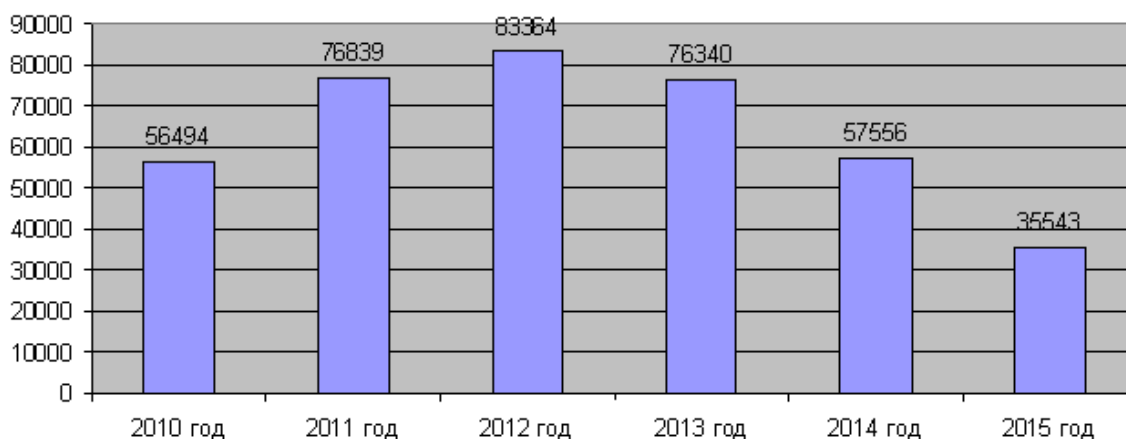


Рисунок 2 – Производство свежей, живой и охлажденной рыбы в Приморском крае (тонн)

Таблица 2 – Динамика цен рыбной продукции [9]

Рыбная продукция	Цена январь 2015 г., руб.	Цена, январь 2016 г., руб.	Прирост цен, %
Икра рыб (лососевых), кг.	2856	3036	6,3
Деликатесные продукты из рыбы (соленые и копченые), кг.	1274	1343	5,5
Рыба охлажденная и мороженая лососевых пород, кг	501	535	6,7
Филе рыбное, кг.	262	285	8,8
Рыба охлажденная и мороженая (кроме лососевых пород), кг	181	194	7,1

Цена рыбы соленой, маринованной и копченой составила 359 рублей за килограмм (+9,8%), филе рыбного – 285 рублей за килограмм (+8,8%), живой и охлажденной рыбы – 185 рублей за килограмм (+12,2%), рыбных пресервов – 142 рубля за 350 граммов (+15,5%), рыбных консервов натуральных – 97 рублей за 350 граммов (+22%). Очевидно, что ускорение инфляционных процессов в экономике в конце 2014-го – начале 2015 года затронуло и рынок рыбопродуктов, причем в большей степени, нежели чем другие товарные рынки, что показывает зависимость этого сегмента экономики от импортного сырья и оборудования, что отражается на конечной себестоимости продукции.

Среди основных стран, в которые в 2015 году осуществлялись поставки российской рыбной продукции, были: Китай, Республика Корея, Нидерланды, Япония и Беларусь. На пять государств в сумме приходится 94% общего объема поставок. Если сравнить данные 2013-го и 2016 годов, то можно отметить значительное падение экспорта рыбы в Республику Корею – на 27,6%, а вот в Японию, напротив, поставки увеличились на 14,3%. Импортная рыбная продукция идет в основном из таких государств и территорий, как: Фарерские острова, Чили, Китай, Белоруссия и Исландия. На долю государств пришлось 70,5% всего объема импорта в натуральном выражении.

Интересен факт попадания Беларуси в число стран – основных импортеров, причем поставки рыбы из этой страны в 2015 году в сравнении с 2013-м увеличились на 90% при отсутствии там морей. Очевидно, что европейские производители, попавшие под ответное эмбарго, поставляют рыбную продукцию через соседнее государство. Норвегия, которая до санкций занимала лидирующее положение по импорту рыбы в РФ, сократила свои поставки практически до нуля (-99,9%, 0,4 тысячи тонн), тогда как в 2013 году на отечественный рынок из этой страны было поставлено 286,2 тысячи тонн. Доля экспорта рыбы сушеной, соленой или в рассоле, а также рыбы

копченной составляла 0,4%, а доля рыбы свежей или охлажденной, за исключением рыбного филе – 0,1%.

Оборот организаций с основным видом деятельности «Рыболовство» в феврале 2017г. составил 20,3 млрд. рублей, что в действующих ценах на 11,9% меньше, чем в соответствующем периоде предыдущего года, в январе-феврале 2017г. - на 4,5% меньше.

Таблица 3 – Рыба и прочая продукция рыболовства [15]

п/п	февраль 2017г., тыс. тонн	февраль 2017г. в % к февралю 2016г.
Рыба морская живая	12,1	72,2
Рыба морская свежая или охлажденная	47,0	140,2
Ракообразные немороженные	2,4	136,3
Рыба пресноводная живая	1,6	103,8
Рыба пресноводная свежая или охлажденная	2,2	115,9

По объемам производства в 2017 году, следует отметить рост рыбной продукции в целом по основным направлениям, кроме направления «рыба морская живая». Спад с аналогичным прошлогодним периодом составил 28,8%. При этом наблюдается значительный прирост по объемам рыбы морской свежей и охлажденной к аналогичному прошлогоднему периоду - на 40,2%, немороженной ракообразной продукции – на 36,3 %, что свидетельствует о повышении эффективности применения технологий охлаждения, которые способствуют продлеваю срока годности продукции и, соответственно, росту объемов сбыта.

Анализ мирового рынка рыбной продукции и торговли свидетельствует о существенных изменениях в структуре рынка и объемах реализации. Лидерами на рынке остаются прежние государства – Китай, США, Япония, Южная Корея. Россия состоит в десятке лидеров, хотя положение и возможности ограничены санкциями в торговых соглашениях и объемах сбыта рыбной продукции.

Предприятия Дальнего Востока, несмотря на близость стран-лидеров по добыче и переработке рыбной продукции, настойчиво расширяют собственные позиции на рынке, расширяя границы регионального рынка.

По результатам анализа проведенного центром маркетинговых исследований экономического института Тихоокеанского государственного экономического университета, были выявлены следующие особенности конкурентного поведения субъектов рынка Приморского края: соотношение численности работающих, между управленческим и производственным персоналом предприятия можно охарактеризовать как 30 и 70%; приморские рыбодобывающие предприятия реализуют рыбную продукцию в основном в замороженном виде; в основном рыбодобывающие предприятия реализуют свою продукцию на рынки других регионов России и за рубеж. Наименьшая доля продукции реализуется на рынке г. Владивостока; наиболее распространенным каналом сбыта рыбной продукции для предприятий Приморского края является оптовая торговля, лишь незначительная доля предприятий используют дополнительно и другие каналы сбыта, в основном - розница и только некоторые крупные производители имеют собственную фирменную сеть [4].

Руководители предприятий выделяют основные факторы, усиливающие конкуренцию на рынках сбыта рыбной продукции: сокращение платежеспособного спроса на внутреннем рынке, увеличение влияния на рынок сбыта иностранных производителей, низкие цены импортных товаров, рост объемов импорта, что свою очередь влечет сдерживание цен российскими производителями.

Наиболее распространенными мерами, принимаемыми для повышения конкурентоспособности приморскими рыбодобывающими предприятиями - снижение издержек, изучение конкурентов, изучение запросов потребителей и улучшение качества продукции, только на последнем месте среди мер для поддержания конкурентоспособности модернизацию и закупку нового оборудования, судов.

ЗАКЛЮЧЕНИЕ

Конкурентная стратегия предприятий представляет собой процесс формирования и обеспечения конкурентными преимуществами, генерируя экономические стимулы для того, чтобы предприятие стремилось к интенсификации усилий по расширению рынков сбыта, привлечению новых клиентов и создания благоприятных условий для продажи собственной продукции [3].

Постоянное обеспечение конкурентными преимуществами является основным стратегическим направлением развития предприятий, поскольку только те предприятия смогут эффективно функционировать в экономической среде ведения бизнеса длительное время, которые заботятся об уровне собственной конкурентоспособности.

Процесс обеспечения конкурентоспособности предприятия происходит постоянно и проявляется в стремлении предприятий-конкурентов улучшать собственное положение на рынке, сформировать достаточный объем ресурсного потенциала, являясь гарантом своевременности расчетов с поставщиками, бюджетом и другими звеньями финансовой системы государства.

Чем выше уровень конкуренции на рынке, тем больше внимания предприятию необходимо уделять именно собственному воспроизводству конкурентных преимуществ по получению максимального результата.

Конкуренция чаще всего оказывает влияние на ценовую политику предприятий, с одной стороны, приводя к снижению уровня цен, а с другой – вытесняя из рынка более слабых мелких товаропроизводителей. В то же время, неценовая конкуренция приводит к росту цен на продукцию крупных фирм при организации и развитии торговых сетей.

Стратегическое позиционирование предприятия влияет на процессы управления затратами предприятия, что обусловлено подходами к достижению конечных целей предприятия. Как отмечалось ранее, различают несколько основных типов конкурентных стратегий: лидерство по издержкам, лидерство по продукту и концентрация на потребителе. Каждая кардинально отличается по уровню необходимых расходов, по направлениям стратегического планирования[1].

Классическими приёмами для увеличения объёмов реализации продукции представителей малого и среднего бизнеса в настоящее время считается снижение цен, расширение рекламы, улучшение обслуживания покупателей и пр. У многих предприятий по производству и реализации рыбной продукции основной акцент стратегии возлагается на лидерство по издержкам. Достижение лидерства возможно благодаря снижению себестоимости по сравнению с конкурентами. Лидерство по затратам может быть достигнуто за счет экономии по масштабу производства, строгого контроля затрат, сведение к минимуму расходов в таких сферах, как исследования и разработки, обслуживание клиентов, реклама и продвижение товара[19].

Специфика производственной деятельности рыболовных и рыбоводных предприятий также не предоставляет широкого выбора стратегических альтернатив. В качестве базисных стратегий развития предприятия отрасли могут выбирать: – стратегию концентрированного роста в рамках своего рыбохозяйственного сектора, ориентированную на усиление позиций на рынке; – стратегию интегрированного роста (вертикальной диверсификации) по средством создания рыбоперерабатывающих мощностей; – стратегию диверсифицированного роста (конгломеративной диверсификации). В частности, за счет создания на предприятиях, ведущих промысел рыбы.

Каждое предприятие определяет свою конкурентную позицию на рынке самостоятельно. Оценка конкурентоспособности предприятия в конкретный момент его существования на определенной фазе его экономического развития представляет собой сложную многоаспектную задачу, так как необходимо оценить комплекс показателей, характеризующих все направления деятельности предприятия и

определить направления необходимых организационных изменений для повышения или поддержания уровня конкурентоспособности.

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DOI <https://doi.org/10.18551/rjoas.2017-06.35>

**ОЦЕНКА ЭКОНОМИЧЕСКОЙ УСТОЙЧИВОСТИ ПРЕДПРИЯТИЙ
РЫБОХОЗЯЙСТВЕННОГО СЕКТОРА ПРИМОРСКОГО КРАЯ**
ESTIMATION OF ECONOMIC STABILITY OF THE FISHERIES SECTOR'S
ENTERPRISES OF THE PRIMORSKY KRAI

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АННОТАЦИЯ

В современных реалиях очень заметна зависимость безопасности экономики страны от устойчивости ее структурных элементов, в частности устойчивости предприятий к внешним воздействиям, изменению рыночной конъюнктуры. В последнее время, как в мировой, так и отечественной науке наблюдается активизация исследований в этой области. В связи с этим, важным является определение экономической устойчивости предприятий пищевой промышленности как основы продовольственной безопасности страны. В статье проводится оценка финансовой и коммерческой устойчивости предприятий рыбохозяйственного сектора Приморского края. В настоящее время рыбная промышленность Дальнего Востока имеет сложности, важнейшими причинами которых являются отдаленность от центра, кризис централизованного управления и связанные с ним нарушения государственного регулирования и координации рыбохозяйственной деятельности. Актуальность исследования определена необходимостью научной оценки состояния рыбохозяйственных предприятий Приморского края в условиях современного хозяйствования, деятельность которых оказывает влияние на продовольственную и экономическую безопасность России. Объектом исследования является уровень экономической устойчивости, предметом исследования выступает влияние экономической устойчивости предприятий на экономическую безопасность страны. Цель исследования состоит в оценке уровня устойчивости предприятий ООО «Ролиз», ПАО «Дальрыба», ПАО «Преображенская БТФ», АО «Восток-1». Методика, используемая в исследовании, основана на принципе критериальной оценки и позволяет разделить предприятия на группы по степени экономической устойчивости. Результатом исследования являются рекомендации по повышению финансовой и коммерческой стабильности исследуемых предприятий. Кроме того, обоснованы перспективы возможности влияния рыбной отрасли на экономику региона.

ABSTRACT

In modern conditions, the dependence of the country's economy's security on the stability of its structural elements, for example, the stability of companies to external influences, changes in the market situation, is very visible. Recently, both in the world and domestic science, there has been an intensification of research in this field. In this regard, it is important to determine the economic sustainability of food industry enterprises as the basis of the country's economic security. The article assesses the financial and commercial sustainability of enterprises in the fishing industry of the Primorsky Krai. At present, the fishing industry of the Far East has difficulties, the most important of which are the remoteness from the center of the crisis of centralized management and the related violations of state regulation and coordination of fisheries activities. The relevance of research is determined by the need for a scientific assessment of the economic status of

fishery enterprises in the Primorsky Krai in the conditions of modern management, whose activities have an impact on Russia's food and economic security. The object of the study is the level of economic stability, the subject of research is the impact of economic stability of enterprises on the economic security of the country. The purpose of the research is to assess the level of sustainability of the enterprises of LLC «Roliz», PJSC «Dalryba», PJSC «Preobrazhenskaya BTF», JSC «Vostok-1». The methodology used in the study is based on the principle of criterial evaluation and allows dividing enterprises into groups according to the degree of economic stability. The result of the research is recommendations for improving the financial and commercial stability of the enterprises studied. In addition, the prospects for the possible impact of the fishing industry on the economy of the region are justified.

КЛЮЧЕВЫЕ СЛОВА

Экономическая безопасность, экономическая устойчивость, рыбохозяйственная отрасль, оценка экономического состояния предприятия.

KEY WORDS

Economic security, economic stability, fish industry, financial analysis.

«Государственная стратегия экономической безопасности Российской Федерации», введенная в действие Указом Президента РФ от 13.05.2017 г., констатирует: «Без обеспечения экономической безопасности практически невозможно решить ни одну из задач, стоящих перед страной, как во внутригосударственном, так и в международном плане».

Экономическая безопасность страны – это защищенность экономических отношений, определяющих прогрессивное развитие экономического потенциала страны и обеспечивающих повышение уровня благосостояния всех членов общества, его отдельных социальных групп и формирующих основы обороноспособности страны от опасностей и угроз.

Эффективная система экономической безопасности – залог существования любой страны, тем более сегодняшней России, стремящейся занять достойное место в мировом геополитическом и экономическом пространстве.

Для понимания сущности экономической безопасности важно уяснить ее связь с понятием «устойчивость». Устойчивость экономики отражает прочность и надежность ее элементов, вертикальных, горизонтальных и других связей внутри системы, способность выдерживать внутренние и внешние «нагрузки».

Чем более устойчивы экономическая система (например, межотраслевая структура), соотношения производственного и финансово-банковского капитала и т.д., тем жизнеспособнее экономика, а значит, и оценка ее безопасности будет достаточно высокой. Нарушение пропорций и связей между разными компонентами системы ведет к дестабилизации и является сигналом перехода экономики от безопасного состояния к опасному.

Экономическая безопасность понимается как многоуровневое явление и включает экономическую безопасность:

- страны в целом;
- региона;
- отрасли и отдельного предприятия;
- отдельного гражданина и предпринимателя.

В последнее время становится все более очевидным, что устойчивое экономическое развитие и страны, и ее регионов достижимо только при экономической устойчивости таких их структурных элементов, как отрасли, предприятия и организации. Экономическая устойчивость каждого отдельного предприятия позволяет всей хозяйственной системе страны не только сохранить потенциал, но и обеспечить ее качественный подъем и выход на международные рынки с новыми конкурентоспособными товарами.

Как самостоятельная категория «экономическая устойчивость предприятия» сформировалась в рыночных условиях хозяйствования из-за сложности прогнозирования результатов деятельности и проявляется в способности предприятий успешно развиваться под действием неблагоприятных факторов.

Впервые термин «экономическая устойчивость» возник в связи с рассмотрением проблемы ограниченности ресурсов, которая стала следствием глобальных энергетических кризисов 1973 г. и 1979 г. затем это направление экономической мысли превращается в отдельную дисциплину, которую называют «ecosestate», что в переводе означает «экономическая устойчивость государства». Данная дисциплина стала рассматривать вопросы устойчивого экономического развития в основном на уровне страны или региона.

Обзор проблематики. На сегодняшний день в научной литературе накоплено множество работ, посвященных исследованию экономической устойчивости предприятия. Исследованию сущности, содержания, подходов к оценке, методов и инструментов управления экономической устойчивостью предприятий посвящены работы таких российских ученых, как О.М. Белоцерковского, А.А. Богданова, Е.В. Броило, А.И. Кибиткина, Е.В. Корчагиной, М.А. Макаровой, О.В. Михалева, Э.Р. Мисхожев, А.В. Новиковой, С.Ю. Плешкова, И.Р. Пригожина, А.И. Романова, С.В. Соколова, А.И. Татаркина, С.В. Чикишева и других ученых.

Обсуждение результатов. При изучении работ отечественных и зарубежных авторов, посвященных сущности экономической устойчивости, можно сформировать собственное определение данной категории в разрезе устойчивости организации.

Экономическая устойчивость предприятия – это способность предприятия сохранять стабильность финансово-хозяйственной деятельности в условиях постоянного изменения рыночной конъюнктуры и под воздействием неблагоприятных внутренних и внешних воздействий путем совершенствования методов управления организацией и приведения его в равновесное состояние.

В структуре экономической устойчивости является целесообразным выделение следующих видов, относящихся к различным аспектам хозяйственной деятельности: финансовая, управленческая, маркетинговая, коммерческая, технико-технологическая, кадровая и нормативно-правовая устойчивость [8].

Финансовая устойчивость – это составная часть экономической устойчивости, которая является основой для совершенствования и выстраивания прочих элементов экономической устойчивости. Финансовая устойчивость предполагает оценку деятельности предприятия, основанную на системе анализа показателей бухгалтерской (финансовой) отчетности.

Коммерческая устойчивость определяется уровнем деловой активности способностью наращивать уровень товарооборота и рыночной доли за счет эффективной маркетинговой политики, конкурентным потенциалом и его долей на рынке сбыта [4].

Маркетинговая устойчивость отражает совокупность маркетинговых стратегий в реализации достижения целей предприятия. А именно, получение точной и объективной специализированной информации о спросе на различных сегментах рынка, уменьшение риска нерегулярности получения заказов, увеличение загрузки мощностей и повышения рейтинга предприятий; а также изучение зависимости предприятия от рыночных факторов, в том числе от емкости рынка, конкуренции, эластичности спроса.

Под управленческой устойчивостью понимается обеспеченность необходимыми ресурсами предприятия, соотношение между затратами на управление и общими затратами, а также уровень квалификации управленческого персонала [1].

Технико-технологическую устойчивость можно рассмотреть с точки зрения «технологической адекватности» и «технологического отставания». Данный элемент необходимо рассматривать как показатель характеризующий обеспеченность предприятия современной техникой и технологией и способность к внедрению новых способов организации производства (работ, услуг).

Кадровая устойчивость – стабильность и квалификационный потенциал персонала. По данным специалистов в каждом пятом случае банкротства предприятия основной причиной является некомпетентность и низкая квалификация руководства фирмы.

Эффективная организация внутренней системы нормативно-правовых документов предприятия является немаловажным элементом его экономической устойчивости. В частности, учетная политика в последнее время превратилась в реальный инструмент управления организацией, позволяющий контролировать устойчивое финансовое положение предприятия [2].

Указанные виды экономической устойчивости взаимосвязаны и взаимозависимы. Уровень развития каждого вида оказывает влияние на общую экономическую устойчивость хозяйствующего субъекта.

Классификация видов экономической устойчивости предприятия позволяет более детально представить содержание данной экономической категории. Это создает объективные предпосылки для моделирования единого интегрального показателя «экономическая устойчивость», который должен характеризовать различные аспекты деятельности экономического субъекта: эффективность деятельности, качество управления, обеспеченность необходимыми запасами, конкурентоспособность, подверженность риску и т. д.

Стоит подчеркнуть, что в данной работе «экономическая устойчивость» рассматривается с позиции оценки способности предприятия сопротивляться воздействию неблагоприятных факторов. Таким образом, более полно будет рассмотрена финансовая и коммерческая устойчивость предприятия [4].

Поскольку экономическая безопасность страны во многом определяется продовольственной безопасностью, немаловажной является оценка устойчивости развития предприятий пищевой промышленности. Данное положение находит поддержку абсолютного большинства российских предпринимателей, ученых-экономистов, представителей различных уровней власти [3].

Основные этапы и механизмы реализации продовольственной безопасности зафиксированы в «Стратегии социально-экономического развития России до 2020 г.», где главный акцент сделан на развитие экономики на основе НТП.

Как показывают исследования и практика хозяйствования последних лет, безальтернативность данной стратегической установки обусловлена системным кризисом российской экономики, в ходе которого значительно вырос физический и моральный износ основных производственных фондов, снизилась эффективность управления воспроизводственным процессом при сокращении объемов долгосрочных источников финансирования.

Особенно тяжелые социально-экономические последствия общероссийского кризиса имеют место в рыбной промышленности Дальнего Востока и, в частности, Приморского края [5].

Рыбная отрасль играет немаловажную роль в обеспечении продовольственной безопасности страны. Для Дальнего Востока рыбная отрасль имеет особое значение, так как рыбохозяйственные предприятия зачастую являются градообразующими, а рыбный промысел – одним из источников обеспечения жизнедеятельности населения.

Приморье обладает крупнейшим рыбохозяйственным комплексом, что объективно обусловлено наличием на Дальнем Востоке мощной сырьевой базы, геостратегическим положением края, благоприятными климатическими условиями, наличием незамерзающих и выходящих на Транссибирскую магистраль морских рыбных портов, наличие трудовых ресурсов [8].

Приморский край среди регионов ДФО занимает первое место по производству рыбных консервов и второе после Камчатского края – по улову рыбы и выпуску товарной пищевой продукции, включая консервы. Потенциал рыбного хозяйства Приморского края определяют около 500 крупных, средних и малых предприятий отрасли, включая рыболовецкие колхозы. Однако основной объем добычи рыбы и морепродуктов (около 80%) приходится на такие крупные предприятия, как ООО

«Ролиз», ПАО «Дальрыба», ПАО «Преображенская БТФ», АО «Восток-1» и др. Более полная информация о состоянии рыбохозяйственной отрасли в Приморском крае представлена в таблице 1.

Таким образом, актуальность исследования определена необходимостью научной оценки экономической устойчивости рыбохозяйственных предприятий Приморского края в условиях современного хозяйствования, функционирование которых вносит существенный вклад в обеспечение продовольственной и экономической безопасности России.

Таблица 1 – Итоги работы предприятий рыбохозяйственного комплекса Приморского края за период 2014-2015 гг.

Наименование показателей	Единицы измерения	2014 г.	2015 г.	2015 г. к 2014 г., %
Вылов рыбы и нерыбных объектов промысла	тыс. тонн	778,0	739,3	95,0
Индекс производства по виду деятельности «Переработка и консервирование рыбо- и морепродуктов»	%	99,7	101,8	-
Индекс производства по виду деятельности «Рыболовство»	%	88,0	105,1	-
Отгружено товаров собственного производства по рыбопромышленному комплексу	млн.руб.	39 075,5	58 925,6	150,8
Доля рыбопромышленного комплекса в отгрузке товаров собственного производства промышленных предприятий края	%	14,6	23,5	-
Оборот организаций по рыболовству и рыбоводству*	млн.руб.	29 985,7	47 797,2	159,4
Выпуск рыбопродукции, включая консервы	тыс.тонн	624,8	646,7	103,5
Выпуск рыбы живой, свежей или охлажденной	тыс.тонн	57,9	37,9	65,5
Выпуск консервов	муб	145,4	147,5	101,5
Поставки на внутренний рынок	тыс.тонн	250,8	307,5	122,6
Доля поставок на внутренний рынок в общем выпуске продукции	%	36,7	44,9	-
Поставки на экспорт	тыс.тонн	549,5	529,7	96,4
Доля экспорта в общем выпуске продукции	%	80,5	77,4	-
Экспорт в стоимостном выражении	млн.\$	967,9	884,7	91,4
Количество предприятий	ед.	513	489	95,3
Количество судов, всего	ед.	314	314	100,0
в том числе:				
- крупнотоннажных	ед.	61	58	95,1
- среднетоннажных	ед.	156	159	101,9
- малотоннажных	ед.	97	97	100,0
Численность работающих	тыс.чел.	10,4	10,4	99,9
Средняя заработная плата на 1 работающего	руб.	37 660	56 490	150,0

Сущность экономической устойчивости предприятия реализуется в системе критериев и показателей, другими словами, с помощью оценки состояния деятельности организации с точки зрения важнейших процессов. Критериальная оценка устойчивости включает в себя оценку ресурсного потенциала и возможностей его развития, уровня эффективности использования капитала и труда, конкурентоспособности продукции предприятия [7].

Для определения экономической устойчивости важное значение имеют не столько сами показатели, сколько их пороговые значения – предельные величины, несоблюдение которых препятствует нормальному развитию различных элементов производства, приводит к формированию негативных, разрушительных тенденций в области управления предприятием. Наивысшая степень устойчивости достигается при условии, что весь комплекс показателей находится в пределах допустимых границ своих пороговых значений, а пороговые значения одного показателя достигаются не в ущерб другим [6].

Для оценки устойчивости предприятий рыбохозяйственного сектора следует проводить комплексный анализ деятельности, состоящий из трех групп показателей,

рекомендованных международным комитетом по стандартам бухгалтерской отчетности, представленных в таблице 2:

- оценка имущественного потенциала;
- оценка финансовых показателей (ликвидности и платежеспособности), для характеристики и развития финансово-инвестиционной составляющей устойчивости;
- оценка рентабельности и деловой активности.

В основном рыбохозяйственные предприятия являются частными (т.е. ведут предпринимательскую деятельность) и направлены, в первую очередь, на извлечение прибыли. В таком случае, важными показателями при оценке состояния организации являются показатели рентабельности (прибыльности).

Таблица 2 – Коэффициенты оценивания устойчивости рыбохозяйственного предприятия

Показатель		Формула	Расшифровка показателей
Обозначение	Название		
K1	Коэффициент финансирования	$K_1 = \frac{Kc}{Kз}$	Kc - собственный капитал; Kз - заемный капитал.
K2	Коэффициент капитализации (плечо финансового рычага)	$K_2 = \frac{Kз}{Kc}$	Kc - собственный капитал; Kз - заемный капитал.
K3	Коэффициент финансовой устойчивости	$K_3 = \frac{Kc+ДО}{ВБ}$	Kc - собственный капитал; ДО - долговые обязательства; ВБ - валюта баланса.
K4	Коэффициент текущей ликвидности	$K_4 = \frac{OA}{КО}$	OA - оборотные активы; КО - краткосрочные обязательства.
K5	Коэффициент наличия собственных оборотных средств	$K_5 = \frac{Cc-ВНА}{OA}$	Cc - собственные средства; ВНА - внеоборотные активы; OA - оборотные активы.
K6	Коэффициент финансовой независимости	$K_6 = \frac{Cc}{ВНА}$	Cc - собственные средства; ВНА - внеоборотные активы.
K7	Коэффициент автономии	$K_7 = \frac{Kc}{ВБ}$	Kc - собственный капитал; ВБ - валюта баланса.
K8	Рентабельность продаж	$K_8 = \frac{ЧП}{В} * 100\%$	ЧП - чистая прибыль; В - выручка.
K9	Оборачиваемость активов	$K_9 = \frac{В}{A_{cp}}$	В - выручка; A _{cp} - среднегодовая величина активов предприятия.

Таблица 3 – Критерии оценки коэффициентов экономического состояния предприятий

Оценка	Цвет	Баллы
Не удовлетворительно	Красный	0
Удовлетворительно	Оранжевый	1
Норма	Синий	2
Хорошо	Зеленый	3

Таблица 4 – Показатели экономической устойчивости предприятий рыбохозяйственной отрасли Приморского края

Показатели	Нормативное значение показателя	Рыбохозяйственные предприятия Приморского края			
		ПАО «Дальрыба»	ООО «Ролиз»	ПАО «ПБТФ»	АО «Восток-1»
K1	≥1	3,03	-0,15	0,81	0,53
K2	≤1,5	0,33	-6,72	1,24	1,90
K3	0,5-0,8	0,75	0,42	0,46	0,80
K4	1,5-2,5	2,70	0,86	1,14	3,73
K5	0,5	0,14	-2,40	-0,52	-0,28
K6	0,4-0,6	1,28	-1,35	0,16	0,26
K7	0,5-0,7	0,75	0,17	0,45	0,34
K8	≥0,15	0,22	0,19	0,19	0,18
K9	1 и бо	3,67	2,12	1,58	1,49
Сумма баллов по критериям оценивания		18	8	12	13

Результатом оценки экономической устойчивости предприятий рыбохозяйственного сектора Приморского края ООО «Ролиз», ПАО «Дальрыба», ПАО «Преображенская БТФ», АО «Восток-1» является таблица 4. Критерии оценивания отражены в таблице 3.

Согласно используемой методике оценивания экономической устойчивости предприятий рыбохозяйственного комплекса, исследование показателей позволяет разделить предприятия на группы по степени экономической устойчивости [7].

Первая группа – «Абсолютно устойчивые предприятия» (Свыше 18 баллов). Организация неavit от кредиторов, так как сумма собственных оборотных средств и краткосрочных кредитов превышает потребность в запасах. Предприятия данной группы имеют достаточно высокие показатели рентабельности и платежеспособности. К данной группе относится ПАО «Дальрыба».

Вторая группа – «Риск экономической неустойчивости» (12-17 баллов). В этом случае предприятия привлекают долгосрочные заемные средства для покрытия запасов. Существует риск финансовой неустойчивости, в остальном предприятия являются эффективно функционирующими. К данной группе относятся ПАО «Преображенская БТФ», АО «Восток-1».

Третья группа – «Экономически неустойчивые предприятия» (6-11 баллов). Наблюдается переход от нормальных значений показателей финансовой устойчивости к неблагоприятным. Финансовая неустойчивость выражается в низкой рентабельности, ликвидности. Существует риск неплатежеспособности, но сохраняется возможность восстановления равновесия. Предприятия, показатели которых приближены к значению 6 баллов характеризуются убыточностью хозяйственной деятельности, имеют риск банкротства. К данной группе относится ООО «Ролиз».

Четвертая группа – «Состояние кризиса» (0-5 баллов). Предприятия находятся на грани банкротства, так как денежные средства, ценные бумаги, дебиторская задолженность не покрывают убытки предприятия. Среди исследуемых предприятий не обнаружено организации, относящейся к данной группе.

Таким образом, анализ экономической стабильности показал, что из 4-х анализируемых предприятий 1 – устойчивое, 2 – имеют риск неустойчивости, 1 – признается неустойчивым. Поскольку на выбранные для анализа предприятия приходится около 80% добычи рыбы и морепродуктов, можно говорить о средней устойчивости предприятий рыбохозяйственного сектора Приморского края [10].

Кроме того, в финансовой отчетности каждого из анализируемых предприятий наблюдались общие положительные тенденции:

- в период 2014-2015 гг. наблюдается увеличение валюты баланса;
- в период 2014-2015 гг. темпы роста оборотных активов выше, чем темпы прироста внеоборотных активов [11].

ЗАКЛЮЧЕНИЕ

Подводя итоги, необходимо отметить, что экономическая устойчивость – это характеристика, главным образом свидетельствующая о стабильном превышении доходов над расходами, свободном маневрировании денежными средствами предприятия и эффективном их использовании, бесперебойном процессе производства и реализации продукции.

Для повышения экономической устойчивости предприятий рыбохозяйственного сектора необходимой мерой является повышение гибкости структуры капитала и организация его движения таким образом, чтобы обеспечить постоянное превышение доходов над расходами с целью сохранения платежеспособности и создания условий для успешного функционирования.

Поскольку в рыбохозяйственном секторе Приморского края наблюдается средний уровень устойчивости предприятий, предоставляется необходимым дать некоторые рекомендации по повышению эффективности деятельности:

- необходимо ускорить оборачиваемость капитала в текущих активах в ПАО

«ПБТФ» и АО «Восток-1», в результате чего произойдет относительное его сокращение на рубль оборота;

–необходимо увеличить резервный капитал в ООО «Ролиз», вывести его на положительную величину;

–необходимо следить за соотношением дебиторской и кредиторской задолженности (значительное превышение дебиторской задолженности создает угрозу финансовой устойчивости предприятия и делает необходимым привлечение дополнительных источников финансирования);

–необходимо привести показатель К6 для ПАО «Дальрыба» к нормативному, поскольку существует риск сдерживании темпов развития предприятия (отказавшись от привлечения заемного капитала, организация лишается дополнительного источника финансирования прироста активов (имущества), за счет которых можно увеличить доходы).

В рыбной промышленности основная задача – ликвидировать диспропорцию в развитии флота и его береговой базы. В перспективе расширение рыболовства будет сопровождаться увеличением прибрежного лова: одним из перспективных направлений является товарное разведение морского гребешка и других моллюсков, а также водорослей.

Рыбная отрасль имеет большое значение для пищевой промышленности в целом, поскольку роль рыбных продуктов в питании населения по-прежнему остается значительной. В общем балансе потребления животных белков, включая мясные и молочные продукты, яйца, доля рыбных белков сегодня составляет около 10%. Поэтому особенно важно обеспечить устойчивое развитие предприятий данного сектора.

Рыбное хозяйство в ДФО имеет реальные возможности не только для стабилизации производства, но и для возрождения отрасли в перспективе. Это обусловлено наличием природных, ресурсных, рыночных, экономических и социальных предпосылок.

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DOI <https://doi.org/10.18551/rjoas.2017-06.36>

COST-BENEFIT ANALYSIS OF WATERMELON PRODUCTION IN EKITI STATE, NIGERIA

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ABSTRACT

The study investigated the cost-benefit analysis of watermelon production in Ekiti State, Nigeria. One hundred and twenty watermelon producers were randomly selected from the study area. The main tool for data collection was questionnaire. Information on watermelon farmer's socio-economic characteristics, cost and return patterns, efficient use of factors of production and production pattern and resource combination that will increase outputs and revenue of farmers was sought from 120 respondents who were randomly selected. Data collected was analyzed using Gross margin analysis to determine the profitability level of watermelon production and stochastic frontier function to determine the efficiency level of watermelon production in the study area. The findings revealed that majority of the watermelon farmers adopted sole cropping system (65%) while just 35% intercrop with other crops. Those that adopted intercropping system intercrop with Cassava (66.67%), Maize (19.05%), Tomato (9.52%) and Pepper (4.76%). The specific reasons giving for intercropping are to increase income (50%), to improve soil fertility (7.14%), to reduce crop failure (9.52%) and for optimum use of land (33.33%). Most of the watermelon farmers plant their seed directly (92.5%) while just 7.5% of the farmers adopt transplanting system. The Gross margin analysis shows that a net profit of #75,114.68 was realized by the watermelon producers in the study area. The stochastic frontier function revealed that the co-efficient of farm size (1.05) was positive and significant at 10% which implies that a considerable increase in the size of the farm will lead to increase of 1.05% in yield. Also, the quantity of seeds has a negative co-efficient (-2.73) as it is the quality of seeds that matters. Quality seeds in abundance quantity will increase outputs. It was recommended that the land acquisition system that makes it difficult for farmers to acquire enough agricultural should be reviewed to allow the farmers have more access to land for cultivation. Also Provision of improve seeds for cultivation should be made available to the farmers and Government grants and loans should be made easy to access as this will reduce the cost incurred on inputs and help provide funds for the production activities.

KEY WORDS

Watermelon, gross margin, stochastic frontier.

Water melon (*Citrullus lanatus*) is a plant species in the family cucurbitaceae (Schippers, 2000), a vine like flowering plant that scrambles and trail. It is originally from West Africa. The cultivation of water melon focuses on the production of fruits which can also be used as vegetables. It is highly medicinal fruits which has great advantages for the health system. With water melon's calories at 46% the fruit offer 20% vitamin C and 17% vitamin A. it supplies lycopene in way higher than tomatoes to fight free radicals. It relieves sore muscles and good for body hydration. The nutrients available in the seeds of water melon ward off cancer, the level of bad cholesterol in the body.

The dual functionality of water melon contributes to its economic viability. It contains about 6% sugar and 91% water. Like other fruits, it is a good supplier of vitamin C, low in fat and sodium. According to FAO (2011) statistics, china is the world's leading producer of water melon. The top twenty leading producers of watermelon produced a collective volume approximately 92.7 million metric tons in 2011, of which china produced 75%. Turkey, Iran and Brazil commanded a production share (of the 20 leading producers) of 4.7%, 3.5% and 2.4% respectively in 2011. Nigeria produced more watermelons in 2011 (139, 223 tons) than

the leading fresh produce Africa exporter, Kenya, which produce 66,196 tons and south Africa that produce 77,993 tons (this day live, 2014). There are over 1,200 varieties of watermelon worldwide and quite a number of these varieties are also cultivated in Africa (Zohary and Hopf, 2000). The global consumption of the crop is greater than that of any other cucurbit.

Water melon is tropical or sub tropical plants needs temperature higher than 25°C (77°F) to thrive. On a garden scale, the seeds are usually sown in pots under cover and transplanted into well drained sandy loam with a PH of between 5.5 and 7.7 with medium nitrogen levels.

The rinds of water melon which is outer greenish covering the edible nut most people avoid eating them due to their pickles (vegetable preserved in a solution usually brine or vinegar). The seeds of water melon have nutty flavor and can be dried and roasted or ground into flour. The juice can be into wine on its own or blended with other fruits. It is possible to make an alcoholic variant by pouring liquor into the hole in the rind of the whole fruit and eat the alcohol permeated flesh. The liquor filled is referred to as hard water melon.

The importance of water melon production is not limited to the general healthy additions. It aids weight loss and has been recommended for obese people and aid for others to maintain steady body growth. Also, it contributes to water in the skin and hair production of human with a wide range of medicinal effects in men. It is highly nutritious and thirst-quenching and also contains vitamin C and A in the form of disease-fighting beta-carotene. Watermelon is rich in carotenoids, some of the carotenoids of which include lycopene, phytofluene, phytoene, betacarotene, lutein and nuerosporene. Lycopene and beta-carotene work in conjunction with other plant chemicals not found in vitamin/minerals supplements. Potassium is also available in it which is believed to help in the control of blood pressure and possibly prevention of stroke (De Lannoy, 2001). Lycopene is what gives water melon it's rich, red colour and is associated with reduced risk of developing muscular degeneration, prostate challenges, and a variety of 13 other degenerative conditions. Beta carotene is another powerful antioxidant that can help to protect body cells against damage by free radicals (Kim, 2008). Watermelon seeds are excellent sources of proteins (both essential and non-essential amino acids) and soil.

However, nutrition seems to be the least motivation for feeding consideration in Ekiti State. Nonetheless, the duality of water melon has not been explored to the maximum. So is the usefulness of its seed as observed. This under utilization has also contributed to the meager income and revenue accruable to the farmers than those of indigenous vegetables. Knowledge of aggregated farm level resources and difference in their productivities are essential in order to enhance productive capacity of small holding farmers (Ajewole and Folayan, 2008). (Ogundari and Ojo, 2005) argued that this would indicate direction of resource use adjustment and allocation.

The potential of watermelon as a cash-producing crop are enormous for farmers, especially those residing near the urban areas (Adekunle *et al.*, 2003). Hence, this research examined in details, the compared cost and returns structure across the cropping system, pin-pointed the factors of affecting production level and efficiency of resources use.

Objectives of the Study. The general objective of the study was to determine the costs and returns of watermelon production in Ekiti State. The specific objectives were to:

- Examine the socio-economic characteristic of watermelon farmers in the study area.
- Estimate the cost and returns pattern of rural farmers with focus on water melon producers.
- Determine the efficient use of factors of production among water melon farmer the study area.
- Determine the production pattern and resources combination that will increase output and revenue of farmers in the study area.

METHODS OF RESEARCH

The study was conducted in Ekiti state, Nigeria. The state is one of the states in the South Western Region of Nigeria. The state is within the tropics. The state was created on the 1st of October, 1996 and comprises of 16 Local Government Area (LGAs). Ekiti state occupies land mass of approximately 6,3028km². Ekiti state has an estimated population of 2,432,543 (NPC,2006). Ekiti State is located between latitudes 7^o25' and 8^o05'N and between longitude 4^o45' and 5^o46'N East. Ekiti state is predominantly an agricultural area whose main cash crops are cocoa, timbers, oil-palm and kolanuts. The food crops grown are cassava, yam, cocoyam and grain crops such as maize and rice. The state has two main seasons i.e. the rainy season and dry season.

Data Collection. Primary data was used for the study. Data was collected from the respondents with the aid of well-structured questionnaire. The information that was obtained included socio-economic characteristics of the respondents, the cost and returns pattern of rural farmers and the production pattern and resources combination.

Sampling Techniques. A multi-stage sampling technique will be use to select respondents for the study. At first stage, three local government area (LGAs) will be purposively selected based on their level of produce in the state which include Ikole, Ijero and Moba, at second stage three communities will be randomly selected from each local government, at the third stage 10 watermelon farmers will be selected also at random from the list of watermelon farmers in each of the communities. Thus a total of 120 respondents were surveyed for the study.

Data Analysis. Both descriptive statistics and quantitative methods were used in the survey. A well-constructed farm budget analysis was used to estimate the production cost, revenue and gross margin accruable to the farmers. The equation below was used to estimate the various parameters:

$$\begin{aligned} GM &= TR - TVC \\ TC &= TFC + TVC \\ NP &= TR - TC \end{aligned}$$

Where: TC = Total Cost, TFC= Total Fixed Cost, TVC= Total Variable Cost, GM= Gross Margin,

TR = Total Revenue, NP = Net Profit.

Stochastic Frontier. The model was employed to examine the factors influencing output of watermelon among farmers in the study area and the technical efficiency of output and resources available to the farmer. The production function was defined stochastically as:

$$Q = F(X|\beta) \exp(V1 - U_i)$$

Where: Q = Quantity of watermelon produced, X1= Vector of input quantities, β = Vector of parameters to be estimated, Exp = Exponential function, V1 = Random variables; U_i = Non negative random variables which account for technical inefficiency in production.

The technical efficiency was calculated using:

$$\begin{aligned} TE_i &= Y_i = F(X1) \exp(V1 - U_i) \\ Y_i^* &= F(X1) \exp(V1) \\ TE &= \exp(-U_i) \end{aligned}$$

Where: Y_i= Actual output, Y_i*= Potential output (frontier output).

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents. Table 1 revealed that 65% of the respondents were male and the remaining 35% were female. This indicates that male were more involved in watermelon production than female in the study area.

From the table it also shows that age bracket of farmers in the study area revealed that 26.7% of the respondents are less than or equal to 20 years, 25.8% are between 21-30 years while 20.0% of the respondents are within 31-40 years and 27.5% are greater than 40 years. This finding reveals that most of the farmers are below 50 years of age indicating that they are still full of energy which will enhance better production of watermelon in the study area.

Table 1 – Socio-economic Characteristics of the Respondents

Variables	Frequency	Percentage
SEX		
Male	78	65
Female	42	35
Total	120	100
AGE		
≤20	32	26.7
21-30	31	25.8
31-40	24	20
≥40	33	27.5
Total	120	100
MARITAL STATUS		
Single	42	35.0
Married	59	49.17
Divorced	9	7.5
Widowed	10	8.3
Total	120	100
EDUCATIONAL QUALIFICATION		
Primary	17	14.2
Secondary	47	39.2
OND/NCE or Equivalent	15	12.5
HND/B.SC	19	15.8
Postgraduate	8	6.7
No Education	14	11.7
Total	120	100
HOUSEHOLD SIZE		
1-4	36	30.0
5-8	62	51.7
≥9	10	17.5
Total	120	100
FARM SIZE		
≤5	46	38.8
5.1-10.0	52	43.3
≥10.0	22	18.3
Total	120	100
FARMING EXPERIENCE		
≤1	29	24.2
2-5	56	46.7
6-10	26	18.3
>10	12	10
Total	120	100

Source: Field survey, 2014.

The marital status of the respondents revealed that 35% of the respondents are single, 49.17% are married, while 7.5% are divorced and 8.3% are widowed. This implies that most of the respondents are married and thus they can help each other and utilize family labour to enhance watermelon production in the study area.

Table 1 also revealed the educational status of the respondents, it was observed that 39.2% have secondary education, 12.5% have equivalents of OND/NCE, 15.8% have HND/BSC, 6.7% have post graduate education, 11.7% have no education, and 14.2% have primary education. This indicates that most of the farmers in Ekiti state are literate and can read and write which might make the adoption of improved technology that may increase the yield of watermelon.

Table 1 shows that 30.0% of the respondents have family size of between 1 and 4, 51.7% have between 5 and 9 while 17.5% have family size greater than 10. The large proportions of the farmers have family size between 5 and 9 which will help the farmers in finding solutions to problems associated with shortage of labour utilization in the study area.

Table 1 also revealed that 38.3% of the farmers had a farm size of ≤ 5 ha, 43.3% had a farm size of 5-10ha, while 18.3% had a farm size of ≥ 10 ha. This indicates that most of the watermelon farmers in the study area are still stick to the subsistence method of farming, hence farming on a relatively small area of farm land.

Table 1 shows that 24.2% of the farmers have farming experience of less than or equal to 1 year, 46.7% have experience of 2-5 years, 18.3% have been farming for a period of 6-10 years and 10.0% have experience of over 10 years. This indicates that farmers in the study area have the necessary experience to increase their watermelon production given a considerable level of inputs.

Cropping System of Watermelon Farmers. Table 2 shows the cropping system adopted by watermelon farmers. Item 1 shows that 65% of the respondents plant solely watermelon as against 35% of the respondents intercropped. Item 2 reveals that 66.67% of the 42 respondents intercropped watermelon with cassava, 19.05% and 9.52% intercropped with maize and tomato respectively while the remaining 4.76% intercropped with pepper. However, only 7.14% of the respondents who practice the intercropping did so to increase soil fertility as 33.33% planted other crops because of optimum land use. 50% of the respondents intercropped for economic reasons i.e. increase income and 9.52% did so to reduce crop failure.

Table 2 – Cropping System Utilized by Watermelon Farmers

S/N	Items	Options	Freq	Percent age
1	What cropping system do you use?	Sole cropping (water melon alone)	78	65%
		Water melon intercrop	42	35%
2	What do you intercrop with water melon?	Water melon+ cassava	28	66.67%
		Water melon+ maize	8	19.05%
		Water melon+ tomato	4	9.52%
		Water melon+ pepper	2	4.76%
3	Why do you intercrop?	To increase income	21	50%
		To improve soil fertility	3	7.14%
		To reduce crop failure	4	9.52%
		Optimum use of land	14	33.33%
4	Water melon planting method do you employ in planting?	Direct seedling	111	92.5%
		Transplanting	9	7.5%
5	How much do you pay as rent on land?	Inherited land	25	20.83%
		Less than 2,000	12	10%
		Between 2,100-10,000	16	13.34%
		Between 11,000-20,000	39	32.5%
		20,000 and above	28	23.33%

Source: Field Survey, 2014.

Majority of the watermelon farmers in the study area sow their seeds directly (92.5%) and only 7.5% transplant seedling of water melons. In item5, 20.83% of the farmers inherited the land they cultivates as this show that the primitive land acquisition system which has great effect on the scale of farming is still common in the study area. 23.33% of the farmer paid more than #20,000 for rent per annum, 10% of them paid less than #2,000 and 13.34%

of them paid between #2,100-10,000 for the land and 32.5% of them paid between #11,000 - 20,000 for the land rent.

Cost and Returns Analysis of Watermelon Production. Table 3 shows the cost and return analysis of watermelon production in the study area. The table below shows that watermelon producers in the study area has a net profit of #75,114.68. This clearly shows that there is a high return rate on the water melon production and the average rate of return is #2.0 ceteris paribus, every #1 invested in water melon production will yield #2.50. Hired labour cost more and it represents the most expensive variable input. It also shows that watermelon production is labour intensive as typical of agricultural production and this conforms to the findings of Adeoye *et al.*, (2011). The cost structure also suggests that water melon production is profitable.

Table 3 – Cost and Returns Analysis

S/N	Variables	Average quantity/ha	Unit price (#)	Value (#)
1 Gross returns				
	Average yield	625	200	125,000
2 Inputs				
I	Variable input (cost)			
A	Seeds (kg)	0.45	100	45
B	Fertilizer (kg)	23.5	212.77	5000.09
C	Chemicals (kg)	1.35	2592.59	3499.99
D	Land (ha)	1	1650	1650
E	Labour (man/day)	34.38	800	27504
II Fixed input (cost)				
A	Cutlass			105.37
B	Hoe			1650
C	Sprayer			4515
D	Tractor			7350
	Total input cost = I+II			49885.32
3 Gross margin analysis				
A	GM = I- \sum 2I			87,300.92
B	TC = TVC+TFC			49,885.32
C	NP = I-3B			75,114.68

Source: Field Survey, 2014.

Table 4 – Estimated Production Frontier

Variable	Parameter	coefficient	t-value
Technical efficiency			
Constant	β_0	8.60	33.84**
Seed quantity	β_1	-2.73	-5.90
Farm size	β_2	1.05	4.74***
Fertilizer	β_3	-1.15	-2.69
Labour	β_4	-0.79	-4.33
Technical inefficiency function			
Constant	δ_0	-20.89	-1.56**
Age	δ_1	0.07	3.03**
Family size	δ_2	-1.38	-2.12
Level of education	δ_3	-0.64	2.07

Source: Field Survey, 2014; **significant at 5% ; ***significant at 10%.

Table 5 – Efficiency Distribution

Efficiency	No. of farmers	Percentage
20-29.99	35	29.17%
30-39.99	14	11.67%
40-49.99	31	25.83%
50-59.99	40	33.33%
Total	120	100

Source: Field Survey, 2014.

The result of stochastic frontier production in table 4 shows that the coefficient of the farm size was positive and significant suggesting that a percentage increase in the size of the farm will lead to an increase of 1.05% in yield. It also showed that coefficient of labour used is negative and not significant. An increase in labour supply will reduce value of output by 0.79% as farmers in this area rely majorly on hired labour. This correlates with the findings of Ogundari and Ojo (2005). Also, the quantity of seeds has a negative coefficient as it is the quality of seeds that matters. If correct seed rates and quality seed are not used, output will be low even if other inputs are in abundance (Ogundari and Ojo 2005) and this tallies with the finding of Ajibefun and Daramola, (2001) and Schippers, (2000).

The estimate coefficient of family size indicates that it is negative but not significant. The negative value of inefficiencies suggests that they have positive correlation. This explains that the 0.07 coefficient of age reduces the efficiency of a farmer as they age on. it is also significant at 5%. However, the level of education is not significant but it reduces the technical inefficiencies of the farmers in the study area.

CONCLUSION

It was observed that the production of water melon in Ekiti state is profitable with a high percentage of the respondents in the study area having good percentage of technical efficiency. However, there is need for the farmers to increase their scale of operation as farm size is important in the productivity of farmers.

RECOMMENDATIONS

Based on the findings of this research work, the following recommendations were made:

- The land acquisition system that makes it hard for farmers to acquire agricultural should be reviewed to allow the farmers have more land to cultivate.
- Provision of improve seeds for cultivation should be made available to the farmers.
- Government grants and loans should be made easy to access as this will reduce the cost incurred on inputs and help provide funds for the production activities.
- There should be an intensive research work into the area of water melon production to help provide information that will make the production easy.

ACKNOWLEDGEMENTS

The effort of Sarumi Abayomi Tajudeen is hereby commended during the data collection process of this study.

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DOI <https://doi.org/10.18551/rjoas.2017-06.37>

**POTENTIAL FOR REVITALIZATION OF INSTITUTIONAL RICE FARMING
ECOSYSTEM WITH ING IN THE OGAN KOMERING ILIR DISTRICT OF SOUTH
SUMATRA PROVINCE**

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ABSTRACT

This study aims to analyze the factors that influence potential revitalization of institutional model of corporate farming. The method used is survey method. The analytical tool used to analyze the factors that influence potential for institutional revitalization with corporate farming models is Structural Equation Modeling (SEM) with PLS (Partial Least Square) program. The variables measured in the study are: 1) Human Resources (X1), 2) Management (X2), 3) Coaching (X3), 4) social environment of the culture (X4), 5) the characteristics of institutional farmer (X5), 6) farmers' knowledge about corporate farming (X6), 7) Potential Corporate farming (Y1), 8) Readiness of farmers to institutional corporate farming (Y2). The results show that the six variables significantly affect the potential for institutional revitalization with corporate farming models.

KEY WORDS

Revitalization, institutional farmers, rice farming, corporate farming.

In order to support South Sumatra attain self-sufficiency, in 2014, the central government through the Directorate General of Infrastructure, Ministry of Agriculture Republic of Indonesia provided assistance to open 2,250 hectares of new ricefields in five regencies of South Sumatra Province. The regencies that received the help are: Banyuasin (500 hectares), Musi Rawas (150 hectares), Ogan Komering Ilir (1100 hectares), South OKU (250 hectares), and East OKU (250 hectares) [Department of Agriculture South Sumatera, 2015].

Production and productivity of rice in South Sumatra still have great potential to be developed as a source of food, especially in tidal rice fields and swampy bog, with the growing expansion of IP-100 to IP-200, and the new paddy fields. Ogan Komering Ilir (OKI) is one of the three largest contributors of rice production in South Sumatra. In 2015 alone, OKI able to produce 542,291 tons of rice.

There are 157,846 hectares of extensive tidal wetland in South Sumatra, with 146,279 hectares of them already planted. Most of the land that has been planted are scattered in Ogan Komering Ilir area as much as 45,678 hectares (31.23 percent) [South Sumatra Provincial Agriculture Office, 2016].

This tidal area is sub-optimal (marginal) for agriculture. For that in the area, use reclaimed or improvements, an increase in the quality of land, partly tidal land in South Sumatra has been reclaimed. Change in acreage and productivity of paddy can be found in Table 1.

From the data it can be seen that the tidal area contribute approximately 1.10 million tonnes per year to rice production in South Sumatra. Research shows tidal wetlands have prospects to develop into agricultural land to support increase in agricultural production [Ismail et al. 1993]. But, although having good prospects, the use of tidal land for agriculture have obstacles, both biophysical and socio-economic and institutional. Institutional issues

include weak institutional support for the provision of capital, means of production and marketing, as well as the accessibility of the area.

Table 1 – Harvested Area, Production and Average Production of Tidal Rice in South Sumatra, 2016

Locations	Land Area (ha)	Production (tons)	The average production per hectare (t / ha)
		GKG	GKG
Ogan Komering Ilir	26,434	127,940.561	4.2
Musi Banyuasin	34,579	47,498.12	4.28
Banyuasin	166,317	804,974.28	4.84
Amount	227,330	1,080,912.9	

Source: BPS South Sumatra Province (2016)

To implement a system of farming with corporate farming in rice farming in tidal ecosystem, the partnerships need confidence in the prospect of Industrial Forest Plantation (IFP) and sustainability to the farmers, given many limitations of farmers who could potentially be a constraint in the implementation of the institutional corporate farming system. The right partnerships, an institutional pattern that is consistent with the conditions of farmers and regional conditions of each region, as well as supporting factors following existing constraints are important factors to be studied previously in order to obtain the appropriate institutional model in its application.

Research issues. Based on the above, the problem of research formulated into a formulation of the problem as follows: «What is the state of potential revitalization of the institutional model of corporate farming in Ogan Komering Ilir».

Research purposes. Generally, this study aims to analyze the institutional system of corporate farming in Ogan Komering Ilir. Specifically, the purpose of this research is to analyze the factors that influence potential revitalization of the institutional system of corporate farming in Ogan Komering Ilir.

Hypothesis. The hypothesis of the study is aspects of human resources, management skills, coaching, social and cultural environment, farmers' knowledge of corporate farming, give positive effect to potential of corporate farming institution.

METHODS OF RESEARCH

Research Location and Period. The study was conduct in three sub districts in Ogan Komering Ilir Regency of South Sumatra Province, which are Tulung Selapan Sub district, Pangkalan Lampam Sub district, and Air Sugihan sub district. Those districts are select because those areas are peat area used for tidal rice farming and having partnership with Industrial Forest Plantation (IFP). This study was conducted in May 2015 until December 2015. The majority of data in this research are primary data, supported by secondary data. Location of the study is Simpang Heran Village, Bukit Batu Village, Rengas Merah Village, Srijaya Baru Village, and Simpang Tiga Sakti Village.

Research Population and Sample. The sampling method used is cluster sampling in peat swamp area because those area are area of peat that the designation have changed into Industrial Forest Plantation (IFP). Approach model in this research is region approach. To determine the size of the sample of the population, method by Neuman (2000) is used, i.e. for a population of approximately 1,000 (small) person the sample required are about 30 percent of the population, for a total population of about 10,000 the sample required are about 10 percent, while for a population of more than 150,000 (large,) 1 percent comparative sample is enough. In this study, the population has 1,804 members, so, the samples in this study is as many as 184 people (10 percent of population).

Analysis method. To determine the factors that influence the potential of farmer institution with corporate farming model, or to see the extent of free variables influencing variables bound as well to see how the research model designed (hypothetical) with a model of the real, inferential statistics models used are Structural Equation Modeling (SEM) analysis with PLS (Partial Leas Square) program. The variables measured in the study were:

1) Human Resources (X1), 2) Management (X2), 3) Coaching (X3), 4) socio-cultural environment (X4), 5) characteristics of farmer organizations (X5), 6) Farmers' knowledge about corporate farming (X6), 7) Corporate farming potential (Y1).

RESULTS AND DISCUSSION

Characteristics of Respondents. The average age of respondents is 48 which is the productive age, according to Act No.13 of 2003 that state productive working age is from 15 to 64 years old. Then, more than 90 percent of respondents in this study are in the productive age.

Judging from the respondents' education, the average is still low. The low level of formal education the farmers in OKI had led to ability to manage farming becomes less than optimum. Levels of education will affect the mindset of farmers because the farmers of higher education will be familiar with the knowledge and make them easier to accept innovation.

Farming experience is adequately long, even reaching 40 years old. Rice farming experience will affect the level of farmers' skills in managing their farming. The longer farmers pursue farming the higher the skills, knowledge, and insights the farmers have, with respect to the farm managed. Farming experience is one of the factors that affect farmers in accepting an innovation. The low level of non-formal education of farmers related to the counseling or training which are not routinely held, and the tendency of farmers who attended training are only the group leader or their representation.

The majority of respondents have 3-4 person as household members, which are in moderate category, so the burden on these respondents are still moderate. So, the respondents have availability of workforce through labor by their family. A majority number of household members which is in moderate category can assist in the implementation of farmers institution revitalization with the corporate farming system.

Average production of paddy in Ogan Komering Ilir is 2.5 GKG per ha per one harvest season. One of the reasons of this low rice production number is sub-optimal performance of farmer institutions (groups, cooperatives). Therefore, institutional revitalization by corporate farming model is needed to increase production, income, and welfare of farmers.

Factors Affecting Potentials of Institutional Revitalization by Corporate Farming Systems In this study, the Component/variance Based Structural Equation Modeling is used to answer research issue that related the influence of human resources, management, development, socio-cultural environment, the characteristics of the institutional farmer and farmers' knowledge about corporate farming and its potential and its impact on readiness or expectation of farmers by institutional corporate farming.

From the structural model test results that have been obtained previously and factually, it can be said that the structural model fit to the data or models that may be applied to the stage of empirical generalization or hypothesis testing.

$$Y1 = 0.14X1 + 0.32X2 + 0.25X3 + 0.12X4 + 0.16X5 + 0.17X6, R^2 = 0.70 \quad (1)$$

Factors that affect the institutional potential corporate farming (Y1), respectively are:

- 1) Management Skills (X2) with a value (β) = 0.3;
- 2) Coaching (X3) with a value (β) = 0.25;
- 3) Knowledge of corporate farming farmers (X6) with the value (β) = 0.17;
- 4) Characteristics of farmer organizations (X5), with a value (β) = 0.16;
- 5) Human Resources (X1), with a value (β) = 0.14;
- 6) Social and Cultural Environment (X4), with a value (β) = 0.12.

The Effect of Management Skills to Institutional Revitalization by Corporate Farming Systems. Based on the partial test, the variables that greatly affect the potential revitalization of the institutional system of corporate farming is management skills. The facts above shows that the higher the skill of farmers, the higher the potential revitalization of the institutional system of corporate farming or the results showed that the variables management skills variable directly affect on farmers' potential institutional revitalization by corporate farming.

The influence coefficient is 0.32 on real level $\alpha = 0.05$ Influence of management skills on potential of institutional revitalization by corporate farming system reflected by 4 indicators that observed (manifest) consisting of Farming Planning (X2.1), the ability to carry out management functions (X2.2), experience of the organization (X2.3), and leadership (X2.4).

The experience of farmers' organizations is the most powerful indicator that reflects management skills in influencing potential institutional revitalization by the corporate farming system ($\lambda = 0.90$). s that the better the experience of farmer organizations, the better the potential revitalization of farmer institutions by corporate farming system. Due to the experience of farmers' organizations the farmers are used to organize, the experience of these organizations greatly affect the potential to carry out an institutional system of the corporate farming.

Leadership is the second strongest influence after organizational experience variable to the potential of farmer institutional revitalization by corporate systems Farming ($\lambda = 0.84$). A positive value indicates that the influence coefficient is also positive indicators. This means that the better the leadership, the better the potential for institutional revitalization of farmers by the corporate farming system because they can mobilize the farming community around him. In the social interaction in the countryside in general, the presence of a highly respected leader is needed in the employment relationship or the situation involved another community relationships. Thus, in accepting something, new farmers will depend on the leaders included in the revitalization of farmer institutions by the corporate farming system. the better the leadership, the potential for institutional revitalization of farmers by corporate farming system will be more easily carried out by farmers.

Planning in farming is the third strongest influence after leadership variable in potential of institutional revitalization of farmers by corporate farming system ($\lambda = 0.64$). It means the better planning in farming, the better the potential revitalization of farmer institutions by corporate farming system.

Implementation of management functions in farming is the fourth strongest influence after leadership variable in institutional revitalization potential of farmers by the corporate farming systems ($\lambda = 0.64$). This means that the better performance of the functions of management in farming, the better the potential revitalization of farmer institutions by corporate farming system. The insufficient in number of farmers that carrying out the functions of management in farming means further implementation of management functions in the farming need to be optimized. Increasing in the performance of the functions of management in farming by farmers will increase potential of institutional revitalization of farmers by the corporate farming system.

Effect of Coaching on Potential of Institutional Revitalization by Corporate Farming Systems. Based on the partial test, one of the variables that greatly affect the potential revitalization of the institutional system of corporate farming is coaching. The facts above show that the higher guidance factor in farmers, the higher the potential revitalization of the institutional system of corporate farming or the results showed that coaching variables effect directly on farmers' potential institutional revitalization corporate farming, with influence coefficient of 0.31 on a real level $\alpha = 0.05$.

Coaching by private company to the farmers is the most powerful indicators that reflected guidance factor in influencing potential institutional revitalization by corporate farming system ($\lambda = 0.81$). This means that the better coaching by private company to the farmers, the better the potential for institutional revitalization of farmers by the corporate farming system. Coaching by the private company includes education, training conducted by the company to farmers as CSR program.

Government guidance is the second strongest influence variable, after coaching by private company, in potential of institutional revitalization of farmers by the corporate farming systems ($\lambda = 0.64$). This means that the better the guidance by government, the better the potential for institutional revitalization of farmers with corporate farming system. Guidance by the government through a group of farmers can help to explore the potential, troubleshoot farm farmer group members more effectively, and facilitate the access to information,

markets, technology, capitalization, and the source [Medan City Agriculture Department, 2008].

Effect of Farmers Knowledge About Corporate Farming on Potential of Institutional Revitalization by Corporate Farming Systems. Their knowledge of institutional corporate farming is fifth strongest influence factor after farmer organizations characteristics to the potential characteristic of institutional corporate farming ($\beta = 0.22$).

From the analysis of the data shows that the farmers' knowledge about the understanding and implementation of corporate farming satisfies moderate criteria. This means that farmers' knowledge about the meaning and how the institutional implementation of the good corporate farming farmer is not fully known, but there are already some farmers who understand the implementation of the farm by way of pooling of land under one management. The reason is information and socialization they get about the institutional corporate farming is still very minimal.

The desire of farmers in the implementation of the institutional system of corporate farming is done by partnership. This desire is due to limited knowledge and the ability of farmers' capital. This means that the institutional implementation of farmers with the corporate farming system adapted to the wishes of farmers. The desire of farmers has become one of the variables found that affect the potential for institutional revitalization of farmers by corporate farming system. The harmony between the knowledge and the desire of farmers to institutional corporate farming will provide strong support to the institutional potential of corporate farming.

Effect of Potential Human Resources on Institutional Revitalization by Corporate Farming Systems. Based on the partial test, the second strongest variables that influence on potential institutional revitalization with corporate farming system are human resources. Based on the facts above shows, it can be shown that the higher the human resources variables, the higher the potential for institutional revitalization with corporate farming system, or the results showed that the variables of human resources directly effect on farmers' potential institutional revitalization corporate farming, with the influence coefficient of 0.28 on a real level $\alpha = 0.05$. Corporate farming is not only institutional workforce but institutional business to empower human resources and to improve the ability of farmers' resources.

Age of farmers is the most powerful indicator that reflects the human resources factors in influencing potential institutional revitalization by the corporate farming system ($\lambda = 0.89$). This means that the higher the age of the farmer, the better the potential for institutional revitalization of farmers with the corporate farming system.

Non-formal education of farmers is the second most powerful indicator that reflects human resources factors in influencing potential institutional revitalization by the corporate farming system ($\lambda = 0.88$). This means that the higher the non-formal education of farmers, then the potential revitalization of farmer institutions with corporate farming system will be better.

Farmers experience is the third strongest indicator that reflecting human resources variables in influencing potential institutional revitalization by corporate farming system ($\lambda = 0.85$). This means that the longer the experience of farmers, the better the potential revitalization of farmer institutions by the corporate farming system. From the results of the research the average years of farming experience in the surveyed site is 21 years. This result suggests that the experience of farming is in old category. Farming experience affects the decisions regarding new technological innovations options.

Gender is the fourth strongest indicator that reflecting human resources variables in influencing potential institutional revitalization by corporate farming system ($\lambda = 0.85$). This means that more male farmers, the better the potential for institutional revitalization of farmers by corporate farming system.

Formal education of farmers is the sixth indicator that reflects the human resources in influencing potential institutional revitalization with the corporate farming system ($\lambda = 0.63$). This means that the higher the education of farmers, then the potential revitalization of farmer institutions by the corporate farming system will be better. Margono Slamet [1992]

stated that the higher a person's education level, the higher the knowledge, attitudes and skills, working efficiency, know-how and techniques to work better and more profitable.

Effect of Characteristics of Farmers Organization on Institutional Revitalization by Corporate Farming Systems. The characteristics of farming institutions illustrate the inherent characteristics of the farming institutions that describe the condition of the institutions they have. The influence of farmer institutional characteristic on the potential of corporate farming institution is reflected by 4 manifest indicators, consisting of age of farmer institution (X51), number of member of farmer institution (X52), activity type (X53), and organizational structure (X55).

These results give meaning that the institutional characteristics of farmers will increase the institutional revitalization potential with the corporate farming system only if the four indicators are optimized. The higher quality of farmers' characteristics reflected by the age of the farmer institution, the number of members of the farming institution, the organizational structure, and the number of administrators will increase the institutional potential of corporate farming, both cultural and social potential, regional potential, structural potential and production potential. Organizational structure is an indicator of farmer institutional characteristics that have the greatest potential in reflecting the institutional characteristics of farmers in affecting the potential of corporate farming institutions ($\lambda = 0.82$). This means that the better the institutional structure of farmers, the better the institutional potential by corporate farming system. The organizational structure itself describes the form of organizational management in terms of completeness of the organizational board components and tasks performed.

The performance of the board is the second ranking indicator that is able to reflect the influence of the variables of farmer institutional characteristics on the potential adoption of SSKA ($\lambda = 0.57$). This means that the performance of a good group management according to the perceptions of its members will also provide good potential to the revitalization of corporate farming institutional by group members. Conversely, if the employee performance is low (bad), then the revitalization potential of corporate farming by group members will also be low (bad). Good performance reflects good work contribution provided by the board for group activities including within the corporate farming organization.

The number of farmer group members is one of the indicators that proved able to reflect the variable of institutional characteristics of farmers in affecting the potential of corporate farming institutions ($\lambda = 0.48$). According to the Ministry of Agriculture [1998], the formation of an ideal farmer group consists of 20 to 30 people per group. This amount is considered the ideal number of candidates to be organized by one PPL in counseling and training. It is also possible to be managed and led by a group leader in carrying out group activities. Abdullah and Syamsu [2008] also stated that a farmer group formed on the basis of equal interests among farmers or farmers in the ideal amount of between 20-30 people will enable them to recognize each other's behavior, thus making the farmer group able to exist and have the ability to access all resources such as natural resources, human, capital, information, and facilities and infrastructure in developing the farms that they work. The age of the farming agency is an indicator that tends to reflect the length of experience of organization for its member farmers. This condition is very helpful in implementation in the revitalization of corporate farming institutions. The newly formed institution when adopting an innovation requires a time of pre-adjustment between members and activities before adopting an innovation.

The Effect of Social, Economy, and Culture Environment on Institutional Revitalization Potential by Corporate Farming System. Based on the partial test, the sixth variables that affect the institutional revitalization potential by corporate farming system are the social, economic and cultural environment. From the above facts, there is indication that the higher the social, economic and cultural environment, the higher the potential for institutional revitalization Corporate farming system, with influence coefficient of 0.12.

Socio-cultural value is indicator of social, economic and cultural values that have the greatest potential in reflecting the socio-cultural characteristics in influencing the potential of corporate farming institutions ($\lambda = 0.83$). It means that the better the socio-cultural value, the

better the institutional potential with the corporate farming system. This research is also in line with the results of research Aminah et.al [2008] that concluded socio-cultural conditions will affect the behavior of farmers in managing land.

Farmers' access to counseling institutions, experts, and capital is an indicator of social, economic and cultural values that has the second greatest potential in reflecting socio-cultural characteristics in influencing the potential of corporate farming institutions ($\lambda = 0.81$). This means that the better access to institutional counseling, research and capital, the better the institutional potential by corporate farming system. Farmers' access to counseling agencies and capital institutions is still low. Business capital is a major supporting factor in agricultural production activities. The intensity of workers counseling in the study area is still rare and not routinely done. Likewise, farmers' access to capital institutions such as financial institutions, both cooperatives and banks located at the village level and in the district, is low. In a farm without adequate capital, it is difficult for farmers to develop farming to achieve optimal production and maximum profit.

Access to transportation is the third indicator of social, economic and cultural values that reflecting socio-cultural characteristics in influencing the potential of corporate farming institutions ($\lambda = 0.82$). This means that the better the existing institutional system, the better the institutional potential with corporate farming system. Institutional system is viewed from the process. Farmers' access to transportation facilities is still low. It is necessary to increase transportation access to increase the potential of the corporate farming institutions. Access to the means of production is the fourth indicator of social, economic and cultural values that reflecting socio-cultural characteristics in influencing the potential of corporate farming institutions ($\lambda = 0.75$). Farmers' access to agricultural production facilities is still somewhat difficult. This difficulty level is caused by the availability, the high price, and the difficulties of obtaining agricultural production facilities in the research location. To optimize the institutional potential by the corporate farming system, it is necessary to increase the availability of production facilities such as seeds, fertilizer equipment, and others with the right price and time, as it will greatly support the success of farming. Given the means of agricultural production is one factor that is very important in supporting the potential of farmers institutions with the corporate farming system then the farmers access to these production facilities need to be improved.

CONCLUSION

The result of SEM analysis is shows that factors influencing potential of institutional revitalization of tidal farming of tidal ecosystem with successive corporate farming model are: 1) Management Skills (X2), 2) Development (X3), Human Resources (X1), 3) Knowledge of farmers about corporate farming (X6), 4) Human Resources (X1), 5) characteristics of farming institutions (X5), 6) Socio-cultural environment (X4), these six variables significantly affect the revitalization potential of corporate farming institutions (Y1). Of the six variables: human resources (X1), characteristics of farming institutions (X5), and socio-cultural environment (X4) need to be optimized again to increase the revitalization potential of tidal rice farming ecosystem with corporate farming model.

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DOI <https://doi.org/10.18551/rjoas.2017-06.38>

PRICE EFFICIENCY OF SHALLOT MARKETING IN RURAL AREA OF INDONESIA

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ABSTRACT

System for the marketing onion still controlled by intermediary traders with offers a price relatively higher. The price of onions red high in the market not always the advantage of farmers, the condition of being actually happened was the greatest advantage obtained the traders more perform the function of marketing. The purpose of this research is to analyze about pricing efficiency in transportation and processed that is for marketing commodities onion. The measurement of efficiency price can be reviewed according to function transportation costs and the cost of function processing they had spent to marketing onion. Pricing efficiency by function transportation that is the difference between the price between place marketing onion in the study areas and not larger than transportation costs issued by institutions marketing. Based on pricing efficiency, marketing onion at the research to all the marketing can said to have been efficient, it was because the proportion of profit marketing or is higher than the cost of marketing issued.

KEY WORDS

Price efficiency, transportation, function, cost.

Institutions of Shallot marketing is an organization that having role to play in channel produce Shallot to the consumer an end by performs the functions of marketing (Barakade A.J. et al, 2011 and Salazar, 2015.). An each marketing channel has different benefits different again to of the each institution marketing involved in these activities. The shorter marketing outlets will give greater advantage to producers compared with marketing outlets long (Rediansyah, 2003).

Marketing Shallot still involves several institutions marketing, as traders, the large areas, the large outside the region, and sellers. It was because farmers indirect selling commodities of Shallot directly to the consumer. This condition has the problem in Shallot marketing are still dominated technique sales is traditional and the prices must be the show standard the quality of the outcome crops. The impact of occurring namely the divisions of the price or farmers it can be said not in proportion to the cost of marketing have been issued (Marsha, 2011; Obasi I.O., Emenam O., 2014).

Now the system marketing of Shallot still controlled by intermediary traders with offers a price relatively higher, in addition transactions are in cash by intermediary traders after their crops onion weighed (Rediansyah, 2003). The ties cooperation and ease is obtained. Money cause farmers choose sell their harvest onion as the price specified directly by intermediary traders. The price of onions red high in the market not always the advantage of farmers, the condition of being actually happened was the greatest advantage obtained the traders more perform the function of marketing (Marsha, 2011).

Based on the description above, and then required analysis research on the efficiency of the price of a commodity Shallot. Marketing onion conducted by marketing institutions will determine much of the marketing based on the efficiency of the function of marketing conducted by marketing of each organization. Hence the purpose of this research is to analyze about the efficiency of a price on transportation and processing which is found in marketing commodities Shallot.

METHODS OF RESEARCH

The determination of recipient the research was done in purposive namely in Malang areas consist of Batu city, Malang city and Malang regency. The determination of respondents for marketing determined approach in non probability of sampling with the methods snow ball sampling that is following a groove marketing starting from farmers onion down to the level consumers the end. Based on the level a manufacturer or farmers will know where the flow of products and institutions what was involved in product marketing until to the consumer the end. Virtue of a groove marketing in the regions research, obtained various institutions marketing involved was two amount of intermediary traders, three amount of large trades on regional level, three amount of large traders on outside the region level, and five amount of retailer traders, so the total traders respondents there were 13 people.

The method of analysis the data used in accordance with research objectives that is efficiency marketing. To analyze marketing onion required pricing efficiency to transport and processed. The measurement of efficiency price can be reviewed according to cost of function transportation and the cost of function processing had spent to marketing onion. Pricing efficiency by function transportation that is the difference between the price between place marketing Shallot in the study areas and not larger than transportation costs issued by institutions marketing. Based on the previous research by Zalukhu (2009); Layade A.A., and Adeoye I.B (2014), for analysis pricing efficiency according to transportation costs can formulated as follows:

$$PA - PB \geq BT$$

Where: PA = Selling price in final place, PB = Selling price in starting place, BT = Transportation cost.

Price efficiency based on processing function is the price difference between Shallot and marketing agencies do not outweigh the cost function processing issued by marketers. Processing function consists of sorting and grading costs, packaging, loading and unloading. The calculation for the analysis of the efficiency of the price according to the cost of processing is as follows:

$$PA - PB \geq BP$$

Where: PA = Selling price in final place, PB = Selling price in starting place, BP = Processing cost.

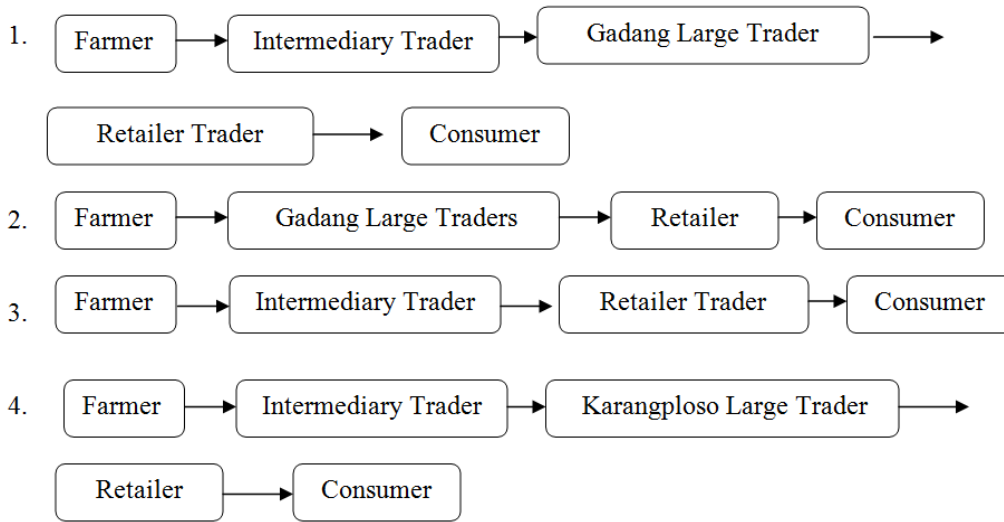
RESULTS AND DISCUSSION

Shallot marketing channel of a series of institutions marketing traversed products commodities Shallot to the direction of the distribution of the product of producers to consumers. The shorter marketing outlets will give greater advantage to producers compared with marketing outlets long. The current marketing Shallot at various degrees of in the study areas it appears that there are several institutions marketing involved in an activity marketing starting from farmers, intermediary traders, large traders, and retailer trader, until with final consumers. Based on the research done there are four marketing channel in the research areas namely.

A sale is a weight that is based on weight a unit of pounds in the form of a sack of Shallot, tied up. In general Shallot sold by farmers' respondents at the condition of being is dried up for 4-6 day. Sales onion done farmers that is waiting for buyers coming to the dried up place in land and also of farmers' house.

Interdiatery traders are the marketing institutions of buy onion directly from the farmers. The process of purchasing is farmers who visited directly intermediary traders and traders who visited directly the farmer. In general intermediary traders are from local village and neighbors' village. The process of selling the purchases through transactions bargain price

between them, with reference to commodity prices onions a prevailing red at the time. Marketing institutions act as middle-men in research locations as many as two people.



Marketing Channel I

- a. Intermediary Trader
 $\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,02) > \text{IDR } 30$
 $\text{IDR } 8.500 - \text{IDR } 7.140 > \text{IDR } 30$
 $\text{IDR } 1.360 > \text{IDR } 30$
- b. Karang Ploso Large Trader
 $\text{IDR } 10.500 - \text{IDR } 8.500 \times (1/1-1,03) > \text{IDR } 11,7$
 $\text{IDR } 10.500 - \text{IDR } 8.755 > \text{IDR } 11,7$
 $\text{IDR } 1.745 > \text{IDR } 11,7$

Marketing Channel II

- a. Batu Large Trader
 $\text{IDR } 9.000 - \text{IDR } 7.000 \times (1/1-1,02) > \text{Rp } 8,5$
 $\text{IDR } 9.000 - \text{IDR } 7140 > \text{Rp } 8,5$
 $\text{IDR } 1.860 > \text{IDR } 8,5$
- b. Retailer Trader
 $\text{IDR } 11.500 - \text{IDR } 9.000 \times (1/1-1,01) > \text{IDR } 66,7$
 $\text{IDR } 11.500 - \text{IDR } 9.090 > \text{IDR } 66,7$
 $\text{IDR } 2.410 > \text{IDR } 66,7$

Marketing Channel III

- a. Intermediary Trader
 $\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,01) > \text{IDR } 24$
 $\text{IDR } 8.500 - \text{IDR } 7.070 > \text{IDR } 24$
 $\text{IDR } 1.430 > \text{IDR } 24$
- b. Gadang Large Trader
 $\text{IDR } 10.500 - \text{IDR } 8.500 \times (1/1-1,03) > \text{IDR } 16,7$
 $\text{IDR } 10.500 - \text{IDR } 8.755 > \text{IDR } 16,7$
 $\text{IDR } 1.745 > \text{IDR } 16,7$

Marketing Channel IV

- a. Intermediary Trader
 $\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,02) > \text{IDR } 26,7$
 $\text{IDR } 8.500 - \text{IDR } 7.140 > \text{IDR } 26,7$
 $\text{IDR } 1.360 > \text{IDR } 26,7$
- b. Retailer Trader
 $\text{IDR } 11.000 - \text{IDR } 8.500 \times (1/1-1,02) > \text{IDR } 82,5$
 $\text{IDR } 11.000 - \text{IDR } 8.670 > \text{IDR } 82,5$
 $\text{IDR } 2.330 > \text{IDR } 82,5$

The large traders from the regions and outside the region are traders who buy Shallot of various intermediary traders and buy directly to local farmers, with the number of the purchase of the major party. Generally, large trader had big patron intermediary traders who sell onion. Traders large buy onion of intermediary traders are already in the form of without fastenings in a sack and others in the form of connective in a sack. While of derived from farmers in overall still in connective in a sack. Marketing institutions act as the large areas as many as three people and the outside region of large traders in the research locations as many as three people.

Retailer traders are traders who come straight with consumers. Retailer traders not doing process of packing repeated because directly sell Shallot that has been purchased in the form of without fastenings.

Analysis of price efficiency this price measuring the cost of transportation and the cost of processing to each marketing institution involved. The measurement of efficiency based on a calculation the difference between the prices actual a commodity at a cost of the cost of function marketing done by institutions marketing involved.

Table 1 – Price efficiency based on transportation function in Shallot institutional marketing

Marketing Channel	Marketing Institution	Price Gap (IDR/Kg)	Transportation Cost Average
I	Intermediary Trader	1360	30
	Large Trader Karang Ploso	1745	11,7
	Retailer Trader	1790	51
II	Batu Large Trader	1860	8,5
	Retailer Trader	2410	66,7
III	Intermediary Trader	1430	24
	Large Trader Gadang	1745	16,7
	Retailer Trader	2290	114
IV	Intermediary Trader	1360	26,67
	Retailer Trader	2330	82,45

Marketing Channel I

a. Intermediary Trader

$$\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,02) > \text{IDR } 55$$

$$\text{IDR } 8.500 - \text{IDR } 7.140 > \text{IDR } 55$$

$$\text{IDR } 1.360 > \text{IDR } 55$$

b. Karang Ploso Large Trader

$$\text{IDR } 10.500 - \text{IDR } 8.500 \times (1/1-1,03) > \text{IDR } 76,7$$

$$\text{IDR } 10.500 - \text{IDR } 8.755 > \text{IDR } 76,7$$

$$\text{IDR } 1.745 > \text{IDR } 76,7$$

c. Retailer Trader

$$\text{IDR } 12.500 - \text{IDR } 10.500 \times (1/1-1,02) > \text{IDR } 70$$

$$\text{IDR } 12.500 - \text{IDR } 10.710 > \text{IDR } 70$$

$$\text{IDR } 1.790 > \text{IDR } 70$$

Marketing Channel II

a. Batu Large Trader

$$\text{IDR } 9.000 - \text{IDR } 7.000 \times (1/1-1,02) > \text{IDR } 100,8$$

$$\text{IDR } 9.000 - \text{IDR } 7140 > \text{IDR } 100,8$$

$$\text{IDR } 1.860 > \text{IDR } 100,8$$

b. Retailer Trader

$$\text{IDR } 11.500 - \text{IDR } 9.000 \times (1/1-1,01) > \text{IDR } 70$$

$$\text{IDR } 11.500 - \text{IDR } 9.090 > \text{IDR } 70$$

$$\text{IDR } 2.410 > \text{IDR } 70$$

Marketing Channel III

a. Intermediary Trader

$$\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,01) > \text{IDR } 55$$

$$\text{IDR } 8.500 - \text{IDR } 7.070 > \text{IDR } 55$$

$$\text{IDR } 1.430 > \text{IDR } 55$$

b. Gadang Large Trader

$$\text{IDR } 10.500 - \text{IDR } 8.500 \times (1/1-1,03) > \text{IDR } 97,9$$

$$\text{IDR } 10.500 - \text{IDR } 8.755 > \text{IDR } 97,9$$

$$\text{IDR } 1.745 > \text{IDR } 97,9$$

c. Large Trader

$$\text{IDR } 13.000 - \text{IDR } 10.500 \times (1/1-1,02) > \text{IDR } 154$$

$$\text{IDR } 12.500 - \text{IDR } 10.710 > \text{IDR } 154$$

$$\text{IDR } 2.290 > \text{IDR } 154$$

Marketing Channel IV

a. Intermediary Trader

$$\text{IDR } 8.500 - \text{IDR } 7.000 \times (1/1-1,02) > \text{IDR } 335$$

$$\text{IDR } 8.500 - \text{IDR } 7.140 > \text{IDR } 335$$

$$\text{IDR } 1.360 > \text{IDR } 335$$

b. Retailer Trader

$$\text{IDR } 11.000 - \text{IDR } 8.500 \times (1/1-1,02) > \text{IDR } 70$$

$$\text{IDR } 11.000 - \text{IDR } 8.670 > \text{IDR } 70$$

$$\text{IDR } 2.330 > \text{IDR } 70$$

Based on the calculation of in table 1, can be seen that on average transportation costs done by each marketing institutions involved in every marketing outlets. A marketing outlets it can be said efficient when value the difference between the price greater than values on average the money that has been issued for marketing onion. On the other hand, a marketing outlets said inefficient when value the difference between the price smaller than values on average cost. In the analysis price efficiency according to function transportation, all the marketing has reached price efficiency.

Approach pricing efficiency also obtained from function processing consisting of sorting and grading, packaging, loading and unloading. Activities sorting to separate onion the best of spoiled or is misshapen. While grading is pengkelasan criteria onion according to the shape and size of the amount tubers onion. After conducted sorting and grading, onion packed with using the sacks plait plastic perforated holes. Loading and unloading activities onion who has packed in a sack plait plastic and kemudian carried into pick up.

Table 2 – Price Efficiency Based on Processing Function in Market institutional Shallot

Marketing Channel	Marketing Institutional	Price Gap (IDR/kg)	Transportation Cost Average
I	Intermediary Trader	1360	55
	Karang Ploso Large Trader	1745	76,7
	Retailer Trader	1790	70
II	Batu Large Trader	1860	100,8
	Retailer Trader	2410	70
III	Intermediary Trader	1430	55
	Pedagang Large Trader	1745	97,9
	Retailer Trader	2290	154
IV	Intermediary Trader	1360	355
	Retailer Trader	2330	70

Based on the results in table 2, according to function processing consisting of sorting and grading, packaging, loading and unloading and, can said to have efficient. It is applicable to marketing outlets it can be said efficient when value the difference between the price greater than values on average cost. On the other hand, marketing outlets said inefficient when value the difference between the prices smaller than values on average cost. Hence the efficiency of marketing outlets was found in all value the difference between the prices of all marketing outlets greater than values on average cost processing.

CONCLUSION

Based on price efficiency, marketing of Shallot at the research to all the marketing can said to have been efficient, it was because the proportion of profit marketing or is higher than the cost of marketing issued. In the next research, can research supply chain management (SCM) analysis of marketing relationship between suppliers seeds, farmers, traders, the large regions and outside the region, and a retailer. Because it can develop this business and compete superior in marketing onion.

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DOI <https://doi.org/10.18551/rjoas.2017-06.39>

**К ВОПРОСУ О ДЕТОКСИКАЦИИ ПОЧВ ЗАГРЯЗНЁННЫХ ТВЁРДЫМИ
БЫТОВЫМИ ОТХОДАМИ**
ABOUT THE QUESTION OF THE DETOXIFICATION OF SOILS CONTAMINATED
BY THE SOLID MUNICIPAL WASTE

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АННОТАЦИЯ

Из общей площади земель сельскохозяйственного назначения Орловской области - нарушенные составляют 252,4 тыс. га. Исследования проводились на участке перекрытия плодородного слоя почвы твердыми бытовыми отходами площадью 1,3 га. Участок расположен на землях сельскохозяйственного назначения Болховского района Орловской области. Отбор и анализ образцов почвы выполнен в соответствии с ГОСТ 26483-85. Цель работы - выявить влияние несанкционированной свалки на агроэкологию почвы.

ABSTRACT

The amount of the disturbed lands out of the total area of agricultural lands in Orel region is 252.4k of ha. Current research was held on the fertile area (1.3 ha) contaminated by the solid municipal waste The area is located in Bolkhov district of Orel region. The sample collection and its analysis were made according to the All Union Standard 26483-85. The aim of this work is to identify the influence of unauthorized landfill of the solid municipal waste on the soil agro-ecology.

КЛЮЧЕВЫЕ СЛОВА

Нарушенные земли, несанкционированные свалки, твёрдые бытовые отходы, почва, гумус, подвижный фосфор, калий, тяжелые металлы, кадмий, медь, свинец, цинк, рекультивация, мелиорация.

KEY WORDS

Disturbed lands, unauthorized landfill, solid municipal waste, soil, humus, active phosphorus, potassium, heavy metals, cadmium, copper, lead, zinc, remediation, soil improvement.

Территория Российской Федерации с полностью разрушенными экологическими системами составляет более 2 млн. км² и является серьёзной экологической угрозой [1]. Одним из главных факторов разрушения экосистем являются свалки твердых бытовых отходов (ТБО). Практически во всех регионах нашей страны мусорные полигоны давно переполнены и на них ежегодно продолжают поступать от 1 до 200 млн. тонн бытового мусора. На каждого городского жителя в течение года образуется около 500 кг ТБО, из них 52 кг полимерные - один из наиболее стойких источников загрязнения окружающей среды, особенно почвенного покрова. Кроме полимеров, ТБО включают (% массы): пищевые отходы - 33-43; бумагу и картон - 20-30; стекло - 5-7; текстиль - 3-5; пластмассу - 2-5; кожу и резину - 2-4; черный металл - 2-3,5; дерево - 1,5-3; камни - 1-3; кости - 0,5-2; цветные металлы - 0,5-0,8; прочие - 1-2 [6,7]. При удалении из селитебной зоны ТБО последовательно трансформируются в сосредоточенный фактор серьёзного воздействия на окружающую среду [8].

Существенное влияние на изменение компонентов окружающей среды оказывают не только объем и состав ТБО, но и способы их хранения. Как правило, свалки ТБО возникают стихийно без элементарных природоохранных мероприятий.

Поэтому на таких свалках под действием атмосферных осадков отходы претерпевают сложные физико-химические и биохимические изменения, которые приводят к образованию различных твердых и растворимых токсичных соединений, которые мигрируют в окружающую среду. В первую очередь фильтрат попадает в почву зоны покрытия свалки и близлежащие примыкающие территории. Фильтрат характеризуется высоким содержанием тяжелых металлов, аммиака, органических соединений и патогенных веществ. В верхних слоях, вследствие ферментации органического материала, образуется и освобождается газ, состоящий примерно из равных частей углекислого газа и метана [14,15].

Ухудшение экологической обстановки наблюдается и на территории Орловской области. Так, по данным Россельхознадзора, из общей площади земель сельскохозяйственного назначения (1,508 млн. га) нарушенные составляют 252,4 тыс. га [9].

Мониторинг экологического состояния почв Орловской области показал увеличение с 3,7% (2013 год) до 10,2% (2015 год) количества почвенных проб, не отвечающих гигиеническим нормативам по санитарно-химическим показателям - превышения отмечены по бенз(а)пирену (64 пробы). При этом на территории селитебной зоны отмечается увеличение доли проб, не отвечающих гигиеническим нормативам на 4,8%, а на территории детских дошкольных учреждений - на 3,8% [10]. Сложившаяся экологическая ситуация диктует необходимость экстренных мер по утилизации отходов свалок и рекультивации загрязненных земель - желательно биологическими методами. Поэтому цель наших исследований – установить влияние ТБО свалок на основные агроэкологические показатели почвы – основы для приемов рекультивации земель [2,3].

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЙ

Исследования проводились на свалке ТБО, расположенной на землях сельскохозяйственного назначения. Свалка общей площадью 1,3 га находится западнее г. Болхов Болховского района Орловской области. Почвенный покров изучаемого участка представлен серыми лесными почвами суглинистого механического состава. В геоморфологическом плане свалка расположена на водораздельном склоне безымянной балки. Период действия свалки ТБО составляет более 10 лет.

Оценку состояния почвы свалки проводили по образцам, отобраным в соответствии с действующими нормативными актами (ГОСТ 26483-85). Приготовление солевой вытяжки и определение ее pH по методу ЦИНАО (ГОСТ Р54650-2011). Определение подвижного калия, фосфора по методу Кирсанова (ГОСТ 26210-91). Определение обменного калия по методу Масловой (ГОСТ 26213-91) и органического вещества [17,18,19,20].

РЕЗУЛЬТАТЫ И ИХ ОБСУЖДЕНИЕ

Комплексный химический анализ (КХА) почвенных образцов участка перекрытия ТБО свалки показывает, что кислотность почв на участке перекрытия ТБО является слабощелочной и варьирует от 6,6 до 7,4 при среднем значении 6,9, что на 5,8% ниже, чем у контрольного образца - pH 6,5 (табл. 1). Это свидетельствует о том, что ТБО данной свалки оказывают незначительное подщелачивающее действие на плодородный слой почвы.

На участке перекрытия ТБО за время их хранения наблюдается накопление органического вещества в почве. Его содержание повышается до 2,7-4,2% (среднее значение 3,5%), что на 65,2% больше чем на контроле - 2,1% (табл.1). Это свидетельствует о том, что в условиях участка перекрытия ТБО по содержанию гумуса почвы (главного показателя плодородия) перешли из категории недостаточно

обеспеченных к средне обеспеченным. Естественно, что накопление гумуса в почве на участке покрытия происходит за счет органической части ТБО.

Таблица 1 – Результаты анализа почвенных образцов участка перекрытия ТБО несанкционированной свалки в окрестностях г. Болхова Орловской области, 2016 год

№ пробы	Основные элементы питания в почвенных образцах, мг/кг			
	pH	гумус, %	P ₂ O ₅	K ₂ O
1	6,64	2,71	168,14	225,43
2	6,77	4,20	212,32	295,82
3	7,37	3,59	420,61	320,17
4	6,91	2,83	301,56	399,51
5	7,35	4,11	440,22	412,63
6	6,94	3,84	302,51	255,76
7	6,72	3,41	270,83	198,30
8	6,61	3,12	189,42	289,81
Среднее	6,91	3,47	288,20	299,67
Плодородный слой почвы (контроль)				
9	6,53	2,10	210,50	183,03
Среднее к контролю, %	105,8	165,2	184,5	163,7

Содержание P₂O₅ в плодородном слое почвы участка перекрытия ТБО колеблется от 168,1 мг/кг почвы (повышенное) до 440,2 мг/кг почвы (очень высокое) при среднем значении 288,2 мг/кг почвы (высокое) что на 84,5% больше, чем на контроле - 210,5 мг/кг. Это свидетельствует о значительном накоплении подвижных соединений фосфора за период действия свалки.

Подвижные формы калия в почвах участка перекрытия ТБО варьируют от 198,3 мг/кг почвы (повышенное) до 412,6 мг/кг почвы (очень высокое) при среднем значении 299,7 мг/кг почвы (высокое), что на 63,7% больше контроля - 183,0 мг/кг. Естественно, что указанные изменения в почве за период действия свалки обусловлены составом ТБО.

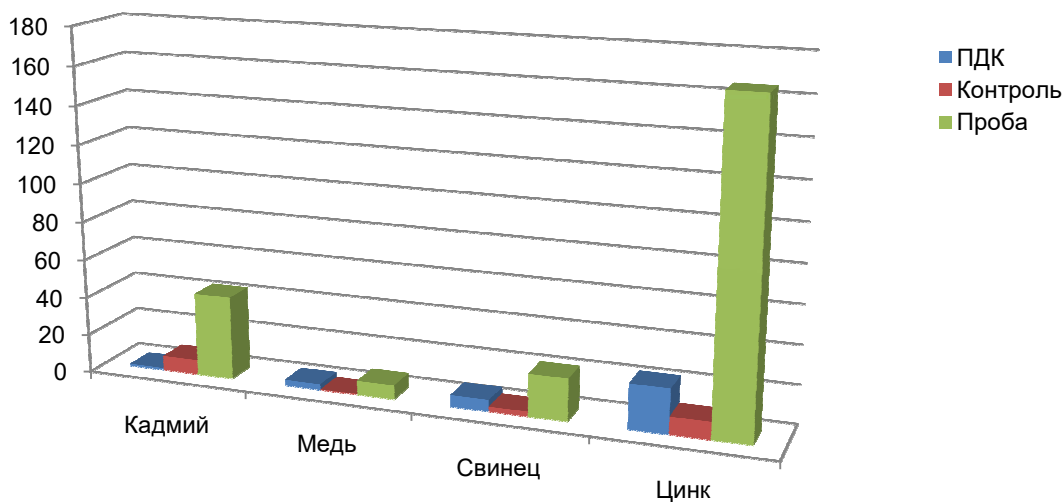


Рисунок 1 – Содержание солей тяжелых металлов в образцах почвы зоны перекрытия ТБО несанкционированной свалки в окрестностях г. Болхова Орловской области, 2016 год, мг/кг почвы

По определению ВОЗ свинец, ртуть, и кадмий являются самыми опасными тяжёлыми металлами, представляя «страшную тройцу» в природной среде. Наибольшую опасность представляют подвижные формы тяжёлых металлов наиболее доступные для живых организмов. Подвижность металлов существенно зависит от почвенно-экологических факторов, основные из которых - содержание органического

вещества, кислотность почвы, окислительно-восстановительные условия, плотность почвы и др. Накопление загрязняющих веществ в системе почва - растение определяется несколькими факторами, основной – миграционная способность токсиканта и отношение к нему растений [4,5].

Так данные лабораторных анализов почвенных образцов зоны перекрытия показывают, что среднее содержание токсичных химических элементов в плодородном слое значительно выше по сравнению с контролем: кадмия – в 5,7 раза, меди – 21,4 раза, свинца – 8,7 раза, цинка -18,3 раза (рис. 1).

В соответствии с требованиями ГОСТ 17.4.2.01.-81 токсические химические элементы разделены по классам гигиенической опасности, которые действуют до настоящего времени:

I класс: мышьяк(As), бериллий (Be), ртуть (Hg), селен (Sn), цинк (Zn), кадмий (Cd), свинец (Pb), фтор (F) – вещества высоко опасные.

II класс: хром (Cr), кобальт (Co), бор (B), молибден (Mo), никель (Ni), медь (Cu), сурьма (Sb) - вещества умеренно опасные.

III класс: барий (Ba), ванадий (V), вольфрам (W), марганец (Mn), стронций (Sr) – вещества мало опасные [11,12,13].

Многие подобные стихийные, несанкционированные свалки в 2017 году (год экологии РФ) будут закрыты и физически ликвидированы. Однако, после физической ликвидации свалок ТБО необходимо устранить их остаточное отрицательное последствие на окружающую среду и в первую очередь провести комплекс мероприятий по рекультивации нарушенных и загрязненных почв зоны покрытия.

Самыми эффективными и безопасными в экологическом плане приемами рекультивации загрязненных земель являются биорекультивации. Для этого в первую очередь необходимо снизить или нейтрализовать токсичное действие тяжёлых металлов на растения (фитомелиоранты) участков покрытия ТБО. Общеизвестным эффективным приемом является внесение в почву кальцийсодержащих веществ, изменяющих реакцию почвенной среды и способствующих переходу тяжёлых металлов в малоподвижные недоступные или труднодоступные для растений соединения. Наиболее распространенный приём - известкование. Так по данным вегетационных опытов, внесение извести в дозах 1,2 и 4,0 г/кг в загрязнённую почву улучшает рост злаковых культур и снижает содержание в них тяжёлых металлов. Рост овса увеличивается в 6, ржи - в 4 раза по сравнению с контролем [6].

Кроме извести снижает доступность тяжёлых металлов для растений внесение торфа и минеральных удобрений. Внесение фосфорных удобрений снижает содержание кадмия в растениях шпината и кукурузы на 53%, торфа и извести - на 75-83% [16]. Высокое содержание в почве органического вещества также приводит к снижению доступности тяжёлых металлов для растений.

Данные табл.1 показывают, что в почвах зоны покрытия ТБО содержится достаточное количество гумуса и основных элементов питания, поэтому под вспашку или глубокую дисковую обработку необходимо внести 4-5 т/га кальциевых мелиорантов (известь, доломитовая мука, дефекат и т.д.).

Посев сидеральных культур семейства капустных (горчица, сурепка, рапс и т.д.) с последующей заделкой их в почву обеспечивает поступление свежей дополнительной органики, стимулирует микробиологический процесс почвы и фиксацию тяжелых металлов органическими соединениями.

После заделки сидерата для залужения участка покрытия необходимо сделать посев многолетних злаково-бобовых трав. В бобовый компонент необходимо включать люцерну. Залужение также необходимо для устранения загрязнения почв примыкающих территорий путем эрозии почвы участка покрытия.

В тех случаях, когда в течение двух – трех лет залужения содержание тяжелых металлов в почве и растениях зоны покрытия не снижается до уровня ПДК, дальнейшая рекультивация территории проводится путем лесомелиорации - посадки кустарниковой и древесной растительности.

ВЫВОДЫ

Стихийные несанкционированные свалки ТБО приводят к увеличению в почвах зоны перекрытия содержания токсичных химических соединений I класса гигиенической опасности: кадмия - в 43,4 раза, меди - 2,4 раза, свинца - 3,6 раза и цинка - 7,2 раза относительно их ПДК.

Повышение содержания органического вещества (гумуса), подвижных форм фосфора и калия в почвах зоны перекрытия ТБО по сравнению с контролем после ликвидации свалки позволяют проводить комплексную рекультивацию загрязненных земель химических, фито- и лесомелиораций.

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DOI <https://doi.org/10.18551/rjoas.2017-06.40>

**АГРОЭКОЛОГИЧЕСКОЕ ОБОСНОВАНИЕ ВЫБОРА СПОСОБА ОБРАБОТКИ ПОЧВЫ
ПРИ ВОЗДЕЛЫВАНИИ ОЗИМОЙ ПШЕНИЦЫ**
AGROECOLOGICAL RATIONALE FOR SELECTING A METHOD OF TILLAGE
IN THE CULTIVATION OF WINTER WHEAT

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АННОТАЦИЯ

В статье приведены основные результаты научной работы на полевом стационарном опыте кафедры земледелия Орловского ГАУ по изучению различных по интенсивности систем обработки почвы и их влиянию на формирование продуктивности озимой пшеницы. Проанализирован ряд опытных данных по физическим, физико-механическим свойствам почвы по вариантам опыта, а также её микробиологической активности и выявление взаимосвязи способа обработки почвы с урожайностью этой культуры в условиях Орловской области.

ABSTRACT

In the article the main results of the scientific work on the field stationary experiment of the chair of farming of the Orel GAU on studying different in intensity tillage systems and their influence on the formation of winter wheat productivity are given. A number of experimental data on physical, physical and mechanical properties of the soil by experience options as well as its microbiological activity and identification of the interrelation of the tillage method with the productivity of this culture in the conditions of the Orel region are analyzed.

КЛЮЧЕВЫЕ СЛОВА

Обработка почвы, урожайность, озимая пшеница, биологическая активность почвы, влажность почвы, физические и физико-механические свойства почвы.

KEY WORDS

Tillage, productivity, winter wheat, biological activity of the soil, humidity of the soil, physical and physical mechanical properties of the soil

В мировом земледелии со второй половины XX в. наметился поворот от многократных и тщательных обработок почвы к их сокращению и распространению «минимальных» и «нулевых» обработок с целью снижения антропогенной нагрузки на почву и уменьшения энергетических затрат [14, С.42; 15, С.108-115; 16, С.87; 17, С.233; 19, С.58-59; 20, С.44-48; 22, с.33-39]. В сельскохозяйственной литературе остаются различные точки зрения на вопрос, каким способом обрабатывать почву и как различные способы обработки влияют на ее агрофизические свойства [4, С.29; 9, С.45-49; 11, С.53; 12, С.45-46].

Во многих регионах урожайность зерновых ограничивается влагообеспеченностью. Все мероприятия должны быть направлены на большее сохранение почвенной влаги, улучшение влагосберегающей способности и уменьшение испарения [13, С.123].

Выбор мероприятий по обработке почвы под зерновые зависит от вида почвы, соотношения между культурами в данном севообороте, климата и погоды, от

преобладающей формы органического удобрения и опасности ветровой и водной эрозии [7, С. 10].

Применение ресурсосберегающей обработки почвы вместо вспашки при возделывании культур в полевых севооборотах, обеспечивает мелкокомковатую разделку посевного слоя и качественный посев, более полное сохранение и продуктивное использование влаги, получение устойчивых урожаев [8, С.22].

Для зернопаровых и зернопропашных севооборотов Центрально-Черноземного региона предложены комбинированные разноглубинные системы, основанные на сочетании вспашки под пропашные с плоскорезной обработкой на 12-14 см под зерновые культуры [2, С.126; 5, С.7].

В полевых севооборотах Нечерноземной зоны наиболее эффективны комбинированные системы с элементами минимализации, включая различные приемы и сочетания отвальной с мелкой и поверхностной обработками. Под зерновые культуры сплошного посева проводят мелкую обработку на 8-10 см дисковыми тяжелыми боронами и комбинированными агрегатами. Также широко применяют более экономичные технологии возделывания зерновых культур на основе совмещения предпосевной обработки почвы и посева [1, С.29; 8, С.22; 10, С.37; 18, С.13].

В Орловском государственном аграрном университете на опытном поле кафедры земледелия в 2015 году проводились исследования, целью которых являлось обоснование использования наиболее рациональной системы основной обработки почвы под озимую пшеницу на основе анализа физических и физико-механических свойств почвы, а также её микробиологической активности и выявления взаимосвязи способа обработки почвы с урожайностью этой культуры в условиях Орловской области.

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЯ

Почва опытного поля – типичная для области тёмно-серая лесная среднесуглинистая глееватая, почвообразующие и подстилающие породы - оглеенные покровные суглинки. Микрорельеф участка выровненный. Пахотный слой имеет слабокислую реакцию почвенного раствора, достаточно высокое содержание гумуса (4,76%) и среднее содержание подвижного фосфора и обменного калия.

Полевой опыт состоял из четырех вариантов: 1) нулевая обработка; 2) обработка плоскорезом на глубину 20-22 см; 3) обработка КОС на 14-16 см; 4) вспашка плугом ПЛН-3-35 на 20-22 см;

Полевой опыт размещен методом рендомизированных повторений в трёхкратной повторности. Размер делянки: длина – 30 м, ширина – 20 м, учетная площадь – 120 м². Все наблюдения, анализы и учёт проводили по общепринятым методикам. В опыте выращивалась озимая пшеница сорта Московская 39. Погодные условия вегетационного периода в целом были благоприятны для роста и развития зерновых культур, и в частности озимой пшеницы.

В исследованиях использовали следующие методики: влажность почвы определяли весовым методом; микроагрегатный анализа (сухое и мокрое просеивание) по Н.И. Савинову; определение водопрочности структуры почвы на приборе И.М. Бакшеева; определение биологической активности почвы методом закладки льняных полотен [6, С. 34, 36, 56, 255].

Учет урожайности проводили поделяночно, сплошным комбайнированием. Отбирались образцы на определение влажности зерна. Расчет урожайности производили на стандартную влажность (14%) и 100% чистоту зерна.

РЕЗУЛЬТАТЫ И ИХ ОБСУЖДЕНИЕ

Основная обработка почвы – главное средство воздействия на ее свойства, и как следствие, на состояние агрофитоценозов. Целью обработки почвы под зерновые культуры является создание благоприятных условий для прорастания семян и

дальнейшего роста и развития растений. Прежде всего, для выращивания озимой пшеницы обработка почвы должна обеспечить накопление и сохранение почвенной влаги, так как пшеница очень требовательна к влаге [3, С.53].

Недостаток влаги отрицательно влияет на урожайность озимой пшеницы и качество зерна. При дефиците влаги в осенний период снижается всхожесть семян. В период кущения недостаток влаги приводит к снижению продуктивной кустистости, а в период цветения-колошения – озерненности колоса [13, С.236]. На рисунке 1 представлена динамика влажности почвы в период с июня по август 2015 года.

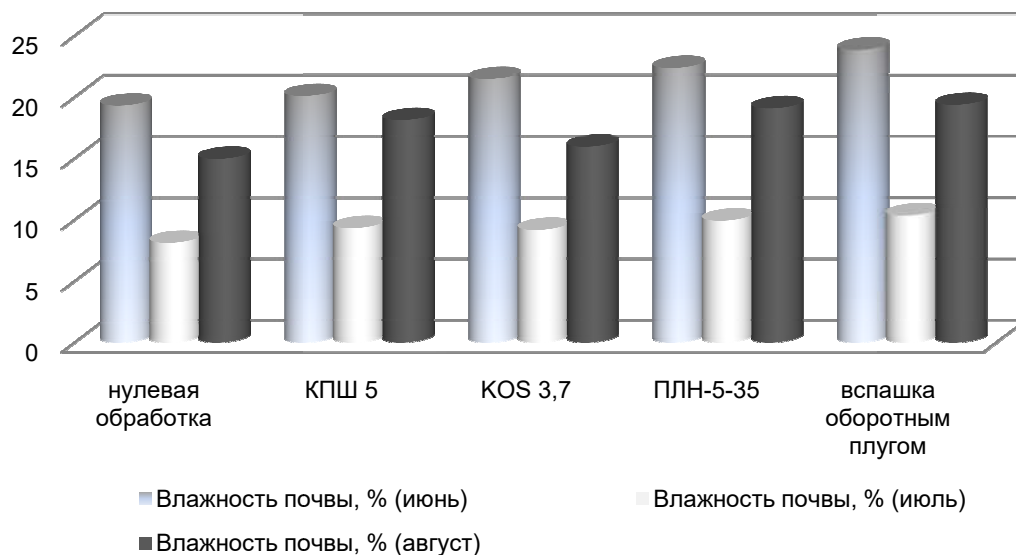


Рисунок 1 – Динамика влажности почвы в слое 0-30 см, %

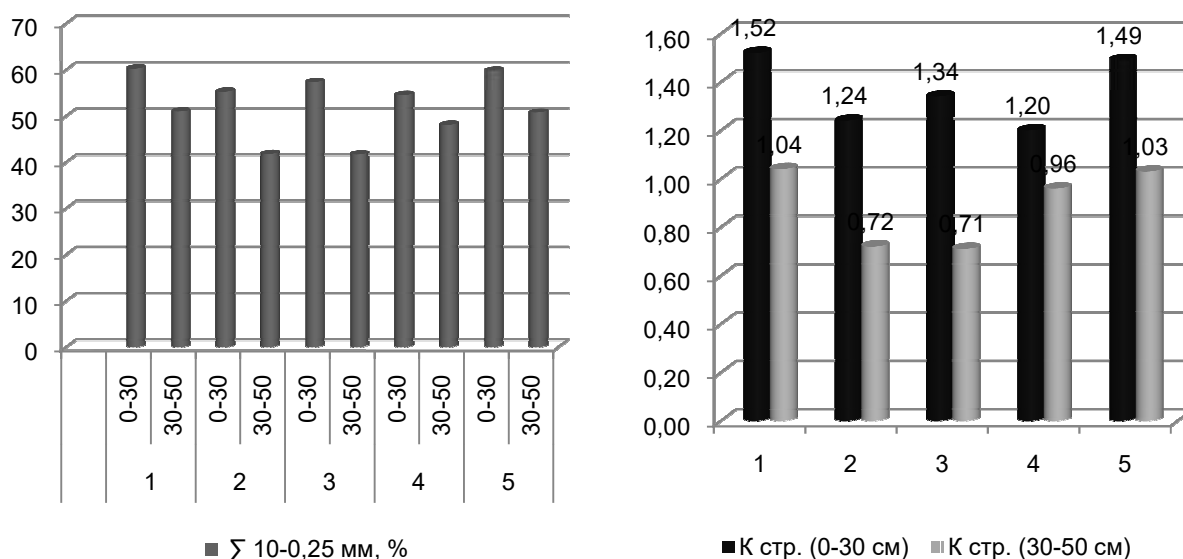
Нами определялась влажность почвы в те же периоды, когда и извлекались льняные полотна. В первый период экспозиции (начало июня) влажность пахотного слоя почвы в посевах озимой пшеницы находилась на уровне 19...24%, во второй период из-за длительного периода без осадков, наблюдалось снижение влажности пахотного слоя почвы на всех вариантах опыта (8...10%), к концу вегетации озимой пшеницы после непродолжительных дождей влажность почвы снова повысилась до 15...19%. Необходимо отметить, что варианты со вспашкой отличались повышенными показателями влажности пахотного слоя во все три отбора, что должно было способствовать большей активности почвенной биоты. Однако этого не произошло.

Для агрономической характеристик почвы большое значение имеет водопрочность ее структуры, т.е. образование прочных, не размываемых в воде отдельностей. Почвы, обладающие водопрочной структурой, имеют благоприятный для развития растений водно-воздушный режим, механические свойства и т.д. Почвы, не имеющие такой структуры, быстро заплывают, становятся непроницаемыми для воды и воздуха, а при высыхании растрескиваются на крупные глыбы (5, С.34).

Количество агрегатов определенного размера определяли методом «сухого» агрегатного анализа. Сухой рассев показал, что в обрабатываемом слое было выявлено значительное содержание (свыше 54%) агрегатов агрономически ценной фракции (рисунок 2).

Колебания процентного содержания макроагрегатов и микроагрегатов составляло от 39,7 до 45,5% общего количества в пахотном горизонте.

Коэффициент структурности почвы, на глубине 0-30 см, по вариантам опыта находился в пределах от 1,20 до 1,52, это свидетельствует о том, что на всех вариантах хорошее агрегатное состояние, а на варианте со вспашкой оборотным плугом - отличное.



*Примечание: 1 - нулевая обработка; 2 - плоскорезная обработка; 3 - комбинированная обработка; 4 - вспашка ПЛН 5-35, 5 - вспашка оборотным плугом.

Рисунок 2 – Структурно-агрегатный состав почвы в зависимости от способа основной обработки

Коэффициент структурности почвы, на глубине 30-50 см, находился в пределах от 0,73 до 1,04, это говорит о том, что почва имеет хорошее агрегатное состояние по всем вариантам опыта.

Водоустойчивость почвенных агрегатов определяли путем мокрого просеивания на приборе Бакшеева. Оценку структуры почвы в отношении ее водоустойчивость проводили по количеству агрегатов определенного размера, получающихся после «мокрого» просеивания. На рисунке 3 приведены данные по содержанию водопрочных агрегатов в структуре почвы под озимой пшеницей.

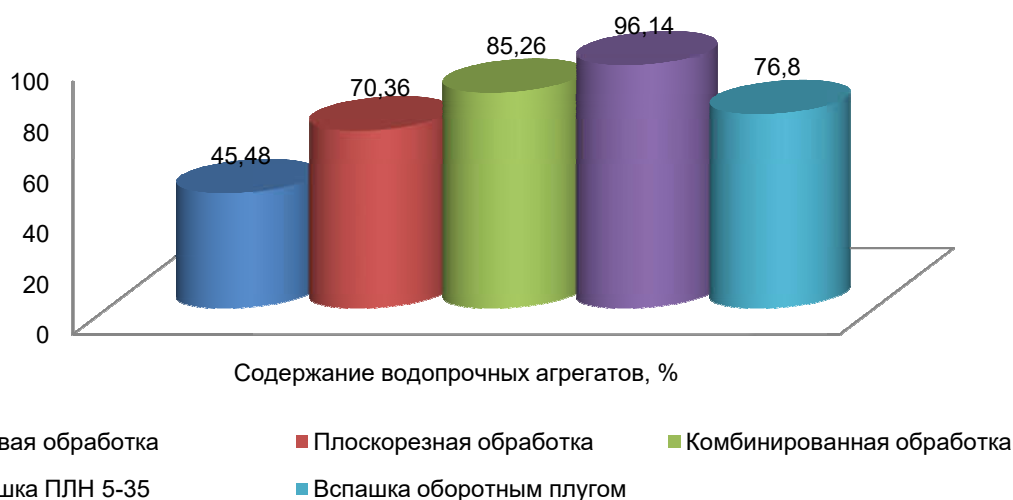


Рисунок 3 – Содержание водопрочных агрегатов в слое 0-30 см. в зависимости от способа основной обработки почвы

Агрономически важными являются, показатели водоустойчивости структуры почвы пахотного слоя, а именно водоустойчивость почвенных агрегатов в слое 0-30 см.

При посеве озимой пшеницы на глубине 0-30 см на вариантах с плоскорезной и нулевой обработкой водоустойчивость структуры почвы характеризуется как «хорошая», а на вариантах со вспашкой и комбинированной обработкой – «избыточно хорошая».

Биологическая активность почвы взаимосвязана с урожайностью выращиваемой культуры (21, С.131). При снижении активности почвенных организмов снижается и урожайность выращиваемых культур. Деятельность микроорганизмов направлена на минерализацию органических остатков и гумусообразование, также они разрушают первичные и вторичные минералы почвообразующих пород и извлекают из них необходимые для растений питательные элементы. Отдельная группа бактерий – азотфиксаторов связывает молекулярный азот атмосферы и переводит его в доступное для растений состояние.

Оптимизация почвенных условий способствует увеличению биологической активности. В таблице 1 отражено влияние разных видов обработок почвы на биологическую активность.

Таблица 1 – Разложение льняного полотна в пахотном слое почвы (0-30см) на посевах озимой пшеницы по вариантам опыта, %

Разложение льняного полотна, % к исходной массе	Вариант обработки почвы				
	Нулевая обработка	Плоскорезная обработка	Комбинированная обработка	Вспашка ПЛН 5-35	Вспашка оборотным плугом
Через 30 дней	23,3	23,4	17,9	11,3	12,2
Через 60 дней	25,7	28,1	19,6	13,8	12,4
Через 85 дней (перед уборкой)	36,9	32,6	41,7	27,7	26,4

Анализ деятельности целлюлозоразрушающих микроорганизмов показывает, что их активность по вариантам основной обработки почвы под озимой пшеницей проявлялась по-разному.

Уже в первый срок (через 30 дней после закладки полотен) наблюдалось различие в активности деятельности микроорганизмов по вариантам опыта. Варианты со вспашкой отличались пониженными показателями активности микроорганизмов (11,3...12,2%). По нулевой и плоскорезной обработке разложение льняного полотна было примерно одинаковым и составляло 23%.

За следующие 30 дней разложение ткани проходило менее интенсивно, что связано с недостатком влаги в пахотном слое (Рис.1) на фоне отсутствия осадков в этот период. К моменту уборки наибольший процент разложившейся ткани был на варианте комбинированной обработки (41,7%), по нулевой и плоскорезной обработке почвы активность микроорганизмов характеризовалась средними значениями (32,6-36,9%). В обоих вариантах со вспашкой активность целлюлозоразлагающих организмов была самая низкая (26,4-27,7%).

Обработки почвы, различаясь по глубине и интенсивности, приводят к неравномерному распределению растительных остатков по профилю. При нулевой, безотвальной и комбинированной обработках наибольшее количество их сосредоточено в верхней части пахотного слоя почвы. Так как органическое вещество является для большинства организмов источником питательных веществ и энергии, то при поверхностной обработке они концентрируются в верхних слоях пахотного слоя, при глубокой – более равномерно распределяются по всему корнеобитаемому слою. Данная закономерность уже неоднократно подтверждалась исследованиями ряда авторов (9, С.46; 21, С.135), подтвердилась она и в наших опытах.

В первый период, т.е. через 30 дней после закладки опыта наибольшая биологическая активность отмечена на участке с нулевой обработкой почвы. Перед уборкой озимой пшеницы наибольший процент разложения льняного полотна – 41,7% был на варианте с комбинированной обработкой почвы. Это объясняется тем, что при

обработке KOS улучшается структура почвы, ее аэрация, водный и тепловой режим, в результате создаются благоприятные условия для развития микроорганизмов.

Уборка озимой пшеницы проводилась в фазу восковой спелости методом сплошного комбайнирования. Применялся специальный комбайн для опытных участков Terrion Sampo. Результаты полевых опытов показали, что на урожайность озимой пшеницы оказали влияние различные способы обработки почвы.

В ходе исследования при норме высева семян озимой пшеницы 220 кг/га или 5,5 млн. всхожих семян на га учитывалось количество растений осенью и сохранность растений за весь период вегетации. Результаты представлены в таблице 2.

Таблица 2 – Количество растений озимой пшеницы по вариантам опыта

Вариант	Количество растений, шт/м ² Всходы осень 2014 г.	Количество растений, шт/м ² Всходы весна 2015 г.	Полевая всхожесть, %	Сохранность растений в зимний период, %
Нулевая обработка	453	369	82,4	81,5
Плоскорезная обработка КПШ 5	523	341	95,1	65,2
Комбинированная обработка агрегатом KOS 3,7	481	448	87,5	93,1
Вспашка ПЛН 5-35	477	451	86,7	94,5
Вспашка оборотным плугом фирмы LEMKEN	527	485	95,8	92,0

Изначально наибольшая всхожесть отмечалась на вариантах со вспашкой оборотным плугом и плоскорезной обработкой КПШ 5. Густота стояния растений на этих делянках составила 527 и 523 шт/м². Такие результаты получены вероятно потому, что при вспашке с оборотом пласта осуществляется глубокая обработка почвы, улучшаются ее физические свойства и уменьшается засоренность. При обработке плоскорезом, также происходит удаление сорной растительности, но при этом не нарушается верхний плодородный слой почвы и происходит активизация почвенной биоты.

Наименьшее количество растений 453 шт/м² отмечено при нулевой обработке почвы. Это связано с тем, что почва переуплотнена и сильно засорена корнеотпрысковыми сорняками. При обработке KOS 3,7 и вспашке ПЛН 5-35 получен средний результат всходов (481 и 477 шт/м²).

Наибольший процент сохраненных за зимний период растений – 94,5% получен на делянке со вспашкой ПЛН 5-35. Также на варианте с обработкой комбинированным агрегатом KOS 3,7 и вспашкой с оборотом пласта результаты несильно отличались от вспашки ПЛН 5-35. Это связано с тем, что при данных видах обработки почвы в осенний период были созданы благоприятные условия для роста и развития озимой пшеницы. В результате на этих вариантах культура была хорошо развита и могла противостоять неблагоприятным погодным условиям и перенести зимние заморозки с наименьшими потерями.

Наименьшие результаты получены при плоскорезной обработке КПШ 5. Несмотря на высокую всхожесть растений на этом варианте, густота стояния их после зимы значительно снизилась. В итоге сохранность составила лишь 65,2%.

Исходя из вышеизложенного ясно, что наиболее благоприятные условия для всхожести и перезимовки растений озимой пшеницы складываются при вспашке оборотным плугом фирмы LEMKEN.

Урожайность зерновых культур зависит от многих факторов. Например, погодных условий, фитосанитарного состояния поля, предшественника и т.д., но основным является технология обработки почвы.

Из данных таблицы 3 видно, что способ обработки почвы значительно влияет на урожайность выращиваемых культур. Так, на делянках с комбинированной обработкой

агрегатом KOS 3,7 урожайность значительно выше, нежели на варианте со вспашкой плугом ПЛН 5-35 без оборота пласта.

Таблица 3 – Урожайность озимой пшеницы в зависимости от способа основной обработки почвы, 2015 год

Вариант	Урожайность, ц/га
Нулевая обработка	38,65
Плоскорезная обработка КПШ 5	35,83
Комбинированная обработка агрегатом KOS 3,7	39,37
Вспашка ПЛН 5-35	34,79
Вспашка оборотным плугом фирмы LEMKEN	37,95
HCP ₀₅	2,12

Разница в урожайности составила примерно 5 ц/га. При нулевой обработке почвы урожайность озимой пшеницы немного ниже, чем при обработке KOS 3,7. Далее, по уменьшению урожайности, идет вспашка оборотным плугом фирмы LEMKEN, затем плоскорезная обработка КПШ 5. На этих вариантах полученная урожайность озимой пшеницы равна 38,65ц/га, 37,95 ц/га и 35,83 ц/га соответственно.

ВЫВОДЫ

Таким образом, наибольшая урожайность зерна озимой пшеницы получена на варианте с комбинированной обработкой почвы (39,4 ц/га). Варианты по нулевой обработке и вспашке оборотным плугом по показателю урожайности были близки и отличались несущественно. Наиболее благоприятные условия для всхожести и перезимовки растений озимой пшеницы складывались при вспашке оборотным плугом фирмы Lemken, что позволило сформировать достаточно высокий урожай (различия с максимальным по урожайности вариантом комбинированной обработки несущественны). Интенсивность разложения льняного полотна достаточно сильно отличалась по вариантам опыта. Данные корреляционного анализа позволили установить достоверную корреляционную связь между показателями урожайности озимой пшеницы и интенсивностью разложения целлюлозы микроорганизмами (коэффициент корреляции $r = 0,63$). Каждый из изученных способов обработки почвы позволяет не только предотвращать уплотнение почвы, но и улучшить водно-воздушный режим.

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DOI <https://doi.org/10.18551/rjoas.2017-06.41>

THE EFFECT OF GIBBERELIC ACID SOAKING DURATION ON RHIZOME GROWTH OF EDIBLE CANNA (*CANNA EDULIS* KER.)

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ABSTRACT

The objective of this research was to evaluate the soaking duration of Gibberelic Acid (GA₃) on rhizome growth of edible canna. This research was conducted from December 2015 to July 2016 in the experimental field and in the Laboratory of Plant Physiology, Department of Agronomy, Faculty of Agriculture, Sriwijaya University, Indralaya. The method used in this study was Complete Randomized Design consisting of seven treatments and four replications. The treatments were without soaking (control), soaking for 6, 12, 18, 24, 30 and 36 hours. The study used 100 ppm of Gibberelic Acid and a half rhizome. Results showed that by soaking the canna rhizome into GA₃ would significantly affect the time of bud emerging, plant height, leaf number, and seedlings number but did not significantly affect the variable level of leaf greenness, leaf chlorophyll, rhizome and plant fresh weight. Soaking rhizome with GA₃ increased the time of bud emerging in the treatment at the nursery, plant height and the number of tillers in the treatment 24 hours, and the number of leaves on 12 hours treatment. Soaking canna rhizome with GA₃ has the growth ability compared to controls. However, further research is needed with a combination of different growth regulators.

KEY WORDS

Edible canna, rhizome, soaking, gibberellic acid.

Edible canna (*Canna edulis* Ker.) is a potential plant to be developed as an alternative source of food. It is an herbaceous plant that comes from South America and since 2500 BCE has been used as food ingredients before rice and cassava (Koswara, 2014). Edible canna plant is a tuberous plant grown and cultivated in Indonesia, especially in the area of Central Java, East Java and Bali and used as a side dish (Directorate Agriculture of Nuts and Tuberous Cultivation, 2009).

Edible canna can be used in various benefits. Old rhizome is used as a source of starch, the young rhizomes for food or steamed vegetables, and its canopy parts for animal feed. Canna flour can be processed into a variety of traditional foods, such as pastries, breads, crackers, noodles and other processed foods just like wheat (News of Agricultural Research and Development, 2010). In Vietnam, canna starch used as raw material in the manufacture of high quality clear noodle to substitute green beans, while in Hongkong the crushed rhizomes are used to treat acute hepatitis (Center for Agricultural Training in Lembang, 2010).

There are two edible canna cultivars in Indonesia which are red cultivar and white cultivar (News of Agricultural Research and Development, 2010). White canna rhizomes can produce about 25 ton ha⁻¹ fresh weight and 28% of starch content, while the red canna rhizomes about 30 ton ha⁻¹ fresh weight and only 22% of starch content. Edible Canna cultivated in monoculture system can produce up to 23 tons rhizomes ha⁻¹ at the age of 4 months, 45-50 tons ha⁻¹ in 8 months and 85 tons ha⁻¹ after one year (Yulfaet *et al.*, 2012).

Edible canna can be cultivated through both generative and vegetative propagation. Generative propagation using seeds is rarely performed due to the difficulty in obtaining the seed and requires longer time. Vegetative propagation using bulbs/rhizomes is mostly carried out by the farmers, horticulturists or planters for various reasons as it can be obtained in less time and stronger compared to that grown from seeds (Tjitrosomo *et al.*, 1980).

Canna cultivation in Indonesia has faced various constraints including the absence of government subsidies for the development of local crops, less competitive prices and the limited of rhizomes supply as planting material since most of the rhizomes has used for consumption (Grehenson, 2015). The limited supply of rhizome could threaten their sustainability so that it is necessary to find the alternative solution for more efficient use of rhizomes as planting material (News of Agricultural Research and Development, 2010).

Rhizome cutting is one alternative to save the seedlings. The bulbcutting did not show any significant different in production compared to whole bulb in shallot. Shallot bulb was divided into two and four division and the growth percentage is still high at 87.77% and 68.90% respectively with the production of 577.14 g and 399.14 g per plot and without cutting of 937.12 g per plot, or equal to potential yield of 9.4 tons/ha, 5.8 tons/ha and 3.4 t/ha respectively. Though the cutting treatment resulted in lower production, but if compared to bulb seedlings (whole bulb) requirement reaching 1.25 tons/ha, the cutting bulb only required for about 0.625 tons/ha (half bulb) and 0.3125 tons/ha (quarter bulb) which considered more efficient (Deviana, 2014).

Research results by Ratnasari (2010) showed that potato cutting (*Solanum tuberosum* L.) tubers into two pieces were able to increase plant height (24.22 cm), the number of shoots per clump (5.08 stems/clump) and tubers weight per plant (173 gram/plant). Half tuber would produce the same amount of tubers as the whole tuber treatment with 4.1 tons ha⁻¹. Half tuber was a proper method for tuber saving up to 100% with the potential result of 8.25 ton ha⁻¹ in January.

Gibberellic acid is a growth regulator that has a role in germination and cell elongation. The use gibberellic acid would help the plant to accelerate the use of food reserves prior to the damage occurrence in planting materials and improve production (Burton *et al.*, 1989 in Baraniet *al.*, 2009). Akbari *et al.* (2013) stated that the application of gibberellic acid (GA3) of 50 and 100 ppm before planting would increase the production of potato tubers with 2.23 kg m⁻¹ and 2.16 kg m⁻¹. According Shibairoet *al.* (2006), an increase in GA3 concentration led to an increase in the germination percentage, tiller number per bulb, plant height, and improve the performance on potato. GA3 application on potato tubers could enhance tuber effectiveness for 3-7 weeks.

Khuankaew (2009) reported that the application of 100 ppm of GA3 on different durations (0, 3, 6, 12, 24, and 48 h) would significantly increase plant height and leaves number of Tulip Siam (*Curcuma alismatifolia* Gagnep.). The treatment of tuber soaking in GA3 solution for 24 hours could increase the leaves number of Tulip Siam up to 26%. According to Asra (2014), the interaction between GA3 concentration and optimum soaking duration in stimulating the germination of *Calopogonium caeruleum* as obtained at the concentration of 500 ppm with a 24-hour soaking duration resulted in germination percentage of 57.33%. The higher concentration of GA3 and the longer soaking duration would tend to increase germination percentage.

This study was aimed to evaluate the effect of soaking duration in Gibberellic acid solution on the growth of edible canna.

Hypothesis. Allegedly edible canna rhizome soaking for 24 hours in gibberellic acid (GA3) solution would increase the growth of half canna rhizomes.

MATERIALS AND METHODS OF RESEARCH

The study was conducted at the Laboratory of Plant Physiology and Experimental Field of Faculty of Agriculture, University of Sriwijaya, and Indralaya for eight months started from December 2015 to July 2016.

Tools and materials used in this study were 100 ppm of gibberellic acid (GA3) solution, planting box, plastic container, 80% ethanol, camera, 1000 ml flask, gauge, analytical balance, cutter, polybag, half cut edible canna rhizomes Red cultivar, spectrophotometer, SPAD meter, chlorophyll meter 502 and net.

Complete Random Design was used consisted of seven treatments and four replicates. Each unit consisted of five plants, and gibberellic acid (GA3) solution as treatment

as following: T0 = without soaking; T1 = soaking for 6 hours; T2 = soaking for 12 hours; T3 = soaking for 18 hours; T4 = soaking for 24 hours; T5 = soaking for 30 hours; and T6 = soaking for 36 hours. The rhizome used was the half rhizome originated from one bud. The analysis was carried out by comparing the resulted F value with F table at the level of 0.05 and 0.01. When F value was higher than F Table at 0.05 level, it meant that the treatment was significantly different and when it was higher than F table at 0.01 level, the treatment was a very significant different. Non significant occurred when the resulted F value was lower than F Table at 0.05 level. Significant test then was performed using Orthogonal Polynomial Method.

The working steps included the preparation of planting materials, making GA3 solution, seeding media preparation, planting media preparation, treatment application, planting in nursery, seeding, transplanting in the field and maintaining. The observed variables consisted bud emerging time (observed while in nursery), plant height, leaf number, tiller number, leaf greenness level, total chlorophyll, plant fresh weight, and rhizomes weight.

RESULTS AND DISCUSSION

The analysis of variance showed that the treatment of soaking duration in GA3 rhizomes was very significantly different in the parameters of bud emerging time, plant height, leaf number per clump, significantly different in the parameter of tiller number per hill and no significant effect for leaf greenness level, leaf total chlorophyll, plant fresh weight, and rhizome fresh weight.

Table 1 – The analysis of variance in the observed parameters

Parameters	F value	Variability coefficient (%)
Bud emerging time (days after planting)	12.44**	26.4
Plant height (cm)	5.29**	8.02
Leaf number per clump	5.06**	7.09
Tiller number per clump	3.44*	17.79
Leaf greenness level		
a. Age of 4 months	0.76 ^{ns}	9.9
b. Age of 8 months	1.59 ^{ns}	6.3
Leaf chlorophyll (mg l ⁻¹)	2.05 ^{ns}	9.05
Plant fresh weight (g)	0.94 ^{ns}	26.5
Rhizome fresh weight (g)	1.94 ^{ns}	30.8
F Table 0.05	2.57	
0.01	3.81	

Note** = highly significant different; * = significantly different; ns = non significant.

Bud Emerging Time (days after planting). Based on the analysis of variance (Table 1), it showed that soaking duration treatments of edible canna rhizomes into GA3 solution was significantly different in the parameter of shoot appearing time. The result of orthogonal polynomial regression is given in the following figure.

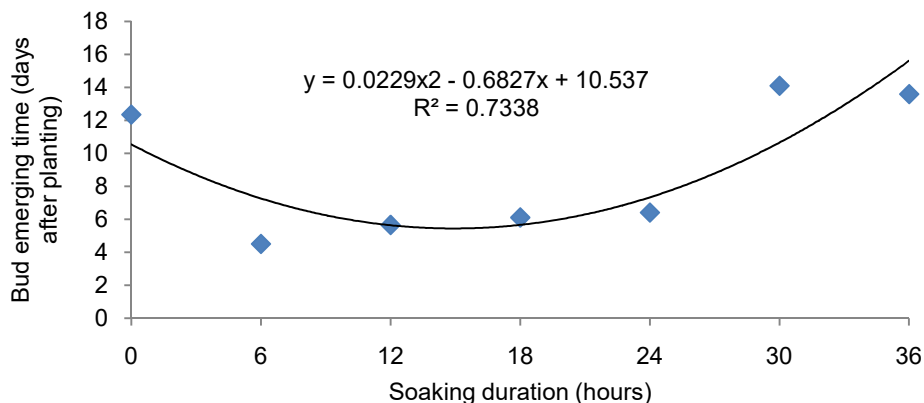


Figure1 – The regression of shoot appearing time in the edible canna

The results of orthogonal polynomial test (Figure 1) showed that the effect of soaking duration of edible canna rhizomes in GA3 solution gave a very significant effect by the quadratic equation $y = 0.0229x^2 - 0.6827x + 10.537$ with $R^2 = 0.733$. The fastest time of emerging buds was found in T1 treatment (6 hours soaking duration) with 4.5 days after planting, while the longest was in T5 treatment (30 hours soaking duration) with 14.875 days after planting.

Plant height (cm). Based on the analysis of variance (Table 1), it was indicated that soaking treatment gave a highly significant impact on plant height. Orthogonal polynomial test on plant height resulted in 26.78 F value (quadratic significantly different), 1.7 F value (non linear significant), 0.7 F value (non cubic significant) and 1.83 F value (non quartic significant) with the value of F Table at 0.05 and 0.01 level were 4.32 and 8.02 respectively. The regression results can be seen in the following figure.

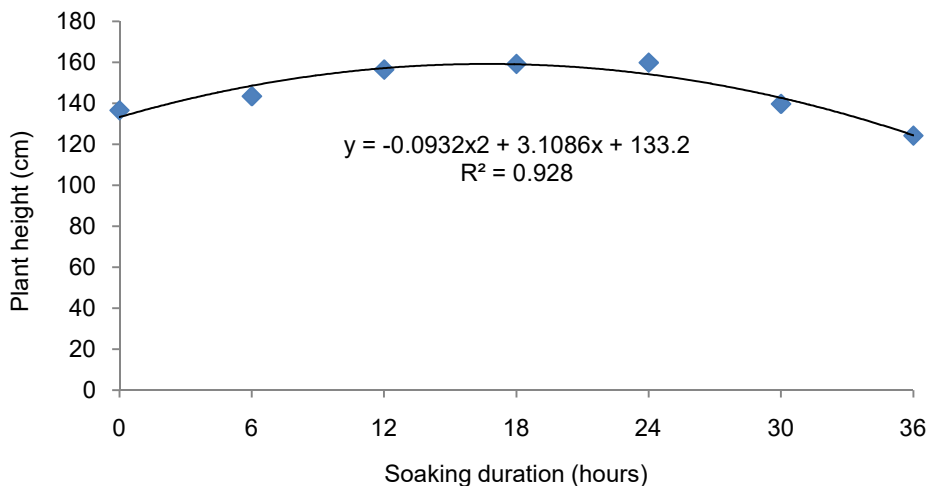


Figure 2 – The regression of plant height in edible canna

The regression results (Figure 2) indicated that the soaking duration of edible canna rhizomes in GA3 solution gave a highly significant impact at the quadratic equation $y = -0.093x^2 + 3.108x + 133.2$ with $R^2 = 0.928$.

Leaf Number. Based on the analysis of variance (Table 1), the effect of soaking duration treatment was significantly different to leaf number. Orthogonal polynomial test also showed significant different linearly (F value = 9.82) and quadratically (F value = 9.72). The regression results can be seen in the following figure.

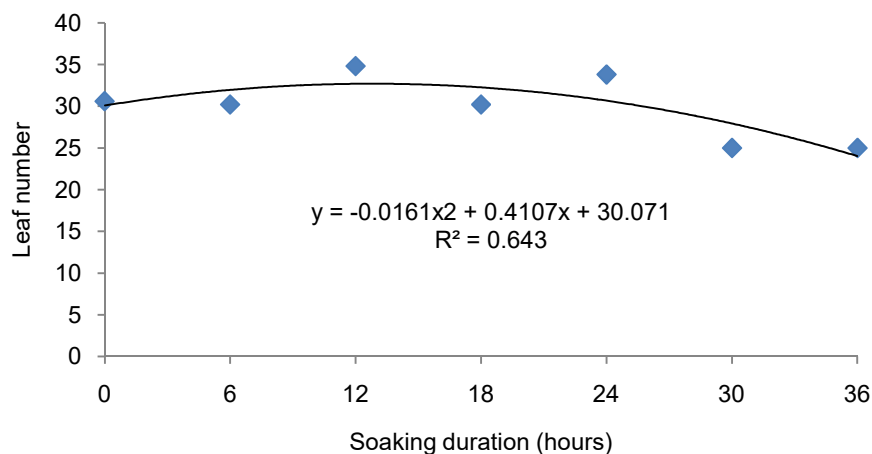


Figure 3 – The regression of leaf number in edible canna

The regression results (Figure 3) showed that soaking duration gave a highly significant effect with the quadratic equation $y = -0.016x^2 + 0.410x + 30.071$ with $R^2 = 0.643$. Highest number of leaves was found in T2 treatment (12 hours soaking duration) with 34.8 leaves while the lowest number of leaves was in T5 treatment (30 hours soaking duration) and T6 (36 hours soaking duration) with 25 leaves.

Tiller Number per Clump. Based on the analysis of variance (Table 1), it was indicated that soaking duration treatment was significantly different to the number of tillers. Orthogonal polynomial test resulted in linearly significant different (F value = 8.51) and quadratic significant different (F value = 7.08). The regression results can be seen in the following figure.

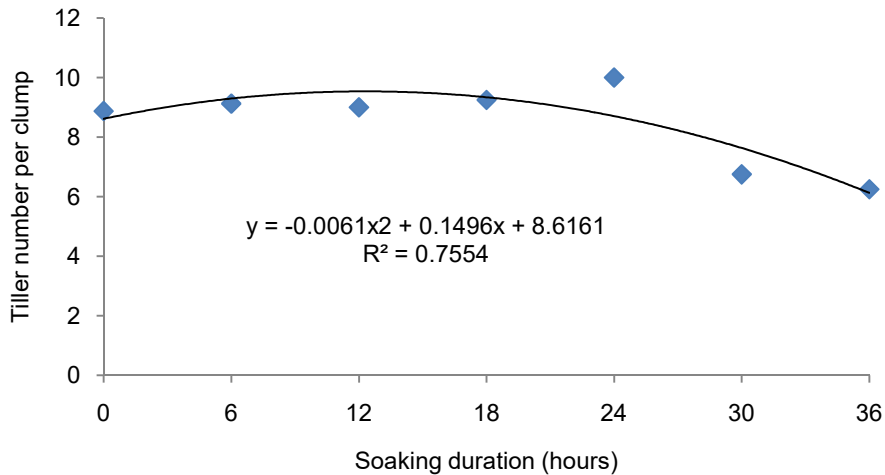


Figure 4 – The regression of tiller number in edible canna

The regression results (Figure 4) indicated the influence of soaking duration treatment in edible canna rhizomes was highly significant in a quadratic level by the quadratic equation $y = -0.006x^2 + 0.149x + 8616$ with $R^2 = 0.755$. The highest number of tillers was found in T4 treatment (24 hours soaking duration) with 10 tillers while the lowest was in T6 treatment (36 hours soaking duration) with 6.25 tillers.

Leaf Greenness Level. Non significant different effect of soaking duration was resulted from the analysis of variance (Table.1) on leaf greenness level for the plants with both age of 4 months and 8 months. The leaf greenness level at 4 months plant was the highest in T0 (without soaking) with 47.2 and the lowest was in T6 (36 hours soaking duration) with 42.1. While at the age of 8 months, the highest leaf greenness was in T0 (without soaking) with 44.92 and the lowest was in T1 treatment (6 hours soaking duration) with 39.2 as seen in Figure 5 and Figure 6.

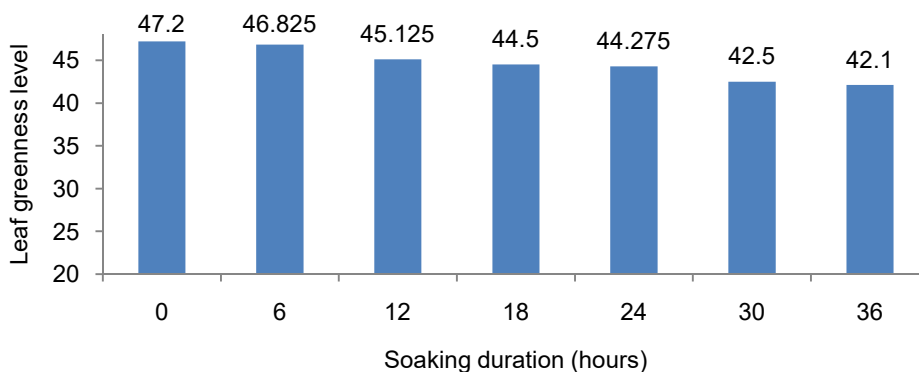


Figure 5 – The effect of GA3 soaking duration on leaf greenness level of edible canna at the age of 4 months

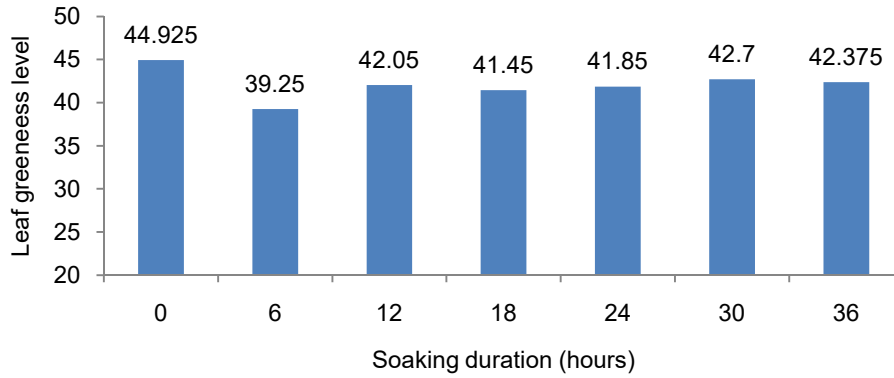


Figure 6 – The effect of GA3 soaking duration on leaf greenness level of edible canna at the age of 8 months

Total Leaf Chlorophyll (mg/l). Non significant different effect was resulted from the analysis of variance (Table 1) of GA3 soaking duration on leaf chlorophyll. The highest leaf chlorophyll was resulted in T0 (without soaking) with 10.87 mg l⁻¹ and the lowest was in treatment T1 (6 hours soaking duration) with 9.11 mg l⁻¹.

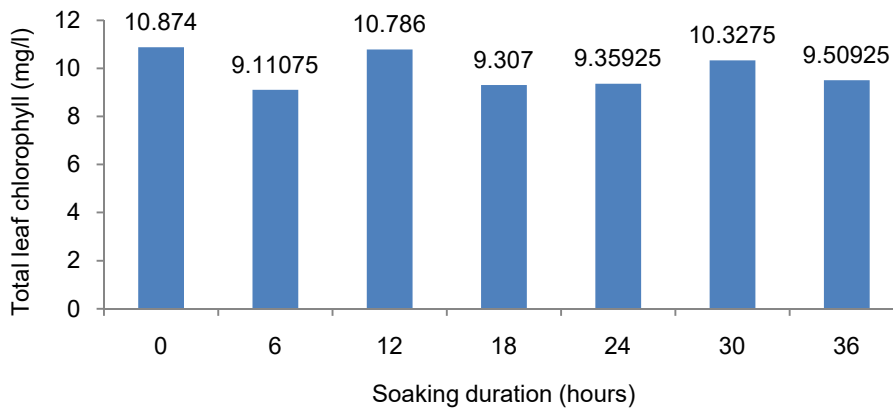


Figure 7 – The effect of GA3 soaking duration on leaf chlorophyll of edible canna

Plant Fresh Weight (g). Non significant different was indicated from the analysis of variance (Table 1) of GA3 soaking duration on edible canna plant fresh weight. The highest fresh weight was in T4 treatment (24 hours soaking duration) with 1512.5 grams and the lowest was in T5 treatment (30 hours soaking duration) with 1075 grams.

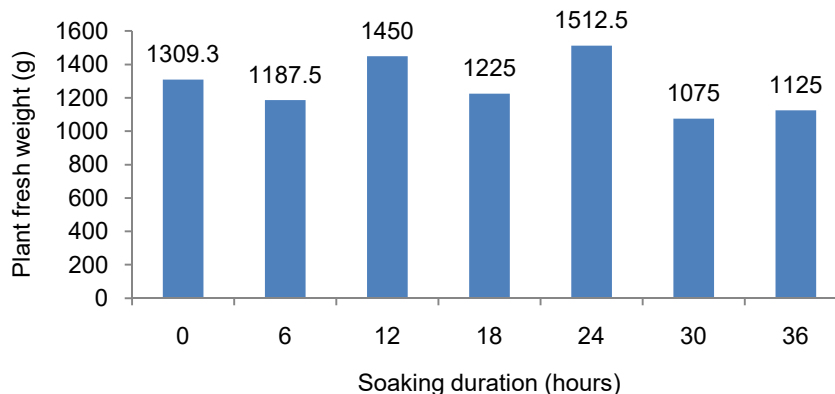


Figure 8 – The effect of GA3 soaking duration on plant fresh weight of edible canna

Rhizome Fresh Weight (g). Non significant different was indicated from the analysis of variance (Table 1) of GA3 soaking duration on edible canna rhizome fresh weight. The highest rhizome fresh weight was resulted in T2 treatment (12 hours soaking duration) with 450 grams and the lowest was 262.5 grams in the T6 treatment (36 hours soaking duration).

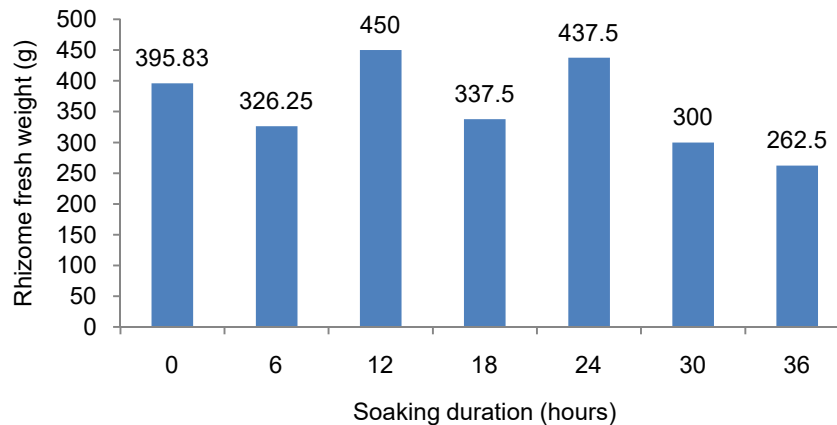


Figure 9 – The effect of GA3 soaking duration on rhizome fresh weight of edible canna

DISCUSSION OF RESULTS

The application of Gibberellic acid treatment in rhizomes could accelerate the emergence of buds. Gibberellic acid initiated the synthesis of α -amylase, an enzyme hydrolyzing starch into glucose. The resulted glucose was then undergo the glycolysis process changed into pyruvate that later on resulted in producing energy in form of ATP after passing through the Krebs cycle. The energy was used for plant growth (Gupta and Chakrabarty, 2013). Gardner *et al.* (1991) reported that the formation of the alpha amylase enzyme occurred at the beginning of germination stimulated by internal Gibberellin. The addition of an external Gibberellin resulted in increasing amounts of Gibberellin in the seed, so that it would increase the availability and activity of alpha amylase enzyme causing more water in cells and shoots elongation.

The soaking of edible canna rhizome into Gibberellic acid solution affected plant height, with a maximum limit of soaking duration for 24 hours. In accordance to research result of Muchiriet *al.* (2015), the immersion of potato tubers using the single solvent of Gibberellin would be able to produce the highest plant height compared to control. Khuankaewet *al.* (2009) reported that the maximum soaking duration of *Curcuma alismatifolia* Gagnep was 24 hours, with the highest average of plant height by 43.4 cm and decreased in 48 hours treatment to 42.3 cm.

The growth of upper and below surface parts of plants was an interconnected relationship. Root growth was influenced by the growth of shoots. Bud was a place of auxin formation. Auxin was then transported by basipetal towards the root primordia and accelerated root growth. Once the roots were formed, the plant would be able to absorb nutrients from the soil and performed photosynthesis. Photosynthate was used for plant growth. Thus, the maximum growth of shoots from the beginning would generate a complete and faster plant growth reflected by the plants' height (Gardner *et al.*, 1991).

The soaking of edible canna rhizome in gibberellic acid solution increased the leaf number. As reported by Siraj and Al-Safar (2006), the gladiolus bulbs were treated with soaking treatment for 24 hours in gibberellic acid solution of 100 mg/l resulted in the highest leaf number up 38.2 leaves. Similarly, Khuankaewet *al.* (2009) also reported that soaking for 24 hours at a concentration of 100 mg/l GA3 resulted in the highest leaf number with 4.3 leaves on *Curcuma asigmatifolia* Gagnep.

Gibberellin is a growth regulator required by the plants during vegetative growth. In the vegetative growth, the development of plants was depended on the division, enlargement

and cell differentiation. Gibberellin influence on vegetative growth was by stimulating cell division activity in the stem meristem and cambium area. Besides, Gibberellin also stimulated the activity of cell enlargement to accelerate the growth of stems and leaves of the plant (Salisbury and Ross, 1985).

The soaking of edible canna rhizome in gibberellic acid solution could increase the tiller number. Similar result was reported by Shibairoet *et al.* (2006) where the highest number of buds on potato was obtained by the soaking treatment of gibberellic acid solution. Research result by Muchiriet *et al.* (2015) also showed that GA₃ was able to increase the rate and number of buds formed on potato due to GA₃ role in plant cell division in the vegetative phase. Number of tillers per plant clump affected the density of stems per unit area. According to Ratnasari (2010), gibberellin treatment and cleavage of potato tubers gave different results where it was highly significant for stem number per clump and no interaction between the two.

The soaking of edible canna rhizome in gibberellic acid did not give any significant impact on leaf greenness and leaf total chlorophyll. Research results by Parvin (2015) on Black Walnut (*Juglansnigra* L.) also indicated similar result in which the application of GA₃ did not affected leaf total chlorophyll with the average of 25.17 mg/g. According to Wahyurini (2011), leaf chlorophyll of lily (*Lilium longiflorum*) would be significantly different among cultivars, however, by applying GA₃, no significant different on leaf chlorophyll was resulted. The soaking of edible canna rhizome on gibberellic acid solution would tend to decrease leaf greenness and leaf total chlorophyll compared to control due to plant metabolism disruption. The application of gibberellic acid would allocate more photosynthate for cell division on the growing apicals causing the shrink on leaves (Zimmerman, 1961).

The highest fresh weight of edible canna plant was resulted in the 24 hours soaking treatment. Plants with soaking treatment would resulted higher weight compared with control. Plant weight was closely related to plant tiller number, leaf number and rhizome number. Ameen and Al-Iman (2007) investigated the soaking of *Pistaciavera* L. on GA₃ solution for 24 hours, resulted in the highest total plant weight with 21.73 g. The application of GA₃ indicated a significant result in increasing plant growth. Gardner *et al.* (1991) discovered that gibberellic acid was often related to the increase on stem growth. Growth was essentially the increase on plant weight. While plant weight was the accumulation of plant materials through cell division activities portrayed in plant height and stem development.

The soaking of edible canna rhizome on gibberellic acid solution did not significantly affect rhizome fresh weight. This was similar with research result by Wahyuniri (2010) indicating that single application of gibberellic acid did not affect rhizome fresh weight, the increase on rhizome diameter and length would increase the weight of rhizome. Based on Kratzleand Palta (1992) in Wahyuruni (2010), rhizome development was essentially carbohydrate and water penetration to the rhizome through phloem. The greater of accumulated carbohydrate stimulated by the stolon length, the greater volume and diameter of the formed rhizome.

One clump of plant consisted of more than one stem would increase the competition on environmental factor, such as for the mineral nutrients, water, lights and air. The competition would result in a higher stem density causing a less yield of rhizome. However, the rhizome yield on each stem from one clump with a higher density would still be higher than the ones with a lower density. Consequently, higher number of stem per clump still could produce higher rhizome weight compared to the ones with less stems per clump. Nevertheless, rhizome size would be smaller in a high density clump due to fair photosynthate translocation resulting in smaller photosynthate accumulation on each rhizome (Gardner *et al.*, 1991).

CONCLUSION

Based on the results, it was concluded that:

The soaking duration of 24 hours was the best treatment for edible canna rhizome propagation for Morados variety originated from half cut rhizome.

The soaking duration of rhizome for 24 hours would result in the highest plant height, tiller number and plant fresh weight.

The soaking of rhizome on GA₃ solution would fasten bud emerging time on T1 treatment, increase plant height and tiller number on T4 treatment, and also leaf number on T2 treatment.

The soaking of rhizome on GA₃ solution would improve growth ability compared to control.

Further research was required to investigate the effect of different combinations of plant growth regulators.

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DOI <https://doi.org/10.18551/rjoas.2017-06.42>

**РЕЗУЛЬТАТЫ КЛИНИЧЕСКИХ ИССЛЕДОВАНИЙ БЕЗОПАСНОСТИ,
АНТИГЕННОЙ АКТИВНОСТИ И ЭФФЕКТИВНОСТИ ПРИМЕНЕНИЯ
ИНАКТИВИРОВАННОЙ ВАКЦИНЫ «ВЕРРЕС-КОЛИКЛОСТ» ПРОТИВ ЭШЕРИХИОЗА
И КЛОСТРИДИОЗОВ СВИНЕЙ**

THE RESULTS OF CLINICAL STUDIES OF SAFETY, ANTIGENIC ACTIVITY AND
EFFECTIVENESS OF INACTIVATED VACCINE «VERRES-KOLIKLOST» AGAINST
ESCHERICHIOSIS AND CLOSTRIDIOSIS OF PIGS

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АННОТАЦИЯ

В работе представлены результаты клинических исследований безопасности, антигенной активности и эффективности применения новой отечественной вакцины против эшерихиоза и клостридиозов свиней «Веррес-Коликлост» на восприимчивых животных в условиях свиноводческих предприятий Российской Федерации. При выполнении исследований установлено, что вакцина, предназначенная для иммунизации супоросных свиноматок, безопасна при однократном и двукратном введении в рекомендуемой дозе. При применении препарата в дозе двукратно превышающей рекомендованную у подопытных животных отклонений от физиологической нормы также не регистрировали. При изучении антигенной активности установлено существенное нарастание титра антител у подопытных животных после двукратного введения препарата к адгезивным антигенам *E. Coli* K99, K88 и F41, а также антитоксических антител к токсинам *Clostridium perfringens* тип С и

Clostridium novyi тип В, что свидетельствует о высокой антигенной активности препарата. На основании полученных результатов по применению разработанной вакцины в промышленных условиях, она может быть рекомендована для использования в практике для профилактики эшерихиоза, анаэробной энтеротоксемии и некротического гепатита свиней.

ABSTRACT

The paper presents the results of clinical studies of safety, antigenic activity and effectiveness of the new vaccine «Verres-Coliclost» against escherichiosis and clostridiosis of pigs in conditions of pig-breeding enterprises of the Russian Federation. During the research it was established that the vaccine intended for immunization of pregnant sows is safe for single and double application at the recommended dose. When applying in a dose twice as high as recommended, deviations from the physiological norm in experimental animals were also not recorded. In the study of antigenic activity, a significant increase in antibody titer in experimental animals after double application of vaccine to *E. coli* K99, K88 and F41 antigens, as well as antitoxic antibodies to *Clostridium perfringens* type C and *Clostridium novyi* type B toxins has been established, which indicates a high antigenic activity of vaccine. Based on the results obtained in industrial conditions, vaccine can be recommended for the prevention of escherichiosis, anaerobic enterotoxemia and necrotic hepatitis of pigs.

КЛЮЧЕВЫЕ СЛОВА

Некротический гепатит, анаэробная энтеротоксемия, эшерихиоз, профилактика, биопрепараты, антигенная активность, инфекционные болезни, свиньи.

KEY WORDS

Necrotic hepatitis, anaerobic enterotoxemia, escherichiosis, prophylaxis, biological preparations, antigenic activity, infectious diseases, pigs.

Инфекционные болезни являются одной из основных причин экономического ущерба в свиноводческих комплексах [1, 3, 5, 6, 8, 17, 18]. Наиболее эффективным способом борьбы с ними является своевременная специфическая профилактика, позволяющая предотвращать массовые заболевания и гибель животных. С целью уменьшения трудозатрат и снижения количества стрессов у свиноматок, для профилактики инфекционных болезней используют ассоциированные препараты, обеспечивающие одновременную защиту против нескольких болезней, протекающих одновременно и осложняющих течение друг друга. Ярким примером такой ситуации можно считать эшерихиоз, анаэробную энтеротоксемию и некротический гепатит свиней [2, 4, 9, 11, 12].

Все перечисленные болезни широко распространены в условиях свиноводческих хозяйств Российской Федерации. И эшерихиоз (колибактериоз), и анаэробная энтеротоксемия относятся к острым инфекционным болезням новорожденных поросят. Заболевание характеризуется профузным поносом, септицемией, быстро нарастающей интоксикацией и обезвоживанием организма [10, 13, 14, 15, 16]. Поражаются, как правило, отдельные поросята или гнезда, смертность при этом бывает очень высокой. При ассоциированном течении эшерихиоза с анаэробной энтеротоксемией наблюдается геморрагическое воспаление тонкого кишечника, некроз ворсинок слизистой оболочки, интоксикация и нервные явления, обусловленные б-токсином *Cl. Perfringens* (фото 1 и 2) [7]. Некротический гепатит свиней (синдром внезапной смерти свиноматок) относится к менее распространенным инфекционным болезням свиней, но возникновение его в хозяйстве является настоящим бедствием, так как гибель взрослых высокопродуктивных, как правило, супоросных свиноматок и подсосунк на последних стадиях откорма происходит внезапно и предотвратить её применением химиотерапевтических препаратов не представляется возможным.



Фото 1 – Патологоанатомические изменения кишечника при анаэробная энтеротоксемии свиней, зафиксированной на одном из свинокомплексов Российской Федерации



Фото 2 – Патологоанатомические изменения печени и селезёнки у взрослой свиньи при анаэробной энтеротоксемии

Болезнь характеризуется некротическими поражениями паренхимы печени, ведущей к быстрой, в течение нескольких часов, гибели животных.

В связи с широким распространением эшерихиоза и клостридиозов и востребованностью препаратов с такой комбинацией антигенов, была поставлена задача по созданию новой отечественной вакцины против эшерихиоза и наиболее клинически значимых для свиней клостридиозов. После выполнения предварительных этапов, связанных с подбором и селекцией производственных штаммов, отработки технологии промышленного культивирования и изучения отсутствия интерференции компонентов, ООО «Ветбиохим» была изготовлена экспериментальная серия вакцины для специфической профилактики перечисленных болезней, получившая коммерческое название «Веррес-Коликлост» (далее – вакцина).

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЙ

Клинические испытания вакцины, целью которых являлось подтверждение безвредности, антигенной активности и эффективности применения, проведены в период с 01.08.2016 г. по 30.12.2016 г. в условиях Тюменской и Вологодской областей.

Оценку безвредности препарата оценивали по выраженности местных и системных реакций на введение препарата. Местные реакции учитывались по наличию гиперемии, отекам или уплотнениям на месте инъекции, а также болезненности при пальпации. Критериями оценки выраженности системных явлений были признаки угнетения, адинамия, значительное повышение температуры, аборт, аллергические реакции, гибель животных.

Антигенную активность вакцины оценивали по наличию титра антител к адгезивным антигенам эшерихий в реакции агглютинации с контрольными штаммами, и анитоксическим антителам в реакции нейтрализации к токсинам *Clostridium perfringens* тип С и *Clostridium novyi* тип В.

С целью оценки эффективности применения препарата сравнивали показатели сохранности поросят полученных от контрольных свиноматок и животных, вакцинированных вакциной «Веррес-Коликлост».

РЕЗУЛЬТАТЫ И ОБСУЖДЕНИЕ

Проведение исследования было разделено на несколько этапов, таких как изучение безопасности препарата при введении в рекомендованной дозе, безопасность препарата при введении в дозе, двукратно превышающей рекомендованную; безвредность препарата при двукратном введении в рекомендованной дозе; изучение активности препарата по эшерихиозному компоненту; изучение активности препарата по клостридиозным компонентам; оценка эффективности препарата.

Определение безопасности введения вакцины в рекомендованной дозе для супоросных свиноматок. Для проведения данного опыта в обоих хозяйствах было сформировано по две группы ремонтных свиноматок по 20 голов в каждой, одна из которых являлась опытной и была подвергнута иммунизации в рекомендованной дозе 2 см³. Животные второй группы являлись контрольными, для чистоты эксперимента им вводили стерильный физиологический раствор в дозе 2 см³. Все используемые в опыте животные были клинически здоровы и помечены специальными ушными бирками с индивидуальными номерами. Вакцину и физиологический раствор вводили согласно временной инструкции по применению, т.е. однократно внутримышечно с соблюдением правил асептики и антисептики.

За подопытными животными проводили клиническое наблюдение в течение 14 суток, проводя ежедневно осмотр животных, термометрию, пальпацию места инъекции.

На первый день наблюдения за животными было установлено, что введение вакцины в рекомендованной дозе вызывало у животных опытной группы кратковременное повышение температуры в среднем на 0,3-0,5°C, и составляло у свиноматок до вакцинации 38,4°C, через 12 часов после вакцинации 38,8°C, что не выходило за пределы физиологической нормы. Через 24 часа после инъекции температура тела животных вернулась к первоначальным параметрам.

У вакцинированных животных не регистрировали каких-либо системных нежелательных последствий после введения препарата: не наблюдалось признаков угнетения, снижения аппетита и адинамии. При пальпации места инъекции отмечено образование отека и гиперемия кожи, которые сохранялись у животных в течение 24-72 часов, а затем исчезали самостоятельно без каких-либо воздействий.

У животных контрольной группы не наблюдалось повышения температуры, а также местных или системных изменений физиологических параметров организма после введения физиологического раствора.

Определение безопасности введения вакцины в дозе, двукратно превышающей рекомендованную для супоросных свиноматок. Схема постановки данного опыта была аналогично предыдущей. В каждом свинокомплексе были сформированы по две группы ремонтных свиноматок по 10 голов в каждой, одна из которых являлась опытной и была подвергнута иммунизации в дозе, двукратно превышающей рекомендованную - 4 см³, животные второй группы являлись контрольными, одновременно с иммунизацией им вводили стерильный физиологический раствор в дозе 4 см³. За вакцинированными животными устанавливали наблюдение в течение 14 суток, проводя ежедневно клинический осмотр животных, термометрию, пальпацию места инъекции.

В ходе наблюдения установлено, что введение вакцины в дозе, двукратно превышающей рекомендованную, вызывало у животных опытной группы кратковременное повышение температуры в среднем 0,7-0,9°C, и составляло у свиноматок до вакцинации 38,4°C, а через 12 часов после вакцинации 39,3°C, что не выходило за пределы физиологической нормы для животных этой возрастной группы. Через 24 часа после инъекции температура тела животных вернулась к первоначальным параметрам.

Какие-либо системные нежелательные последствия после введения препарата в удвоенной дозе у животных не наблюдалось. Признаки угнетения, снижения аппетита, адинамия, аллергические реакции отсутствовали. На месте инъекций отмечено образование отека и гиперемия кожи, а также болезненность при пальпации. Однако все перечисленные явления сохранялись у животных в течение 24-72 часов, а затем исчезали самостоятельно без каких-либо дополнительных воздействий. За весь период наблюдения не обнаружено образования у подопытных животных долго не рассасывающихся уплотнений на месте инъекций и абсцессов.Abortов в группе супоросных свиноматок, иммунизированных удвоенными дозами вакцины, не зарегистрировано.

У животных контрольной группы также не наблюдалось повышения температуры, и местных или системных изменений физиологических параметров организма после введения физиологического раствора.

Определение безопасности введения «Вакцины против эшерихиоза и клостридиозов свиней «Веррес-Коликлост» инактивированной», экспериментальных серий №1 и №2 для супоросных свиноматок в рекомендованной дозе при двукратном введении. Для проведения данного исследования на предприятиях было сформировано по две группы ремонтных свиноматок, т.е. 10 голов в опытной группе, которая была подвергнута двукратной иммунизации в рекомендованной дозе - 2 см³ по описанной в инструкции схеме, и 10 свиноматок во второй группе, которым вместо вакцины вводили физиологический раствор в том же объеме. Вакцину и физиологический раствор вводили двукратно с интервалом 25 дней внутримышечно с соблюдением правил асептики и антисептики.

Все животные были клинически здоровы и помечены специальными ушными бирками с индивидуальными номерами.

Установлено, что введение вакцины в рекомендованной дозе двукратно вызывало у животных опытной группы после каждой инъекции кратковременное повышение температуры в среднем 0,4-0,8°C, и составляло у свиноматок до вакцинации 38,3°C, через 12 часов после вакцинации 38,8°C, что не выходило за пределы физиологической нормы для животных этой возрастной группы. Через 24 часа после инъекции температура тела животных вернулась к первоначальным параметрам.

У вакцинированных и контрольных животных не регистрировали каких-либо системных нежелательных последствий после введения препарата. У подопытных не наблюдалось признаков угнетения, снижения аппетита, адинамии. При пальпации места инъекции вакцины отмечено образование отека и гиперемия кожи, которые сохранялись у животных в течение 24-72 часов, а затем исчезали самостоятельно. Также отмечено, что повторное введение вакцины в дозе 2 см³ вызывало более выраженные местные реакции в виде отеков, которые самостоятельно исчезали через 5-7 дней. У двух свиноматок опытной группы на месте отеков образовались

безболезненные асептические уплотнения размером 4*5 см, которые рассасывались в течение 22-25 дней. За весь период наблюдения не обнаружено образования на месте инъекций у вакцинированных животных долго не рассасывающихся уплотнений и абсцессов.

Определение влияния вакцины на течение супоросности, а также отсутствие у вакцины тератогенного действия при введении супоросным свиноматкам в рекомендованной дозе при двукратном введении. Для проведения опыта использовали вакцину экспериментальной серии №1, которой было иммунизировано 430 голов супоросных свиноматок, серией №2 было обработано 350 голов. В обоих случаях контрольная группа состояла из 100 голов.

Вакцину вводили двукратно с интервалом 28 дней внутримышечно в область шеи с соблюдением правил асептики и антисептики в рекомендованной дозе - 2 см³. Все животные были клинически здоровы и помечены специальными ушными бирками с индивидуальными номерами.

За вакцинированными животными устанавливали наблюдение в течение всего оставшегося срока супоросности. Критерием оценки являлось отсутствие у вакцинированных животных абортос после применения препарата, количество полученных жизнеспособных поросят, а также отсутствие у молодняка, полученного от вакцинированных свиноматок каких-либо врожденных уродств.

Установлено, что введение вакцины в рекомендованной дозе двукратно не вызывало у животных опытной группы каких-либо осложнений течения беременности, кроме того не было зафиксировано случаев абортов на поздних сроках супоросности. От 430 голов свиноматок вакцинированных первой серией препарата получено 3118 поросят, а от 350 голов вакцинированных свиноматок второй серии получено 2984 голов жизнеспособных поросят, у которых не было зафиксировано врожденных аномалий и уродств. От 100 контрольных, не вакцинированных свиноматок в первом хозяйстве получено 712 поросят, также не имеющих аномалии развития. Общий выход поросят на каждую свиноматку в контрольной группе составил 7,12 поросят, а в опытной 7,25 поросят, что подтверждает отсутствие отрицательного влияния вакцинаций на течение супоросности. Во втором хозяйстве от 100 контрольных свиноматок получено 849 поросят, также не имеющих аномалии развития. Общий выход поросят на каждую свиноматку в контрольной группе составил 8,49, а в опытной 8,52 поросят, что также подтверждает отсутствие отрицательного влияния вакцинаций на течение супоросности.

Определение антигенной активности «Вакцины против эшерихиоза и клостридиозов свиней «Веррес-Коликлост» инактивированной», экспериментальных серий №1 и №2 в рекомендованной дозе при двукратном введении. Оценка антигенной активности вакцины проводили путем постановки серологических реакций с определением титра антител в сыворотке крови вакцинированных животных.

Для отбора проб крови выборочно метили ушными бирками по 10 животных в опытной и контрольной группах свиноматок. Пробы крови в каждой группе брали в динамике: непосредственно перед первой, а затем и перед второй иммунизацией, и через 14-16 дней после второго введения.

Полученные результаты по определению антигенной активности эшерихиозных компонентов препарата приведены в таблице 1.

Как видно из представленных в таблице 1 данных, титры антител к адгезивным антигенам эшерихий в крови подопытных животных на момент начала исследования были практически на нулевом уровне. Поскольку при постановке реакции агглютинации разведения сыворотки начинались с разведения 1:25, более низкий уровень антител не определялся.

Первичная иммунизация свиноматок вакциной способствовала образованию антител на уровне 1:25-1:200 с оценкой на два креста и выше, а повторная вакцинация вызвала образование антител на уровне 1:200-1:3200, что равно или превышает защитный уровень антител.

Таблица 1 – Результаты опыта по определению активности вакцины серии №1 и №2 в реакции агглютинации в отношении адгезивных антигенов *E. Coli*

Серия	Антиген	Титр антител к адгезивным антигенам <i>E. Coli</i> в реакции агглютинации										
		1	2	3	4	5	6	7	8	9	10	Конт.
Титр антител в сыворотке крови свиноматок до вакцинации												
1	K99	0	0	0	0	0	0	0	0	0	0	-
	K88	0	0	1:25	0	0	0	0	0	0	1:25	0
	F41	0	0	0	0	0	0	0	0	0	0	-
2	K99	0	0	0	0	0	0	0	0	0	0	-
	K88	1:25	0	0	0	0	0	0	0	0	0	-
	F41	0	0	0	0	0	0	0	0	0	0	-
Титры антител в сыворотке крови свиноматок после первой вакцинации												
1	K99	1:100	1:50	1:200	1:25	1:50	1:100	1:100	1:50	1:100	1:50	-
	K88	1:50	1:100	1:50	1:100	1:100	1:25	1:100	1:50	1:100	1:100	-
	F41	1:100	1:25	1:25	1:100	1:100	1:50	1:100	1:50	1:100	1:200	-
2	K99	1:200	1:100	1:200	1:100	1:50	1:25	1:100	1:100	1:100	1:50	-
	K88	1:50	1:100	1:25	1:200	1:100	1:50	1:200	1:50	1:25	1:200	-
	F41	1:100	1:50	1:50	1:100	1:200	1:50	1:100	1:50	1:100	1:200	-
Титр антител в сыворотке крови свиноматок после второй вакцинации												
1	K99	1:200	1:400	1:400	1:200	1:200	1:400	1:200	1:800	1:200	1:200	-
	K88	1:800	1:800	1:800	1:1600	1:1600	1:800	1:3200	1:800	1:800	1:1600	-
	F41	1:1600	1:1600	1:1600	1:800	1:1600	1:3200	1:1600	1:1600	1:1600	1:1600	-
2	K99	1:400	1:200	1:400	1:200	1:800	1:400	1:200	1:800	1:1600	1:400	-
	K88	1:800	1:800	1:800	1:1600	1:1600	1:800	1:3200	1:800	1:800	1:1600	-
	F41	1:1600	1:3200	1:800	1:800	1:3200	1:1600	1:1600	1:1600	1:400	1:800	-

Проведённый опыт показал, что применение вакцины вызывает у вакцинированных животных образование антител в высоком титре, так к антигену K99 титр антител составил в среднем 1:400, к антигену K88 титр антител составил в среднем 1:1600, к антигену F41 титр антител составил в среднем 1:1600 с оценкой на два креста и выше.

Таблица 2 – Результаты определения титров антитоксических антител у свиноматок на разных этапах применения вакцины серии №1 и №2

Серия	Антиген*	Титр антитоксических антител к токсинам <i>Cl. perfringens</i> тип С и <i>Cl. novyi</i> в РН									
		1	2	3	4	5	6	7	8	9	10
Титры антитоксических антител в сыворотке крови свиноматок до вакцинации, МЕ/см ³											
1	Cl. p	0	0	0	0	0	0	0	0	0	0
	Cl. n	0	0	0	0	0	0	0	0	0	0
2	Cl. p	0	0	0	0	0	0	0	0	0	0
	Cl. n	0	0	0	0	0	0	0	0	0	0
Титры антитоксических антител в сыворотке крови свиноматок после первой вакцинации, МЕ/см ³											
1	Cl. p	3,5	0,5	1,0	2,0	1,0	3,0	3,5	3,5	1,0	1,0
	Cl. n	0,5	0	0	0,5	1,0	1,5	0,5	1,0	1,0	0,5
2	Cl. p	3,5	1,5	2,0	2,0	1,0	3,0	1,5	3,5	2,0	1,5
	Cl. n	1,5	0,5	1,0	0,5	1,0	1,0	1,5	1,0	1,0	0,5
Титры антитоксических антител в сыворотке крови свиноматок после второй вакцинации, МЕ/см ³											
1	Cl. p	10,5	10,5	10,0	12,0	15,0	13,0	10,5	13,5	10,0	10,5
	Cl. n	3,5	2,0	3,0	4,5	2,0	1,5	2,5	3,5	2,0	2,5
2	Cl. p	10,5	10,5	10,0	12,0	15,0	13,0	12	15,0	10,5	10,0
	Cl. n	3,5	2,0	3,0	4,5	3,0	2,5	2,5	3,5	2,0	2,5

* Cl. p – *Clostridium perfringens*, Cl. n – *Clostridium novyi*.

Результаты опыта по определению активности вакцины серии №1 и №2 в реакции нейтрализации в отношении *Clostridium perfringens* тип С и *Clostridium novyi* приведены в таблице 2.

Как видно из данных представленных в таблице 2 титры антитоксических антител в сыворотке крови подопытных животных до вакцинации были на нулевом уровне. Первичная иммунизация свиноматок вакциной способствовала существенному приросту антитоксических антител к токсину *Clostridium perfringens* тип С на уровне от 0,5 до 3,5 МЕ/см³ и от 0 до 1,5 МЕ/см³ к *Clostridium novyi*. Повторное введение вакцины вызвало образование антител к токсину *Clostridium perfringens* тип С на уровне от 10,5 до 15,0 МЕ/см³ и от 1,5 до 4,5 МЕ/см³ к *Clostridium novyi*, что равно или превышает

защитный титр антител (10 МЕ и 1,5 МЕ/мл соответственно). Проведённый опыт показал, что применение вакцины вызывает у вакцинированных животных образование антитоксических антител в высоком титре к токсину *Clostridium perfringens* тип С и *Clostridium novyi*.

Определение эффективности проведенной иммунизации свиноматок «Вакциной против эшерихиоза и клостридиозов свиней «Веррес-Коликлост» инактивированной» в рекомендованной дозе при двукратном введении. Оценку эффективности проведенной вакцинации проводили по определению сохранности поросят, полученных от вакцинированных и контрольных свиноматок, в период дорастивания, среднесуточному приросту и средней живой массы поросят при передаче их на откорм в 102 дневном возрасте. Результаты определения эффективности применения биопрепарата приведены в таблице 3.

Таблица 3 – Результаты определения эффективности применения вакцины серии №1 и №2 по показателям сохранность народившегося молодняка и среднесуточный прирост

Серия	п/п	Количество родившихся поросят	Средний вес поросенка при отъеме	Выжило поросят	Возраст передачи на откорм, дни	% сохранности	Среднесуточный прирост, гр
1	Опыт	3118	8,9	3017	102	96,7	420
	Контроль	712	8,2	578	102	81,2	365
2	Опыт	2984	8,4	2832	102	94,9	456
	Контроль	849	7,6	731	102	86,1	381

Проведённый опыт показал, что применение первой серии вакцины обеспечивает 96,7% сохранности полученных от вакцинированных свиноматок поросят, тогда как в контрольной группе сохранность составила 81,2%. Применение второй серии препарата обеспечивает 94,90% сохранности полученных от вакцинированных свиноматок поросят, тогда как в контрольной группе сохранность составила 86,10%. Кроме того при сравнении среднесуточного привеса вакцинированных поросят с значением аналогичного показателя к не вакцинированным животным было отмечено, что вакцинированные животные на 13-16% имеют больший среднесуточный привес.

Полученные при проведении клинических исследований результаты позволяют утверждать, что разработанный биопрепарат является безвредным для супоросных свиноматок при однократном и двукратном инъектировании рекомендуемой дозы, а также при введении дозы, двукратно превышающую рекомендуемую. При этом у подопытных животных не было зафиксировано каких-либо серьезных нежелательных местных и/или системных изменений физиологической нормы, лишь кратковременное повышение температуры тела в пределах физиологической нормы, и быстро исчезающие отеки на месте введения. Иных нарушений жизнедеятельности, связанных с применением препарата, выявлено не было. Кроме того проведенный опыт на супоросных свиноматок позволил зафиксировать полное отсутствие воздействия введённого препарата на новорожденных поросят и их здоровье, что свидетельствует об отсутствии у вакцины тератогенного действия. Применение препарата на супоросных свиноматках благоприятно повлияло на сохранность народившегося молодняка, обеспечив сохранность на 10-19% выше контрольной группы, а среднесуточный прирост поросят на 15-20%.

При определении антигенной активности препарата зафиксировано значительное нарастание титров антител у животных опытных групп к адгезивным антигенам *E. coli*, содержащихся в вакцине, после второй вакцинации до защитного уровня антител, т.е. до 1:200-1:3200. Контроль активности клостридиозных компонентов препарата позволил зафиксировать прирост антитоксических антител у свиноматок до уровня 0,5-3,5 МЕ/см³ к токсину *Clostridium perfringens* тип С, и 0-1,5 МЕ/см³ к *Clostridium novyi* уже после первой вакцинации. Повторная вакцинация позволила добиться повышения титров антитоксических антител до 10,5 до 15,0 МЕ/см³ к токсину *Clostridium perfringens* тип С и 1,5 до 4,5 МЕ/см³ к *Clostridium novyi*, что в свою очередь говорит о высокой активности препарата.

ЗАКЛЮЧЕНИЕ

Вакцина против эшерихиоза и клостридиозов свиней «Веррес-Коликлост» инактивированная является безопасным и высокоэффективным иммунобиологическим препаратом, и может быть рекомендована для использования в практике для профилактики эшерихиоза, некротического гепатита и анаэробной энтеротоксемии свиней.

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DOI <https://doi.org/10.18551/rjoas.2017-06.43>

RESPONSE OF RED CHILLI VARIETIES UNDER DROUGHT STRESS

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ABSTRACT

Red chilli (*Capsicum annum* L.) is the vegetable commodity that is widely cultivated in Indonesia. Growth and yields of the plants may be hampered by drought stress. The research to evaluate the effect of drought stress to agronomical and physiological characteristics of red chilli was done from October 2015 to April 2016 in a screen house of the Horticulture Seed Centre, Jambi Province, Indonesia. The Split Plot Design was used in this research with drought stress as main plot (100%, 75%, 50% of field capacity, FC) and chilli varieties as sub plot (Lado, Kastilo, BCA, Tanamo, Laris, Romario, Ferosa, Azimuth). The maximum decrease of growth and yield was recorded under the high level of water stress (50% FC) compared to optimum water supply (100% FC). The tolerance chilli varieties will increase the proline content and maintain the total sugar and chlorophyll content. Tanamo, Lado, Kastilo and BCA are varieties that can survive under drought stress and still provide the higher yield.

KEY WORDS

Agronomy, physiology, drought, red chilli, *Capsicum annum*.

Red chilli (*Capsicum annum* L.) is one of the commodities of vegetables that have an important meaning because it has economic value and high nutrient content in Indonesia. In Indonesia, red chilli production in 2015 is 1.045.182 ton, and its productivity is 8.65 ton per hectare (Ministry of Agriculture, 2016). Global warming and climate change that is occurring today cause the limited water availability for crops, this is an obstacle in efforts to increase production and productivity of red chilli (Budiastuti, 2010).

The inadequacy of availability of water will cause drought stress to plants. Drought stress is one of the factors that can impede seriously cultivated area production and it is also considered as a severe threat for sustainable crop production in conditions of climate change (Anjuum *et al.*, 2011; Hammad and Ali, 2014).

The plant will respond to the drought by changing its morphological and physiological characteristics. The growth of plant shoot, crop growth rate, number and leaf area, plant fresh and dry weight are decreased caused by drought (Abdalla, 2014). The increasing of proline concentration to the plants is a mutation of plant physiological characteristics that experiences drought stress (Djazuli, 2010).

The intensity of drought, the length of drought, species and the genotype of plants are the factors can be affected yields losses from drought (Demirevska *et al.*, 2009). Decreasing water availability to 40% field capacity for three months reducing fresh weight and dry weight of purwoceng (*Pimpinella pruatjan* Molk.).

The improvement of plant characteristics related to adaptation to the environment experiencing water stress or use of crop varieties that are tolerant to drought stress is an effort that can be done to reduce losses from drought (Abdul Malik, 2012; Sumartini, *et al.*, 2013).

The assessment of the character changes in agronomy and physiology in the various varieties of red chilli in different levels of drought stress needs to be done to get red chilli varieties that are tolerance to drought stress. This research was aimed to evaluate the

agronomical and physiological changes that occur on different varieties of red chilli in different levels of drought stress.

MATERIALS AND METHODS OF RESEARCH

The research was conducted in a screen house of the Horticulture Seed Center, Sungai Tiga, Jambi (101°10' - 104°55'BT - 0°45' - 2°45'LS) Indonesia, started from October 2015 until April 2016, using a Split Plot design in three replications. The main plot were three drought stress level (based on soil water content /field capacity, FC), i.e. 100% FC; 75% FC and 50% FC. The determination of soil water content was calculated gravimetrically. The sub plot was red chilli varieties, i.e. Lado, Kastilo, BCA, Tanamo, Laris, Romario, Ferosa, and Azimuth. Selection of varieties based on popular varieties.

Drought stress is given from planting to harvest (0 Week After Planting / WAP to 15 WAP). Determination of soil water content using the gravimetric method with a formula:

$$Ka_1 = 100\% (Bt - BtKON) / BtKON$$

The weight of soil + water in each treatment is as follows:

$$\begin{aligned} 100\% \text{ FC} &= (Ka_2 \times BtKON) + BtKON \\ 75\% \text{ FC} &= Bt + [(75\% \times Ka_2) - Ka_1] \times BtKON \\ 50\% \text{ FC} &= Bt + [(50\% \times Ka_2) - Ka_1] \times BtKON \end{aligned}$$

Ka_1 is the first soil water content; Ka_2 is water content at field capacity (100% FC); Bt is soil weight/pot at the first soil water content and BtKON is soil dry weight.

The red chilli seeds were sown in seedling media and after the seedlings were 10 days old, they were transferred to the nursery until the age of 3 weeks, and then they were planted in 25 x 40 cm of 10 kg soil of polybag. Media for the seedbed nursery and cultivation used was a mixture of soil, sand, and compost (2:1:1). The plants were nourished by a standard method of red chilli care in a polybag.

The observation was done at the age of 4 and 8 weeks after planting (WAP) toward plant agronomy, i.e. a number of branches, shoot dry weight, root dry weight, fruit number, and fruit weight. Proline content, total sugar, and leaf chlorophyll at 8 WAP were physiology parameter observed. The method of Bates *et al.* (1973) was used to measure of proline content of fresh leaves. Total sugars were measured according to Irigoyen *et al.* (1992), and total chlorophyll was determined by immersion methods (Hall and Rao, 1987).

The data was analyzed using analysis of variance (ANOVA). Least Significant Different Test was used to see the difference of drought stress level, its varieties, and interaction, and the simple correlation of Pearson was also used to see the relationship between two pairs of parameters. Stress Susceptibility Index (SSI) is calculated using equation according to Fisher and Maurer (1978):

$$SSI = (1 - (Y_s / Y_p)) / (1 - (\hat{Y}_s / \hat{Y}_p));$$

Y_s and Y_p = observation value for one variety of drought stress and optimal conditions;
 \hat{Y}_s and \hat{Y}_p = observation value for all varieties of drought stress and optimal conditions.

RESULTS AND DISCUSSION

Effect of drought stress on plant agronomy. The result showed that the drought stress has not significantly different on parameters at 4 WAP but has significant different on branch number, shoot dry weight, fruit number, and fruit weight, except on root dry weight at 8 WAP. Drought stress at 75% FC decreased branch number of red chilli 26.37% (75% FC), and 58.93% (50% FC) compared to 100% FC. The highest decrease of branch number at 75 % FC is Kastilo and the lowest is Ferosa, while BCA is the highest decrease and Ferosa is the lowest at 50% FC (Table 1).

Table 1 – Reduction of branch number and shoot dry weight of red chilli varieties at drought stress levels

Level of drought	Reduction (%)								Average of reduction (%)
	Lado	Kastilo	BCA	Tanamo	Laris	Romario	Ferosa	Azimuth	
....branch number...									
75% FC	31.53	42.41	28.90	21.72	34.52	30.72	6.20	14.95	28.37
50% FC	54.19	52.53	69.94	54.04	65.99	62.09	51.94	60.75	58.93
...shoot dry weight...									
75% FC	25.96	26.16	32.04	29.60	20.75	11.42	10.32	26.48	22.84
50% FC	31.49	45.85	56.37	44.89	40.64	53.63	31.47	39.13	42.94

The decline in the number of branches large enough from BCA at 50% FC in line with the number of branches produced (17.33). Ferosa produces branch number is 20.67 (Fig. 1).

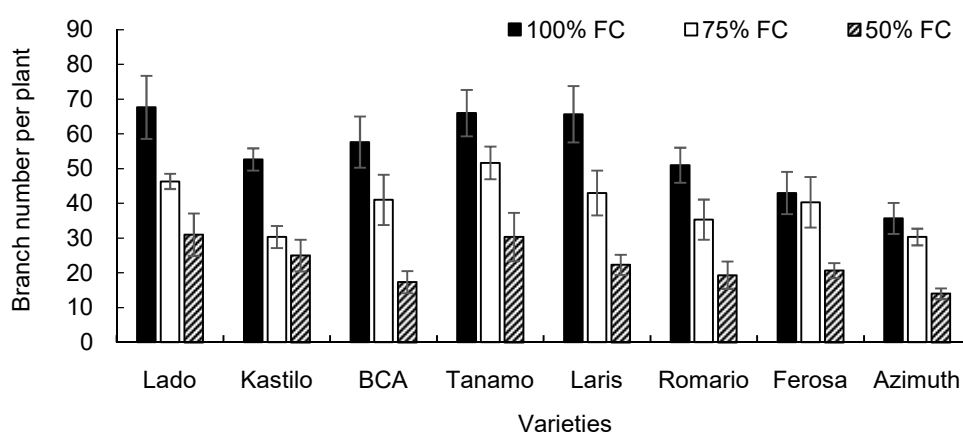


Figure 1 – Branch number of red chilli varieties at drought stress levels at 8 WAP. Error bars indicated standard error (n = 3)

Increase drought stress lowered shoot dry weight at 75% FC (22.84%) and 42.94% (50% FC). The biggest decrease of shoot dry weight of 50% FC is BCA and smallest is Ferosa (Table 1). Dry weight decreased of Kastilo at 75% FC and 50% FC is smaller than BCA. Tanamo gave a relatively similar response to Kastilo.

The dry weight of red chilli varieties at various levels of drought stress can be seen in Figure 2. The varieties of Kastilo and Tanamo have higher shoot dry weight (8.50 and 8.80) than BCA (7.62) at 50% FC.

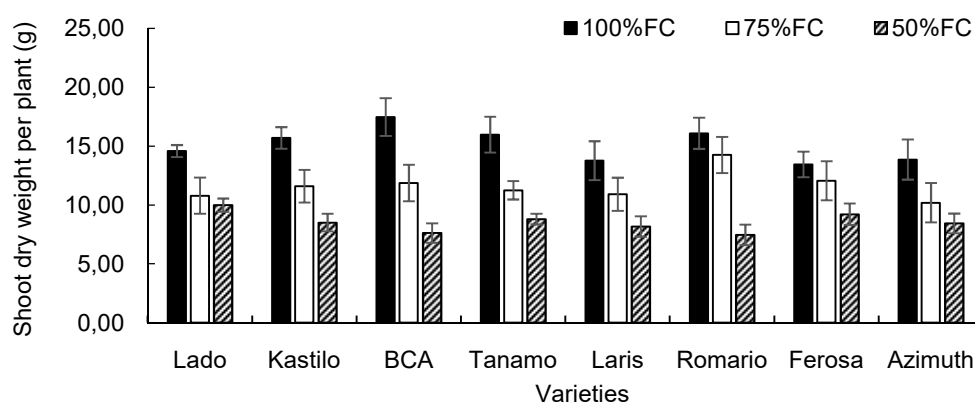


Figure 2 – Shoot dry weight of red chilli varieties at drought stress levels at 8 WAP. Error bars indicated standard error (n = 3)

Reduced of water supply to plants or the transpiration rate increase caused drought stress (Anjuum *et al.*, 2011). The plants will respond the shortage of water by lowering water content, decreasing the potential of water, leaf and cell turgor, closing the stomata, reducing the expansion and cell growth (Jaleel *et al.*, 2002), that caused lowering growth and dry matter accumulation (Delfine *et al.*, 2002). The result showed that drought stress condition will reduce the number of branches, followed by decreasing the shoot dry weight. The lowering of shoot dry weight was positively correlated with the number of branches of red chilli with $r = 0.829$ ($p < 0.01$) (Table 3).

Root dry weight was not significantly affected by drought stress and varieties. Drought stress decreased root dry weight at 0.0005% (75% FC) and 0.0018% (50% FC) (data not shown). The root length of peanuts did not effect by drought stress. The red chili tends to maintain the volume and root length at a certain depth to withstand drought stress (Riduan *et al.*, 2005).

Drought stress decreased the number of fruit at 75% FC (7.71%) and 29.50% (50% FC). The decline in the fruit number of Kastilo, BCA, and Tanamo was smaller than the others varieties (Table 2).

Table 2 – Reduction of fruit number and fruit weight of red chilli varieties at drought stress levels

Level of drought	Reduction (%)							
	Lado	Kastilo	BCA	Tanamo	Laris	Romario	Ferosa	Azimuth
fruit number.....							
75% FC	5.00	4.95	-1.25	5.08	4.55	20.55	3.08	19.75
50% FC	37.50	16.83	18.75	19.49	31.82	36.99	27.69	46.91
fruit weight							
75% FC	-2.23	6.52	-2.63	5.66	6.12	24.22	10.48	18.32
50% FC	32.98	19.97	18.50	20.69	33.03	39.09	43.75	45.99

The decrease in the number of fruits in the varieties of Kastilo, BCA and Tanamo produced more fruits than other varieties (Figure 3). The correlation analysis showed that the decrease in the number of fruit was more affected by the decrease in the number of branches compared with the decrease of shoot dry weight ($r = 0.642$, $r = 0.429$, $p < 0.01$) (Table 3).

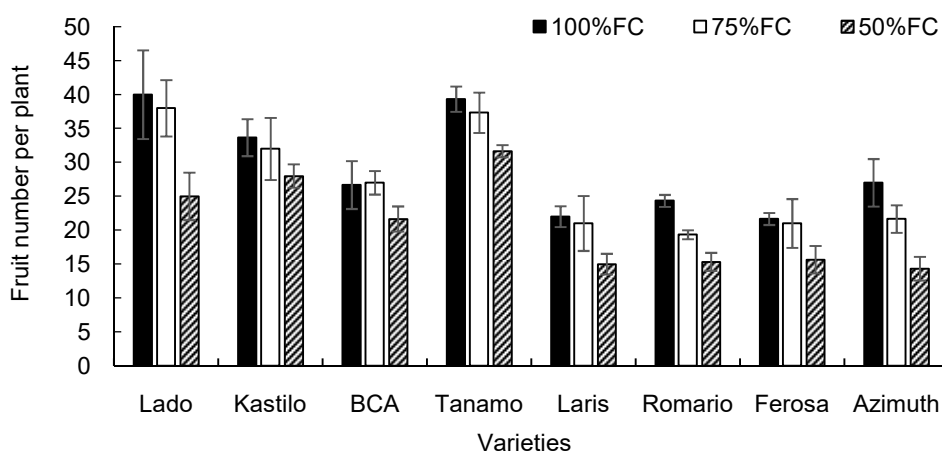


Figure 3 – Fruit number of red chilli varieties at drought stress levels. Error bars indicated standard error (n = 3)

The branches number of red chilli greatly affects the number of flower buds produced because the flower buds on red chilli will appear on each branch (Poulos, 1994). Drought stress on some cultivars of sweet red chilli affects the number of flower buds, the percentage

of flowers fall, the percentage of fruit set and fruit production (Abdulmalik *et al.*, 2012). A decrease in the amount of tested fruit on the varieties of red chilli may also cause by the lowering of flower buds and increased flower fall percentage due to drought stress. The amount of fruit per plant on cultivar chilli "*low and medium pungent*" in drought stress is significantly lower than without drought stress (Phimcan *et al.*, 2012).

The fruit weight of red chilli was decreased by drought stress at 8.31% (75% FC) and 31.75% (50% FC) (Table 2). The decline of fruit number caused by the decrease of fruit number because of drought. Fruit weight is closely related to the number of branches and the number of fruits with r respectively is 0.554 and 0.988, but it was not significantly correlated to shoot dry weight ($r = 0.348$) (Table 3).

Table 3 – The correlation coefficient between growth parameters at 8 WAP and yield at various of drought stress

Parameters	Branch number	Shoot dry weight	Root dry weight	Fruit number	Fruit weight
Branch number	-	0.829**	0.430*	0.642**	0.554**
Shoot dry weight		-	0.683**	0.429*	0.307tn
Root dry weight			-	0.195tn	0.094tn
Fruit number				-	0.988**

Fruit number of red chilli varieties can be seen in Figure 4. Tanamo, Kastilo, and BCA have more fruit weight than the other varieties at 50% FC, except Lado.

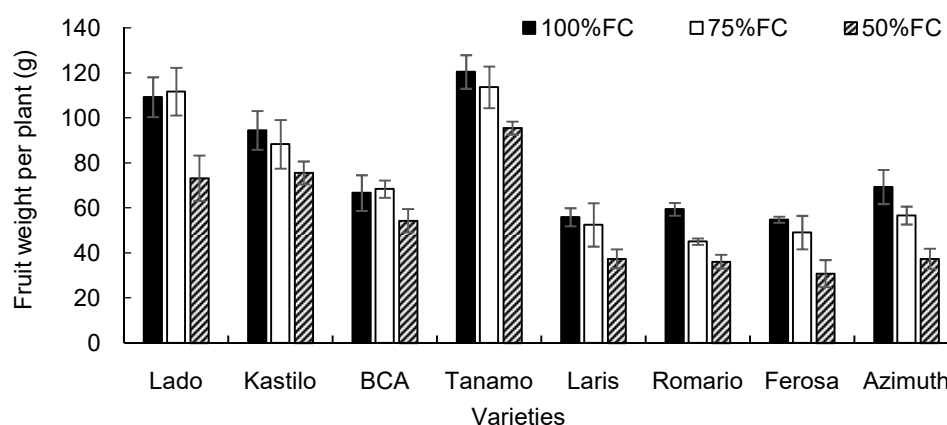


Figure 4 – Fruit weight of red chilli varieties at drought stress levels. Error bars indicated standard error (n = 3)

The growth parameter that has a closer correlation to the number and weight of the fruit than other parameters is a number of branch. The decrease of branch number in drought stress 50% FC is greater than 75% FC. Because of that, the number of branches at 50% FC can be used to filter the tolerance of red chilli to drought.

The plant susceptibility index to drought stress (SSI) calculated based on the number of branches, the number of fruits and the fruit weight at 50% drought of KL can be seen in Table 4.

Table 4 – SSI of eight red chilli varieties at 50% FC based on branch number at 8 WAP and plant yield

Parameter	SSI							
	Lado	Kastilo	BCA	Tanamo	Laris	Romario	Ferosa	Azimuth
Branch number	0.92 (T)	0.89 (T)	1.18 (P)	0.92 (T)	1.12 (P)	1.05 (P)	0.88 (T)	1.03 (P)
Fruit number	1.29 (P)	0.58 (T)	0.65 (T)	0.67 (T)	1.10 (P)	1.28 (P)	0.96 (T)	1.62 (P)
Fruit weight	1.11 (P)	0.67 (T)	0.62 (T)	0.70 (T)	1.11 (P)	1.32 (P)	1.48 (P)	1.55 (P)

The letters in parentheses indicate tolerance grouping into tolerant (T) if SSI < 1.0 and sensitive (P) if SSI ≥ 1.0

Based on SSI in Table 4, BCA, Kastilo, Tanamo and Ferosa are drought tolerant varieties, while Lado, Laris, Romario and Azimuth are sensitive. The drought tolerant varieties have fruit weight greater than the sensitive with smaller yield decreases except for Ferosa (Figure 4 and Table 2).

Effects of drought stress on plant physiology. The results showed that drought stress generally increases the levels of proline content at 4.79% (75% FC) and 62.28% (50% FC) (data not shown). Proline accumulation in plants is important in the effort to plant tolerance to osmotic stress (Shao, *et al.*, 2005). Proline helps the plant reduce oxidative damage, and this is an important strategy for plants to withstand drought stress (Vendruscolo *et al.*, 2007; Chegah, *et al.*, 2013). Drought stress in various rice varieties increases the proline content (Maisura *et al.* 2014).

The proline content of BCA, Kastilo, Tanamo, and Ferosa increased with increasing drought (Table 5). The proline content of drought tolerant varieties is relatively higher compared to the sensitive varieties.

Table 5 – The content of proline, total sugar and red chilli chlorophyll at drought stress levels at 8 WAP

Level of drought	Varieties							
	Lado	Kastilo	BCA	Tanamo	Laris	Romario	Ferosa	Azimuth
prolin (mM/g).....							
100% FC	0.26	0.20	0.19	0.25	0.20	0.15	0.13	0.29
75% FC	0.11	0.24	0.32	0.27	0.16	0.16	0.36	0.13
50% FC	0.10	0.36	0.36	0.27	0.21	0.12	1.08	0.21
total sugar (mg/g)...							
100% FC	42.17	45.47	41.79	50.00	32.92	35.28	36.04	46.51
75% FC	27.14	27.27	21.69	33.77	49.16	25.65	39.87	37.6
50% FC	11.36	20.91	20.82	23.55	18.36	20.45	38.27	28.91
	...total chlorophyll (cm ² /ml)...							
100% FC	56.04	49.46	56.04	56.09	45.38	58.41	65.61	41.90
75% FC	43.86	46.65	54.62	52.19	64.04	59.02	51.10	53.73
50% FC	44.93	46.55	53.29	53.35	62.15	44.28	56.67	60.83

Drought stress treatments lower total sugar content of almost all varieties of red chilli except Ferosa that has relatively constant (Table 5). Alfalfa total sugar content increase in mild drought, but with increasing drought stress, the total sugar content decreased compared with the plant under optimal conditions (Irigoyen *et al.*, 1992). The decrease of total sugar content of Kastilo was higher compared with Tanamo (52.90%) and BCA (50.18%) at 50% FC (data not shown). Liu *et al.* (2011) found that intensive and prolonged drought would inhibit the accumulation of total sugar in two species of shrubs and four tree species.

Chlorophyll content of red chili varieties decreased with increasing drought. The decrease in chlorophyll content of drought tolerance red chilli varieties smaller than other varieties (Table 5). The sensitive varieties to drought stress have inability to chlorophyll synthesis (Sikuku *et al.* (2010).

The mechanism of red chilli tolerance to drought stress seems to be done by increasing the proline and maintaining its total sugar and chlorophyll content.

CONCLUSION

Sufficient water supply is fundamental to obtain optimal growth and yield of chilli. The decrease in the plant yield to drought stress was due to the reduced number of branches, shoot dry weight and number of fruits. Drought stress at 75% FC can already lower the agronomical and physiological characteristics of red chilli. Mechanism tolerance of red chilli to drought is done by increasing the proline content and maintaining its total sugar and chlorophyll content. Chilli varieties that able to withstand under drought stress and still provide higher yield was Tanamo, followed by Kastilo, Lado, and BCA.

ACKNOWLEDGMENTS

This work was supported by a Doctorate Research Competitive Fund, Directorate General of Higher Education, Ministry of Research, Technology and Higher Education, 2016. We express our gratitude for the assistance provided.

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DOI <https://doi.org/10.18551/rjoas.2017-06.44>

**ВЕТЕРИНАРНО-САНИТАРНАЯ ОЦЕНКА МОЛОКА КОРОВ ПРИ ВКЛЮЧЕНИИ
В РАЦИОН ПРЕПАРАТА ФЕРРОПЕПТИД**
VETERINARY AND SANITARY ASSESSMENT OF COW MILK UNDER CONDITION
OF FERROPEPTIDE'S INCLUSION IN THE FEEDING DIET

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АННОТАЦИЯ

В результате изучения ветеринарно-санитарного состояния молока и молочной продуктивности коров при использовании в рационе комплексного микроэлементного препарата ферропептид, было установлено, что включения препарата в рацион, не оказывает негативного влияния на здоровье животных. Оценка молока свидетельствуют о том, что применение, препарата ферропептид способствует увеличению содержания в молоке жира на 14%, белка на 31%, плотности на 9%, а также увеличению среднесуточного удоя молока в среднем на 7,3%.

ANNOTATION

As a result of studying the veterinary and sanitary state of milk and milk productivity of cows when using a complex microelement preparation ferropeptide in the diet, it was found that the inclusion of the drug in the diet does not adversely affect the health of animals. Evaluation of milk indicates that the use of the ferropeptide preparation increases milk fat content by 14%, protein by 31%, density by 9%, and an increase in the average daily milk yield of the experimental group of animals by an average of 7.3%.

КЛЮЧЕВЫЕ СЛОВА

Животноводство, фармакология, безопасность, молоко, ветеринарно-санитарная экспертиза, ферропептид.

KEY WORDS

Animal, pharmacology, safety, milk, veterinary and sanitary examination, ferropeptid.

Проблема дефицита железа, меди, кобальта и других необходимых микроэлементов в организме животных, стоит достаточно остро.

Важно не только восполнение состава данных микроэлементов, а нормализация слаженного взаимодействия всех веществ друг с другом. Даже при достаточном поступлении железа в организм животных проблема анемии сельскохозяйственных животных может никуда не уйти, это может объясняться нехваткой меди, кобальта либо наоборот избытком молибдена и цинка в рационе.

Недостаток или избыток микроэлементов приводит к нарушению работы всей целостной системы организма крупного рогатого скота, что сказывается на

пищеварении, обмене веществ, снижении резистентности организма и как следствие уменьшении продуктивности и увеличении падежа поголовья скота. Все это с экономической точки зрения ведет к убыткам, снижению выпускаемой продукции качественно и количественно.

Для решения серьезной проблемы микроэлементозов разработан препарат Ферропептид, нормализующий процессы обмена веществ и восполняющий дефицит микроэлементов сельскохозяйственных животных.

В связи с чем, целью исследования было изучение ветеринарно-санитарного состояния молока коров, и их молочной продуктивности при использовании в рационе препарата ферропептид.

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЙ

Опыт проводили на базе совхоза АО «Внуковское» Дмитровского района Московской области. Органолептические и физико-химические свойства коровьего молока опытной и контрольной групп проводили на кафедре паразитологии и ветеринарно-санитарной экспертизы ФГБОУ ВО МГАВМиБ – МВА имени К.И. Скрябина.

Для изучения биологического действия препарата ферропептид, было отобрано 20 клинически здоровых коров холмогорской породы 3-х летнего возраста, подобранных по принципу пар-аналогов. Первая опытная группа (10 коров) ежедневно вместе со стандартным рационом, получала суточную дозу (350 мл) препарата на голову на протяжении с 1 - 10 суток, и с 21 – 30 сутки эксперимента. Вторая контрольная группа коров препарат не получала, и находилась на стандартном рационе. Условия их содержания, качественный и количественный состав кормов были одинаковыми.

Ферропептид в 1 литре, содержит в качестве действующих веществ: железо (III) – 5-6 г. в форме железо-декстринового комплекса; йод – 0,35-0,45 г. в виде – йодогоргоновой кислоты; микроэлементы: медь - 0,5-0,6 г, кобальт - 0,03-0,4 г, и селен - 0,07-0,9 г. в составе железо-полимальтозного комплекса, марганец - 0,6-0,7 г. и цинк - 0,6-0,7 г. в виде хелатных соединений; ферментативный гидролизат соевого белка (10-15%) - 100-150 г.

Входящие в состав ферропептида, соединения менее токсичны и более активны, нежели использование препаратов с неорганическими солями микроэлементов. Ферропептид при пероральном применении всасывается в желудочно-кишечном тракте и депонируется в печени и кроветворных органах, восполняя дефицит железа, меди, кобальта, селена и йода в организме. В то же время, аминокислоты и пептиды в составе препарата исполняют роль строительного материала клеток, активизирующих белковый обмен и иммунные реакции.

Отбор проб молока проводили, методом ручного сдаивания. Предварительно вымя каждой коровы тщательно промывали. Первые струйки молока сдаивали, не допуская попадания в отбираемую емкость контрольных образцов. Каждая корова имела свою индивидуальную посуду для отбора проб молока.

Ветеринарно-санитарную оценку молока проводили согласно (ГОСТ 31449-2013) «Молоко коровье сырое. Технические условия». Органолептические исследования: (цвет, консистенция) – по ГОСТ Р 52054 -2003; (вкус и запах) – по ГОСТ 28283-89 «Молоко коровье. Метод органолептической оценки запаха и вкуса». Определение температуры молока (ГОСТ 26754-85) «Молоко. Методы изменения температуры». Определение жира (ГОСТ 5867-90) «Молоко и молочные продукты. Методы определения жира». Определение СОМО (ГОСТ 3626-73) «Молоко и молочные продукты. Методы определения влаги и сухого вещества». Определение белка (ГОСТ 25179-90) «Молоко. Методы определения белка». Определение плотности (ГОСТ 3625-84) «Молоко и молочные продукты. Методы определения плотности».

РЕЗУЛЬТАТЫ И ИХ ОБСУЖДЕНИЕ

В результате проведенных исследований можно сказать, что включение в рацион препарата ферропептид, отрицательно не сказывается на клиническом состоянии коров. На протяжении эксперимента все животные характеризовались как клинически здоровые, признаком побочных действий препарата не отмечалось.

Влияние препарата ферропептид на молочную продуктивность представлено в таблице 1.

Таблица 1 – Среднесуточный удой молока опытной и контрольной групп животных

№	Группы животных	Кол. голов	Среднесуточный удой, л			
			Ноябрь		Декабрь	
			Утро	Вечер	Утро	Вечер
1.	Опыт	10	8,90±4,36	7,75±3,67	7,50±3,13*	7,40±2,87*
2.	Контроль	10	8,75±6,23	7,25±3,58	6,95±4,20	6,95±2,97

* - $p \leq 0,05$

Из приведенных в таблице 1 данных видно, что в ноябре месяце отмечался незначительный рост удоя молока опытной группы животных, а в декабре утренний удой опытной группы животных составил 7,50±3,13 л, что на 8,0% превышало контроль, вечерний удой молока в опытной группе составил 7,40±2,87 л, что на 6,5% превышает данное значение в контрольной группе животных.

Далее проводили ветеринарно-санитарную экспертизу молока.

Для определения цвета молока его, переливали в стакан из бесцветного стекла и просматривали при естественном освещении. Одновременно при переливании определяли запах молока, и доводили температуру молока до комнатной температуры.

Консистенцию определяли при медленном переливании молока тонкой струйкой по стенке цилиндра. В струйке и по оставшемуся после нее следу на стекле устанавливали наличие примесей, хлопьев, загрязнений.

Вкус сырого молока устанавливали после его кипячения, смачивая им поверхность языка.

Результаты органолептической оценки сырого коровьего молока проводили в несколько этапов, до и после введения препарата в рацион животным. Результаты исследований представлены в таблице 2.

Таблица 2 – Органолептические показатели сырого коровьего молока контрольной и опытной групп животных

Наименование показателей	Группы животных	
	Опыт	Контроль
Консистенция	Однородная жидкость без осадка и хлопьев	Однородная жидкость без осадка и хлопьев
Вкус и запах	Слабовыраженный кормовой привкус и запах	Слабовыраженный кормовой привкус и запах
Цвет	От белого до светло-кремового	От белого до светло-кремового

Из приведенных в таблице 2 данных следует, что все органолептические показатели сырого коровьего молока от животных, получавших препарат, и животных контрольной группы не имеют различий и характеризуют его как доброкачественное коровье молоко, отвечающее требованиям ГОСТ 31449-2013 «Молоко коровье сырое. Технические условия»; ГОСТ 28283-89 «Молоко коровье. Метод органолептической оценки запаха и вкуса».

Из приведенных в таблице 3 данных, видно увеличение содержания, двух наиболее важных компонентов молока: содержания жира (на 14%) и белка (на 31%), а также отмечалось увеличение показателя плотности (на 9%) и, незначительное повышение СОМО (на 1%) в молоке.

Таблица 3 – Результаты физико-химических исследований сырого коровьего молока по предложенной схеме применения ферропептида

№	Показатели	Группы животных		
		Опыт	Контроль	
1.	Температура образцов, С ⁰			
	До начала опыта	18,81±1,41	18,04±1,99	
	На 10-е сутки опыта	11,35±3,66	17,45±1,82	
	На 20-е сутки опыта	7,99±2,25	11,16±1,86	
	На 30-е сутки опыта	7,88±2,83	9,41±2,05	
	На 40-е сутки опыта	21,55±5,83	25,02±1,29	
2.	Содержание жира, %			
	До начала опыта	2,85±0,13	3,02±0,12	
	На 10-е сутки опыта	3,37±0,27	2,93±0,16	
	На 20-е сутки опыта	3,52±0,17*	3,01±0,11	
	На 30-е сутки опыта	3,55±0,13*	3,19±0,10	
	На 40-е сутки опыта	3,54±0,12*	3,09±0,13	
	% к контролю	114	100	
3.	Массовая доля СОМО, %			
	До начала опыта	8,35±1,89	8,11±0,43	
	На 10-е сутки опыта	7,89±0,58	7,93±0,38	
	На 20-е сутки опыта	7,94±0,50	8,17±0,40	
	На 30-е сутки опыта	7,76±0,50	8,26±0,67	
	На 40-е сутки опыта	8,55±0,54	8,42±0,66	
	% к контролю	101	100	
4.	Плотность,			
	До начала опыта	25,09±9,47	25,99±3,35	
	На 10-е сутки опыта	30,75±2,16	26,46±2,88	
	На 20-е сутки опыта	28,92±3,93	25,94±3,43	
	На 30-е сутки опыта	30,85±3,51	31,17±2,10	
	На 40-е сутки опыта	32,96±3,21	30,25±2,29	
	% к контролю	109	100	
5.	Массовая доля белка, %			
	До начала опыта	6,65±1,18	6,91±1,11	
	На 10-е сутки опыта	9,85±0,61	8,58±1,12	
	На 20-е сутки опыта	9,48±0,42*	7,52±0,87	
	На 30-е сутки опыта	10,27±0,64*	8,56±1,09	
	На 40-е сутки опыта	10,81±0,55*	8,20±1,03	
	% к контролю	131	100	

* - $p \leq 0,05$

Заключение. Полученные результаты исследований свидетельствуют, что применение комплексного микроэлементного препарата ферропептид не оказывает отрицательного влияния на показатели качества коровьего молока, и способствует увеличению содержания в молоке жира на 14% и белка на 31%, плотности на 9%. А также способствует увеличению среднесуточного удоя молока опытной группы животных в среднем на 7,3%.

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DOI <https://doi.org/10.18551/rjoas.2017-06.45>

**КОМПЛЕКСНАЯ ТЕРАПИЯ СУХОГО КЕРАТОКОНЪЮНКТИВИТА СОБАК
С ПРИМЕНЕНИЕМ АУТОЛОГИЧНОЙ ПЛАЗМЫ ОБОГАЩЕННОЙ ТРОМБОЦИТАМИ**
COMPLEX THERAPY OF DRY KERATOCONJUNCTIVITIS OF DOGS USING
AUTOLOGOUS PLASMA ENRICHED WITH THROMBOCYTES

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АННОТАЦИЯ

В работе представлена комплексная терапия сухого кератоконъюнктивита собак с применением аутологичной плазмы обогащенной тромбоцитами. Предложен новый подход к лечению данной проблемы, в основе которого лежит применение тромбоцитарных факторов роста, содержащихся в плазме обогащенной тромбоцитами. Сравнительный анализ общепринятых схем лечения и схем с добавлением аутологичной плазмы обогащенной тромбоцитами показал высокую эффективность метода плазмалифтинга при лечении сухого кератоконъюнктивита собак. При использовании аутологичной плазмы в составе комплексной терапии сокращается время лечения, кратность топической инстилляций антибиотиков и глюкокортикостероидов, увеличивается период клинической ремиссии.

ABSTRACT

The complex therapy of dogs' keratoconjunctivitis with autologous plasma enriched with platelets is presented. A new approach to the treatment of this problem is proposed, based on the use of growth factors contained in plasma enriched with platelets. Comparative analysis of conventional treatment regimens and schemes showed a high efficiency of proposed method. When autologous plasma is used as part of complex therapy, the treatment time, the multiplicity of topical instillation of antibiotics and glucocorticosteroids are reduced, and the period of clinical remission increases.

КЛЮЧЕВЫЕ СЛОВА

Кератоконъюнктивит, терапия, аутологичная плазма, тромбоциты, роговица, субконъюнктивальная инъекция.

KEY WORDS

Keratoconjunctivitis, therapy, autologous plasma, platelets, cornea, subconjunctival injection.

Сухой кератоконъюнктивит (СКК) представляет из себя полиэтиологическое заболевание, для которого характерны проявления роговично-конъюнктивального ксероза [15], связанные с нарушением увлажнения переднего отрезка глазного яблока (роговицы и конъюнктивы) [3,2,8]. При этом происходит разрушение клеток эпителия роговицы, образование ксеротических язв, миграция меланоцитов конъюнктивы в роговицу (пигментозный кератит), появление обильного слизисто-гнояного отделяемого [3], а также постоянный дискомфорт глаз [14,16]. К вторичным заболеваниям, возникающим на фоне СКК, можно отнести конъюнктивиты, сосудистые и пигментозные кератиты, а также ксеротические язвы роговицы. [2,4,6]. Поражение глаз может быть как односторонним, так и двусторонним [9]. Патология мало изучена и недостаточно представлена в научной ветеринарной литературе, неполно изложены вопросы диагностики и лечения синдрома.

Цель работы – разработать метод применения аутологичной плазмы обогащенной тромбоцитами при комплексном лечении сухого кератоконъюнктивита у собак.

МАТЕРИАЛЫ И МЕТОДЫ ИССЛЕДОВАНИЯ

Нами было исследовано 30 собак с симптомами СКК разной степени выраженности. Животные были разделены на 3 группы по 10 голов в каждой.

Животные из группы №1. Эта группа являлась контрольной и получала стандартное лечение. Животные получали следующее лечение: Глазные капли «Ципровет» (0,3% раствор ципрофлоксацина) по 1-2 капле в каждый глаз 4-6 раз в день. Циклоспорин А в виде глазной мази «Оптимун» (в 1 г. Мази содержится 2,0 мг. Циклоспорина А и вспомогательные вещества: белый парафин, кукурузное масло, амерхол) 3 раза в день. Глазной гель «Корнерегель» (препарат из группы кератопротекторов, действующее вещество декспантенол 50 мг.) 6 раз в день.

Животные группы № 2 (опытная группа) в добавление к стандартному лечению с глюкокортикостероидами (ГКС) получали аутологичную плазму обогащенную тромбоцитами (PRP): Глазные капли «Ципромед» (0,3% раствор ципрофлоксацина) по 1-2 капле в каждый глаз 4-6 раз в день; Глазной гель «Корнерегель» (препарат из группы кератопротекторов, действующее вещество декспантенол 50 мг.) 4-6 раз в день; Глазные капли «Офтан Дексаметазон» (в составе дексаметазона натрия фосфат 1,32 мг, что соответствует содержанию дексаметазона 1 мг.) по 1-2 капле 3 раза в день; Плазма, обогащенная тромбоцитами (PRP) в виде субконъюнктивальных инъекций в дозе 0,3 мл., 1 раз в 7 дней; PRP в виде инстилляций в конъюнктивальный мешок по 1 капле 3 раза в день в течение 8 недель

Животные группы № 3 являлись группой опыта и наряду со стандартной схемой лечения на основе Циклоспорина А получали PRP, глазные капли «Ципромед» (0,3% раствор ципрофлоксацина) по 1-2 капле в каждый глаз 4-6 раз в день; Глазной гель «Корнерегель» (препарат из группы кератопротекторов, действующее вещество декспантенол 50 мг.) 4-6 раз в день; Циклоспорин А в виде глазной мази «Оптимун» 2-3 раза в день; PRP в виде субконъюнктивальных инъекций в дозе 0,3 мл. 1 раз в 7 дней; PRP в виде инстилляций в конъюнктивальный мешок по 1 капле 3 раза в день в течение 8 недель.

Визуальный осмотр больных животных, проводили с применением оптики (бинокулярная лупа фирмы Heine), биомикроскопия роговицы офтальмоскопия глазного дна и роговицы (прямой офтальмоскоп фирмы Riester и непрямой офтальмоскоп фирмы ААЮ). Флуоресцеиновый тест стандартный и с применением синего кобальтового фильтра. Слезный тест Ширмера (СТШ) 1и 2 типа соответственно. В процессе работы изучались показатели биохимического и общего клинического анализов крови больных СКК собак. Проводились цитологические исследования мазков отпечатков с роговицы и конъюнктивы глаза больных животных, изучалась динамика цитологических изменений на разных стадиях лечения как с применением

PRP, так и без применения. Изучалась динамика визуальных изменений в переднем отрезке глаза (роговица, конъюнктива) в процессе лечения больных животных.

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЙ

Значительное количество существующих методов лечения СКК отражает попытки исследователей и клиницистов оказать лечебное влияние на звенья патологического процесса. Практически все подходы к лечению сухого кератоконъюнктивита собак сводятся к применению иммуносупрессоров, таких как глюкокортикостероиды, циклоспорин-А и такролимус [3,6]. К сожалению, препараты на основе искусственной или натуральной слезы требуют повышенной кратности инстилляций (до 10-15 раз за сутки), что не всегда представляется возможным. На наш взгляд, существующие методы консервативного лечения СКК у собак недостаточно эффективны и улучшения носят только временный характер. На этапе первичного осмотра у всех животных было выявлено явное снижение слезопродукции, что подтверждалось результатами СТШ, которые колебались в пределах от 3 до 9 мм (при норме от 15 мм) [2,4]. Также проводился флюоресцеиновый тест, который заключался в аппликации на роговицу глаза специальной тест полоски, содержащей витальный краситель флюоресцеин, который окрашивает очаги нарушения целостности эпителия роговицы. При закладывании тест полосок «Fluostrips», окрашивание и наличие мелких эрозий и язв наблюдалось у 100% больных животных. Пигментозный кератит с полной или частичной потерей прозрачности роговицы наблюдался у 28 животных. Исключение составил 8 месячный щенок породы французский бульдог, а также собака породы пекинес 2 г. Прорастание сосудов конъюнктивы в роговицу наблюдалось у всех наблюдаемых животных.

Таблица 1 – Динамика клинических проявлений у животных в процессе лечения

Клинический показатель	Период наблюдения (недели)				
	1	2	4	6	8
1 группа					
Чувствительность роговицы	Роговичный рефлекс отсутствует		Касание вызывает роговичный рефлекс.		
Наличие пигмента	Роговица не прозрачна. Тёмно-коричневого цвета			Роговица частично прозрачна, пигмент присутствует.	
Наличие сосудов в толще роговицы	Выражена инъеция сосудов.			Частичное запустевание сосудов.	
Показатели СТШ	3-9 мм.	7-9 мм	9-10 мм	9-11мм 10-13мм	10-13 мм
Показатели ФЛТ	Положительный			Отрицательный	
2 группа					
Чувствительность роговицы	Роговичный рефлекс отсутствует		Касание вызывает роговичный рефлекс.		
Наличие пигмента	Роговица не прозрачна. Тёмно-коричневого цвета			Роговица частично прозрачна, пигмент присутствует.	
Наличие сосудов в толще роговицы	Выражена инъеция сосудов.			Частичное запустевание сосудов.	Сосуды отсутствуют.
Показатели СТШ	3-9 мм.	7-9 мм	9-10 мм	12-15мм	12-15 мм
Показатели ФЛТ	Положительный			Отрицательный	
3 группа					
Чувствительность роговицы	Роговичный рефлекс отсутствует		Касание вызывает роговичный рефлекс.		
Наличие пигмента	Роговица не прозрачна. Тёмно-коричневого цвета			Роговица частично прозрачна, пигмент присутствует.	
Наличие сосудов в толще роговицы	Выражена инъеция сосудов.			Частичное запустевание сосудов.	Наличие сосудов в толще роговицы
Показатели СТШ	3-9 мм.	3-9 мм	Показатели СТШ	3-9 мм.	3-9 мм
Показатели ФЛТ	Положительный			Отрицательный	

Примечание: СТШ - слезный тест Ширмера, ФЛТ - флюоресцеиновый тест.

Наблюдение за результатами лечения проводилось в течение 8 недель (60-65 дней). Динамика клинических показателей приведена в таблице 1.

Из приведенной таблицы следует, что у животных 1-ой группы значительное улучшение состояния глаз наблюдалось с 3-4 недели лечения. Чувствительность роговицы восстанавливалась к 14-21 суткам, отложения пигмента меланина на поверхности роговицы частично подвергались резорбции к 6 неделе лечения (40-50 суток), слезопродукция частично восстанавливалась только к 7-8 (50-60 суток) неделе лечения, при этом показатели СТШ были ниже нормы на 2-4 мм. Эпителизация и заживление ксеротических язвенных дефектов на роговице наблюдалась к 6-7 неделе лечения (40-50 суток). У животных 2 и 3 опытных групп улучшение течения болезни, отмечено уже через 1 неделю с начала лечения: чувствительность роговицы восстанавливалась к 7 суткам, отложения меланина исчезали практически полностью к 6 неделе, частичное восстановление слезопродукции происходило к 6 неделе лечения, при этом значения СТШ отличались от физиологического показателя на 1 мм. Эпителизация и заживление ксеротических язв наблюдалось уже к концу 1 недели лечения, при этом внешний вид глазного яблока улучшался: исчезала гиперемия конъюнктивы, уменьшались отек конъюнктивы век и конъюнктивы глазного яблока, происходило запустевание новообразованных сосудов в роговице, происходила эпителизация эрозий и язв, что подтверждается значениями флюоресцеинового теста, отделяемое из глаз отсутствовало уже через 7 дней. Поверхность роговицы была гладкой и блестящей, исчезал зуд в области глаз. Из анамнеза; если до лечения животные плохо ориентировались в пространстве, полагаясь больше на слух и обоняние, то с момента начала лечения заметно улучшалось зрение, что было особенно заметно в сумерках. При этом животные даже на расстоянии четко следовали к хозяевам и не натывались на посторонние предметы.

На сегодняшний день, аутологичная плазма обогащенная тромбоцитами применяется во многих отраслях медицины [1,7]. К сожалению, использование аутологичной плазмы в ветеринарии не находит такого широкого применения. Наиболее широко известна роль тромбоцитов в гемостазе, помимо основополагающей роли в процессе свертывания крови у тромбоцитов имеются особенности. В своем составе тромбоциты содержат протеины, которые играют очень важную роль в регенерации тканей. Эти протеины носят название факторы роста, которые играют ключевую роль в регенеративных процессах. Именно наличие факторов роста позволяет использовать богатую тромбоцитами плазму в качестве стимулятора регенерации тканей [1,7]. В отечественной и зарубежной литературе данные о применении аутоплазмы не достаточно полные, поэтому, мы считаем, что применение ее в ветеринарной медицине перспективным методом. Метод заключается, в том, что производится забор венозной крови с последующим центрифугированием. Вопрос о методах получения аутоплазмы, обогащенной тромбоцитами, является дискуссионным и представляет огромное поле для деятельности. В научной литературе, мы встретили различные данные о методах получения аутологичной плазмы.

Антибактериальная терапия проводилась всем животным опытных групп только местно и заключалась в инстилляциях глазных капель «Ципровет» (ципрофлоксацин 0,45%) 4-6 раз в день. Исходя из литературных данных [3] и собственного опыта для местной антибиотикотерапии при лечении СКК, препаратами выбора для больных животных могут служить глазные капли, содержащие Ципрофлоксацин («Ципромед», «Ципровет»), а также глазные капли, содержащие гентамицина сульфат («Гентамицин») или комплексные препараты, которые содержат гентамицин и глюкокортикостероиды (глазные капли или мазь «Декса-гентамицин»).

У животных всех трёх групп еженедельно проводился клинический осмотр глаз и специальные тесты: СТШ и флюоресцеиновый тест [2,6,4]. Данные тесты используются для определения общей и рефлекторной слезопродукции [11,12] и для определения и визуализации дефектов эпителия роговицы. На первом приеме у всех животных значение СТШ колебалось от 3 до 9 мм, что соответствует средней и тяжелой степени

СКК (по Копенкину Е.П., Сотниковой Л.Ф.), в свою очередь флюоресцеиновый тест, также был положительным у всех животных.

Выводы. Высокий уровень встречаемости СКК и пигментного и сосудистого кератита характерен для собак породы кокер спаниель, йоркширский терьер, а также для брахицефальных пород. СТШ в совокупности с флюоресцеиновым тестом показали высокую эффективность при диагностике СКК у собак. Считаем, что проведение СТШ и флюоресцеинового теста должно стать обязательной частью повседневной практики ветеринарных специалистов. В то же время, к сожалению, животные, поступающие на прием, по поводу сухости глаза уже имеют среднюю и тяжелую степень течения СКК, что грозит потерей зрения и глаза как органа, поэтому, мы считаем необходимым проводить разъяснительную и профилактическую работу с владельцами собак, особенно пород состоящих в группе риска. Ранняя диагностика и регулярная диспансеризация собак существенно снизят риск развития СКК. В качестве препаратов выбора при лечении воспалительных заболеваний роговицы мы рекомендуем глазные капли или мази, содержащие в своём составе ципрофлоксацин и гентамицин для купирования развития микрофлоры в комбинации с глюкокортикостероидами. Из проведенного нами исследования можно сделать вывод, что включение в состав комплексной терапии СКК аутологичной плазмы плазмы обогащенной тромбоцитами в виде субконъюнктивальных инъекций и в виде инстилляций в конъюнктивальный мешок является достаточно эффективным, что подтверждается результатами СТШ и флюоресцеинового теста, а также динамикой клинической картины. Наши исследования в области применения аутоплазмы обогащенной тромбоцитами в офтальмологии показывают, что время заживления ксеротических язв на поверхности роговицы уменьшается до 7 дней (в сравнении с классической схемой лечения), удается добиться максимального терапевтического эффекта в более короткие сроки. Восстановление дефектов эпителия роговицы наступает уже через 1 неделю лечения с применением PRP, плазма обогащенная тромбоцитами способствует более быстрой эпителизации и восстановлению поверхности роговицы. Можно предположить, что наличие факторов роста в аутоплазме, способствует улучшению восприимчивости ткани роговицы и конъюнктивы собак к лекарственным средствам. Уровень общей слёзопродукции восстанавливается в более полном объёме к 6 неделе лечения, ремиссия является стойкой, но при условии постоянной симптоматической терапии. Разработанная нами методика лечения СКК собак с применением аутологичной плазмы, позволяет наблюдать снижение клинических проявлений по сравнению с традиционным лечением.

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DOI <https://doi.org/10.18551/rjoas.2017-06.46>

ОЦЕНКА ПОТРЕБИТЕЛЬСКИХ СВОЙСТВ ОБОГАЩЕННЫХ ХЛЕБОБУЛОЧНЫХ ИЗДЕЛИЙ С ИСПОЛЬЗОВАНИЕМ ФУНКЦИОНАЛЬНЫХ ПИЩЕВЫХ ИНГРЕДИЕНТОВ
EVALUATION OF CONSUMER PROPERTIES OF FORTIFIED BAKERY PRODUCTS PREPARED USING FUNCTIONAL FOOD INGREDIENTS

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АННОТАЦИЯ

Потребительский рынок – это одна из важнейших социально-экономических подсистем общества, задача которой состоит в поддержании равновесия между производством и потреблением, спросом и товарным предложением, и как следствие удовлетворение потребностей населения. На региональном потребительском рынке объем реализации по основным группам продовольственных товаров, которые производят воронежские предприятия, производящие, в том числе хлебобулочную продукцию, составляет более 80%. Местные хлебозаводы являются основными поставщиками, при этом их доля на рынке составляет 98-99%. Следует отметить, что в последнее время серьезную конкуренцию им составляют предприятия соседних регионов, которые предлагают широкий ассортимент хлебобулочных изделий, в том числе с использованием функциональных пищевых ингредиентов. Объем производства обогащенных хлебобулочных изделий предприятиями Воронежа не превышает 1,5%, чем обусловлена необходимость научно-исследовательских работ по созданию новых видов хлебобулочных изделий.

ABSTRACT

The consumer market is one of the most important socio-economic subsystems of a society, whose task is to maintain a balance between production and consumption, demand and supply, and as a result, meeting the needs of the population. In the regional consumer market, the volume of sales for the main groups of food products produced by Voronezh enterprises, including bakery products, is more than 80%. Local bakeries are the main suppliers, while their market share is 98-99%. It should be noted that recently they are seriously contested by the enterprises of neighboring regions that offer a wide range of bakery products, including using functional food ingredients. The volume of production of fortified bakery products by the enterprises of Voronezh does not exceed 1.5%, which necessitates the research work on the creation of new types of bakery products.

КЛЮЧЕВЫЕ СЛОВА

Обогащенные хлебобулочные изделия, функциональные пищевые ингредиенты, хлебопекарные предприятия.

KEY WORDS

Enriched bakery products, functional food ingredients, bakery enterprises.

Потребительский рынок играет немаловажную роль в экономике региона: от спроса и предложения на потребительском рынке зависит уровень производства и потребления благ, качество жизни населения. Требования к реализуемым товарам быстро изменяются, следовательно, предприятия, в том числе производящие хлебобулочную продукцию должны быть готовы к изменениям и быстрой адаптации к

запросам человека. Большой интерес представляет создание новых, инновационных товаров, обеспечивающих более качественное существование индивида [1].

С использованием выборочного метода анкетирования проведен анализ рынка с целью выявления потребительских предпочтений хлебобулочных изделий, в том числе содержащих функциональные пищевые ингредиенты. Объем выборки был равен 400 респондентам, обработка результатов определялась с учетом статистической погрешности, которая не превышала 5%.

По результатам мониторинга, следует отметить, что около половины опрошенных в Воронежской области респондентов (48%) предпочитают хлеб из ржаной и смеси ржаной и пшеничной муки. Полученные результаты в отношении потребления функциональных продуктов показывают, что 34,4% респондентов употребляют функциональные пищевые продукты (рис. 1).

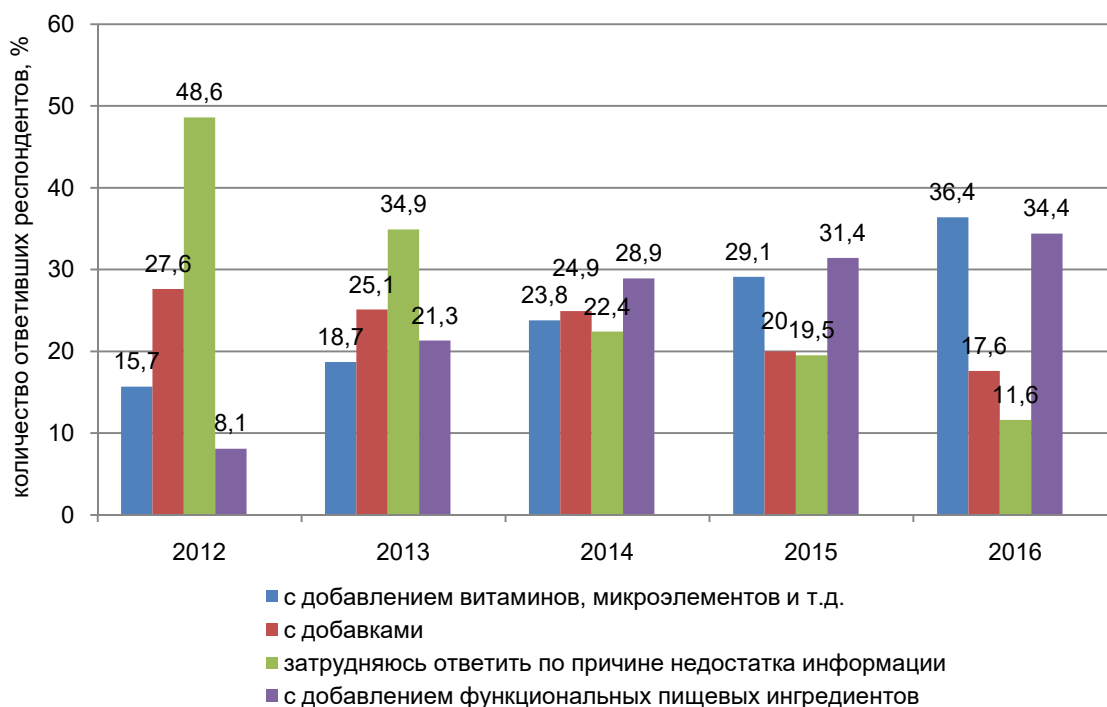


Рисунок 1 – Понимание респондентами термина «обогащенные продукты»

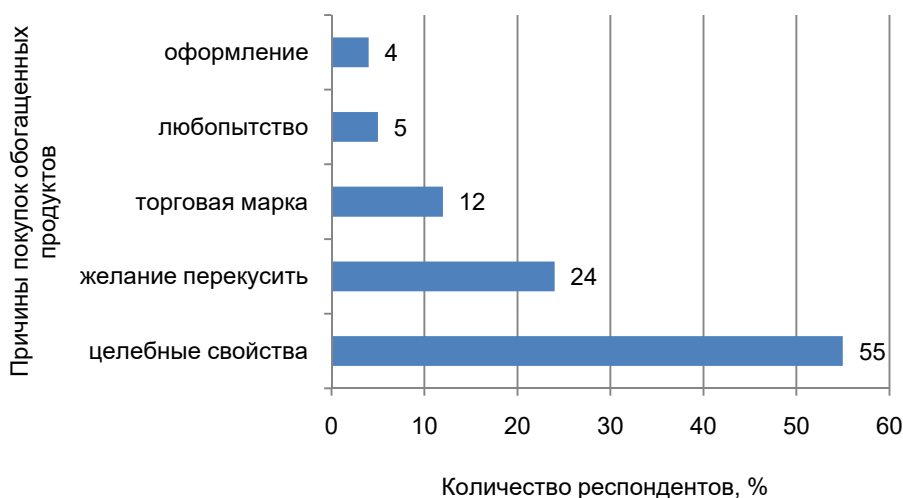


Рисунок 2 – Причины, побуждающие участников опроса к покупке обогащенных хлебопродуктов

На основе проведенного опроса выявлено, что потребители недостаточно владеют информацией о функциональных свойствах отдельных пищевых продуктов и ингредиентов, что как следствие, является причиной неупотребления данных видов продуктов питания.

На следующем этапе работы выявлялись причины, побуждающие участников опроса к покупке обогащенных хлебопродуктов (рис. 2).

Важнейшими свойствами обогащенных продуктов являются их лечебно-профилактические свойства, которые способствуют укреплению здоровья, улучшению работоспособности, профилактики различных заболеваний. Значительная часть опрошенных приобретают функциональные продукты по причине целебных свойств, которыми они обладают (55%).

В ходе исследований предстояло выяснить, из каких источников участники опроса получают информацию об обогащенных продуктах [2]. Результаты представлены на рис. 3.

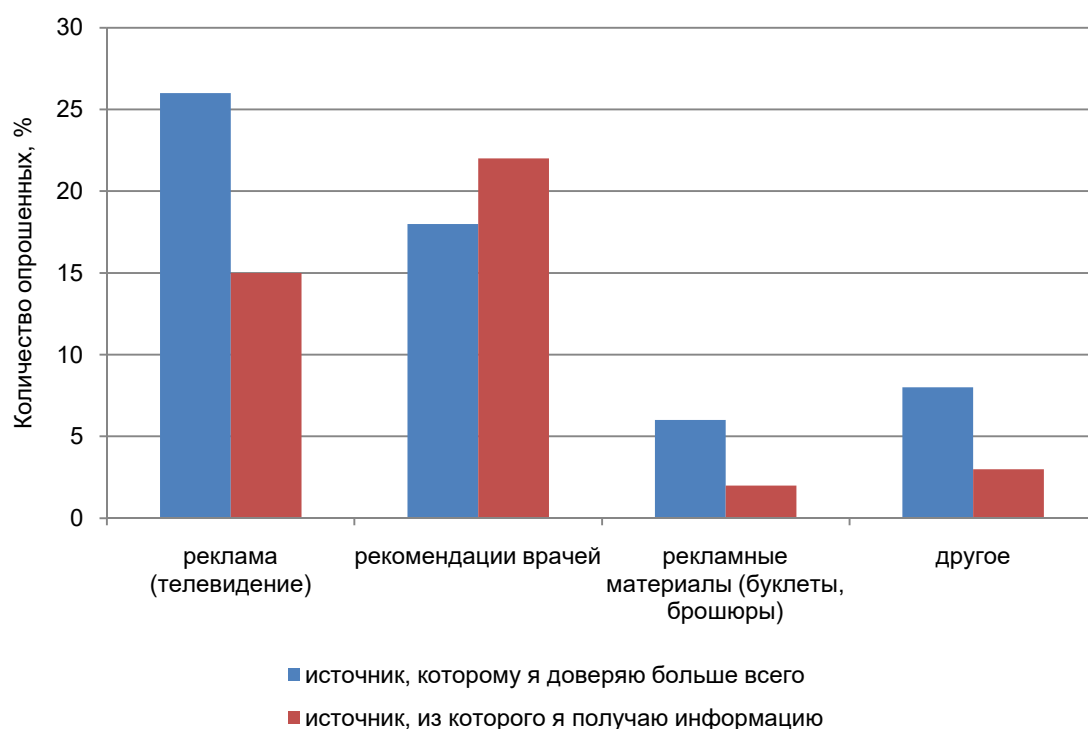


Рисунок 3 – Источники получения информации об обогащенных продуктах и степень доверия к ним

Анализ полученных данных свидетельствует о том, что наибольший объем информации участники опроса получают от врачей (22%). Полученные результаты свидетельствуют о том, что участники опроса проявляют значительный интерес к обогащенным продуктам.

Для населения России хлеб и хлебопродукты – являются основными источниками энергии, т. к. обеспечивают от 25% до 30% потребности индивида в белках, от 30% до 40% в углеводах, от 20% до 25% в витаминах, в пищевых волокнах и минеральных веществах [3]. Традиционные виды хлеба: пшеничный и ржано-пшеничный обладают недостаточной пищевой ценностью и несбалансированны по основным питательным веществам.

Хлеб не приедается, он обладает неизменной и неснижаемой при ежедневном употреблении усвояемостью, однако пищевая ценность хлеба не вполне соответствует современным требованиям «науки о питании фармаконутрициологии». Массовые сорта хлеба содержат недостаточное количество минеральных веществ, белков, и

витаминов, следовательно не могут удовлетворять в необходимом количестве потребность организма [4].

Анализ научной и научно-технической литературы показал, что для повышения пищевой ценности хлебобулочных изделий используются вещества – обогатители различной природы, которые принято называть физиологически функциональными ингредиентами [5].

Рынок функциональных пищевых ингредиентов (ФПИ), предлагаемых для обогащения продуктов питания, в том числе и хлебобулочных, представлен широким ассортиментом веществ различного происхождения, вводимых в пищевое сырье или готовые продукты с целью совершенствования технологии, сохранения или придания им заданных свойств (функциональных, органолептических и др.), продления сроков годности [6].

Чаще всего, в качестве ФПИ используют жиросодержащие добавки, белковые добавки, пищевые волокна растительного и животного происхождения, микро- и макроэлементы, витамины, комплексные добавки, содержащие вышеуказанные компоненты, фитодобавки. Работы ученых, занимающихся вопросами функциональных пищевых ингредиентов и источники информации отражены в табл. 1.

К основным этапам создания функциональных продуктов относятся выбор и обоснование функциональных ингредиентов, формирующих новые свойства продукта, способных оказывать физиологическое воздействие на организм человека.

Как мы видим из таблицы 1, основные категории функциональных ингредиентов: пищевые волокна, изопреноиды, витамины, олигосахариды, сахароспирты, молочнокислые бактерии, фосфолипиды, холины, аминокислоты, пептиды, протеины, нуклеиновые кислоты, макро-микроэлементы, гликозиды, полиненасыщенные жирные кислоты и др. антиоксиданты, органические кислоты и растительные ферменты [7].

Таблица 1 – Перечень функциональных пищевых ингредиентов, используемых для производства хлебобулочных изделий

Наименование ФПИ и их использование	Источник
Использование натуральных пищевых обогатителей с повышенным содержанием незаменимых аминокислот, витаминов, минеральных веществ в биоусвояемой форме.	О.Е. Темникова, Н.А. Егорцев, А.В. Зимичев. Обзор использования нетрадиционного сырья в хлебопечении / Хлебопродукты.,2012. №4. С. 54–55. О.Л. Ладнова, Корячкина, С.Я. Новые сорта диабетического хлеба с нетрадиционными растительными добавками. Хлебопечение России. – 2005. – №3. – С. 8–9.
Использование продуктов переработки семян амаранта путем введения их в рецептуру с целью повышения содержания витаминов в ХБИ.	Ю.Ф. Росляков, Н.А. Шмалько Влияние продуктов переработки семян амаранта на усвояемость мякиша хлеба. Хлебопечение России. – 2005. – №3. – С. 10–11. Н.М. Дерканосова, С. ВШелмова, О.А. Василенко, И.А. Зайцева Влияние порошкообразного полуфабриката цикория на потребительские свойства хлеба. Технологии и товароведение сельскохозяйственной продукции. – 2015. – №2. – С.7–11.
Использование нетрадиционных видов зернового сырья (амарант, лебеда, люпин, конопля, метличка, чиа) с целью повышения содержания витаминов в ХБИ.	Hofmanová, T., Hrušková, M., Švec, I..Evaluation of wheat/non-traditional flour composites. Czech Journal of Food Sciences. – 2014. – Vol. 32, N 3. – P. 288–295.
Использование непросеянной муки, обогащенной гидратированной гороховой мукой и с добавлением гидроксипропилцеллюлозы, агар-агара и гуаровой камеди для улучшения органолептических показателей и снижения гликемического индекса.	Mastromatteo, M., Danza, A., Lecce, L., Spinelli, S., Lampignano, V., Laverse, J., Conte, A., Del Nobile, M.A Nutritional and physicochemical characteristics of wholemeal bread enriched with pea flour. International Journal of Food Science and Technology. – 2015. – Vol. 50, N 1. – P. 92–102.

<p><i>Продолжение таблицы 1</i></p> <p>Использование комбинирования пшеничной муки и муки просо для повышения пищевой ценности ХБИ путём дополнительного внесения в рецептуру эмульгатора и комплекса ферментов.</p>	<p>R. Schoenlechner, M.Szatmari, A.Bagdi, S.Tömösközi Optimisation of bread quality produced from wheat and proso millet (<i>Panicum miliaceum</i> L.) by adding emulsifiers, transglutaminase and xylanase. <i>LWT – Food Science and Technology</i>. – 2013. – Vol. 51, N 1. – P. 361–366.</p>
<p>Использование семян кунжута, льна, ядер кедрового ореха, меда и персикового пюре в качестве обогащающих компонентов для выработки хлеба с повышенной биологической ценностью.</p>	<p>Остробородова, С.Н. Разработка технологий функциональных хлебобулочных изделий применением сырья растительного и животного происхождения: Диссертация канд. техн. наук. Воронеж: Воронежская государственная технологическая академия, 2009. – 219 с.</p>
<p>Использование добавки на основе рисового солода, улучшающей при производстве хлеба из пшеничной муки с крепкой клейковиной органолептические и физико-химические показатели качества готовых изделий.</p>	<p>Л.О. Коршенко, О.Г. Чижикова, Н.Н. Абдулаева, С.М. Доценко, Е.А. Коршенко Разработка композиции хлебопекарного улучшителя на основе рисового солода. <i>Товаровед продовольственных товаров</i>. – 2013. – №9. – С. 36–38.</p>
<p>Использование льняной муки в качестве сырья при производстве хлеба пшеничного с целью повышения содержания пищевых волокон в хлебе до статуса функционального ингредиента.</p>	<p>И.А. Супрунова, О.Г. Чижикова, О.Н. Самченко Мука льняная – перспективный источник пищевых волокон для разработки функциональных продуктов. <i>Техника и технология пищевых производств</i>. – 2010. – №4. – Т.19. – С. 50–54.</p>
<p>Использование вторичных продуктов переработки зерна риса в рецептуре ХБИ с целью повышения биологической ценности.</p>	<p>Красина, И.Б. Потребительские свойства вторичных продуктов переработки зерна риса / Красина И.Б. // <i>Известия ВУЗов. Пищевая технология</i>. – 2007. – №5 – 6. – С.23–24.</p>
<p>Использование рисовой крупы и рисового экструдата в качестве частичной замены пшеничной муки высшего сорта при производстве ХБИ с целью повышения пищевой ценности.</p>	<p>А.С. Захарова, Л.А. Козубаева Хлеб с добавлением рисовой крупы. <i>Хлебопродукты</i>. – 2008. – №5. – С.50–51.</p>
<p>Использование глюкана ячменной муки в сравнении с обычной ячменной с целью увеличения количества пищевых волокон в хлебе, а также сохранения техно-функциональных и сенсорных характеристик.</p>	<p>C. Collar, A. Angioloni Nutritional and functional performance of high β-glucan barley flours in breadmaking: Mixed breads versus wheat breads. <i>European Food Research and Technology</i>. – 2014. – Vol. 238, N 3. – P. 459–469</p>
<p>Использование в рецептуре хлеба ржаного ферментированного солода и сахара-песка для улучшения органолептических свойств хлеба из смеси пшеничной и овсяной муки.</p>	<p>П.А. Чалдаев, А.Ф. Шевченко, А.В. Зимичев Пути улучшения качества пшенично-овсяных хлебобулочных изделий // <i>Хлебопечение России</i>. - 2010. - №1. - С. 20-21.</p>
<p>Использование солодовых экстрактов путем внесения в состав рецептуры ржано-пшеничных ХБИ с целью улучшения показателей качества.</p>	<p>Е. В. Серякова, А.С. Романов, О.Г. Позднякова, А.Ю. Беляев Сравнительный анализ показателей качества хлеба, изготовленного с внесением солодовых экстрактов различных торговых марок. Тенденции сельскохозяйственного производства в современной России: материалы XII Международной научно-практической конференции – Кемерово: 2013.-КГСИ. – С.365-371.</p>
<p>Использование ω-3 жирных кислот, входящих в состав муки чиа, для получения хлеба из пшеничной муки высшего сорта повышенной пищевой и биологической ценности с улучшенными потребительскими свойствами</p>	<p>Л.В. Зайцева, Т.А. Юдина, А.В. Лаврова, В.Г. Байков Влияние муки чиа с высоким содержанием ω-3 жирных кислот на показатели качества и пищевую ценность хлеба. <i>Хлебопродукты</i>. – 2014. – №3. – С. 48–50.</p>
<p>Использование растительных масел (рапсовое, рыжиковое, льняное, конопляное) с целью обогащения хлеба полиненасыщенными жирными кислотами семейств ω-6, ω-3 и токоферолов, что способствует увеличению эластичности мякиша, пористости и удельного объема хлеба, повышению его пищевой и биологической ценности.</p>	<p>Н.И. Конова, И.Б. Шарфунова, Т.Г. Кичаева и др. Применение масла рыжика при производстве хлебобулочных изделий. <i>Хлебопекарное и кондитерское производство</i>. – 2005. – №6. – С. 1–4. Н.И. Конова, Т.В. Рензязева, И.Б. Шарфунова, Т.Г. Кичаева, О.П. Рензязев Приготовление хлеба с добавлением растительного масла. <i>Хлебопродукты</i>. – 2009. – №. 2 – С.50–51.</p>
<p>Использование пшеничных отрубей и порошка топинамбура для оптимизации рецептуры хлеба диабетического назначения.</p>	<p>Л.П. Бессонова, А.А. Шевцов, И.В. Мажулина, Т.Н. Тертычная Оптимизация рецептуры хлеба повышенной пищевой ценности диабетического назначения. <i>Хлебопродукты</i>. – 2014. - №2. – С.36–37.</p>

<p><i>Продолжение таблицы 1</i></p> <p>Использование порошкообразного полуфабриката якона (вид многолетних травянистых растений из рода <i>Smallanthus</i> семейства Астровые) с целью повышения содержания физиологически функциональных ингредиентов в ХБИ (инулина, клетчатки, кальция, железа, селена).</p>	<p>Дерканосов, Н.И. Разработка и оценка потребительских свойств хлебобулочных изделий обогащенных яконом: автореф. дис. канд. тех. наук – Орел, 2011. – 22 с.</p>
<p>Использование белково-липидной массы из семян тыквы для повышения содержания линолевой и олеиновой жирных кислот в хлебе.</p>	<p>О.Л.Вершинина, И.В. Шульвинская Применение белково-липидной добавки из семян тыквы в производстве хлеба. Известия ВУЗов. Пищевая технология. – 2007. – №1. – С. 37–38. Марковский, Ю.И. Разработка рецептуры и оценка потребительских свойств хлебобулочного изделия функционального назначения, обогащенного БАД «Тыковка» /дис. канд. техн. наук.:05.18.15 – Краснодар, 2007. – 134.</p>
<p>Использование порошка шиповника с целью придания продукту приятного фруктового вкуса и обогащения витаминами и пищевыми волокнами пшеничных сортов хлеба.</p>	<p>А.А. Генев Хлеб с шиповником. Хлебопечение России. – 2005. – №6. – С. 24.</p>
<p>Использование зеленого чая в технологии производства пшеничного хлеба с целью обогащения полифенолами, белками и другими функциональными ингредиентами.</p>	<p>И.Д. Щеголева, М.Б. Мойсеяк Применение зеленого чая в технологии производства пшеничного хлеба. Хлебопечение России. – 2014. №2. – С.18–20.</p>
<p>Использование побочного продукта производства чая – чайной пыли, содержащей большое количество антиоксидантных полифенолов и танин в технологии производства пшеничного хлеба с целью повышения биологической ценности</p>	<p>Culetu, A., Héritier, J., Andlauer, W. Valorisation of theanine from decaffeinated tea dust in bakery functional food . International Journal of Food Science and Technology. – 2015. – Vol. 50, N 2. – P. 413–420.</p>
<p>Использование измельченных пантов марала в качестве функционального пищевого ингредиента при разработке рецептуры нового вида специализированного хлебобулочного изделия целью обогащения незаменимыми микро- и макроэлементами.</p>	<p>Н.Б. Трофимова (Коптелова), Е.О. Ермолаева, В.М. Позняковский Разработка хлебобулочных изделий «Пантомарал» функциональной направленности //Товаровед продовольственных товаров. – 2014. – №8. – С. 17–21.</p>
<p>Использование нерастворимых древесных волокон из <i>Gliricidiaserium</i> путём внесения в состав рецептуры с целью увеличения содержания пищевых волокон в хлебе.</p>	<p>A.A. Abdulrahaman, O.O. Bamidele, F.A.Oladele Wood of gliricidiaserium as a potential source of dietary fiber. Archives of Biological Sciences. –2013. – Vol. 65, N 3.– P. 1105–1112</p>
<p>Использование экзополисахарида, продуцируемого молочнокислыми бактериями с целью улучшения механических свойств при хранении.</p>	<p>E. Torrieri, O. Pepe, V. Ventorino, P. Masi, S. Cavella Effect of sourdough at different concentrations on quality and shelf life of bread. LWT – Food Science and Technology. – 2014. – Vol. 56, N 2. – P. 508–516.</p>
<p>Использование йода и селена путем введения в состав рецептуры комплексной обогащающей добавки (КОД), содержащей селенопиран и калия йодид при разработке функциональных хлебобулочных изделий.</p>	<p>Н. И. Давыденко, В. А. Нестерова, А. И. Карчевная Обоснование необходимости комплексного обогащения при разработке функциональных хлебобулочных изделий. Ползуновский Вестник. – 2012. – №2/2. – С. 200–205.</p>

Использование обогащенных видов хлеба позитивно сказывается на снижении дефицита полезных веществ в организме. При разработке новых сортов хлебобулочных изделий, обладающих повышенной биологической ценностью и пониженным содержанием углеводов, целесообразно использовать новые виды сырья для выпечки хлеба. С этой точки зрения перспективной является мука из нетрадиционной зерновой культуры – тритикале.

Сравнительный анализ химического состава основных хлебных злаков представлен на рис. 4 [3].

Несомненный интерес для решения вопросов обогащения продуктов растительным белком, представляет новая культура тритикале [8]. Проведенный анализ подтверждает, что по накоплению белка в зерне и по содержанию лизина сорта тритикале превышают на 1% - 2% сорта мягкой пшеницы (рис. 5). Содержание незаменимых аминокислот в хлебе из муки тритикалевой хлебопекарной значительно

превышает их количество в пшеничном хлебе: лизина - на 26%, триптофана -2%, треонина - 47%. Содержание лизина обуславливает лучшую питательную ценность зерна тритикале и продуктов его переработки. Фракции глобулинов и альбуминов являются у тритикале наиболее полноценными по аминокислотному составу [8, 9].

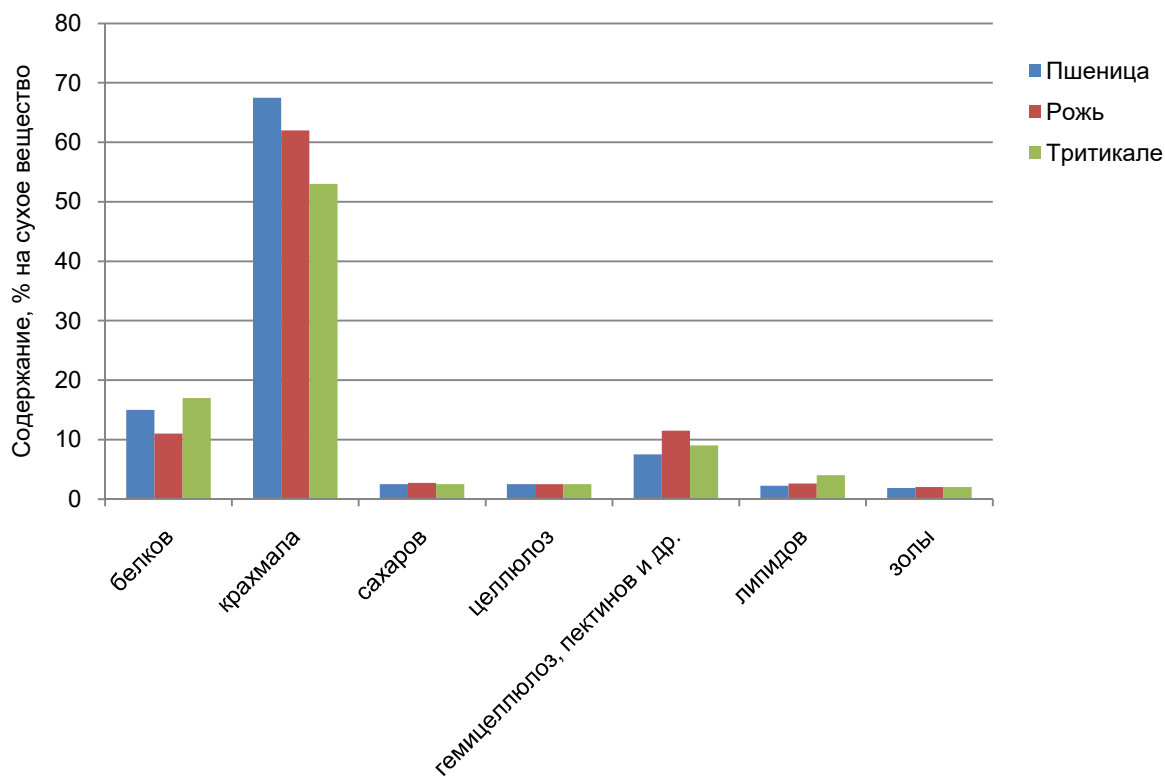


Рисунок 4 – Химический состав зерновых культур

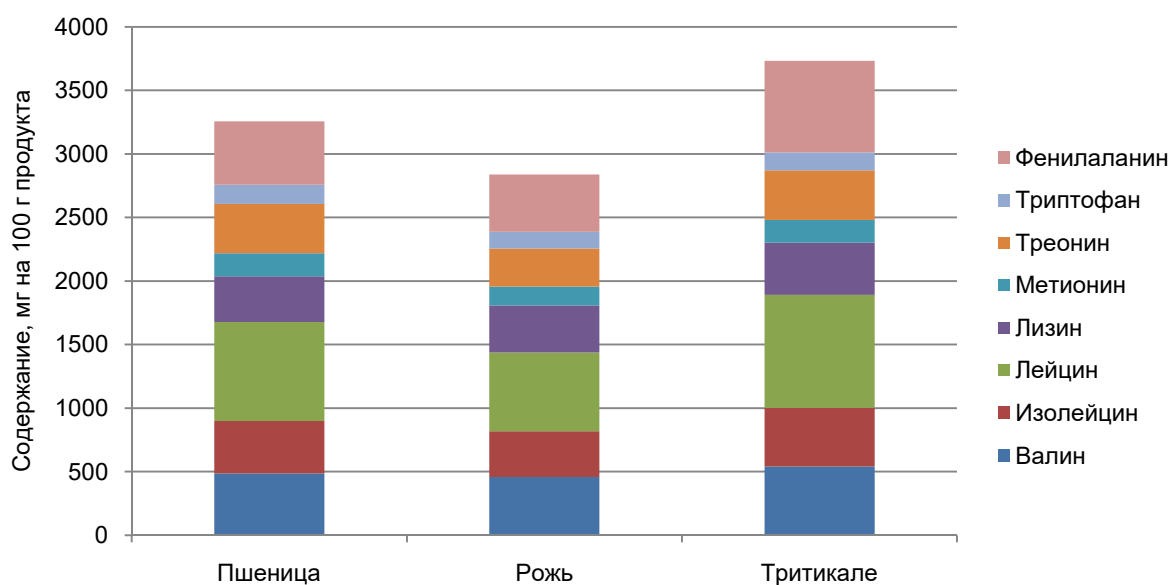


Рисунок 5 – Средний аминокислотный состав зерна пшеницы, ржи, тритикале, мг на 100 г продукта (незаменимые аминокислоты)

Минеральная и витаминная сбалансированность зерна и продуктов его переработки имеет важнейшее значение в питании человека, следует отметить, что

содержание минеральных веществ в зерне тритикале несколько больше, чем в родительских формах (рис. 3). Зерно тритикале и продукты его помола - хороший источник магния, калия, натрия, фосфора, цинка, меди, железа [9]. Содержание марганца, натрия, меди, цинка, железа в тритикале выше, чем в пшенице и незначительно ниже, чем во ржи. Минеральный состав тритикаленаходится на уровне с зерном пшеницы (рис. 6).

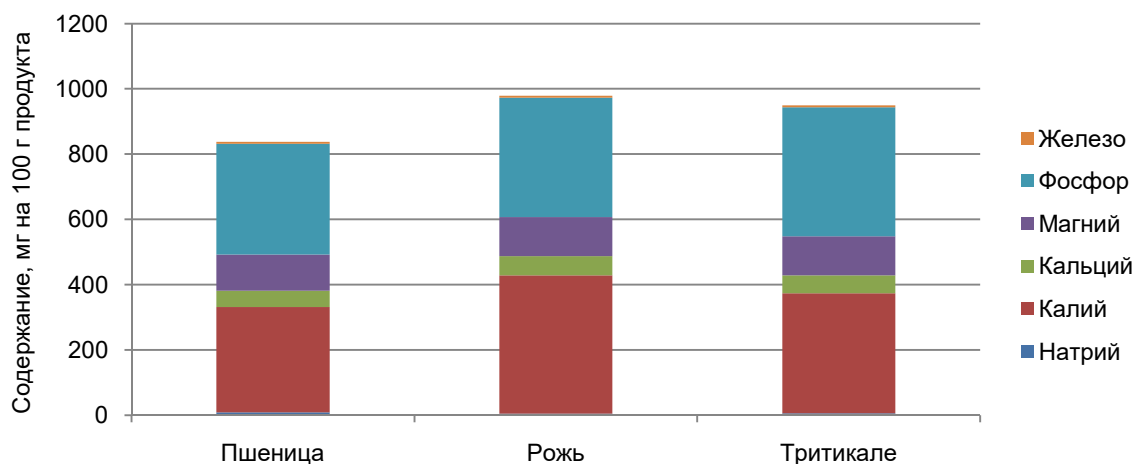


Рисунок 6 – Содержание макроэлементов в зерне, мг на 100 г

Состав и содержание витаминов в зерне тритикале находится на уровне пшеницы, кроме ниацина, содержание которого ближе к ржи (15,6-17,9 мг/г) [10]. Повышенное содержание наиболее полноценных белковых веществ, сахаров, витаминов, макро- и микроэлементов обуславливает высокую биологическую ценность зерна тритикале, следовательно хлебобулочные изделия, приготовленные с его использованием, можно будет отнести к группе изделий функционального назначения.

Использование тритикалевой муки в производстве хлебобулочных изделий перспективно для расширения сырьевой базы и увеличения ассортимента продукции с повышенной пищевой ценностью. Хлеб из тритикалевой муки характеризуется высокой пищевой и биологической ценностью.

По мере увеличения спроса населения на новые сорта хлебобулочных изделий нами рекомендуется постепенно осуществлять замену пшеничной и ржаной муки на тритикаловую, при этом конечный результат остается за потребителем. Разнообразие ассортимента хлебобулочных изделий повышенной пищевой и биологической ценности расширению сырьевой базы хлебопекарной отрасли будет способствовать созданию новых хлебобулочных изделий из тритикалевой муки, в целях укрепления здоровья населения [11].

На современном этапе разрабатываются и внедряются безотходные технологии по комплексной переработке сельскохозяйственного сырья, в результате которых получены новые пищевые продукты с полноценным химическим составом, содержащие биологически активные вещества, служащие ценной добавкой при производстве хлеба. Нетрадиционное сырье применяется для повышения пищевой ценности хлебобулочных изделий, улучшения их органолептических и физико-химических показателей, а также создания изделий для профилактического и лечебного назначения [12].

Наиболее перспективными, с точки зрения функциональных свойств и направлений использования в производстве продуктов питания, являются полуфабрикаты на основе плодов, овощей, травяных сборов, которые содержат значительное количество биологически активных веществ: микроэлементов, витаминов, пищевых волокон, пектина и др. Применение данных полуфабрикатов позволяет улучшить и расширить ассортимент хлебобулочных изделий.

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Russian Journal of Agricultural and Socio-Economic Sciences (ISSN 2226-1184) is an interdisciplinary open access journal of agriculture and socio-economic studies. Topical coverage includes: agriculture and rural development, agricultural economics, management, agribusiness, agrarian policy, information systems, social economy and rural sociology.

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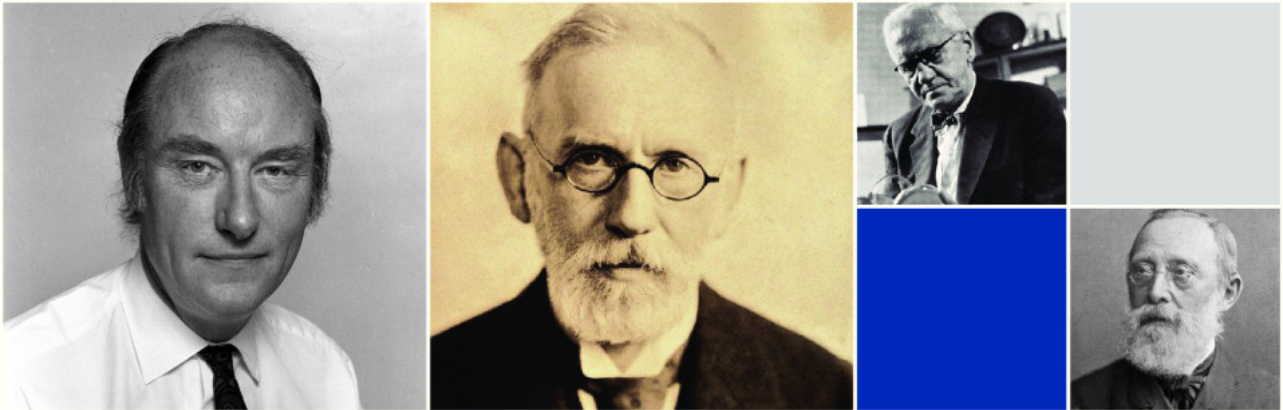
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