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# Strategic Management of Innovation Development of Tourism Businesses: Multi-Systematic Approach

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## Abstract

*The article systemizes and analyses the properties of innovation roles depending on the life cycle stage of a tourism business. It identifies the strategic character of innovation development of a tourism business, which calls for the necessity of its quality management. The article also forms a system of the innovation development management of tourism businesses, which includes a complete list of tools within the components: project-technological block, resource-financial apparatus and organizational-resolution mechanism. Applying the designed "map" of parameters of the innovation development and the chief components method (the Karhunen–Loève method and Hotelling's changes), an integral assessment of the innovation development of tourism businesses was done. An experimental-statistics method in compliance with Fishburne's rule was used to identify the value coefficients of innovation development parameters. In order to generalize the results of the integral assessment, the Harrington's Scales were suggested. For the justification of the amount of sample of tourism businesses, the method of the Gallop Institute was used. The promising areas and strategic directions of the innovation development of the tourism businesses have been justified. It has been proved that implementation of development program of the tourism businesses on the innovation basis has to be put into practice in accordance to the formed multi-system innovation strategy. The objective of the multi-system innovation development of the tourism businesses has been identified as ensuring their sustainable and structurally balanced development on the innovation basis.*

**Keywords:** management; innovation development; tourism businesses; strategy.

## 1. Introduction

Emergence of irreversible linearization processes in trade and economic relationships, increased impact of the scientific-technical progress on all areas of social life, development of the extensive network of infrastructural facilities and improvement of the transport communication on the regional, national and international levels adjust the established set of determinants of the efficient performance of the tourism businesses on the market which objectively cause the feasibility of justification and development of the strategic priority directions of improved growth of such businesses on the innovation basis (Martínez-Pérez, Elche, & García-Villaverde, 2019; Sugathan & Ranjan, 2019; Bianchi, 2018; Omerzel, 2015).

The conceptual indication of innovation activities is their novelty, which ensures the dynamic competitive advantages of the tourism businesses on the market during a specific time period. Businesses which periodically introduce innovations, have not only better pre-conditions of getting higher income through price maximization for the set of provided tourism services, but also possibility to create the preventive mechanisms to protect their economic interests, to build an efficient system opposing the destabilizing impact of possible risks and threats, to increase their share of the target segment of the tourism market and to decrease the dependence on changes parameters of the market environment (Fu, Okumus, Wu, & Köseoglu, 2019; Lane, 2018;

Vasylytsiv, Lupak, & Kuniyska-Iliash, 2018; Hipp & Grupp, 2005).

Refocusing of management impacts to the segment of forming the basics of the innovation development of the tourism businesses is a key determinant that ensures a strong competitive market positions and minimizes the risks of transferring into the stagnation phase within its life-cycle parameters (Figure 1). It is obvious that formation of the basics of the innovation development of tourism businesses a priori can't be a chaotic process, it objectively requires formalization of the efficient mechanisms and ways to ensure its operating manageability within the changing parameters and operating environment of the tourism market (Gardiner & Scott, 2018; Peters & Pikkemaat, 2006).

Thus, the peculiarities of the strategic management of the innovation process of a tourism company determine a special character of ensuring the manageability of innovation processes, which requires formalization of the structural parameters of a target management system, assurance of directing its functioning to maximize its optimization criteria as a priority, considering intellectual component of HR policy and diversification of the resources to support the innovation development processes (Zach & Hill, 2017; Szymańska, 2015; Rodríguez, Williams, & Hall, 2014). This strengthens the viability of further research in the area of applied aspects of multi-system management organization in the development of tourism businesses on the innovation basis.

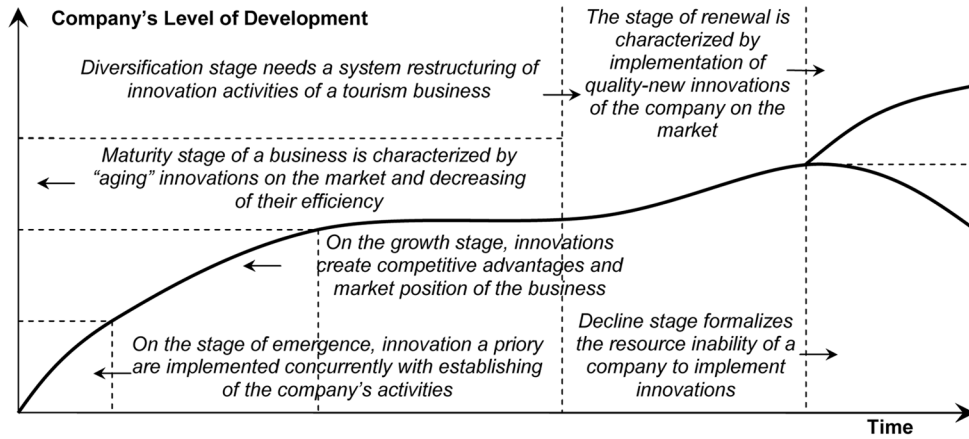


Figure 1. Differentiation of characteristics of the innovation role depending on the life cycle of a tourism business  
Source: own processing

## 2. Innovation development management of tourism businesses: multisystem communications

Concentration on the issues of the tourism companies' development is an adequate response to the environmental challenges, which includes implementation of a number of sustainable changes within structural-functional parameters directed at higher efficiency of resource potential and stronger dynamic competitiveness in the space-time dimension.

To ensure a better efficiency of innovation process management at tourism companies, it is important to form and institute a corresponding system (Figure 2). The management system of innovation processes of a tourism business has its own structural-hierarchical design which is an aggregate of

such components as project-technological block, resources-functional apparatus and organizational-resolution mechanism, the cooperation of which aims at ensuring manageability of innovation processes on the basis of delegating authorities, responsibilities and duties in the context of achieving the set goals of a tourism business operations on the market (Verreyne, Williams, Ritchie, Gronum, & Betts, 2019; García-Villaverde, Elche, Martínez-Pérez, & Ruiz-Ortega, 2017). Achieving efficiency of management system of innovation development of tourism businesses requires keeping to the following principles: complexity, flexibility, entity, balance, scientific nature, succession and rationality (Song, Wen, & Liu, 2019; Gardiner & Scott, 2018; Omerzel, 2015; Aldebert, Dang, & Longhi, 2011).

Management of innovation development of tourism businesses is determined by a number of additional important aspects,

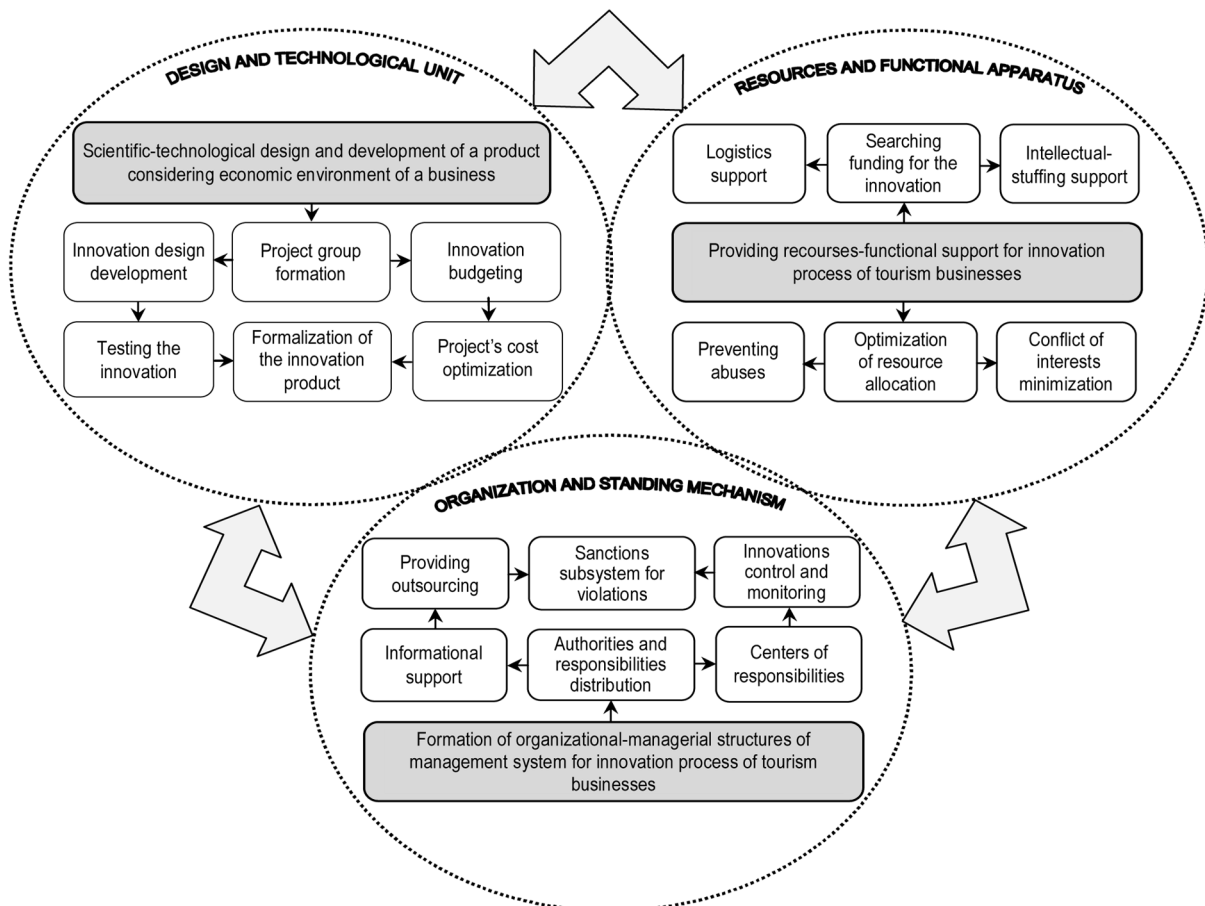


Figure 2. Structure of management system of innovation development of tourism businesses  
Source: own processing

among which are: higher possibility risk of wrong managerial decision making; existence of a differential institutional-legal basis that regulates innovation activities of the companies providing tourism services in various countries; strategic direction of tourism business to the development of service-product innovations; limited state support of innovation activities; risks of commercially secret information leaks; licensing of certain types of activities; dependence of efficient innovation management of tourism businesses on the development of infrastructure facilities; shadowing of the tourism sphere (Pulido-Fernández, Cárdenas-García, & Espinosa-Pulido, 2019; Chim-Miki & Batista-Canino, 2018; Li, Hu, Huang, & Duan, 2017; Weidenfeld, 2013).

### 3. Indicators of innovation processes management of tourism companies: methodology aspects

It is important for the selected indicators to assess the innovation development of a tourism company, considering the peculiarities of its innovation activities and to evaluate not only the existing innovation potential of such a development, but also peculiarities of its implementation and results which consist in the necessity of assessment of the innovation development directions typical and distinctive for the tourism businesses (Mayaka, Croy, & Cox, 2019; Sigalat-Signes, Calvo-Palomares, Roig-Merino, & García-Adán, 2019). Also, a set of indicators must be identified and arranged so that to maximally outline and consider all the activities components of tourism businesses, their integration and cooperation on the foreign markets of tourism services, the necessity to attract and use the unified technical-technological networks and software, peculiarities of marketing and technical-technological development, significant role and differences in introducing the service and marketing innovations connected with the brand development, attracting and using intangible assets in such activities (Kallmuenzer, Kraus, Peters, Steiner, & Cheng, 2019; Shafiee, Ghatari, Hasanzadeh, & Jahanyan, 2019; Chim-Miki & Batista-Canino, 2018; Vasylytsiv, Lupak, & Osadchuk, 2017; Fundeanu, 2015).

Considering those tasks, calculations of the summarized integral index of innovation development of tourism business (IIRTP) should be done by the formula:

$$I_{IRTP} = \sum b_i \times I_{ji}^{CKL}, \quad (1)$$

where  $b_i$  – weighting coefficients which determine the contribution level of  $i$ -component into the general integral index of innovation development of a tourism firm;  $I_{ji}^{CKL}$  – the value of  $j$ -integral index of  $i$ -component of innovation development of a tourism firm.

Calculations of an integral index of innovation development of a tourism firm by each component is done by the formula:

$$I^{CKL} = \sum \alpha_{uj}^i \times P_{ui}, \quad (2)$$

where  $\alpha_{uj}^i$  – weighting coefficients which determine the contribution level of  $u$ -component into the  $j$ -integral index by  $i$ -component of innovation development of a tourism firm;  $P_{ui}$  – the value of the incoming data of  $u$ -indicators by the  $i$ -component of innovation development of a tourism firm.

The quantitative assessment of relevance, value of each of the determined indicators in the overall index of innovation development of tourism companies is of a great importance. The value coefficients are defined by an expert-statistics method, which attributes to each of the defined indicators a grade with specific level of importance and, accordingly, defining the value coefficients of each indicator ( $\alpha_{uj}^i$ ) is done by the Fishburne's formula:

$$\alpha_{uj}^i = \left\{ \frac{2(n_{uj}^i - k + 1)}{(n_{uj}^i + 1) \times n_{uj}^i} \right\}, \quad (3)$$

where  $n_{uj}^i$  – the total amount of  $u$ -indicators by calculating

the  $j$ -integral index by the  $i$ -component of innovation development of a tourism firm;  $k$  – a list number of a local indicator in the corresponding system of indicators.

Value coefficients of the basic components of the integral index of innovation development of a tourism firm ( $b_i$ ) are defined by the Fishburne's formula in the same way.

$$b_i = \left\{ \frac{2(n_i - k + 1)}{(n_i + 1) \times n_i} \right\}, \quad (4)$$

where  $n_i$  – the total amount of  $i$ -components used to calculate the overall integral index of innovation development of a tourism firm;  $k$  – a list number of a component in the corresponding system of the integral assessment.

To identify the values of all parameters within their groups of innovations, out of the total amount of economic-statistics methods we suggest using the method of the principal components (the Karhunen Loeve's method and Hotelling's changes). This method consists of a linear change of uncorrelated parameters which form a  $X$  matrix of a  $I \times J$  dimension, the lines of which correspond to the analyzed parameters ( $i = 1, \dots, I$ ), while its columns correspond to the original variables  $x_j$  ( $j = 1, \dots, J$ ), characterizing those parameters. Consequently, the main parameters of innovation development of tourism firms  $t_a$  ( $a = 1, \dots, A$ ) take the form of a linear combination of the initial variables:

$$t_a = p_{a1}x_1 + \dots + p_{aJ}x_J \quad (5)$$

Meanwhile, each line of the  $P$  matrix includes coefficients that connect variables  $t$  and  $x$ , each column of the  $P$  matrix is a projection of a corresponding  $x_j$  variable on a new coordinate system.

The method requires alignment (subtraction of the average  $m_j$  value from each  $x_j$  column) or rationing (division of each  $x_j$  column by the own standard deviation  $s_j$ ) of the offered amount of parameters as the disperse values of the indicators depend on the measurement scale of innovation development:

$$m_j = \frac{x_{1j} + \dots + x_{Ij}}{I}, \quad (6)$$

$$s_j = \sqrt{\frac{\sum_{i=1}^I (x_{ij} - m_j)^2}{I}} \quad (7)$$

Considering the corresponding methodology for the systematic and detailed assessment of innovation development of tourism firms, it is worthwhile to make a "map" of the key innovation types characteristics. In particular, in each group of innovations, to most fully identify the parameters which reveal both its content-practical meaning and innovation development direction (table 1). This design permits to make a complex analysis and get the fullest possible picture of the real situation at a tourism firm in the innovation sphere.

An expert technology application means that the respondents (managers and chief experts of tourism businesses) give answers to each characteristic of innovation development in terms of its availability or implementation in the companies that they represent, ranging from zero to ten points, where 10 is the maximum meaning, 0 is the minimal meaning or a complete absence of the corresponding characteristic in the firm.

The received empiric data have a high precision correlation with other numerous research results in the area of innovation development of a tourism industry. The basic argument in favor of such a conclusion is a high level of even importance distribution of each provided directions of innovation activities of tourism businesses. Four out of five types of innovations received practically the same weightings – about 20.0% in the structure of innovation activities by all their directions and areas.

To interpret results of a complex assessment of innovation development of tourism businesses, it's appropriate to apply the Harrington's Scale, which consists of five interval evaluations of the integral indicator of innovation development (table 2).

Types and parameters of innovation activities	Weighting coefficients	Types and parameters of innovation activities	Weighting coefficients
<b>Service-product innovations</b>		<b>Organizational-managerial innovations</b>	
Creating and introducing new tourism products	0.056	A level of development of organizational-managerial system in the area of innovation activities at the firm	0.055
The start of providing principally new additional services for the customers	0.041	A formed institutional-legal support of innovation activities	0.028
Development of new integration and cooperation forms in a tourism business and supply of a complex complete tourism product	0.065	Establishing of quality control management of innovation activities in the firm	0.069
Introduction of innovative relative services (finance-banking, insurance, transport-excursion, sporting-entertainment, etc )	0.041	Level of implementation of new innovation approaches to the development management of a tourism business, business processes flow	0.049
<b>Marketing innovations</b>		<b>Technological innovations</b>	
Level of implementation of innovation market research methods	0.064	Level of automation and informatization of business processes	0.032
Applying new innovative methods of promoting tourism products on the market	0.065	Level of development and spread of electronic communication forms in a company, using information technologies abilities for such purposes	0.029
Quality and efficiency of innovations in tourism products commercials	0.071	Extent of implementing of information and internet technologies into the system of other external communications	0.069
Novelties in Public-relation system of tourism firms and their services	0.009	Modern and innovation character of the company's material and technical-technological base	0.049
<b>Social-environmental innovations</b>		<b>0.209</b>	
Availability and extent of dissemination of resource and energy saving technologies		0.064	
Quality of novelties in the area of rational product using		0.065	
A share of environment-friendly tourism products of a firm		0.071	
Extent of innovations implementation in the system of internal and external social responsibilities of a tourism firm		0.009	

*Table 1.* Innovation types, parameters and weighting coefficients in assessing innovation activities of tourism businesses  
*Source:* own research results

Integral index level of innovation development of a tourism firm	Numeric values interval of integral index of innovation development of a tourism firm
Very high	0.80-1.00
High	0.63-0.80
Medium	0.37-0.63
Low	0.20-0.37
Very low	0.00-0.20

*Table 2.* Harrington's Scale for interpreting the integral value's meaning of innovation development of a tourism firm  
*Source:* own research results

## 4. Discussing innovation development of tourism businesses in Ukraine

Ukraine has unique and various natural-climatic conditions and resources, historical-cultural heritage, folk traditions, a network of recreation-therapeutic, health resorts, which create a considerable potential of tourism development as a whole and tourist, firms in particular. However, the available possibilities are untapped, Ukrainian tourism firms are not fully performing their appropriate social-economic functions and tasks. By the key parameters of volumes and efficiency, they fall behind the tourism businesses of the countries with highly developed tourism industry (Vasylytsiv, Lupak, & Kynytska-Iliash, 2019).

To justify the amount of sampling of Ukrainian tourism firms, the Gallop Institute method was used. The method consists in interviewing 1.0% of the total sampling of respondents (by this, the error of the expert interviewing doesn't exceed 3.0%). At the same time, the error is less than 1.0% if the sampling is 2.0%.

Figure 3 shows the values of the overall integral coefficient and integral values of innovation components of tourism businesses in each time period of the analysis.

It's been identified that the level of innovation development of tourism businesses is middling (0.50 by the scale from zero to one) with a negative trend to a worse situation in January and July 2019. Among all types of innovations, the least developed ones appeared to be organizational-managerial innovations (0.36) and social-environmental innovations (0.33). Meanwhile, the organizational-managerial innovations were characterized by a lower indicator in 2017-2019 (from 0.38 to 0.36).

It's been found out that deterioration of the integral index of innovation development of tourism businesses was caused by

2017-2019 decrease in integral values of indicators of such innovation types as service-product (by 0.034) and organizational-managerial (by 0.023) as well as the latest decline of social-environmental (by 0.014) innovations. Nevertheless, in the importance structure, all innovation development trends remain necessary for tourism firms with a minor gap in technological innovations. The above proves the necessity of a systematic and complex approach to the development of Ukrainian tourism firms on the innovation basis.

## 5. Strategic directions of tourism businesses development on the innovation basis

Increasing competition on the global market of tourism services, with no doubt, hinders the development conditions for Ukrainian tourism companies and highlights the need of innovations as a factor of increasing quality and competitiveness of tourism services. At the same time, firms' policy in this aspect has to be systematic and have a strategic character with clearly defined ways of its implementation.

The analysis summary of situation and trends, operation conditions of Ukrainian business firms shows that the following steps of their further innovation development can be regarded as promising: creating new innovation products and services, introducing new tourism services on the market, improving organizational-managerial processes, information-technological, intelligent-personnel, financial support of innovation activities, active computerization and introducing marketing innovations, integration into the single information-tourism space.

Accordingly, the above proved it necessary to identify the

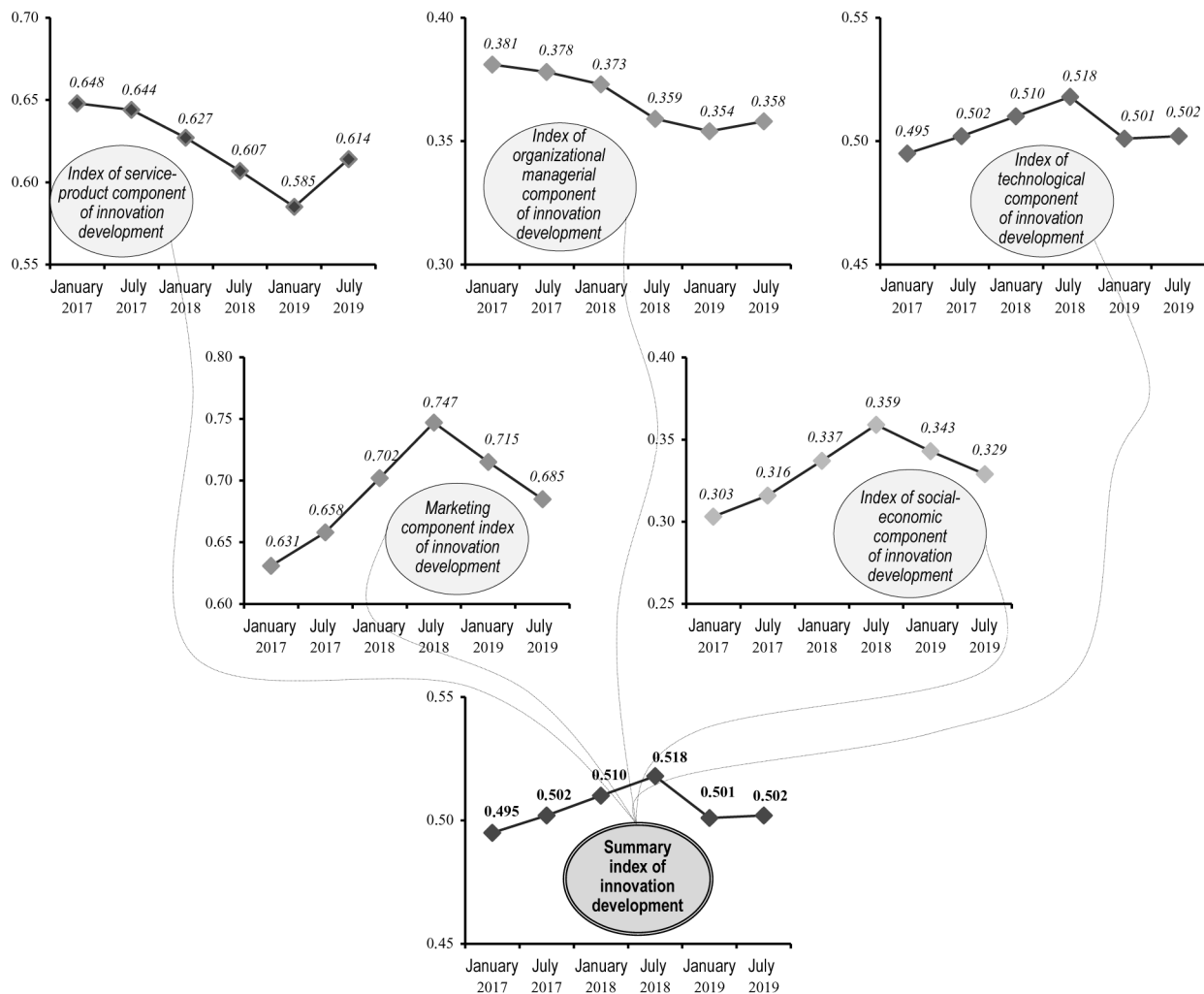


Figure 3. Integral coefficient and integral values of components of innovation development of tourism businesses in Ukraine  
Source: own research results

following priority directions of innovation development of tourism businesses:

- ❑ organizational-managerial direction focusing on improvement of internal organizational-managerial and business processes in terms of innovation activities management;
- ❑ information-technological direction aimed at introducing new information technologies in tourism activities, joining single data bases and networks of regional and global tourist markets;
- ❑ financial-investment direction in terms of forming a sufficient investment support and efficient use of finance resources allocated to innovation development;
- ❑ marketing direction with creation and promotion of the company's brand, introduction of new methods and tools of advertising and selling of tourism products and services;
- ❑ infrastructural direction, which includes modernization of the existing infrastructure as well as development of new internal and external infrastructures of a tourism firm, active introduction of outsourcing instruments;
- ❑ immanent direction with the tasks of finding new approaches and ways to meet the needs in tourism and related services;
- ❑ integral direction focused on the vertical, horizontal and diagonal integration with external entities in order to improve the functional support of innovation activities;
- ❑ cluster direction which includes participation of a tourism firm in creating and operating of regional tourism clusters,

forming tighter cooperation links with tourism firms on the market, growing specialization, business concentrating, costs optimization of creating and introducing innovations;

- ❑ interactive space-network direction which consists in forming the regional tour-operators' network, promoting a modern branding model and introducing franchising tools.

Implementation of innovation development by these directions envisages a detailed strategic management (planning and designing) of innovation changes introduction, the institutional basis of which is a system of multi-systematic innovation development of a tourism business. Implementation of the strategy provides for the company's sustainable, structurally balanced development on the innovation basis (Figure 4).

At the same time, possibility of institutionalization of multi-systematic innovation development strategy of tourism firms greatly depends on the availability of the corresponding institutional support in the company, which is sufficiently extends (Kallmuenzer, Kraus, Peters, Steiner, & Cheng, 2019; Garcia-Villaverde, Elche, Martínez-Pérez, & Ruiz-Ortega, 2017; Vasylytsiv, & Lupak, 2016; Kernel, 2005):

- ❑ firstly, on creating and constructing of innovation development institutions, their functions and goals, principles of operations, applied management methods, information-analytical support, organization of internal and external intra-subject interrelations;
- ❑ secondly, on forming an institutional support in innovation

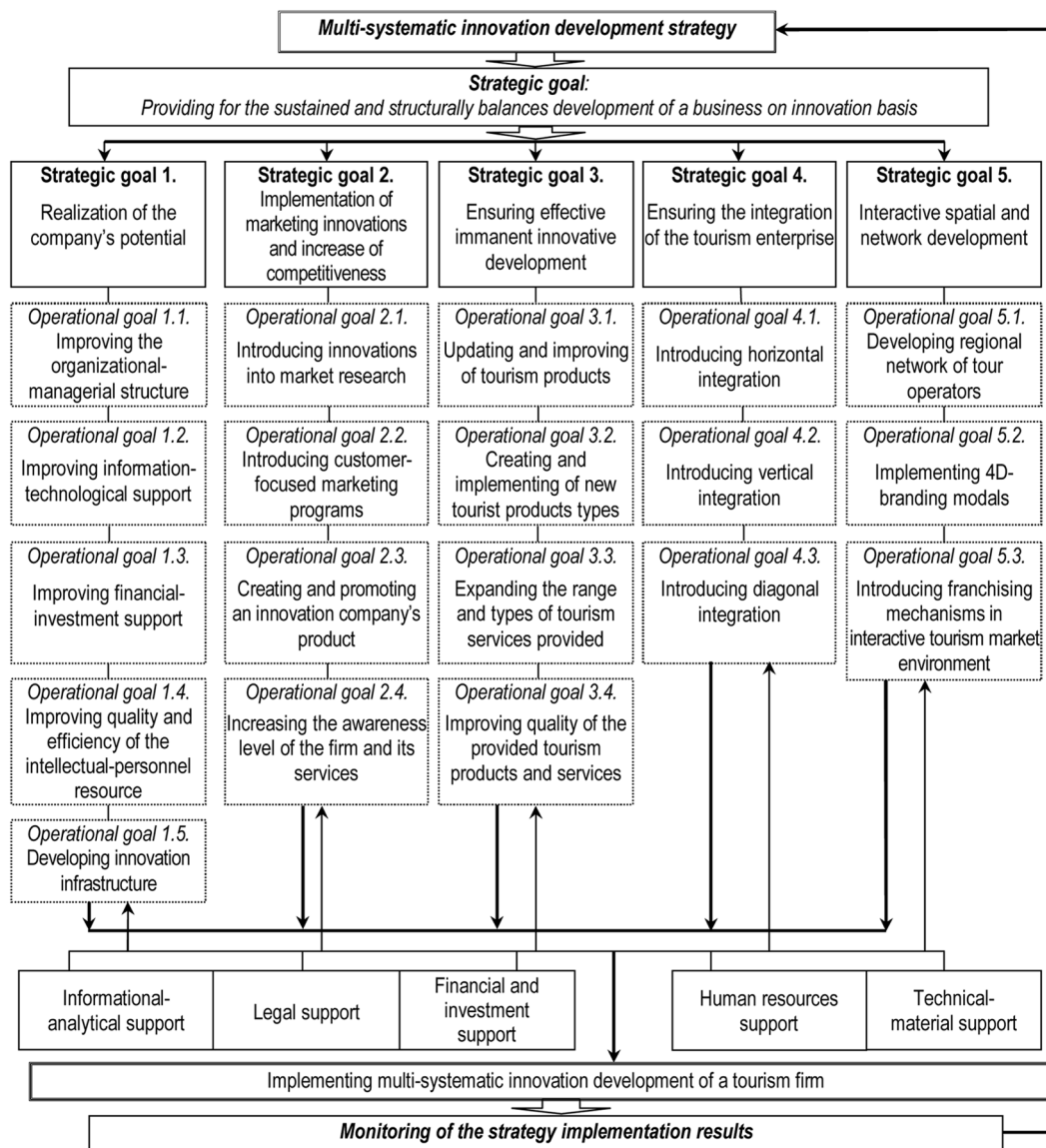


Figure 4. Strategic and operational goals of the multi-system innovation development of tourism businesses  
Source: own processing

activities with additions and changes in legal and normative-guidance documents of a firm;

- thirdly, on building informal institutions of innovation development (innovative corporate culture, investment-innovative ideology, staff's professional and social-psychological incentives and motivation).

## 6. Conclusions

It's been found that the perspective directions of innovation development of tourism business consist in implementing the following innovations:

- service-product ones related to creating and implementing of new tourism products and services on the market;
- technological in terms of using technical-technological novelties, employing new modern technologies, growing integration ability and mobility of firms on the tourism market;
- marketing ones as for finding new ways of promoting, advertizing and stimulating sales of products and services;
- organizational-managerial directions based on applying new managerial technologies and approaches to ma-

- naging innovation development of tourism firms;
- social-environmental ones aimed at implementing of new efficient decisions into business activities of socially responsible businesses, including environment.

It is important for the tourism firms to construct an institutional and organizational-managerial supporting system for promising directions of their innovation development. Meanwhile, it's should be clear that it is not limited to the intra-firm processes, but extends into the innovation environment.

Implementation of the development program of tourism companies on innovation basis has to be done in compliance with the established innovation strategy. The essence and peculiarities of the strategy consist in defining its strategic goals and objectives aimed at systematic, comprehensive influence on the service-product, organization-managerial, marketing, technological and other operation sub-systems of a tourism firm, which are implemented in the situation of constant and successive innovation changes, calling for balance and multi-consistency.

The objective of a multi-systematic innovation development of tourism businesses is defined as ensuring their sustainable and structurally balanced development on innovation basis. Strategic and operational goals of the strategy have to focus on implementation of the company's innovation potential,



introducing marketing innovations and increasing the firm's competitiveness, ensuring an efficient immanent internal growth of a tourism firm, its horizontal, vertical and diagonal integration, implementing processes of interactive regional development alongside with forming regional networks, introducing the 4D branding models and franchising mechanisms.

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# Organizational and Economic Mechanism of Economic Security Management in Foreign Economic Activity of the Enterprise

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## Abstract

*The article deals with the organizational and economic mechanism of economic security management in foreign economic activity of the enterprise, namely, the principles, methods and stages of economic security management in foreign economic activity of the enterprise.*

*The authors of the article emphasize and consider applying an optimization models in the process of managing of economic security in the foreign economic activity of the enterprise as reasonable. By considering of different criteria and certain limiting conditions can be taken the most appropriate solution in the number of cases.*

*The integrated structure of the mechanism of economic security management in foreign economic activity is developed.*

*The process of economic security managing in foreign economic activity is based on the development of alternative management decisions, its detailed analysis and implementation of the most optimal of them.*

**Keywords:** economic security; mechanism of economic security management; foreign economic activity; enterprise, optimization model.

## 1. Introduction

As of today, the issue dealing with expanding business ties towards the international direction is very relevant for enterprises. This is due to a number of reasons, both internal (the economic situation of the country, the development of scientific and technological potential), and external (world integration and globalization processes). The strategy of entering international markets, no doubt, contains a number of advantages, but at the same time, it also involves certain risks. The issue of developing a holistic system of managing the economic security of foreign economic activity of enterprises is becoming increasingly important due to the necessity to implement an integrated approach to the protection of business entities interests.

## 2. Problem setting

The issue of the organization and management of the economic security system of foreign economic activity of the enterprises, defining their basic principles and stages require

closer study. The aim of the research is to study the organizational and economic mechanism for managing the economic security of foreign economic activity of the enterprise.

## 3. The results of the research

Ensuring sustainable development of enterprises and achieving their goals are impossible without the use of an effective system of economic security. Despite the significantly close relationship between the economic security of the enterprise and its activities, most scientists investigate these issues separately, and today there is no single definition of the concept of “economic security of foreign economic activity”.

The Law of Ukraine “On Foreign Economic Activity” defines that foreign economic activity of business entities of Ukraine and foreign business entities is built on the relationship between them and takes place both on the territory of Ukraine and abroad [6].

The concept of “economic security” does not have a single definition and scientists interpret it differently (table 1).

Author	Definition
Lynnyk O. I. [2]	A stable condition of an enterprise protection from the negative impact of external and internal threats, destabilizing factors, which ensures stable implementation of the basic commercial interests and goals of the statutory activity
Cherchyk A. O. [3]	Condition of an enterprise, when it has sufficient resources, access to the markets, competitive advantages for achieving the set development goals, fulfilling the mission and ensuring competitiveness in the long term.
Skrynkovskyi R. M. [4]	A specially built system of protective measures, the main purpose of which is the purposeful and day-to-day ensuring the uninterrupted and, at the same time, cost-effective and effective performance of the enterprise by combating various kinds of causes and factors that have a negative impact on this activity.

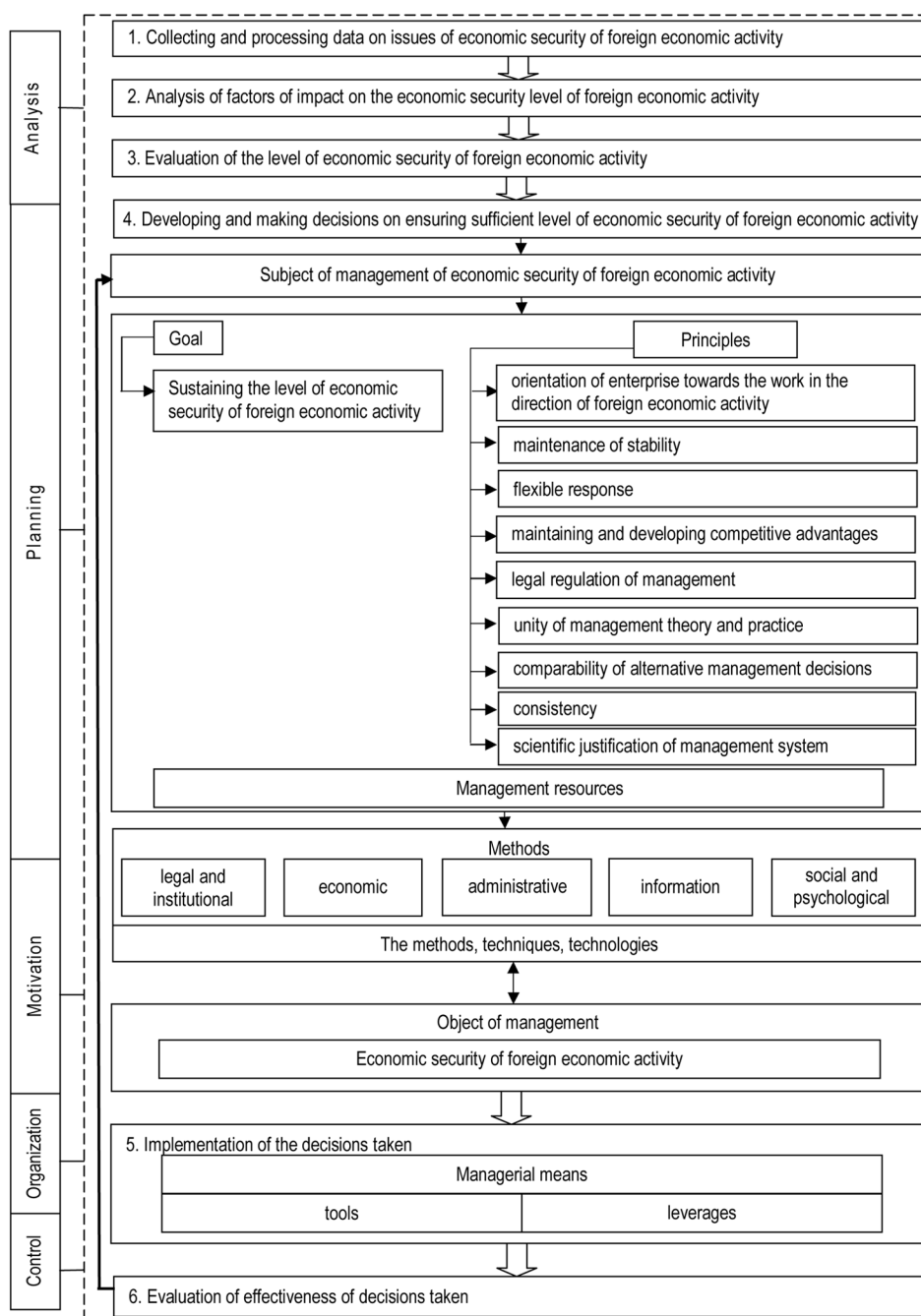
Author	Definition
Shumilo O. S. [5]	The condition of enterprise economic development is characterized by the maximum achievement of the basic goals of the enterprise operation in the current and future periods, and its ability to adapt to the changing external and internal environment.
Hapak N. M. [7]	A comprehensive characteristic, which is considered as a level of protection of all types of enterprise potential from internal and external threats, which ensures stable operation and effective development and requires management provided by top management of the enterprise.
Bilousov Ye. M. [8]	This is the condition of the safety of the resource potential, when the enterprise can withstand the effects of external and internal threats, maintain and improve sustainable development by the principal directions, give effect to its own economic interests and ensure economic independence from attracting funds for operation.
Falchenko O. O. [9]	The condition of safety of the enterprise from the negative impact of destabilizing factors, which ensures its stable operation, implementation of basic commercial interests, at the present moment and in the future.

*Table 1. Approaches to the defining the concept of “economic security”*

The definitions given in the table confirm the difference in the approaches to defining the concept of “economic security”. However, the common thing for them is the condition of safety, independence in terms of the impact of certain external or internal negative factors, and orientation toward the achievement

of key factors for the enterprise success.

It should be noted that the foreign economic activity of enterprises is carried out in a changing political and economic environment, fierce competition that cause risk for financial and economic situation of enterprises [10]. Management of



*Figure 1. Integrated structure for managing economic security of foreign economic activity mechanism*  
 Source: Compiled by the authors according to [1, 11, 12]

economic security of the enterprise foreign economic activity should extend to fields of activity related to the movement of resources, goods, services and labor across the national borders.

Thus, the economic security of foreign economic activity is considered as ability of an enterprise to make the most efficient use of available resources (key success factors) to ensure the stable operation of enterprises both on the territory of the country and abroad in the context of achieving harmonization of economic interests of enterprises involved in foreign economic activity.

Based on the abovementioned, it is advisable to consider the economic security of foreign economic activity of the enterprise as a set of measures aimed at protecting the enterprise from the negative impact of external and internal environment factors. In conditions of variability of external environment, the use of the organizational and economic mechanism for managing the economic security of foreign economic activity is of particular importance. The integrated structure of the mechanism for managing economic security of foreign economic activity is presented in Figure 1.

The process of managing economic security of foreign economic activity of the enterprise should be considered as a sequence of interconnected stages.

The first stage is characterized by collecting and processing data on issues of economic security of the enterprise foreign economic activity. The obtained information should be reliable and timely. Examples of such information are data on the financial solvency of enterprises, the economic situation in the country, the state of the market, the presence of risks, sales conditions. Such information can be formed on the basis of analysis of past work experience, expert opinions, etc.

The stage of analysis of the factors of impact on the economic security level involves identifying the causes of the economic security condition violation and the factors that have influenced it (organizational and legal, political conditions, force majeure, etc.).

The next stage is the developing and making decisions to ensure a sufficient level of economic security of foreign economic activity. At this stage, the subject of management, based on certain principles and goals of management, develops several alternative scenarios for the development of events and calculates the value of the aggregate criterion of economic security for each of them. After selecting the best option based on the results of calculations and analyzing the options, the remaining ones develop operational recommendations for the current management of economic security of enterprise foreign economic activity.

After making the most appropriate decision, the management calculates the needs for each of the available types of resources and forms a strategic set of necessary ones to achieve the set goals. To implement the set tasks, various methods of management, techniques and technologies are used [13].

The next stage is the implementation of the decision taken. It involves its implementation by using selected tools and control leverages that correspond to the above mentioned management methods.

The last stage is the evaluation of the effectiveness of the activity after a certain period. During the process of foreign economic activity of enterprise there appears the information to analyze the condition of its economic security. Based on this information, the functional and aggregate criteria of economic security, their deviations from the planned values are evaluated and the causes of such deviations are analyzed. After that, the guidelines are developed on adjusting the set of resources, systems for strategic and current planning of enterprise foreign economic activity, as well as its operational management system.

While managing the economic security of enterprise foreign economic activity, it is advisable to use optimization models taking into account the fact that there are many situations when more profitable decision must be made with taking into account various criteria and certain limiting conditions. In general, the optimization model of an agreement (transaction) in enterprise foreign economic activity may be represented as follows:

$$E_{fea} = \Pi P_{fea} - BP_{fea} \rightarrow \max, \quad (1)$$

where:

$E_{fea}$  – the economic effect of the transaction of foreign economic activity of enterprise;

$P_{fea}$  – proceeds of a transaction (agreement, contract) of foreign economic activity of enterprise.

The task of maximizing proceeds of a transaction (agreement, contract) of foreign economic activity of enterprise can be presented as follows:

$$P_{fea} = \sum p_i Q_i - C_k \rightarrow \max, \quad (2)$$

where:

$p_i$  – selling price of the  $i$ -th type of goods;

$Q_i$  – sales volume of the  $i$ -th type of goods;

$C_k$  – costs of enterprise of a transaction (agreement, contract) on goods delivery.

One of the difficult tasks in managing the economic security of foreign economic activity of enterprise is to minimize the risks. Minimizing risks in foreign economic activity is a process of implementing a set of measures aimed at reducing the probability of negative events leading to an unforeseen increase in expenses on foreign trade operations and a decrease in proceeds that leads to losses.

$$Rl_{fea} = \sum l_i \rightarrow \min, \quad (3)$$

where:

$Rl_{fea}$  – risk losses;

$l_i$  – losses caused by  $i$ -th type of risk (worsening of customs conditions by the countries of the subjects of foreign economic activity, change in the price of goods after contract signing or non-payment for goods, change in the exchange rate, loss or damage of goods during transportation, etc.).

It should be noted that the adjustments can also be made to the economic security planning system. In this case, it is advisable to use the above mentioned methods for planning the economic security of foreign economic activity and make appropriate changes to the plans of the enterprise and the system for their implementation.

## 4. Conclusions

Summing up the abovementioned, we note that enterprise economic security of the foreign economic activity is the key object of the organizational and economic management mechanism in the context under study. The paper describes the basic characteristics of this mechanism: its definition, principles, methods and implementation procedure. The attention should be drawn to the necessity for high-quality processing of information on the economic security of foreign economic activity, analysis of factors that have a significant impact on it while a reliable evaluating its level. The process of managing economic security of foreign economic activity is based on the development of alternative managerial decisions, their detailed analysis and implementation of the most appropriate of them.

The above mentioned stages of managing the economic security of foreign economic activity should contribute to more effective actions in the direction of ensuring and maintaining the chosen strategy of the specified direction of the enterprise. The results of the research can be used in further developments aimed at evaluating the level of economic security of foreign economic activity of enterprise.

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# Developing Organizational Citizenship Behavior on Public Organizational Performance

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## Abstract

*The research aims to build model behaviors and perceptions of public employees regarding organizational performance can be understood through their voluntary contributions to the functioning of their organization. It is argued that OCB can mediate the relationship between subjective constructs of organizational performance and the perceptions of employees regarding their leaders as well as their motivation to serve in the public sector. The purpose of this study is Mapping Organizational Citizenship Behavior Model on Public Organizational Performance. And the second is Developing Organizational Citizenship Behavior Model on Public Organizational Performance. The research was conducted in 3 City Sector public area, The population in this research was all employees at public sector organization in 3 Regency City in Central Java: Semarang, Purworejo and Purwokerto. The sample selection was conducted through purposive sampling method. The sample in this research were civil servants of the financial section in SKPD with the number of 300 respondents. The sources of data in this study were primary data through the distribution of questionnaires.*

**Keywords:** organizational citizenship behavior; public sector; performance.

## 1. Introduction

Organizational citizenship behaviour (OCB) might happen at the individual level and is about showing a positive behaviour beyond expectations such as helping colleague even if it is not required, voluntarily for extra jobs, respecting the rules and regulations of the organization as well as having tolerance with occasional work-related impositions and nuisance (Robbins, 2013). JS and OCB are two factors that have been regarded as primary for organizational success (Schnake *et al.*, 1995). Shim and Rohrbaugh (2014) stated that OCB shows a collective engagement and contributes to betterment and effectiveness of an organization. Ibrahim and Aslinda (2013) suggested that employees with high satisfaction were likely to portray positive behaviours such as OCB as an expression of "pay back" by way of being thankful to the organization.

Currently, there are 1.3 million government employees in Indonesia (kompas, 2018) in 28 schemes of various services under Public Sector Department. With a huge number of employees, work implementation process might become very tedious and need a total collaboration and support from top management. Therefore, JS is considered as an imperative factor in increasing the government organization work productivity. Not only JS can be expressed verbally or openly, the behaviour of a person can also be an indication of his/her JS or dissatisfaction. Thus, there might be different perceptions of public officials towards their job. Hence, this research is undertaken to determine the perception of JS among public sector employees and to identify which facets of JS is highly correlated with OCB. Public service motivation scholars have argued that public employees have distinct motivational bases that could lead them to engage in citizenship behaviour (Houston, 2000; Perry, 2000; Crewson, 2007). Several studies have adopted social exchange approaches to examine the influence of justice awareness and

perceived supervisory support as important predictors of JS (Coyle-Shapiro *et al.*, 2002).

Although these approaches are helpful in explaining government employees' OCB, they are limited in explaining why public employees tend to engage in citizenship behaviour proactively while facing unsatisfactory working conditions. Hence, this study will examine whether JS has influence on OCB dimensions in the public sector. This study focuses on administrative employees from different levels such as support staff, officers and managerial level employee of civil servants in Ministry level.

However, the extent to which OCB can influence the working relations in a group and/or contribute to organizational performance is still not clear. For instance, Banki (2010) suggests that, in the presence of self-serving motivators, OCB has a detrimental effect on group cohesion and thus the performance of a group. Employees may react negatively to coworkers who display OCB in order to impress the supervisor, causing others to become defensive. Such behaviors can also cause others to avoid interpersonal communication. Moreover, not all contribute equally to the group, suggesting that OCB may have little effect on organization effectiveness. When employees voluntarily helped members of a group who are withholding efforts, OCB decreases organizational effectiveness. The problem is particularly acute if the helpers are distracting from performing their routine duties (Sevi, 2010). Moreover, the causal effect of OCB is also not clear, i.e., the relationship can be spurious if groups with outstanding performance reported the use of OCB (even when the group did not perform OCBs) suggesting that members of outstanding performing groups tend to be those that help each other more than those in an underperforming groups (Podsakoff *et al.*, 2000).

This research will develop Organizational Citizenship Behavior on Public Organizational Performance. The research

build model behaviors and perceptions of public employees regarding organizational performance can be understood through their voluntary contributions to the functioning of their organization. It is argued that OCB can mediate the relationship between subjective constructs of organizational performance and the perceptions of employees regarding their leaders as well as their motivation to serve in the public sector. Leadership style matters because leaders can shape the environment in a workplace (Vigoda-Gadot, 2007; Wang *et al.*, 2005).

The motivation to serve in the public sector also matters because individuals with a strong public service motivation tend to show higher levels of compassion, interest for the well being of the community, and the expectation to sacrifice personal benefit for the well being of others (Vandenabeele *et al.*, 2006; Christensen & Whiting, 2009). And that, both variables have been considered as predictor for organizational performance. Additionally, as we mentioned earlier, OCB is considered to increase the performance within the organization. But also, leadership styles and motivation to serve the public are considered explanatory variables for OCB. Thus, we argued that OCB plays a mediator role between leadership styles, public service motivation and perceived organizational performance

Public sector employees have exhibited higher degree of OCB as compared to private sector employees. Most importantly, organizational citizenship behavior is being proven as the catalyst for enhancing job satisfaction level of employees. For the last two decades, organizational citizenship behavior (OCB) has been a major construct in the fields of psychology and management; thus, it has received a great deal of attention in the literature.

Despite the administrative reforms, bureaucratic problems still persist. Scholars pointed out that the existence of traditional administrative systems (i.e., red-tape and inefficient distribution of the scarce resources location) is one of the main problems associated with the barriers to reform (Grindle, 2007). Other obstacles to reform include the obsolete local systems responsible for public services (i.e., lack of responsiveness and quality of the services), poor professionalization of public employees (i.e., lack of experience and excessive employment-mobility), and the lack of urban planning and economic development (i.e., in the medium and long term).

## 2. Literature Review

### 2.1. OCB in Public Sector

OCB are critical in enhancing government organizations' productivity. At the point of taking part in citizenship practices, public officials; likewise their partners in the private sector, can look for approaches to upgrade organizational performance. In doing so, they would provide better public service and build a better organizational atmosphere. As a result, citizenship behaviours of public employees can improve the welfare of citizens and enhance the image of public organizations (Vigoda and Golembiewski, 2001).

This study specifically adopts the dimensions of OCB from Organ (2007). He defined OCB as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization." Based on Organ's (2007) study, OCB has five dimensions including altruism, civic virtue, conscientiousness, courtesy and sportsmanship. Altruism is defined as helpfulness or simply helping others such as co-workers, clients, associates or bosses (Organ, 2007). Civic Virtue is all about involvement of subordinates and the way they alert such as being up to date with changes within the organization, keeping up with important matters of organization and willingness to contribute actively in its governance (Podsakoff *et al.*, 2000). Conscientiousness is referred to adherence with the standards, guidelines and regulations of the organization. Courtesy involves helping others by taking steps to avoid problem among colleagues as well as consulting before taking actions

(Mohammad *et al.*, 2011). Finally sportsmanship is conduct of individuals who do not complain about unimportant matters. According to Podsakoff *et al.* (2000) as cited from Lo *et al.* (2009), good sportsmanship would boost the determination and the morale of the work group.

### 2.2. Transformational Leadership Style

The employees' perceptions of leadership styles are also important for organizational performance because leaders and managers can influence employee behaviors (Wright & Pandey, 2010). While there are multiple conceptualized definitions on what constitutes a leadership style, we are interested to understand the dimensions of transformational leadership styles.

The leadership style is often defined as the process whereby "leaders and followers raise one another to higher levels of morality and motivation" (Organ, 1988: 4). The definition assumes that employees will do what their managers or leaders do, rather than what the policy manual specifies (Paarlberg *et al.*, 2009). Managers who inspire their followers to go beyond their short-term self interest, by cooperating, taking risks, and innovating, can benefit the organization as a whole (Miller, 2002). Thus, we hypothesize that if public employees perceive their organization is practicing a transformational leadership style, they are likely to have a positive view of the performance of their organization (H2).

The transformational leader style can encourage employees to engage in OCB (Vigoda-Gadot, 2007). For example, Kacmar and Ferris (1991) argue that leaders have the ability to create conducive working environment for employees by promoting fairness and justice. In such a working environment, employees are likely to contribute their efforts beyond the requirements of their job description, i.e., motivated to emulate the leaders and be viewed as part of their efficacious followers. For example, Yoon and Suh (2003: 597) find that "employees' job satisfaction and trust in the manager are significantly related to OCB and that their active engagement in OCB has a positive relationship with the perception of service quality." Morrison (1996) and Yoon and Suh (2003) found OCB correlated positively with a relatively high quality customer service. This is because the level of emphasis of OCB by human resources management influences the extent to which managers motivate social exchanges, identify the organization mission, and empower the employees. Thus, we hypothesize that if public employees perceived their organization is practicing a transformational leadership style, they are likely to engage in OCB (H3).

### 2.3. Public Service Motivation

Perry and Wise (1990: 368) define public service motivation (PSM) as an "individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations." While there are few strong empirical evidence to support the proposition that PSM influences employees' work productivity (Perry *et al.*, 2010), theoretically, one can also argue that PSM is associated with organizational performance because the individuals' motivation to serve their communities is based upon the idea of sacrifice and compassion for others (Perry & Wise, 1990; Brewer *et al.*, 2000; Kim, 2006).

The argument is based on the assumption that public employees have a strong desire to work for the public sector because they "respond to motives grounded primarily ... in public institutions and organizations" (Perry & Wise, 1990: 368). Therefore, we hypothesize that if public employees have a strong commitment about public service motivation (PSM), they are likely to have a favorable view of the performance of their organization (H4). The motivation to serve in the public sector signals strong emotional commitments to the welfare of others; and if translated into citizenship responsibilities, can encourage unselfish behaviors and build interpersonal relationships among co-workers within the organization. In the organization that they

serve, the “public spirit” often translates into good citizenship behaviors. As noted by Goodsell (2011) through his idea of the “mission mystique” – much of what public administration does has to do with attitudes (e.g., beliefs and values) and behaviors (ethical conduct) of employees. The desire to serve in the public sector signals commitment to non-utilitarian incentives. Such attitude encourages employees to engage in OCB, which can serve as a foundation upon which employees take pride in their efforts, express a strong commitment to the organization, and establish reciprocity relationships. Thus, we hypothesize that if public employees have a favorable view of public service motivation, they are likely to engage in OCB in their organizations (H5).

## 3. Research Methodology

### 3.1. Research Methods

The research was conducted in Semarang Sector public area, is the center for state and local government administration, as well as economic activities in the central java region. The population in this research was all employees at public sector organization in 3 Regency City in Central Java: Semarang, Purworejo and Purwokerto. The sample selection was conducted through purposive sampling method. The sample in this research were civil servants of the financial section in SKPD with the number of 300 respondents. The sources of data in this study were primary data through the distribution of questionnaires. The data analysis method used in this research was multiple regression analysis method

### 3.2. Measurements

The appendix shows the questionnaire items and statistics related to all the measures of this study. Answers to survey items were measured on a five-point Likert scale where “1=strongly disagree” and “5=strongly agree”, but transformational leadership items were from “0=not at all” and “4=frequently, if not always.” The perception of employees regarding the public organizational performance (POP) was operationalized based on 4 items, reflecting organizational responsiveness (toward the fulfillment of its mission, efforts to support residents, responds to public requests, and responds to public criticism and suggestions for improvement) (Vigoda, 2000; Lusthaus *et al.*, 2002). Consistent with the Public Management perspective, the organizational performance was operationalized as the employees’ perceptions on the extent to which an organization is able to meet its overall goal of public interests (Vigoda, 2000). For example, Dubnick (2005) argues for the importance of a result-oriented performance, which emphasizes the processes of what is being produced, rather than the outcomes of production.

We adopt a subjective measure based on employees’ experiences and perceptions concerning their assessment of organizational goals. The exploratory factor analysis for public organizational performance produced a high internal consistency ( $\alpha = .89$ ). The latent construct of organizational citizenship behavior (OCB) was measured based on eight items. The construct has two dimensions (Williams & Anderson, 1991; Lee & Allen, 2002; Organ, 1997): (1) the extent to which individual employees perceived their citizenship roles on others in the organization (altruism, courtesy, helping co-workers) and (2) the extent to which individual employee perceived his/her citizenship roles in relation to the organization (loyal to organization, attentive to organizational development, supportive of organizational image).

This is in line with the literature emphasizes that employees may behave differently toward their peers and the organization. For example, Lee and Allen (2002) argued that OCB benefiting the organization were related to fairness and recognition; whereas citizenship behaviors related to the individual are based on altruism, empathy, and the concern for others.

The public service motivation (PSM) measurement was captured by an index based on seven items. The latent construct has two factor components: (1) Commitment to the public interest, which was measured by four items on the extent to which respondents regard their employment as a civic duty, unselfish act, and meaningful to the whole community.

The latent construct for the Transformational Leadership Style (TLS) was measured by five leadership styles by using 20 items derived from the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 1995). These 20 items were classified into the leadership styles mentioned earlier (see footnote 4). Leaders can shape the working environment, and hence the performance of the organization (Hennessey, 1998). As indicated in the literature, inspirational leadership is an element of the transformational leaderships where leaders can motivate their followers through optimism about the future such as setting organizational goals, projecting an idealized vision, and causing the followers to believe that the vision is reachable.

## 4. Analysis and Discussion

### 4.1. Result and Analysis

Public employees in 3 central java cities are characterized by their active participation in society. They have a traditional view about the role of government when it comes to the implementation of public policies (Dávila & Elvira, 2007). Writing about Public employees 3 Regency City in Central Java: Semarang, Purworejo and Purwokerto employees, Tierney *et al.* (2002) noted that employees’ extra-role behaviors depend on the relationships they have with their supervisors. The argument is consistent with Elvira and Dávila (2007), who argue that public worker attitudes at the work place are based on “psychological contracts” i.e., as characterized by their sense of loyalty, commitment, and good relationship with their managers/supervisor.

We received a total of 350 completed surveys representing a 87 percent response rate. The majority of responders were male (i.e., 52.8 percent) and about 45.6 percent female. Most respondents worked for the state governments. More than half were employed in activities linked to public services (i.e., they deal face-to-face with citizens) and most worked full-time (i.e., 65 percent). Most respondents earned a bachelor’s degree education (i.e., 60 percent). The respondents’ experiences in the public sector averaged about 10 years. The average age of respondents was around 38 years old.

The respondents were presented with a 52-item survey instrument. About 3 percent of the total items in the survey were left missing by the respondents. As pointed out by McKnight *et al.* (2007), missing values if unresolved can lead to bias in the final estimation. We examined the patterns of missing data by comparing the differences of variance between items “with” and “without” missing values and then determining whether the differences have an effect on the other items in the survey.

We also performed the Little’s Chi-square test and found the missing data occurred completely at random (MCAR) (Little, 1988). To correct for the missing values, we used the multiple imputation method as proposed by McKnight *et al.* (2007). We also checked for the normality assumption violation using the criteria of skewness and kurtosis absolute values (Curran *et al.*, 1996; Kline, 2011) and found no serious violation. The data analysis was executed with AMOS 18 with maximum likelihood estimation.

Answers to survey items were measured on a five-point Likert scale where “1=strongly disagree” and “5=strongly agree”, but transformational leadership items were from “0=not at all” and “4=frequently, if not always”. The perception of employees regarding the *public organizational performance* (POP) was operationalized based on 4 items, reflecting organizational responsiveness (toward the fulfillment of its mission, efforts to support residents, responds to public requests, and responds to public criticism and suggestions for improvement) (Lusthaus *et*



al., 2012). Consistent with the New Public Management perspective, the organizational performance was operationalized as the employees' perceptions on the extent to which an organization is able to meet its overall goal of public interests (Vigoda, 2017). For example, Dubnick (2015) argues for the importance of a result-oriented performance, which emphasizes the processes of what is being produced, rather than the outcomes of production.

Researcher adopts a subjective measure based on employees' experiences and perceptions concerning their assessment of organizational goals. The exploratory factor analysis for public organizational performance produced a high internal consistency ( $\alpha = .89$ ).

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The *public service motivation* (PSM) measurement was captured by an index based on seven items. The latent construct has two factor components:

1. Commitment to the public interest, which was measured by four items on the extent to which respondents regard their employment as a civic duty, unselfish act, and meaningful to the whole community ( $\alpha = .70$ ) and
2. Compassion, which was based on three items capturing respondents' views on people in need and caring for others ( $\alpha = .66$ ). The construct attraction to the public policy making was dropped because of its low reliability ( $\alpha = .63$ ). Public service motivation as a latent construct has a casual effect on these components because it was assumed that the employees are driven by "a desire to serve the public interest, loyalty to duty and to the government as a whole and social equity" (Perry & Wise, 1990: 369).

The overall CFA model and second order CFA were implemented in order to evaluate the construct validity of PSM ( $df=12$ ) = 30.14,  $p < .003$ , AGFI = 0.98, CFI = 0.99, RMSEA = 0.04, and SRMR = 0.03]. The fit of this model was also good.

The latent construct for the *Transformational Leadership Style* (TLS) was measured by five leadership styles by using 20 items derived from the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 1995). These 20 items were classified into the leadership styles mentioned earlier. Leaders can shape the working environment, and hence the performance of the organization (Henessey, 1998). As indicated in the literature, inspirational leadership is an element of the transformation leaderships where leaders can motivate their followers through optimism about the future such as setting organizational goals, projecting an idealized vision, and causing the followers to believe that the vision is reachable.

The overall measurement model fit was more than acceptable ( $df=310$ ) = 762.33,  $p < .001$ , AGFI = .98, CFI = .96, RMSEA = .038, and SRMR = .043. These results showed that the latent variables or constructs have high internal consistency with all reliability scores around .70 or higher and all the average variance extracted values above 0.60 (Fornell and Lacker, 1981). Additional evidence of discriminant validity is presented in Table 1 where the reliabilities of first-order constructs were compared with the inter correlations. Results indicated that all correlations were smaller than the estimated reliabilities that, according to Churchill (1999), satisfy the discriminant validity requirement.

The procedures involved in SEM were implemented in two parts. First, the technique involved the development of a measurement model, which included the identification of latent constructs (e.g., assessments of factor loadings, errors in variances and covariances, factor variances, and covariances).

Second, the technique involved the development of a structural model, which assessed the direct and indirect relationships among latent variables. This was done after conducting a *Confirmatory Factor Analysis* (CFA). While the CFA established the patterns on how each observed variable loads in specific latent variables, the analysis did not produce direct or indirect effects connecting the various constructs of interest (Garson, 2011).

Subsequently, using information developed from the CFA, a structural model was developed. The summary statistics and correlation coefficients of the latent constructs can be found in Table 1. The goodness of fit indices indicated the structural equation model fits the data well ( $df=310$ ) = 762.32,  $df=2.46$ , AGFI = .95, CFI = .96, RMSEA = .038 and SRMR = .041.

	Mean	SD	[1]	[2]	[3]	[4]	[5]	[6]
1. Public Organizational Performance	3.67	1.03	(.89)					
2. OCBs Related to Organization	4.09	.84	.41*	(.87)				
3. OCBs Related to Individuals	3.54	.89	.21*	.43*	(.72)			
4. Public Interest	3.70	.93	.21*	.38*	.29*	(.70)		
5. Compassion	3.68	.95	.14*	.33*	.26*	.44*	(.66)	
6. Transformational Leadership Style	2.94	.84	.41*	.47*	.28*	.21*	.21*	(.81)

Notes: Elements in parenthesis on the diagonal are Cronbach's alphas. Elements below the diagonal are intertrait correlations. All correlations are statistically significant at the  $*p < .01$  (2-tailed) level.

Table 1. Discriminant Validity: Intertrait Correlations and Reliabilities

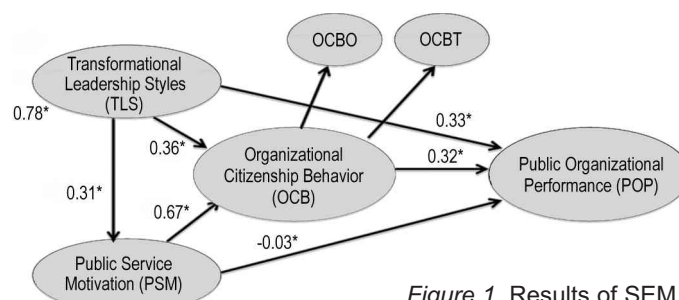


Figure 1. Results of SEM

In the context of the 3 City public sector employee, we found that public employees are engaging in OCB, and that the public employees' OCB has a positive effect on their perceptions concerning organizational performance. The factors that motivate public employees' OCB in 3 cities Area can be explained partly by their perception of transformational leadership style and partly by their motivation to serve in the public sector.

Figure 1 presents the results of the SEM, which shows that most of the inferential results are statistically significant at the  $p < .001$  level apart from the standardized coefficient for the PSM\_POP pathway, which is negative and not statistically significant ( $b = -.03$ ,  $p > .05$ ). About 29 percent of the public organizational performance variance is explained by the predictors (i.e., OCB, TLS, and PSM). Similarly, about 73 percent of the OCB variance is explained by TLS and PSM.

## 4.2. Direct Effect

There is evidence to support the first hypothesis that public employees' engagements in OCB are associated positively with their perceptions of public organizational performance. public employee's attitudes about OCB will predict a .30 standard deviation increased in the mean of employees' perceptions of organizational performance, holding the other variables constant. The result is in accordance with the studies related to OCB and organizational performance (Organ *et al.*, 2006).

We also found that public employees' perceptions of transformational leadership style (TLS) are positively associated with their perceptions of public organizational performance. The structural model shows a positive and statistically significant association between these two variables ( $b = .33$ ,  $p < .01$ ). The result is consistent with previous research, which studied the relationship between transformational leadership style and organizational performance (Wright & Pandey, 2010; Vigoda-Gadot, 2007; Burns, 1978; Bass, 1985; Rainey & Ryu, 2004).

The third hypothesis is also supported. That is, public employees' perceptions of transformational leadership style are associated positively with their engagements in OCB. Results from the structural model showed the relationship to be positive and statistically significant ( $b = .36$ ,  $p < .01$ ). The finding is consistent with the previous research that suggests employees are likely to perform extra-role behaviors such as those related to OCB (e.g., Podsakoff *et al.*, 2000; Organ *et al.*, 2006; Vigoda-Gadot, 2007).

We also found a positive association between PSM and OCB. If public employees have a favorable view of public service motivation, then they are also likely to engage in OCB. There is a strong support for this hypothesis because the coefficient is relatively large and statistically significant (i.e.,  $b = .67$ ,  $p < .01$ ). The positive association between PSM and OCB is consistent with the literature (e.g., Kim, 2006; Pandey *et al.*, 2008), suggesting that the motivation to work in the public sector contributes to employees' motivation to engage in OCB. The employees maintain and enhance the social and psychological environment of their work place and thus better execute their assigned responsibilities and specific tasks. The contributions can take the form of helping coworkers accomplish their activities, as well as manifesting concern for the functioning of the organization. However, we found no evidence to support the association between the levels of PSM and the perceptions of organizational performance. The SEM analysis produces a negative coefficient and the association is not statistically significant ( $b = -.03$ ,  $p > .05$ ).

## 4.3. Indirect Effects

The SEM analysis establishes the partial mediator role of OCB, i.e., between TLS and POP and between PSM and POP. The employees' engagement in OCB affecting their views on the performance of public organization is not because of the influence of TLS but PSM. the indirect effect of TLS-OCB-POP

pathway indicates that the indirect effect of TLS on POP occurred via the influence of OCB. The indirect effect of 0.108 i.e., (.36) (.30)] indicates that, on average, the level of public employee perceptions of POP can be expected to increase by a 0.108 standard deviation for every increase of standard deviation of the TLS via the prior effect on OCB, holding the other variables constant

However, the results suggest that OCB played a mediator role when the association between PSM and POP is considered. This is because the indirect effect of PSM-OCB-POP  $\{b [( .67) (.30)] = 0.201$ ,  $p < .01$  is higher than the direct PSM-POP ( $-0.03$ ,  $p > .05$ ) which satisfies the Baron and Kenny's requirement. The results suggest that employees who engage in OCB will perceive favorably their organizational performance because of their strong motivation to serve the public. In other words, they are likely to perform extra activities such as those described in OCB to fulfill their internal motivations of serving their communities; and that such attitudes have an effect on their perception about the performance of the organization.

This indirect effect is lower than the direct effect (.33), which does not meet the Baron and Kenny (1986) criterion for a mediator variable. However, the results suggest that OCB played a mediator role when the association between PSM and POP is considered. This is because the indirect effect of PSM-OCB-POP  $\{b [( .67) (.30)] = 0.201$ ,  $p < .01$  is higher than the direct PSM-POP ( $-0.03$ ,  $p > .05$ ) which satisfies the Baron and Kenny's requirement. The results suggest that employees who engage in OCB will perceive favorably their organizational performance because of their strong motivation to serve the public.

In other words, they are likely to perform extra activities such as those described in OCB to fulfill their internal motivations of serving their communities; and that such attitudes have an effect on their perception about the performance of the organization.

Among the public employees, the association between OCB and perception of organizational performance is particularly evident. The public employees in the sample are more likely to help their coworkers. They perceive their leader as someone who has a strong sense of purpose, is able to articulate a compelling vision of the future, demonstrates a concern for the organization's image, expresses loyalty, and protects the organization from potential problems.

Aside from the influence of the leadership style, the empirical analysis shows that OCB played an important mediating role between public service motivation and public organization performance. The evidence boosted the general proposition that OCB plays an important role given the absence of an association (direct effect) between public service motivation and the employees' perception of organizational performance. Although the finding suggests that the public service motivation is not statistically significant in explaining the public employees' perception of public organizational performance, the fact that the direct association is not clear in the literature presents a theoretical puzzle.

Public employees may have a relatively strong motivation to serve in the public sector, but they may be disappointed to perform well for the public organization. One possible explanation is based on the argument presented by Scott and Pandey (2005), who point out that the motivation to serve in the public sector can be frustrating for public employees, especially if they fail to witness the connection between their efforts and the organizational outcomes. Despite the belief in making a difference, they can be frustrated with procedural rules with no clear connections between performance and rewards.

In the context of public employee administration, public employees may have a strong motivation to serve in the public sector; however, because of the inappropriate management system, excessive red tape, and unskilled employees, the performance of public organization is not viewed favorably.

Public management scholars have suggested that OCB may have a positive impact on organizational performance; however, few have extended the argument by including the mediating

effects of OCB between leadership styles, public service motivation, and public organizational performance. and public service motivation as antecedents for citizenship behaviors in order to explain public employees' perceptions regarding the performance of their organization. Our findings highlight that, in the 3 Cities in central Java, should be encouraged by the government because such behaviors are an important part of contemporary management practices and encourage public employees to display OCBs. That is, there is evidence to suggest that SKPD public employees with higher levels of PSM (e.g., desire to serve their community) and experiencing transformational leadership (i.e., based on values) will be motivated to perform above and beyond what is expected of them.

Our findings have several implications for practice. In the context of public administration employee, since OCBs are important for organizational performance, the task for the HR practitioners is to identify the behaviors in the job analysis and consider them as part of job success. OCB among public employees will be an important management practice that should be encouraged in order to respond to public demands for public services.

To carry out these responsibilities, public employees with strong public service motivation and OCB will be the cornerstone to achieve a desired organizational goal and instill a strong commitment to public service. In addition to performance appraisal, there is also a need to introduce training programs as well as applying practices of recruiting and selection of potential employees likely to engage in OCBs. Such approach can improve human resource management and practices in a public organization.

According to Organ *et al.* (2016), the process of recruitment and selection of potential public employees is an important first step to enhance OCB. Since OCBs are important for organizational performance, the task for the HR practitioners is to identify the behaviors in the job analysis and consider them as part of the job success. It is also possible to engage employees in OCB through training and mentoring programs by partnering most experienced employees with new employees as a way to motivate those being mentored to engage in OCBs (Organ, *et al.*, 2016).

While the study makes contributions to the field of public management, it also has several limitations. The empirical study is based on perceptions of employees and not on their actual behaviors. The measurements used to operationalize the latent construct also have their limitations.

For instance, although the measures used in this research had been empirically tested for their reliability and validity, the latent construct OCB is difficult to operationalize because of the fuzziness of the concept. Scholars have warned of the difficulty in separating the differences between in-role behaviors and extra-role behaviors (Morrison, 1994).

In addition to the operationalization of OCB and public service motivation, future research should explore other forms of leadership style. For instance, the transformational leadership style is only one type of leadership style that may be experienced by all public employees in Mexico. The employee in central java leadership style is based on "paternalism, indicates that leaders are generally benevolent by taking care of their employee's basic needs and families.

## 5. Conclusion

In the context of public administration employee, since OCBs are important for organizational performance, the task for the HR practitioners is to identify the behaviors in the job analysis and consider them as part of job success. OCB among public employees will be an important management practice that should be encouraged in order to respond to public demands for public services. In addition to the operationalization of OCB and public service motivation, future research should explore other forms of leadership style.

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# Formation of Development Strategy for Industrial Enterprise

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## Abstract

The article presents theoretical study of the formation and implementation of the strategy, the types of strategic development of the enterprise and their adaptation to real opportunities and conditions in the current environment, the essence of pre-planned strategic analysis and the role of forecasting in pre-planned strategic analysis and management of strategy implementation. There is the program of strategic development for the real industrial enterprise in the article.

**Keywords:** hierarchy of goals; pre-planned strategic analysis; strategic development; strategy implementation program; unstable financial condition.

## 1. Introduction

The successful functioning and development of an industrial enterprise in an ever-changing environment is based on the development of effective strategy. The process of forming a development strategy for an industrial enterprise involves the implementation of such stages as a pre-planned strategic analysis, forecasting, developing of the strategy and planning, managing the implementation of strategic tasks and developing a system for monitoring and evaluating the results of the strategy.

The strategy is a strategic planning document of the enterprise, which contains the following sections: list of goals and objectives, analysis of the internal and external environment of the enterprise, general strategic assessment of the enterprise, management and sustainable development of the enterprise and scenarios for their effective achievement and solution.

## 2. Methodology

Formation of a development strategy begins with a detailed study of each individual component to create a specific conceptual framework.

The choice of directions for strategic development begins with the formulation of a "mission" and a "vision".

The definition of the mission of the enterprise involves solving problems associated with:

- identification of areas of active actions of the organization and the elimination of areas of action that do not imply the achievement of the intended result;
- development of a common framework for setting goals;
- formation of a holistic concept of activity that inspires employees.

Developing a vision at the beginning of the strategic process creates certain guidelines before the start of a pre-planned assessment and analysis. The mission does not contain specific instructions about what the enterprise should do. Such information is obtained in the formation of goals.

In a well-developed plan, strategic development begins with

setting strategic, tactical, and operational goals that imply concreteness and measurability.

Objectives must satisfy the following requirements of the SMART concept introduced by Peter Drucker:

- specificity;
- measurability;
- reachability;
- realism;
- certainty over time (Golubkov, 2018).

Summarizing the SMART concept, we make the following definition: strategic goals should be defined clearly. There is the classification of goals in the Table 1.

Sign	Type of goals
Stability level	Stabilization
	Development
Scope and impact	Strategic
	Tactical
	Operational
Functionality	Financial
	Production
	Procurement
	Innovative / technological
	Personnel
Degree of importance	Vitally important
	Alternative
Degree of openness	Open
	Close

Table 1. Classification of goals

It is necessary to note a number of general characteristics that should be considered when building a complete hierarchy of enterprise development goals:

- goal of the lower level must be a sub-goal of the higher level, i.e. the main requirement of the "goal tree" must be satisfied;
- goal of the higher level should be oriented for a longer period of time;
- goals can be qualitative and not quantified, this fact does not reduce their importance;

- hierarchy of goals is not a constant value and needs adjustments and corrections as the goal of a higher level is realized, because the motivation of employees changes over time (Biggio, 2006).

Implementation of the goal consists of 6 steps and involves the following (Chen, 2006):

1. Identification of needs and desired results;
2. Identification of opportunities and necessary resources;
3. Clarification of purpose;
4. Formation of a goal achievement strategy;
5. Developing a program and setting timelines;
6. Monitoring their achievements.

Achievement of the set goals begins with the formation and development of a strategy that represents a tool that implies an obligation to act definitely.

In a generalized sense, a strategy is an indication or route about how to transfer the organization from where it is now to where it wants to be with the definition of the time period. That is, the strategy involves a scheme developed on the basis of the mission to achieve the results designed by the vision.

There is a classification of strategies based on existing attributes in the Table 2. The considered strategies are used further in the work when forming the enterprise development strategy.

Sign	Type of strategy
Management levels	For whole organization
	For type of activity (product)
	For individual units
Management functions	Financial and economic
	Supply chain
	Innovative and technological
	Personnel, etc.
Market and production orientation	Market development
	Product development
	Diversification

*Table 2. Strategy classification*

The list of strategies from the Table 2 is fundamental for the formation of the “strategic path” to achieve the development goals of the enterprise.

The developed strategy of the enterprise should satisfy the items based on the vision, should contain general and tactical goals for the developed period of time and a detailed plan of measures to achieve the goals.

The development strategy pursues the goal of increasing production and sales, that is, involves expanding the product line and production capacity. The strategy should have a documentary structured form, distributed in detail and laid out by stages or periods.

When developing an enterprise development strategy, it is also necessary to consider the nature of the pre-planned strategic analysis and the role of forecasting in the pre-planned strategic analysis.

Preplanned strategic analysis is the starting point and it consists of an analysis of the internal and external environment. During the analysis, “problematic components and system malfunctions” are specified for further study in the course of implementing the formed strategy to achieve the goals. In the process of strategic analysis, special attention should be paid to identifying and assessing possible risks. Hereinafter we consider the components of this analysis in more detail.

Analysis of the internal environment of the enterprise is based on the following analyses:

- financial and economic situation and potential;
- production status and potential;
- managerial and personnel status and potential;
- technological and innovative potential.

Environmental analysis includes the following analyses:

- direction of public policy;
- state and development of the industry;

- consumers of manufactured products;
- potential of suppliers.

The existing initial state, potential and all kinds of risks of the enterprise, industry and the state will ultimately be reflected in the market value of the enterprise’s business. According to this fact, the pre-planned strategic analysis involves assessing the market value of the enterprise’s business.

Business structure may consist of several activities. Each of them should be calculated separately to achieve greater accuracy and then by adding the market value of the enterprise should be calculated.

The most optimal way to assess market value will be the income approach, because the strategy will affect the efficiency of the enterprise, expressed in increasing the revenue component of the enterprise.

Forecasts and scenarios for the development of “further events” are compiled based on the preplanned analysis the basic (medium-probability) version of the enterprise development strategy and two alternative options (optimistic and pessimistic).

The process of developing and analyzing a strategy terminates with the establishment of common guidelines, the following of which will ensure the growth and strengthening of the position of the enterprise.

An analysis of opportunities and threats, strengths and weaknesses are performed and summarized by the SWOT analysis. A SWOT analysis will summarize all the elements of strategic analysis and will be a starting point for building an effective strategy that considers all the features of a particular industrial enterprise under study.

An important part of forming a development strategy is the management of the implementation of the strategy, which involves the development of a strategic program.

The successful functioning and development of an industrial enterprise in an ever-changing environment is based on the formation of a development strategy, the implementation of which involves the preparation of a program.

The program for the implementation of the strategy is associated with the distribution of activities to achieve the objectives, and performs the functions assigned to them. The activities (production, investment, financial, managerial, HR, innovative) are necessary to achieve the objectives of the development strategy in the planned terms of its activities, at the stage of implementation of the strategy can be presented in five consecutive stages.

Stage 1: in-depth study of the environment state, goals and developed strategies. At this stage, the following main tasks are solved:

- analysis of the essence of the formed goals developed by the strategy, identification of their correctness, relevance and relationship with each other and conformity of the environment state;
- implementation of the goals and objectives of the strategy and communicating the meaning of the goals to employees at all levels of the enterprise in order to prepare the conditions for their involvement in the implementation of strategies, which can be facilitated by mentoring.

Stage 2: development of a set of tasks and solutions for the efficient use of the potential and opportunities available to the enterprise. The strategic analysis and identification of potential, the allocation of resources and their alignment with the implemented strategies are being implemented. For this, special programs are compiled, the implementation of which should contribute to the development of resources.

Stage 3: decisions about making changes to the current organizational structure.

Stage 4: carrying out necessary changes at the enterprise, because without them it is impossible to start implementing the strategy. For this there is a possible resistance to changes and there are measures to eliminate or reduce to a minimum the real resistance and to consolidate the changes.

Stage 5: updating the strategic plan and program if the new circumstances require it.

The implementation of the strategy solves three problems. Firstly, it is the establishment of priority among strategic goals and objectives for correspond their relative importance to the formed strategy of the enterprise, which will become the main route for the development of the enterprise. Secondly, the direct assessment and analysis of the compliance of the chosen strategy with internal processes and constantly changing external conditions (state, industry, etc.) are carried out with the aim of orienting and predicting the future activities of the enterprise to implement the formed strategic goals and objectives. Compliance should be achieved by the characteristics of the enterprise, i.e. its structure of main activity, personnel policy system, mentoring in production, production, organizational capabilities, qualifications of employees, etc. Thirdly, there is a selection and implementation of strategic goals and objectives in accordance with the ongoing strategy and approaches to managing the whole enterprise.

All noted strategic goals and objectives are realized through changes related to the actual content of various processes for implementing the adopted strategy.

Carrying out the necessary strategic changes helps to bring the enterprise to a qualitatively new level and create the conditions necessary for the implementation of the modified enterprise development strategy. The need and degree of changes depend on the strategic readiness of the enterprise to effectively follow and implement the formed development strategy. There are qualitative and sustainable changes that differ in a certain completeness of the type of strategic change.

Restructuring of the enterprise is a qualitative fundamental change associated with the mission and organizational culture of the whole enterprise. This type of enterprise change can modify the industry and its market of activity. The restructuring of the enterprise involves the emergence of great difficulties with the implementation of the strategy, since they occur both in the technological field and in the field of labor resources.

Moderate transformation of the enterprise is associated with entering the market with new solutions and products and seeks to win new consumers. In this case, the changes affect the production process and marketing. They involve a connection with transformations in the financial marketing and production sphere. They are not significant and affects the activities of the whole enterprise (Dudin, Lyasnikov, Dzhurabaeva, Dzhurabaev, Reshetov, 2015).

Strategic changes are systemic. Because of this, they affect all aspects of the enterprise. At the same time, two sections of the organization can be distinguished, which are the main ones in carrying out strategic changes from the organizational structure to the organizational culture.

Basically, it is customary to single out five factors that determine the formation and application of organizational strategic culture (Fursov, 2017):

- values and beliefs of senior management;
- management response to critical situations;
- attitude to the work and understand the mission staff and employees' visions;
- criteria for selection, appointment, promotion and dismissal from the organization.

Each factor requires the use of certain techniques to achieve success with a conscious change in the culture of the enterprise. At the stage of implementation of the strategy, the main efforts are aimed at bringing the organizational culture in line with the chosen strategy.

The total effect of these characteristics is reflected in the value of the enterprise. The market value of the enterprise is an indicator reflecting the efficiency of the existence and conduct of the enterprise's business, it is formed due to the existing actual state of the enterprise, the potential environmental potential and the possible risks. Therefore, it is necessary to analyze the possible value of the enterprise's business to manage the

implementation of the strategy, because the main objective of the business is the capitalization of the enterprise.

The article will conduct a full analysis of the internal and external environment, assess the market value of the current position of the industrial enterprise according to the external and internal reporting for the retrospective period from 2014-2018. Based on the identified problems and existing potential, a strategy has been formed, a program for its implementation has been developed and proposed.

We will formulate a development strategy for an industrial enterprise whose controlling stake belongs to an integrated holding structure and, therefore, the activities of the enterprise depend on the direction and development goals of this holding. The main activity of the enterprise is the fulfillment of orders for production, repair, supply and warranty service of equipment.

Financial and economic analysis of the industrial enterprise was carried out to formulate the strategy: analysis of the property condition of the enterprise, of the financial stability and autonomy, of the solvency of the enterprise, diagnostics of insolvency (bankruptcy) based on the criteria of the Federal Service for Insolvency (Bankruptcy) and financial recovery, of the indicators profitability and analysis of indicators of financial results. The financial and economic analysis of the state of the industrial enterprise under consideration showed the presence of such problems as:

- presence of a high amount of negative retained earnings;
- value of net assets is less than the size of the authorized capital;
- enterprise for the study period is financially unstable and not autonomous – financing of its own activities is carried out only by 18% from its own sources;
- enterprise is not able to freely maneuver with its own means;
- non-current assets are not covered by own sources;
- lack of working capital;
- balance sheet structure of the enterprise at the end of 2018 is unsatisfactory, and the whole enterprise is insolvent;
- decrease in positive cash flow, and as a result, decrease in net cash flow;
- decrease in cash flow liquidity;
- decrease in profit before tax due to decrease in net profit.

The next step was an analysis of the production capabilities and potential of the enterprise.

Assessment of the production capabilities of the analyzed industrial enterprise is calculated by analyzing the various components of the production process, constraints and various target functions. Target functions and limitations are selected depending on various scenarios of the proposed development and require special attention (Chaika, 2016).

The main indicators of production potential and equipment are the following: cost of fixed assets, capital productivity, capital intensity, capital ratio, gross output, they have a positive growth dynamic for the analyzed period. The negative component is a significant depreciation of equipment, which is 75% -100% and not the use of production potential.

The level of technological processes of the enterprise corresponds to the current tasks of manufacturing products, but does not allow to increase the range of production, and also to reduce all types of costs for the enterprise (Panagushin, Sevryukov, Chaika, Chaika, 2014).

The equipment of the industrial enterprise under analysis does not fully meet the tasks set for the implementation of current and promising projects without appropriate investments in maintaining the technical condition of fixed assets and the purchase of new equipment that provides advanced technologies.

There is the direction for the development of technological development and the renewal of the equipment fleet of the enterprise, the introduction of promising innovative technologies and high-quality modern information technologies in the

organizational and administrative processes.

The personnel potential, that is, the totality of the personnel policy and the personnel of the enterprise, with competent development, is capable of having a significant impact on the effectiveness of the result of the enterprise. Therefore, an analysis was made of the dynamics of the number and structure of personnel, an analysis of the movement of labor.

The personnel structure is not distributed correctly, the number of administrative personnel to the rest of the personnel has a ratio of 1/1.5.

The total number of the entire person for the study period is steadily growing.

The production rate or the value of output in monetary terms per 1 worker increases 2.15 times.

In determining the conditional release (additional attraction) of the number of workers due to changes in labor productivity, it was revealed that the conditional release of workers is reduced against the background of growing output and an increase in gross output. This dynamic can be assessed as a positive phenomenon.

The analysis of wages showed that wages correspond to the average market.

The stability of the staff is an essential prerequisite for the growth of labor productivity and production efficiency.

The following areas were identified for taking them into

account when forming the strategy for the personnel potential: reviewing the personnel ratio and working out the communication and interaction networks of personnel among themselves, that is, connecting them into unified information flows.

The enterprise under study was built with the focus on production in large batches. The enterprise implemented the operational principle of manufacturing basic parts and assemblies. Migration operations take a long time.

At the present stage of development, production takes place in small batches. Small-scale production revealed many of the above-mentioned shortcomings of the indicated mode of production.

Another priority is to provide the enterprise with modern equipment. This is due to the fact that most of the fixed assets of the enterprise are morally and physically worn out.

All of this makes it necessary to reform the existing production in the direction of increasing overall flexibility, updating the equipment fleet and carrying out a number of measures ensuring the financial and economic development of the enterprise.

After analyzing the existing methods of general analysis, it is concluded that it is necessary to use the SWOT analysis method. Table 3 contains a list of the components of the activity of the analyzed industrial enterprise and an assessment of the strengths and weaknesses.

Component activities	Effectiveness of the components of internal environment (their potential)				
	Very	Strong	Neutral	Weak	Very weak
<b>Marketing component</b>					
Share of new products			+		
Market share in Russia				+	
Products A			+		
Products B					+
Products C					+
World market share					+
Product quality and relevance to scientific and technological progress			+		
Product reliability		+			
Distribution channels (counterparties)			+		
Counterparty stability		+			
Product promotion			+		
Contract policy efficiency				+	
<b>The financial and economic component</b>					
Profitability level				+	
Financial autonomy					+
Financial stability					+
Ratio of borrowed to borrowed funds					+
Current assets security				+	
Solvency					+
Profitability				+	
return on equity				+	
return on current assets					+
return on sales				+	
product profitability				+	
Financial stability				+	
<b>Production component and development</b>					
Use of production potential				+	
Level of research and development and innovation (development)				+	
Production equipment				+	
Process technology				+	
Capacity reserves			+		
Using modern technology			+		
<b>Human resources (HR) component</b>					
Staff turnover		+			
Frame change			+		
HR potential (universities, colleges)			+		
Management level			+		
Leadership qualifications (by education)			+		
Qualification of workers (by education)			+		
Rationality of personnel policy – ratio of personnel					+

Table 3. SWOT analysis of the analyzed industrial enterprise

Component activities	Effectiveness of the components of internal environment (their potential)				
	Very	Strong	Neutral	Weak	Very weak
Organizational culture					
Pride in your organization		+			
Psychological climate in the team			+		
Motivation system				+	
Another component					
State support (subsidies, orders)	+				
Orientation of the state development strategy (innovation programs, industry)	+				
Development focus of the whole industry	+				

Table 3. SWOT analysis of the analyzed industrial enterprise (continuation)

Strengths	Weak sides
Product reliability Reliable sales channels and stable counterparties State support (subsidies, orders) Orientation of the enterprise development strategy	Low market share Profitability level Efficiency of contract policy Financial autonomy and sustainability Low solvency Low profitability Level of R&D and innovation (development) Use of production potential (production infrastructure) Manufacturing process technology Production equipment Rationality of car policy – staff ratio
Threats	Opportunities
Decrease in market share Loss of autonomy, stability, solvency and profitability Loss of state support Change of priority and direction of the enterprise development strategy	Increased market share Development of contract policy Stabilization of the financial and economic situation Improving the production component HR policy development

Table 4. Strengths and weaknesses of the enterprise

SWOT analysis showed that the company has opportunities and potential for development. The strong point is production, contractors and orders. The weak side is the level of profitability and low ratios of financial stability. The main threats to an industrial enterprise are loss of orders and financial stability. It is recommended to pay attention to financial indicators and the improvement of the derivative component for the development of the enterprise.

In the process of forming a strategy for the analyzed industrial enterprise there are the following tasks:

- formation of a common strategic goal;
- increase in the share of production and export of high-tech products;
- The strategy will consider the results of the strategic analysis.

### 3. Formation of a development strategy for industrial enterprise, forecasting and evaluating possible scenarios for implementing of it

Formation of the strategy is based on the mission and vision of the enterprise. The enterprise under study does not have a clearly formulated mission and vision, therefore the enterprise is dependent on its goals.

The mission of the enterprise is to meet the requirements and expectations of consumers, including the customer.

The strategic objectives of the enterprise are:

- full implementation of orders and all development programs;
- maintaining and developing competencies in the segments of products;
- revenue growth of the company by 5% per year;
- improving the efficiency of the main production activities of the enterprise, by reducing costs;
- ensuring the adequacy of resources for the implemen-

tation of promising strategic programs and development projects of the enterprise.

The goal of the enterprise is to create a production and financially stable, structurally balanced system capable of effective self-development through integration into the global technological environment, development and application of advanced industrial technologies that provide a general qualitative increase in labor productivity, aimed at the formation and development of new markets innovative products that effectively solve the problems of ensuring the development of profitability indicators (Narula, Dunning, 2010).

The objectives of the enterprise in the areas of strategy are as follows:

1. financial and economic development;
2. modernization of innovative and technological potential;
3. improving staff potential.

The objectives of the enterprise for the implementation of the strategy will be the following:

1. stabilization of financial and economic potential;
2. development of HR and the study of existing problems in the personnel policy of the enterprise;
3. increasing innovative technological activity in the production activities of the enterprise;
4. introduction of modern technologies related to the integration of processes into the administrative support of the enterprise, creation of an integrated information flow;
5. refinement of the production infrastructure.

To monitor and evaluate the effectiveness of the implementation of production programs, a list of key indicators (indicators) is provided (Panagushin, Chaika, 2015):

- revenue (net) from the sale of goods, works, services of industrial organizations of the industry;
- quantity of products supplied by the enterprise;
- labor productivity in production.

Based on the identified areas, guided by the goals and objectives presented above, an industrial enterprise strategy for 5 years will be developed.



## 4. Development of a program for implementing the development strategy of an industrial enterprise

The strategy implementation program has been developed for 5 years and it includes 3 subprograms. The program involves the continuation of the production and economic activities of the enterprise, suggesting the gradual growth and implementation of subprograms of financial and economic development, modernization of innovative and technological potential and improvement of HR (Decree of the President of the Russian Federation No. 204, 2018) (Table 5).

The company has a territory that is not comparable with its real needs. This fact necessitates to be changed. Targeted restructuring and staffing of the production site should be carried out without disruption of the technological process, including the

creation of a compact efficient production site, involving the further implementation of the construction project on the released territory.

In the process of restructuring equipment should be transferred, acquisition of new, instead of non-transferrable, construction of new capital structures, construction of a new treatment plant.

The implementation of the program is possible while maintaining the unconditional fulfillment of existing obligations.

Target indicators and indicators of implementation efficiency, including in the areas of program activities from 2019 to 2023 are the following:

- increase in the ratio of the total cost of sales to revenue by 11%;
- increase in production per worker by 1.9 times;
- 2 times increase in output per worker.

Stages	Financial and economic development	Modernization of innovative and technological potential	Improving HR
1	Development of financial, economic and contract policy	Consistent introduction of innovative technologies into production processes	Adjustment of the composition and number of administrative personnel
2	Stable increase in revenue by 10-15%, receiving support in the form of increasing orders	Modernization and updating of the main production fund	Attracting young engineering professionals
3	Lower production costs by reducing production costs	Reorganization of the production system through compaction and optimization of technological processes of the enterprise	Introduction of a mentoring system as a factor in increasing labor productivity
4	Consistent uncovered loss reduction	Acquisition and release of 2/3 of the territorial-production complex, transfer of production infrastructure by 1/3, in order to introduce, for example, an industrial science park into the structure of the enterprise	
Result	Improving and stabilizing the financial and economic state of the enterprise	Improvement of innovative and technological potential	Improving staff utilization and increasing labor productivity

Table 5. Subprogrammes and goals of achievement

Table 6 provides a list of activities for the industrial complex modernization subprogram. The level of technological processes of the enterprise corresponds to the current tasks of manufacturing products, but they do not allow increasing the efficiency and quality of production, as well as achieving a reduction in all types of costs for the enterprise (Hendley, Murrell, Ryterman, 2010).

Name of activities of new technologies	Expected results
In the field of increase energy efficiency	These measures should enable the company to save energy resources
In the field of development of new technologies in production	Measures for the technical re-equipment of the enterprise, aimed at ensuring the implementation of production orders
In the field of implementation of information technology	Result of the introduction of information technology is the automation of work and the reduction of time for processing certain operations
In the field of development of interaction with subjects of the innovation environment, including with universities	Result of these measures is the development of engineering personnel by educating a new generation of designers, technologists, production organizers, which will lead to sustainable innovative development of the enterprise

Table 6. List of measures to modernize the industrial complex

Equipment will be replaced in stages over the course of 5 years of the implementation of the strategic program for the development of an industrial enterprise.

Staffing the territory of the enterprise will release a significant amount of space. Lease of these areas or construction of innovative complexes will be the basis for further development

of the enterprise. And it will find a relationship in the growth of non-production income.

The estimated effect of the implementation of the tasks in the program is shown in the Table 7.

Stages	Improving innovative and technological potential	Effect
1	Introduction of new and innovative technologies	Cost reduction at the end of the program
		Reduced production time
		Increase in quality
2	Modernization and renewal of the production fund	Reduction of time
		Increase productivity
		Increase in quality
3	Reorganization of the production system by compaction and optimization of technological processes of the enterprise	Reducing the cost of maintaining the infrastructure
		Reduction of production time
4	Staffing and release of the territorial production complex, transfer of production infrastructure	Obtaining non-production income in the form of rent

Table 7. Effectiveness of the subprogramme increase innovation and technological potential

The existing problem of the ratio of working and managerial personnel also needs significant adjustment. In order to reduce costs, the company needs to reduce the number of administrative and managerial personnel.

Mentoring is a powerful tool that links initiative specialists in different areas of the production process with common goals, promotes and ensures true partnership and exchange of experience between young and specialists with more experience.

Mentoring reduces the time of adaptation of personnel and creates effective motivation to work. Table 8 shows the expected impact of the subprogram on capacity development.

Introduction of mentoring	Effect
	Professional development
	Reduced staff adaptation time
	Creating a working atmosphere
	Team building and employee motivation
Increase labor productivity	

Table 8. Effect of mentoring in the workplace

The financing of the program will be based and carried out through its own activities and subsidies. Then we need to evaluate the effectiveness of the modified development strategy of the industrial enterprise.

## 5. Economic evaluation of the effectiveness of the development strategy of an industrial enterprise

Currently, many existing methods can be applied to assess the effectiveness of the implementation of the strategy and the strategic program for the development of the enterprise, but they are not universal, they do not consider the influence of all factors (Strategy for innovative development, 2020).

One of the methods for assessing the effectiveness of the implementation of the strategy is to assess the market value of the enterprise before and after the implementation of the development strategy of the enterprise. Therefore, we evaluate the market value of the enterprise, changes in revenue and cost.

Assessment of the market value of the enterprise increased after the implementation of the development program by 20%. The increase in the market value of the industrial enterprise showed that the strategic program is effective.

Strategic subprograms included cost reduction and revenue growth. After evaluating the changes in forecast values before and after the implementation of the strategic program, we received 29% revenue growth and 11% cost reduction.

The strategy and the strategic program have shown their overall effectiveness. Strategic effectiveness has shown qualitative changes in forecast values for the outcome of the strategy.

## 6. Conclusion

The article analyzed the theoretical aspects of the formation and implementation of the strategy: basics of the formation of the strategy, types of strategic development of the enterprise, their adaptation to real opportunities and conditions in the current environment, nature of the preplanned strategic analysis and role of forecasting in the preplanned strategic analysis, as

well as management implementation strategy. The strategic development program was developed for an industrial enterprise.

The process of formation and implementation of the strategy is unpredictable, any unaccounted factor can affect the results, and even lead to a complete "defeat" to achieve the desired. Laying the proposed tactical routes and predicting development is a rather complicated and laborious procedure, involving a detailed analysis of all components of the enterprise's life, as the strategy determines the functioning and development of the enterprise in the future.

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# Market Innovation and Product Excellence in Indonesia: The Moderating Role of Product Innovation

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## Abstract

*This research aims to analyze the influence of entrepreneurship orientation, market orientation, technology orientation to product excellence with product innovation as moderating. This study followed a quantitative method using Structural Equation Modeling (SEM) with WarpPLS approach. This paper was conducted on the seaweed farmer community in Sidoarjo, East Java in Indonesia. In addition, the data were collected through questionnaires given to farmers while the sampling technique used was convenience simple random sampling. The results showed that entrepreneurship orientation, market orientation, technological orientation with product innovation have a positive influence on product excellence.*

**Keywords:** entrepreneurship orientation; market orientation; technology orientation; product excellence; product innovation.

## 1. Introduction

The Indonesian government has sought to develop the potential of marine and fisheries resources through various policies, such as the development of Minapolitan conception. In the ministerial regulation, minapolitan is defined as a conception of maritime economic development and area-based fisheries based on integrated principles, efficiency, quality and acceleration. Thus, minapolitan area is an area with major economic activities that utilize, manage and cultivate marine and fisheries resources and have functional linkage with the surface system that developed to encourage local economic growth and grow regional competitiveness. In Indonesia, the largest seaweed producing areas include Bali, Papua, Maluku, Central Sulawesi, East Kalimantan, East Java, North Sumatera, and others.

East Java becomes one of the ten largest seaweed producing areas in Indonesia. With the potential of marine waters that are very suitable for the development of seaweed cultivation, it is not surprising if then East Java transformed into one of the national seaweed production barns. The area of seaweed in East Java reaches more than 166 thousand hectares from the previous 158 thousand hectares. Demand for high export market against seaweed also spurs business actors in seaweed production center. For the type of Cottony, it is found in Sidoarjo Regency, Gresik Regency, Bangkalan District, Pamekasan Regency, Situbondo and Pacitan regency. Then, Sumenep Regency, Pasuruan Regency, Probolinggo Regency and Banyuwangi Regency while Gracillaria types are found in Sidoarjo, Pasuruan, Probolinggo and Situbondo Regency.

Sidoarjo is one of the coastal areas in East Java that has most abundant seaweed. Sidoarjo Regency consists of land area and ocean area with a land area of 714,245 km<sup>2</sup> consisting of 18 sub-districts. Sidoarjo District is directly adjacent to Madura Strait and thus has the potential for development of fisheries sector. In supporting the development of fisheries sector has been defined Minapolitan area, consisting of 6 sub-

districts namely Candi, Sidoarjo, Sedati, Waru, Buduran, and Jabon. Reviewed from the topography state terrain of Sidoarjo is at an altitude between 23-32 above sea level. This shows that Sidoarjo has a maritime potential that can be utilized in economic development so that it needs to be developed optimally as a source of genuine income of the region.

These abundant factors promote farmers and seaweed enterprises to improve product quality, production capacity and product innovation so that consumers would still choose the seaweed product. Through product innovation, an industry can create other products from the previous one or develop products that are a refinement of pre-existing products or create a completely new product. For consumers, product innovation is advantageous because consumers can consume innovative products to their liking. While for an industry, product innovation becomes very important to do because the industry is a step ahead of its competitors. In addition, product innovations can be influenced by several factors, one of which is an entrepreneurial orientation. Kumalaningrum (2012) stated that firms with strong entrepreneurial orientation will have the ability to innovate stronger than any other company. In this dynamic economic environment, entrepreneurial orientation is clearly essential for the continuity of an industry in the innovation of its products. (Beaver & Prince, 2002) argued that entrepreneurship, indicating that risk taking is positively influential towards the development of new product performance.

Other factors that affect product innovation is market orientation. Market orientation is quite crucial for an industry as tight as competition and consumer desires that increase innovative products. Market orientation for industry has become a business culture in it. With the current situation, an industry mindset should always improve the creativity of the products produced in creating superior value for consumers. Usvita (2015) mentioned that the market orientation as an organizational culture will be fundamental to the basic needs of external, desire and market demand. Pelham and Wilson (1995) defined

company performance can be measured through sales growth and market portion. This is the benchmark of company performance to be more optimal. Menon et al. (1999) added that the market orientation is influential on competitive advantage, corporate culture that emphasizes the importance of the company to pay attention to market (market-oriented) will lead to strengthening the company's competitive advantage. Akimova (2000) revealed that companies implementing market orientation have the advantage in terms of customer knowledge and these advantages can be used as a source for creating Products to suit customers' wishes and needs.

Entrepreneurial orientation has an association with opportunities, the courage to risk and the decision to act on the leaders of the Organization (Knight & Kavusgil, 2004). Entrepreneurship orientation is a company's value system that later determines the direction of the company's movement or strategy. Similarly, Akimova (2000) mentioned that, companies implementing market orientation have the advantage in terms of customer knowledge and these advantages can be used as a source for creating Products to suit customers' wishes and needs. Entrepreneurial orientation has an association with opportunities, courage to risk and the decision to act on the leaders of the organization (Knight & Kavusgil, 2004). Entrepreneurship orientation is a company's value system that later determines the direction of the company's movement or strategy (Tawas & Djodjobo, 2014).

The implementation of new technology is the deciding factor in new product development. The technological excellence of a product can attract consumer buying to make purchases on new products that are produced. By using sophisticated technology, the company can make its products to be better or more innovative (Satata, 2006). Hartini (2012) remarked that innovation is starting or introducing something new. Product innovation is something that can be seen as functional progress of the product that can bring the product a step ahead compared to the competitor product. If the product has an advantage that is seen as an added value for consumers. The development of new and more effective products is often the defining success and survival of a company, however, it is not an easy project. The development of new products requires effort, time and capabilities, including the magnitude of risk and failure costs. Setiawan (2012) explained that the competitive advantage of a product is one of the determinants of the success of new products (up to an innovation product should have an advantage over other products. Gatignon and Xuereb (1997); Bruno (2019) presented three characteristics of innovation that is product excellence, product cost and product credibility. Product innovation can fail simply for reasons of not offering a unique design or misestimate of the wishes and needs of customers. Product innovation should be able to provide added value compared to similar products (product excellence) so that it can make the company has an advantage over its competitors.

Competitive advantage is the result of implementing a strategy that leverages the company's various resources (Menon et al., 1999; Sugiyarti, 2015). Unique expertise and assets are seen as the source of competing for excellence. The ability of the company to develop the expertise of its employees well will make the company excel in the application of its strategy and difficult to emulate by its competitors. Unique assets are real

resources that companies use to run their strategy. The merger between employee skills development and unique assets is able to support the industry to be superior and have a difference with other sectors. An industry can be said to be superior to its competitors if the resulting products have added value, such as uniqueness, not easily imitated, rarely found, not easily replaced, and competitive prices.

Generally, consumers are more interested in innovative products. Thus, product innovation can be used as one of the sources of competing excellence of an industry. In this study, seaweed production that had only been exported in raw form and sold in the factory as the base material for the manufacture of agar and cosmetics by farmers and traffickers and marketers of seaweed was processed into various typical food products from Sidoarjo such as seaweed crackers, seaweed noodles, seaweed ice cream that can be used by tourists. As the high demand for diverse seaweed consumers experienced innovation over time. Based on the previous background, this study is intended to understand how the influence of entrepreneurial orientation, market orientation and technological orientation affect the competitive advantage of product innovation as its intervening variables.

## 2. Method

This study applied a quantitative method using Structural Equation Modeling (SEM) with the WarpPLS approach to examine the relationship between variables and understand the moderating role of product innovation. This research was conducted in six sub-districts, namely Candi, Sidoarjo, Sedati, Waru, Buduran, and Jabon Sidoarjo regency. The data were collected through questionnaires given to farmers. The sampling techniques used are convenience simple random sampling which is the retrieval of sample members from the population conducted randomly regardless of the strata in the population. The sample is about 60 seaweed farmers who belong to the group of processing seaweed and marketers in Sidoarjo. The data analysis uses Structural Equation Modeling (SEM) with the WarpPLS approach. In more detail, the framework of research is illustrated in Figure 1.

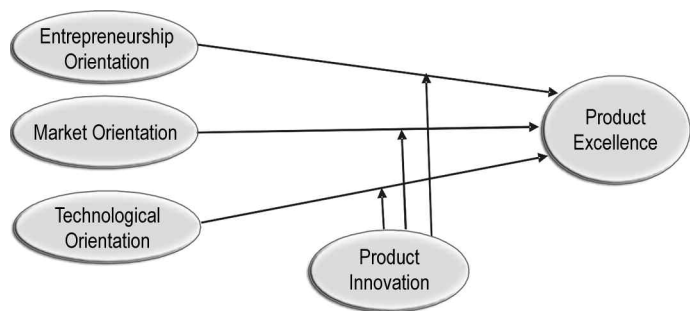


Figure 1. The Framework of the Research

## 3. Results

### 3.1. The Impact of Entrepreneurial Orientation to Product Excellence

Relationships between variables (explanatory variables → response variables)		Line coefficient	p-value	Description
Entrepreneurial orientation (X <sub>1</sub> )	Product Excellence (Y)	-0.136	.070	Weakly Significant

Table 1. Relationships between variables

H<sub>1</sub>: There is an impact of entrepreneurial orientation (X<sub>1</sub>) to product excellence (Y).

Entrepreneurial orientation (X<sub>1</sub>) to product Excellence (Y) with a line coefficient of -0.136 and p-value of 0.070. Given that

p-value is smaller than 0.1 it is said to be weakly significant, then the hypothesis is accepted. The path coefficient marked negative (-0.136) indicates that the better the entrepreneurship orientation then the product excellence is decreasing.

### 3.2. The influence of Entrepreneurship Orientation to Product Excellence (Y) moderated by Product Innovation

Relationships between variables			Line coefficient	p-value	Description
Explanatory variables	Moderation variables	Response variables			
Entrepreneurial orientation (X <sub>1</sub> )	Product innovation (X <sub>4</sub> )	Product Excellence (Y)	0.283	0.001	Moderate

Table 2. Relationships between variables

H<sub>2</sub>: There is an entrepreneurial orientation influence (X<sub>1</sub>) to Product Excellence (Y) moderated product innovations (X<sub>4</sub>). The path coefficient of entrepreneurship orientation (X<sub>1</sub>) towards product Excellence (Y) moderated innovation product (X<sub>4</sub>) by

0.283 with p-value = 0.001, is said to be highly significant, so X<sub>4</sub> is a moderation variable. The positively marked coefficient (0.283) means that product innovation can strengthen the impact of entrepreneurial orientation on product excellence.

### 3.3. The Effect of Market Orientation on Product Excellence

Relationships between variables (explanatory variables → response variables)		Line coefficient	p-value	Description
Market Orientation (X <sub>2</sub> )	Product Excellence (Y)	0.220	0.009	Highly Significant

Table 3. Relationships between variables

H<sub>3</sub>: There is a market orientation influence (X<sub>2</sub>) on product excellence (Y). Market Orientation (X<sub>2</sub>) on product Excellence (Y) with a line coefficient of 0.220 and p-value = 0.009. Given that p is smaller than 0.01 it is revealed to be highly significant,

therefore, the hypothesis is accepted. The column coefficient marked positively (0.220) indicates that the better the market orientation then the product excellence is increasing.

### 3.4. The Effect of Market Orientation on Product Excellence moderated by Product Innovation

Relationships between variables			Line coefficient	p-value	Description
Explanatory variables	Moderation variables	Response variables			
Market orientation (X <sub>2</sub> )	Product innovation (X <sub>4</sub> )	Product Excellence (Y)	-0.417	0.001	Moderation

Table 4 Relationships between variables

H<sub>4</sub>: There is a market orientation influence (X<sub>2</sub>) on product Excellence (Y) moderated product innovation (X<sub>4</sub>). The line coefficient of influence of market orientation (X<sub>2</sub>) on product Excellence (Y) moderated product innovation (X<sub>4</sub>) of -0.417 with

p-value = 0.001, is said to be highly significant, so that X<sub>4</sub> is a moderation variable. Path coefficient marked negative (-0.417) means product innovation can weaken the effect of market orientation on product excellence.

### 3.5. The Effect of Technology Orientation on Product Excellence

Relationships between variables (explanatory variables → response variables)		Line coefficient	p-value	Description
Technological orientation (X <sub>3</sub> )	Product Excellence (Y)	0.180	0.026	Significant

Table 5. Relationships between variables

H<sub>5</sub>: There is a technological orientation effect (X<sub>3</sub>) on product Excellence (Y). Technology Orientation (X<sub>3</sub>) on product Excellence (Y) with a line coefficient of 0.180 and p-value = 0.026. Given that p is smaller than 0.05 it is said to be

significant, so the hypothesis is accepted. The column coefficient marked positively (0.180) indicates that the better the orientation of technology then the product excellence is increasing.

### 3.6. The Influence of Orientation Technology and Product Excellence moderated by Product Innovation

Relationships between variables			Line coefficient	p-value	Description
Explanatory variables	Moderation variables	Response variables			
Technological orientation (X <sub>3</sub> )	Product innovation (X <sub>4</sub> )	Product Excellence (Y)	0.300	0.001	Moderation

Table 6. Relationships between variables

H<sub>6</sub>: There is a technological orientation influence (X<sub>3</sub>) against product Excellence (Y) moderated innovation products (X<sub>4</sub>). The line coefficient of influence orientation technology (X<sub>3</sub>) on product Excellence (Y) moderated innovation product (X<sub>4</sub>) by 0.300 with p-value < 0.001, is said to be highly significant, so that X<sub>4</sub> is a moderation variable. The positively marked coefficient (0.300) means product innovation can strengthen the impact of technology orientation on product excellence.

## 4. Discussion

The results of this research proved that the better entrepreneurship orientation, then product excellence is decreasing. It is because management dare to take risks, and try to create a new product precede the tastes of consumers, besides always make use of market opportunities, creating a unique product and has distinctive characteristics of its competitors, Introducing the new products such as seaweed ice cream, seaweed sticks, noodles, nori, and paper crackers from seaweed. Hence, there is no effect on the competitive advantages between farmers and the marine-processing and marketers. It is to win the competition in the market seize. Then the market orientation becomes an activity that must be done by an industry. Market orientation consists of three components namely customer orientation, competitor orientation and coordination between functions. These three components if conducted by responding to the needs and desires of customers in a competitor's market, it will create a superior value for the customer that can lead the competitive advantage in the midst of competition. Thereby, product innovation can affect the competitive advantages of farmers processing and marketing of seaweed in Sidoarjo, East Java, Indonesia. Innovation is a variable mediator between the market orientation and the performance of the company (Olavarrieta & Friedmann, 2008). Altuntas et al. (2013) stated that innovation is highly dependent on market orientation and will play a role as a mediator to encourage organizational performance.

SMEs must invest in product innovations to gain a competitive edge. The emergence of product innovations is essentially meeting the needs, desires, and demands of consumers so that product innovation is one that can be used as a competitive advantage for the industry. Research conducted by Tung (2012); Killa (2014); Utaminingsih (2016) found that innovations have a positive effect on performance. Industries that have been innovating products value consumers more than their competitor products. Thereby, innovation increasingly has significance not only as a tool to maintain the survival of products and the development of the industry but also to excel in the competition.

Therefore, it can be said that the more often the SMEs to innovate the product will further increase the value of competitive advantage of SMEs. The results of this study is supported by previous study of Prakoso (2005) which remarked that the influence of positive and significant innovation to marketing performance or in other words that by the effectiveness of the company's innovations one of them through the product then the company can improve performance. This is in accordance with the theory of Saladin (2010) which stated that consumers want new products (innovations) so that consumers consume more goods. The research also proves the prior research conducted by Ceccucci et al. (2010) revealed that product innovations have significant effect on the intention of buying. Indeed, a study by Shiau (2014) also stated that product innovations significantly affect the buying intent and the brand image as its modernist variables.

## 5. Limitations and Future Research

The purpose of this research is merely to seek influence so that if there are one or two fit criteria fulfilled, therefore the

research can be continued. In the future, SMEs must be more creative and dynamic in facing global market. For this matter, SMEs should be able to master information technology in improving the quality and quantity of production.

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## The Role of Marketing Function for Competitive Advantage

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### Abstract

*Provide a new perspective on the involvement of dynamic marketing capabilities for sustainable competitive advantage by focusing on three areas of the scientific literature to be studied and integrated into the framework of small companies that can be learned and used in managing digital marketing company. The paper reviews prior literature on Customer Relationship Management (CRM), Social Customer Relationship Management (SCRM), Engagement, and Perspectives on Theory of Dynamic Capability (DC), Dynamic Marketing Capability (DMCs). Dynamic Marketing Engagement is a new concept that is created through a process of reduction of the concept of Dynamic Marketing Capabilities (DMCs) and the concept of Engagement associated with a competitive advantage and competitiveness sustainability. This new concept offers a marketing strategy using digital tools not forgetting offline strategies for identifying, anticipating, managing and winning business competition and studied business in the digital sector, especially for SMEs; thus has implications for the field of academics, practitioners and industry. Combining the three major areas of business research for sustainable competitive advantage, that is Social Customer Relationship Management, Engagement and Marketing Dynamic Capabilities.*

**Keywords:** social CRM; engagement; dynamic capability; dynamic marketing capabilities.

### 1. Introduction

Integrating Customer Relationship Management on business operations using information technology as a media tool to build relationships with customers, requiring knowledge of management concepts and transformed comprehensively to all components within the company. Core elements of Customer Relationship Management towards sustainability must be combined with the core elements of sustainability to understand the customer's wishes in accordance with the characteristics and behavior of customers continues to grow. Identifying issues involving the development of marketing with customers to encourage innovation of product creation and improving customer retention sales. Integration of all elements in the Customer Relationship Management can measure and improve the performance of the company. The emergence of social media changing the map of central power with the creation of a customer-centric as a new generation of powerful, sophisticated, difficult to influence, induced and maintained. To deal with these changes, Customer Relationship Management assessment metrics to integrate social media and turned into a social CRM (Customer Relationship Management) as a new paradigm in marketing. To achieve goals and improve company performance required customer involvement in implementing marketing strategies in social media. Engagement is a new trend in marketing that first appeared in 1990, develops and talking when social networking media into a marketing tool for many companies to achieve a competitive advantage in the broad market. Engagement also seen to improve the performance of the company to increase sales, create new products and enrich the relationship between the company, employees, customers and supply chains. Finally, all of involvement boils down to the goal of excellence and competitiveness sustainability.

The debate between RBV and RBT invited researchers to

clarify confusion over less heterogeneity on performance and competitive advantage, while in the literature of the dynamic capability view of the split into three interrelated parts, between the economy, technology and innovation management. Beyond the debate, raised a new term called dynamic marketing capabilities that is based on the development of dynamic capabilities inherent in the organization and are considered to have a high level of value, rare, difficult to imitate and irreplaceable. It is indicated and leads for the purpose of competitive advantage in the ability of organizational competitiveness in the broad market. Dynamic Marketing Engagement is a new concept that is created through a process of reduction of the concept of Dynamic Marketing Capabilities (DMCs) and the concept of Engagement associated with a competitive advantage and competitiveness sustainability. The basic foundation of all renewal based on the incorporation of dynamic capabilities and marketing capabilities in the process involves the role of employees, customers and supply chains in entering and playing the role of marketing in both market linkages between non- and digital. This new concept aims to address significant issues of the role of the marketing function is dynamic and it is hoped will be able to be a marketing guide for SMEs in entering the digital market.

### 2. Literature Review

#### 2.1. Social CRM

##### 2.1.1. Integration Customer Relationship Management in Social Media

The emergence of social media as a marketing tool to be a bridge for the company to convergence with customer relationship management to social media. Metrics ratings more easily detected; evaluating the performance of each of the elements involved in the information technology supporting the



overall marketing strategy that influenced the decision, acquisition and retention (Malthouse, Haenlein, Skiera, Wege, & Zhang, 2013). The company's success in empowering customers on social networks depends on and how the company's experience designing social media programs that deliver value to customers. Provide support, attention and spend some time with the enthusiasm of the company is very difficult to be achieved from the customers as users of social networks. Companies must compete in the business area of extreme to integrate Customer Relationship Management in social media networks in order to acquire and develop the data, because customers and virtual network is very influential in driving the conversation (Baird & Parasnis, 2011). Therefore it is necessary for marketing research in understanding the explosion of social media usage and as a Customer Relations Management convergence analysis into social media (Ang, 2011). Change the traditional view of Customer Relationship Management by incorporating social media technology as a new form in establishing business relationships with customers is a dramatic shift. Rishika, et al (2013) expressed the need for managers to integrate knowledge from the relationship customer transactions with the participation of social media to serve customers and create sustainable business value.

Integrating knowledge have feedback that can be obtained from the moods, attitudes and behaviors to help customers get the benefit of the entire value chain that have an impact on forecasting and demand and establish sale (Woodcock, Green, & Starkey, 2011). This shift is like a game, started playing bowling in which companies only focus on targeting, but as the development of the game turned into a pinball require feedback. If the company can make sense of this game, both have risks, but in bowling, the manager is only required to how well in targeting customers, although sometimes a shot that missed estimates, while the pinball manager not only did the shot but the pass between the customer also needs to be anticipated to win the game such as word-of-mouth (WOM), customer relationship management, brand community, search engine optimization, viral marketing, guerilla marketing, event-based marketing and social media isolation. All of these things because of their relationship with the marketing done by the company in cyberspace called e-marketing. The definition of e-marketing itself according to Kotler et al, (2009), e-marketing is the company's efforts to inform the buyer, communicate, promote and sell products and services via the Internet. While the definition of e-marketing adopted by EMA (e-marketing association) according to Eid & El-Gohary, (2013) is the use of electronic data and applications to the planning and execution of the conception, distribution and pricing of ideas, goods and services to create exchanges that satisfy individual and organizational goals. Previously, researchers have confirmed the e-marketing their differences from findings such as Barwise & Farley, (2005), recognizes that the impact of e-Marketing less than expected during the dotcom boom in the 1990s and is now a significant impact. followed by Brodie et al, (2007), which Barwise & Farley, (2005) confirm previous research which claimed that e-Marketing "starting to come of age," to conduct investigations in areas that are rarely investigated and found that there had been an increase in the penetration of e-Marketing. Their findings also indicate that the adoption of e-Marketing is positively related to performance and have a tendency competitive advantage. Meanwhile in the literature review El-Gohary, (2010), distinguish areas such as: E-Business, E-market, Electronic Commerce, electronic platform, Mobile Marketing and other research areas, still has many gaps, especially in the field of research performance as well as the adoption of E-Marketing at the company's Small Business. In review by Tsiotsou & Vlachopoulou, (2011), on the implementation of e-marketing states that companies are using the Internet as the main vehicle to adopt e-marketing in developing value chain efficiency, reduce costs, gain promotions positive word-of-word, improve customer and channel relationships and gain competitive advantage. Empirically proved that

the use of the Internet to carry out transactional activities, such as reservations, sales, and payment is positively associated with increased business performance and has been proposed to be exploited fully the importance of the internet. In its findings stated that the market orientation of contributing to the performance through multiple mechanisms that contribute either directly or indirectly, to the relationship through e-marketing.

Furthermore, Lahuerta Otero, et al (2014), offers four guidelines for companies that want to increase the flow of customers to their websites. The first is to improve search engine optimization by linking and re-linking of a company's website to other websites, linking with social media sites (Eg. Facebook, LinkedIn, Twitter) and include blogs on the site. The second is the use of the Infomediaries or websites that provide a virtual market place for other companies (Eg. Tripadvisor, Home Away.com); The third is to provide value to customers by ensuring they maintain a well-designed website; The fourth is to utilize social media in which a link back to the website, companies can increase SEO. Gajendra Sharma & Wang, (2015) adding that the quality of information and the quality of online services are key determinants of user satisfaction and sustainability of e-commerce technology. Of the various explanations and findings of the above is necessary to be known by the company in order to understand the fundamental building blocks of social media as a marketing strategy.

According to Constantinides, (2014) social media has changed the structure of power in the market with the advent of powerful new customer generation and sophisticated, it is difficult to be influenced, seduced and defend it. Crager, et al (, 2014), stated that social media can connect people who are using digital tools, such as Facebook. According to Carlota, et al (2013), the use of social media as part of a marketing strategy with the goal of customers, has clear benefits in improving customer relations, communications market, after sales service, and obtain feedback information from customers. Thus it can be digested on how to establish social relations in the social networking business more rapidly and widely (Ellison, Steinfield, & Lampe, 2007); (Chu, 2011). Social media is the web 2.0 aims to establish a relationship with the customer in a system that has an effect on the management and business. These effects led to a new paradigm in customer relationship management which was originally performed by the traditional system turned into an online system. Due to their integration into social networks it gives birth to a new paradigm called social CRM; talk social media together with social CRM and discuss both of these is about how relationships in the public domain (Askool & Nakata, 2011); (Heidemann, Klier, & Probst, 2012).

### **2.1.2. Paradigma of Social CRM**

Social CRM was first discussed more extensively in the article by Greenberg, (2010), who found a new generation of customers with the needs of the company's transparency, authenticity and interaction. New customers have expressed an aggressive and smart in influence. Basically, Social CRM is an extension of the use of technology in Customer Relationship Management which was originally proposed by Jayachandran, (2005). Several studies of social CRM explains that social CRM is aimed at the performance of customer relations (Maklan & Knox, 2009); (Keramati, Mehrabi, & Mojir, 2010); (Rapp, Trainor, & Agnihotri, 2010); (Trainor, 2012). In the scientific literature state-of-the-art Lehmkuhl & Jung (Lehmkuhl & Jung, 2013), concluded that Social CRM as a new concept that requires a transformational effort between all parts of the organization. While Trainor et al. (Trainor, Andzulis, Rapp, & Agnihotri, 2014), states affected by the ability of social CRM customer-centric management system and social media technologies that have the interactive effect on the formation rate of the company's ability proved positively related to the performance of the customer relationship. And in the process (social CRM) involves customers to engage achieve goals (Choudhury & Harrigan, 2014).

Meanwhile, to see and measure social CRM (Customer Relationship Management) in the context of SMEs, Harrigan & Miles, (2014) illustrates the importance of customer relationship orientation, uncover support and data issues surrounding the use of social media, promoting the importance of customer engagement in the online community, and recognizes the role of driver update process. Once the strategic involvement of customers in relationship marketing, Vivek, et al, (2012), believes that customer engagement as the intensity of the participation of individuals in connection with the organization deals and it is composed of elements of the cognitive, emotional, behavioral, and social. While Bowden, (2009), stated in a study of satisfaction with the approach that includes an understanding of the role of commitment, engagement and trust in the creation of a customer engaged and loyal, can provide a deeper understanding and more complete than the nature of customer relationships and brand in the process of engagement that can be developed and fostered among different customer segments

## 2.2. Engagement

### 2.2.1. Customer Engagement

Customer engagement related to the behavior, attitudes, ethics, style, mood and more attached to the individual person in view, respond to, support and interpret a company's products and services are offered for use by customers as well as to merchantability starting point of the movement word-of-mouth to recommend to other people to participate in legal proceedings. Once the extent of the customer engagement, Doorn van et al., (2010), defines the behavior of customer engagement as a manifestation of customer behavior toward a brand or company outside of the purchase resulting from driver motivation.

While Verhoef, et al (2010), states that the involvement of the customer is regarded as a manifestation of your brand or company's behavior beyond the transaction. In a business environment that is interactive and dynamic, the role of customer involvement in the co-creation is needed and according to Brodie et al, (2011), customer engagement (CE) is a psychological state that occurs based on interactive, co-creative customer experience with intermediary voice / objects (Eg, brand) focus in the service relationship. This occurs under a specific set of context-dependent conditions produce different levels of CE; and there is a dynamic process that is repeated in relation assess the co-creation services. CE plays a central role in government relations nomological network services where other relational concepts (Eg, engagement, loyalty) is antecedents and / or consequences in the CE process repeats. It is a multi-dimensional concept subject to the context and / or expression of specific stakeholder relevant cognitive, emotional and / or behavioral dimension. In social networks such as Chu, (2011), stated that the basis of Facebook is to build and maintain social relationships, whereas Askool & Nakata, (2011), suggests that social CRM emerged as a new paradigm for integrating social networks, while Heidemann et al., (2012), found online social networking application for the business area of marketing and sales, one of which is social CRM. The statement also confirmed by Lehmkühl & Jung, (2013), stating that the Customer Engagement has been identified as the main purpose of SCRM.

More specific by Sashi, (2012), states that there are four types of relationships arise from the development of CE is the customer transaction, the customer is happy, loyal customers and fans. Customer engagement increasingly popularized by the technology sector for marketing digital marketing. According Hansen et al. (in Hallock, et al 2016), Social media technology has changed the nature of the interaction between the customer and the company, gave birth to the ways new radical interaction that basically revolutionized marketing. This revolution centered on the fact that potential customers are currently using social media to engage with companies and other consumer products and services. Requires answers to these questions to understand what personality traits customers who encourage to

engage them online and what value they think can receive in the digital age to help managers understand segments better and evaluate the involvement of their customers online, questions and answers of what it described raised by Marbach, Lages, & Nunan, (2016), and found seven personality traits associated with Online Customer Engagement (OCE) is introversion/extroversion, (dis) hospitality, awareness, openness to experience, needs activity, need to learn and altruism. In addition, their findings also show that customers are involved in the community of Facebook users see different forms of customer value as a social value, play, efficiency, forte, aesthetic and altruistic values.

### 2.2.2. Employee Engagement

The concept of engagement introduced by Socio-psychological Kahn, (1990) which is based on the theory of equity, became the reference Kumar & Pansari, (2014), which examines the involvement and produce a blueprint to improve the company's service, customer satisfaction and the resulting performance of the company. Whereas involvement of employees to improve customer satisfaction and increase sales turnover of employees is likely to cause financial benefit for short-term goals (Harter, Schmidt, & Hayes, 2002). Whereas for the purpose of continuing need to understand that there are differences between the two linkages involvement in the engagement that employees and companies, where employee involvement and the company predicted by job characteristics and predictable organization of procedural justice (Saks, 2006). Companies that have been running with a fair procedure and has run employee involvement in the operation, certainly very difficult to be exceeded by competitors because has a key competitive advantage (Macey & Schneider, 2008); (He, Zhu, & Zheng, 2014). Consistency employees in relation to the company's involvement was always influenced by the demands and requests that caused fatigue that tends to be seen as an obstacle to be negative and vice versa (Crawford, Lepine, & Rich, 2010). According to Gruman & Saks, (2011), in the model of management engagement agreement performance and amenities engagement provide input on employee engagement and may change depending on the needs of employees based on assessment and feedback, but it should be underlined that the process is ongoing and sustainable.

Further explain the engagement of management to begin the process of employee engagement is necessary in order to stimulate the energy, focus and intensity, or the feeling of engagement. Kahn, (1990) (in Gruman & Saks, (2011), notes that three psychological conditions that generate engagement parallel logic of the contract in that people tend to enter into a contract which has clear benefits (meaningfulness psychological), guarantees the protective (safety psychological), and they believe that they have the resources to respect (availability psychological). At this stage of facilitating the involvement, the main focus is on identifying and providing employees with the resources they need to become involved. This involves resources that will allow employees to proficient understanding, safety, and availability. The main activity at this stage involves the design work, leadership, training, coaching and social support. Key components of performance management as a cornerstone of the process is the assessment and evaluation of employee performance. In the context of employee involvement, this process should also include an assessment of employee engagement behavior (Eg, persistence, proactively, the expansion of the role, and adaptability) other than job performance. The main activity at this stage is the performance assessment and feedback. However, for the purpose of increasing engagement, trust and fairness perceptions are very important. Employee engagement is expected to have an immediate effect on job performance improved; the theory of engagement, the employees have been linked to job performance. Public Engagement has important implications for the performance of employees. Energy and focus are inherent in working enga-

gement allows employees to bring their full potential at work. The focus this energy to improve the quality of their core job responsibilities. They have the capacity and motivation to concentrate only on the task at their hands. the prediction by Bal, et al, (2013), that accommodates HRM (Human Resource Management) will be successful if it meets the specific needs of employees, selection, optimization and compensation strategies. And it takes leadership role to determine the success of the engagement, as predicted by Breevaart et al., (2014), that transformational leadership and appreciate the unity contributed to the more favorable working environment;, and in the process takes the professionalism of companies and PR (Public Relations) to strengthen internal communication with employees to build a culture of transparency with management (Mishra, Boynton, & Mishra, 2014).

### 2.2.3. Supply Chain Engagement and Organization Engagement

The company's business success is seen as a sustainable competitive advantage involving the value chain from retailer and supplier collaboration (Berning & Venter, 2015). The role of suppliers in the supply chain is important to be involved to bridge between buyers and suppliers as process of Customer Relationship Management (Duffy, Fearn, Hornibrook, Hutchinson, & Reid, 2013). It is necessary for the selection of suppliers to achieve success in performance management relationships within a competitive market to improve the performance of the purchase (Kannan & Choon Tan, 2006). Cherin, (2000), argues that the concept and practice of organizational involvement is not in the language or understanding of management; it remains trapped, unarticulated, and only described in vague terms. According to (Juhdi, Pa'wan, & Hansaram, 2013), Engagement Organization predicted to produce the success of employees, organizational and financial performance, but rarely studied; the involvement of different organizations with a commitment; Engagement the organization is the desire to remain as a member of a particular organization which translated into a willingness to conform to the values of the organization and exert every effort for the good of the organization as a whole; on the other hand the involvement of the organization is the absorption rate of a person's role in an organization's performance. More recently an involvement of research organizations investigated by Barrick et al, (2015), presents a comprehensive theory of the involvement of the collective organization, integrating theoretical engagement with resource management model. They propose that the engagement may be considered as construct an organizational level is influenced by organizational practices that focus on motivation to represent the level of resources in the company. Specifically, they evaluated three different organizational practices as a motivating source of job design, human resource management practices, and CEO transformational leadership that can facilitate the perception that members of the organization as a whole physically, cognitively, and emotionally invested in the workplace. Their theory is based on the idea that, when used together, the organization's resources to maximize each with three underlying psychological conditions necessary for full engagement; namely, the psychological significance, security, and availability.

Resource management model also underscores the value of members of the top management team to implement and monitor the progress of the company's strategy as a means to enhance the effects of organizational resources on the involvement of collective organization. They empirically test the theory in a sample of 83 companies, and provide evidence that the involvement of the collective organization mediates the relationships between organizational resources and corporate performance. In addition, they found that the implementation strategy of moderate positive relationship between the three organizational resources and the involvement of collective organization. While Plester & Hutchison, (2016), recommend to

the effects on an organizational level, creating an enjoyable workplace that stimulates pleasure greater overall involvement with the team, unit or organization itself.

## 3. Perspectives on Theory

In discussions by Newbert, (2007), based on the literature seen a shift that scholars can conduct empirical research on the RBV in the future might want to move away from the approach to the heterogeneity of the resource dominant to organizing approach or approaches ability dynamic to test theoretical models that better reflect the circumstances that took place on the use of Model RBV native of J. Barney, (1991). Further Newbert (Newbert, 2008), stated in the description that view is based on the company's resources (RBV) hypothesize that the exploitation of valuable, scarce resources and the ability to contribute to the competitive advantage of companies, which in turn contributes to its performance and the results showed that the value and scarcity associated with a competitive advantage by performance mediates the relationship of scarcity and performance.

RBV theory debate over the last 20 years, has reached a pre-eminent position among theories in the field of strategy, but it remains questionable nature of its accuracy and how methodological approaches to empirical research on RBV. Lockett, et al., (2009), it has been suggested that the resources are complex, unobservable and difficult to measure the greatest possible importance and further, it has been noted that the problem of multicollinearity and endogeneity hypothesis testing in the area of problems, particularly with the data level of the company. Addressing these issues will not be easy, probably more effort needs to be devoted to data collection at the business unit level or with a sample of smaller firms where less complex set of resources. Researchers management may need to be more diligent in the search for a suitable instrument to address the endogeneity problem in common variable used. Although the core message RBV is attractive, easy to understand and easy to teach, but the nature of RBV that is not determined from two basic concepts for the resources and values plus RBV concern because there is a problem with the explanation that narrow of RBV of competitive advantage of companies, for which Kraaijenbrink, et al (2010), argues for further directions, perhaps, is to move RBV in inherently dynamic and subjectively frame. In a popular proverb warns companies that they must innovate or die, the maxim also applies to organizational theory J. B. Barney, Jr, & Wright, (2011), stated that one of the implications of the maturity of a theory lies in the critical moments that followed the revitalization or decrease. Similarly, where the RBT, they revitalize and empirically analyze the assumptions underlying the theory of inductive perspective. Three major trends appear to coexist with theory RBT namely, resource-based view, knowledge-based view and relational view. However, recently at a forum in operations management journals, raised several questions aimed at RBV / RBT for operations management research, it was revealed by the editorial-in-chief of the Journal of Operations Management by Ketokivi, (2016) which emphasizes the importance of operating performance or financial, to avoid confusion with a competitive advantage. In the operations management research the authors were asked to be cautious in applying the theoretical basis if it is to present arguments about performance and competitive advantage as well as to answer the question why and what the implications are showing considerable heterogeneity. This suggestion is based on the span of the last 20 years in research and operations management in the debate were taken from two of literature, the first article by Hiitt, (2016) which identifies problems and shortcomings of the conceptual clarity and validity of the measurements in research RBT application operations management, and (claimed the resource-based view is a theory); The second article of the Bromiley & Rau, (2016), found heterogeneity

resource management research operations empiric not explained by RBV and RBV take a critical stance that is not required for linking resources to performance and offers practice-based view (PBV) because RBV is not a theory but a view (debate views).

### 3.1. Dynamic Capability (DC)

In view of the resources, the dynamic is in the ability, as well as the capacity of organizational learning that generates additional opportunities from time to time, complementary, interrelated and co-specialization which are all talking about how to combine resources to create value and the idea of a combination of resources and recombination is central to the literature on capabilities. While the ability can be defined as the creation of resources and production factors simultaneously in productive activities (D. J. Teece, Pisano, & Shuen, 1997); (Helfat & Peteraf, 2003). According to D. J. Teece, (2007), Companies need dynamic ability to adapt to environmental changes and shaping the ecosystems they inhabit. dynamic capabilities made possible the company could renew competencies to respond to the changing needs of the market, studying the integration, reconfigure internal and external skills through company resources (D. J. Teece et al., 1997). Dynamic capabilities approach also provides a coherent framework for integrating existing concepts into empirical knowledge and facilitate what has been its recommendation by decision makers (D. Teece & Pisano, 2003), this is referred to discussions Newbert, (2007) and the next direction proposed by Kraaijenbrink et al., (2010) previous. Dynamic capabilities framework mentioned by Augier & Teece, (2007) has touched a "matchless" as one of the main intellectual foundation for the modern theory of resources based on business strategy, organizational routines and capabilities theory which placed the management of entrepreneurship in the theory of multinational companies as a framework of dynamic capabilities. More dynamic capabilities framework in touch Penrose help to explain the essence of the business enterprise profits escape from the trap absence explained Augier & Teece, (2007), Augier & Teece, (2009) that the company formed by the product of its own history shaped by managers not to get caught by the decision infestation they call the evolution of design. Paradigm dynamic capabilities view the company as an incubator and a repository for replicating specific asset companies such as technology and other intangible assets which require the manager's role in improving performance (D. J. Teece, 2010). Dynamic capability is also able to sense and capture the various forms of opportunities that arise. Can maintain its competitiveness by improving, combining, protecting, and reconfigure the intangible and tangible assets (Wu, 2010). Need to understand that the dynamic competition (Schumpeter) is a competition posed by the product and process innovation in a competitive market by bringing injustice and anti-trust price competition (anti-trust) of the product and the company which impact on cancellation of purchases by customers (Gregory Sidak & Teece, 2009). To deal with it, D. J. Teece, (2010) believes that needed a business model that describes the design of value creation, delivery and retrieval mechanism work that can provide value to the customer, persuade customers to pay for value and convert the payment into profits. For practical purposes, Leih, et al (2015) states that the dynamic capabilities can be decomposed into three sets of activities, namely, sensing opportunity, use it, and change the organization to do so. Business model innovation, implementation, and change is a major output of each of these activities and demonstrate that the dynamic capabilities framework can better understand the role of business model in the long-term performance of the business enterprise. Dynamic capabilities framework pointed to the importance of high-level cooperation in the internal supported by a culture of openness and sharing knowledge. It also shows that activities such as sensing can be supported by decentralized combined with extensive internal

communication. As for the business model innovation is different in different management requires the intervention of leaders of different will the model are conducted to achieve success (Foss & Stieglitz, 2015). In the real world, D. J. Teece, (2015) stated the manager was called to fill the role of entrepreneurship and leadership role in explaining the allocation of resources and the heterogeneity among enterprises for sensing opportunities, develop and implement a viable business model, the ability to build and guide the organization through the transformation. An understanding of organizational management and entrepreneurial skills will contribute to the economic model that is more realistic and better understanding by policy makers of the dynamics of the industry and as a requirement of innovation. Oliver, (2016) examines the theory of 'dynamic capabilities' in a media company in the UK (BskyB) to illustrate the importance of including a critical evaluation of the company's ability to adapt and change from a subscription-based television company into a multi-product, multiplatform media company; stated in conclusion that the theory of dynamic capabilities provide a valuable contribution to the debate about how media companies can maintain the company's high level of performance in response to rapidly changing market conditions. The theory of dynamic capabilities provide precise views for use in examining how media companies to adapt to a rapidly changing environment. In a dynamic market, companies must adapt and refresh their resource base in order to develop new skills and competencies that will provide a sustainable competitive advantage over time.

### 3.2. Dynamic Marketing Capabilities (DMC's)

At this time, the literature on dynamic capabilities is still strongly influenced by the evolution of the economy (Helfat & Peteraf, 2003), Technology by Lavie (Lavie, 2006), and innovation management by Teece et al. (D. J. Teece et al., 1997). Barrales-Molina (2014), stated that the current one significant problem happens is the role of the marketing function in the development of dynamic capabilities that have spawned a new term Dynamic Marketing Capability and any attempt to explain the DMC must begin with a common foundation, namely DMC is the ability to use knowledge of the market to adapt to the source organizational talent and ability. Previous, Bruni & Verona (2009) stressed the importance of marketing capabilities play a role in the development of new products in the pharmaceutical companies and involving the dispersion process knowledge, build social networks, as well as integrated with other processes. Easterby-Smith, Lyles, & Peteraf, (2009) believes that the ability of dynamic marketing involves the exchange process with external experts to exchange knowledge about what is happening in the industry and with customers, as well as cross-functional processes within the enterprise. Fang & Zou, (2009), develop marketing conceptualization dynamic capabilities (MDCs) to investigate the development of the international joint venture (IJVs), explores the effect on IJVs performance and competitive advantage. Their study found empirical support for their effect on the competitive advantage IJVs MDCs and performance. In addition, the MDCs found to be influenced by the level of resources IJV complementary to the culture and organizational structure. According to Wang, Hu, & Hu, (2013), in a growing market, dynamic marketing capabilities (DMC) enables companies to identify important market signal, evaluating new processes or services, and design and implement effective responses to market changes. Their results showed a direct effect on the ability of dynamic marketing of the company's market orientation, the use of IT to support CRM, IT infrastructure capabilities and functions. While Tan & Sousa, (2015) suggests that the principles of the theory of dynamic capabilities are dynamic capabilities as well as the marketing capability is an important determinant in the company's competitive advantage and performance (Fang & Zou, 2009). The reason is that the ability of dynamic marketing allows companies to meet changing customer needs and respond to competitive pressures in the

foreign market, with the right to adapt, integrate, and (re) configuring the skills of internal and external to the organization, resources, and functional competence including product development, price, distribution, and communication (D. J. Teece et al., 1997); (Griffith, Yalcinkaya, & Calantone, 2010). Therefore, a very dynamic marketing capabilities inherent in the organization so that it has a high level of value, rare, difficult to imitate and irreplaceable.

## 4. Results and discussion

Starting from the literature review in the article by El-Gohary, (2010), in e-marketing study in 365 scientific articles published in 89 journals indexed by Scopus 2003-2010 found any research gaps that need further research to investigate the relationship between the implementation of e-Marketing and small business performance. Constantinides, (2014) provide an explanation on the foundations of e-marketing with derivatives, Web1.0 is a website and web 2.0 is social media. For far more types of similar applications increase, but the most market share and ranks the first is used, particularly in view of SMEs is Facebook (Stelzner (Stelzner, 2015); *We are Social: Digital in 2016*, 2016). Thus, the purpose of using Facebook as a marketing strategy is to establish social relations in the social networking business (Ellison et al., 2007); (Chu, 2011). Due to the nature and effect of social media impact on business and management with the integration in establishing a business relationship with the customer into the system online in social networking (which was originally performed by traditional / offline) was born a new paradigm called social CRM, therefore, talk social media as well as discuss social CRM (Askool & Nakata, 2011); (Heidemann et al., 2012). Meanwhile, to achieve performance goals in the Social CRM customer relationship, Lehmkuhl & Jung, (2013) identify the impact of customer engagement on a matrix of traditional performance and customer relationships, as well as statement by Trainor et al., (2014), that Social CRM capabilities are influenced by customer-centric management system and social media technology that is proven to positively associated with the performance of the customer relationship. From the second that opinion, so take it can be interpreted in Social CRM processes to achieve performance enterprise customer relationship must involve the customer in the process Choudhury & Harrigan, (2014) and to measure the performance of Social CRM, Harrigan & Miles, (2014) in his article stated, the importance of customer engagement in the use of social media as a marketing strategy. In the second linkage, Kumar & Pansari, (2015) find a second engagement (CE & EE) while positively impacting the company's performance despite higher customer engagement influence compared to the involvement of employees, therefore, Kumar & Pansari, (2015) advised to re-examine the influence of each engagement on the performance of the company to achieve competitive advantages. At this time, significant problems that arise and the concept of dynamic marketing capabilities is the role and function of marketing DMCs proposed by Barrales-Molina et al., (2014) for that, each dynamic marketing research capabilities must start from the bottom of DMCs that ability to use knowledge of the market adapted to the resources and organization. There is a need to answer the questions raised by clicking collaborative competitive advantage through the concept of engagement and dynamic marketing capabilities with a new concept that I call temporarily with a dynamic marketing engagement. The concept of engagement is the foundation of customer engagement as the goal of social CRM, the second engagement refers to a competitive advantage with the dimensions of engagement, then combined with a dynamic ability that is focused on marketing and its role will be enabled with a competitive advantage through the involvement. In the process of engagement mindset dynamic capabilities, Second engagement (CE & EE) aims to improve the company's performance, the same hope in future studies presented by

Fang & Zou, (2009) to pour knowledge of the market on the company's performance and competitive advantage, and this is in line with research by Kumar & Pansari, (2015) the competitive advantage engagement dimension. Similarly, knowledge of market research by Bruni & Verona, (2009) who revealed in future studies to consider complementary source of market knowledge into competitive advantage. Furthermore, based on the research suggested by the equation Fang & Zou ( in Bruni & Verona, 2009) were followed by Barrales-Molina et al., (2014) states for further research, marketing and operations in order to collaborate to integrate market knowledge into the supply chain. In the follow-up process of this line of thinking, the author combines the direction of further study of DMCs findings Barrales-Molina et al. (Barrales-Molina et al., 2014) and competitive advantage dimensional findings engagement Kumar & Pansari (Kumar & Pansari, 2015) to be developed in the concept of a dynamic marketing engagement. In the logic of the concept mapping, DMCs (Dynamic Marketing Capabilities) overshadow the market knowledge and competitive advantage dimension overshadow engagement customer engagement, employee engagement and company performance. The author combines the supply chain to be involved in accordance with the direction of future research by Barrales-Molina et al., (2014) into the scope of marketing and operations were filled by second engagement (CE & EE). Furthermore, in the process flow of thought in the context of the concept of novelty, engagement in the supply chain and operational marketing turns into supply chain engagement. While the performance of the company became the object of which is considered by Dynamic Marketing Engagement as the novelty of the process of merging the two engagement of the concept of competitive advantage engagement dimensions, plus the engagement of the supply chain market knowledge dynamic marketing capabilities. Finally, the discussion of a conceptual model of Dynamic Marketing Engagement illustrated and in formulating the hypothesis of a merger of the research model as follows: How can knowledge of the market can affect customer engagement, employee engagement and supply chain engagement in Dynamic Marketing Engagement (DME) to affect the firm performance (see figure 1).

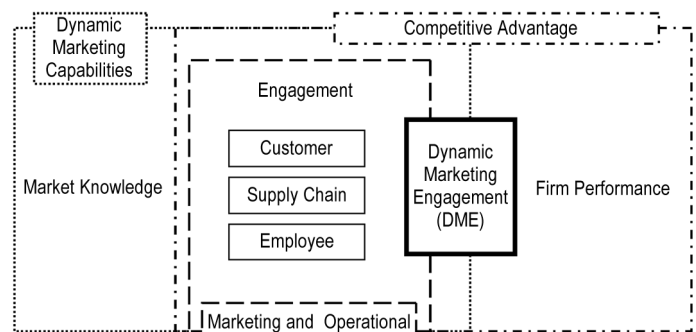


Figure 1. The Concept of Dynamic Marketing Engagement

## 5. Conclusion

Starting from differences in the results of research in the literature of e-marketing that affect the performance of the business using internet marketing media, in the catapult was a new concept in this book to meet the needs and answer the significant problem of the role of the marketing function in the dynamic capabilities that had previously been raised by Barrales-Molina et al., (2014). This concept is called "Dynamic Marketing Engagement". In the process of creation, Dynamic Marketing Engagement raised to the surface after the process of decline of RBV, RBT, DC and Dynamic Marketing Capabilities are then mated with the concept of Engagement also through the process of reduction of CRM, Social CRM, Customer Engagement, Employee Engagement and Competitive Advantage through Engagement, A new theory or concept is declared when a theory or concept expressed critical or required followed by

revitalization or with a decrease (J. B. Barney et al., 2011). This concept has fulfilled two conditions for the so-called new and further more research is needed to test these concepts in business reality. For a while the authors conclude that dynamic capabilities within the marketing function will be successfully implemented when companies engage employees, customers and supply chains into a competitive advantage strategy to improve the performance of the company, for which this concept was created.

## Resources

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# The Development Model of Creative Industry Competitiveness: Case in South Sulawesi, Indonesia

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## Abstract

*The purpose of this study was to analyze the influence of external factors on organizational resources, organizational capabilities, and company competitiveness. Then, to analyze the influence of organizational resources, and organizational capabilities on company competitiveness. In addition, this study also investigated the indirect effect of external factors on company competitiveness through the mediating role of both organizational resource variables, and organizational capabilities. This study was conducted at the creative industry centers of the craft sector in South Sulawesi province, namely North Toraja Regency, Tana Toraja Regency, and Makassar City for 6 months in 2019. This study uses primary data by using questionnaires and interviews in 204 creative industry business units as the sample, and the manager or business owner as a research respondent. The analytical method used both descriptive statistical analysis, and analysis of structural equation modeling to test hypotheses. The results showed that external factors including aspects of social economic, information technology, government policies, competitors, suppliers, and aspects of consumers have a significant effect on organizational resources as well as organizational capabilities. Both organizational resources and organizational capabilities have a significant effect on company competitiveness. But, external factors have an insignificant effect on company competitiveness. However, external factors have a significant effect on company competitiveness indirectly through the mediating role of either organizational resource variables or organizational capabilities.*

**Keywords:** external factors; organizational resources; organizational capabilities; company competitiveness.

## 1. Introduction

Creative economy is an economic concept in the new economic era based on creativity and comes from individual knowledge, skills, and talents to create prosperity (Howkins, 2002). As a part of national economic movers, creative industries were built based on creativity, expertise, and talents that potentially can improve social welfare through creativity and innovation (Simatupang, 2008). Nowadays, many industries compete in the global market not only based on price or product quality but also more focus on technology aspect, innovation aspect, creativity aspect and ideas (Esti & Suryani, 2008).

The fact proved that creative industries are one of important elements for both national and global economic development in Indonesia because of their contributions to various aspects of life include economically and non-economically. Creative industries have been contributed to the national economy either emerging countries or advanced countries (Suryana, 2013; Martinaityte & Kregzdaitė, 2015). According to Syarif et al. (2015), creative industry in Indonesia has a significant role in reducing unemployment.

Until now, efforts to develop creative industries in Indonesia face many challenges such as availability of human resources creative, competitive natural resources, cultural resources accessible, financing/ capital, infrastructure and technology, and institutions that support the development of creative industries (Tambunan, 2010; Hamid & Susilo, 2011). Creative industries are developed through innovative ideas that contribute to develop products, goods, and services. Then, creative indus-

tries are also based on the intensive use of technology so as to encourage innovation (Muller et al. 2009).

Previous studies that investigate the creative industry have been found in management field literature. Most of the researchers found that the creative industry's development affected by numerous variables, such as Satria & Prameswari (2011) asserted that a number of creative industries didn't get government support fully so that companies couldn't able to maximize its role in improving the local economy as well as national. Fahmi et al. (2016) emphasize the importance of human resources and product diversification as important elements for the development of creative economies in both advanced and developing countries. Then, cultural factors are an important element in developing creative industries in a region (Jianjun & Baoqin, 2008). Utami & Lantu (2014) said that government policy is very important role in developing the competitiveness of creative industries.

Furthermore, Mahmood & Hanafi (2013) and Sulaiman et al. (2015) found that creativity and innovation variables influence the competitiveness of creative industries. Other findings by Yi-Ching Chen et al. (2012) that emphasize the importance of intellectual capital and organizational commitment in developing creative industries. In line with previous findings, Munizu et al. (2017) say that the competitiveness of the manufacturing industry is determined by quality culture, production technology, supply chains, and modern management practices. Furthermore, the development effort of creative industry competitiveness is affected by material, human resource, marketing, finance, and technology aspect. Moreover, organizational



capabilities and internal business strategies are important variables in improving the business competitive advantage of SMEs (Cunningham & Rowley, 2007; Murray et al. 2011; Heiss, 2017)

Based on data and empirical facts that have been described above, then the development company competitiveness is determined by a number of important factors that sourced from external environment and internal organization. Therefore, the conceptual framework model of the study can be presented in the figure below.

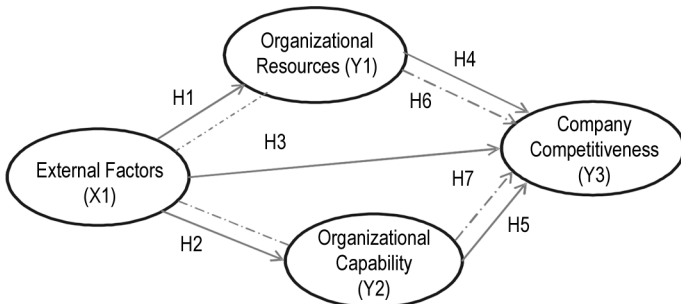


Figure 1. Conceptual Framework Model

Furthermore, in accordance with the conceptual model that has been provided above, the research hypothesis can be formulated as follows:

- H1: Variable of external factors has a significant effect on organizational resources.
- H2: Variable of external factors has a significant effect on organizational capability.
- H3: Variable of external factors has a significant effect on company competitiveness.
- H4: Variable of organizational resources has a significant effect on company competitiveness
- H5: Variable of organizational capability has a significant effect on company competitiveness
- H6: Variable of external factors indirectly influences company competitiveness through mediating role of organizational resources variables.
- H7: Variable of external factors indirectly influences company competitiveness through mediating role of organizational capabilities variables.

## 2. Methods

This study was conducted at three areas of creative industry center, namely: Tana Toraja, North Toraja, and Makassar. The population of this study was 2,758 units. Where the minimum number of samples is determined by using SLOVIN formula at  $\alpha = 10\%$ . Based on the formula, the minimum samples in this study were 100 business units (Sekaran & Bougie, 2016). Then, there were 204 questionnaires were obtained after the primary data collection activity finished. Furthermore, the description of sample distribution based on research location can be seen in the table below.

No.	District/ City/ Region	Frequency (unit)	Percentage (%)
1.	Tana Toraja Regency	48	23.53
2.	North Toraja Regency	62	30.39
3.	Makassar City	94	46.08
	Total	204	100.00

Tabel 1. Distribution of samples by region  
Source: Data processed, 2019

Based on the above table, it can be explained that the number of samples of this study were 204 respondents, who came from three districts/cities namely Tana Toraja District by 48 respondents (23.53%), North Toraja District by 62 respondents (30.39%), and Makassar City as many as 94 respondents

(46.08%) of the total number of respondents. This study uses both secondary data and primary data. Primary data were collected by questionnaire and interview techniques, while secondary data was obtained through relevant documentation and reports from local government and other relevant sources. The variables of this study consisted of 4 variables i.e.: external factors, organizational resources, organizational capabilities, and company competitiveness.

Respondents' perceptions are measured by using a Likert scale with a score of 1 to 5. Item validity has been tested by using the Pearson correlation method, where every indicator or item has a correlation value of more than 0.30 from the total correlation. Meanwhile, instrument reliability also has been tested by using Cronbach Alpha coefficient ( $\alpha$ ), where every variable has  $\alpha$  value is greater than 0.60 (Hair et al., 2014; Sugiyono, 2017). This study used both descriptive statistical analysis and Structural Equation Modeling (SEM) as the primary method of analysis for proving hypotheses.

## 3. Results and Discussion

### 3.1. Descriptive Statistical Analysis

The results of descriptive statistical analysis are a description of respondents profile which includes variables of gender, age, level of education, position in the company and length of business for 204 research respondents as shown in the table.

No.	Description	Total (persons)	Percentage (%)
I.	Gender:		
	a. Male	155	75.98
	b. Female	49	24.02
II.	Age :		
	a. 18 - 30 years	28	13.73
	b. 31 - 40 years	99	48.53
	c. 41 - 50 years	55	26.96
	d. > 50 years	22	10.78
III.	Education level :		
	a. High school	130	63.73
	b. Diploma	39	19.12
	c. Bachelors (S1)	30	14.71
	d. Post graduates (S2)	5	2.45
IV.	Position in company :		
	a. Owners	156	76.47
	b. Managers	48	23.53
V.	Length of business:		
	a. 1 - 10 years	57	27.94
	b. 11 - 20 years	105	51.47
	c. > 20 years	42	20.59

Tabel 2. Description of Research Respondent Profiles  
Source: Data processed, 2019

The results in the table above showed that from 204 respondents in this study, most were male as many as 155 people or 75.98%, while women were 49 people or 24.02%. Then, by age, most of respondents were aged between 31-50 years, i.e. 75.49% or 154 people. From the aspect of education level, most respondents of this study were 130 high school graduates or 63.73%, while the rest were respondents who had education at the diploma, undergraduate, and postgraduate levels. The data in the table also provides information that respondents in this study dominantly were owners as many as 156 people or 76.47%, whereas managers of 48 people. Additionally, most of the respondents have been running their business as long as 11-20 years i.e.: 105 people or 51.47% from the total respondents.

The results of descriptive statistical analysis also illustrate the level of implementation of variables and indicators based on respondents' perceptions. This research variable consists of external factors (X1), organizational resources (Y1), organizational capabilities (Y2), and company competitiveness (Y3). External factors consist of six indicators that measured it,

namely X1-1 to X1-6. Then, internal resources have five indicators that measured it, namely, Y1-1 to Y1-5. Furthermore, organizational capability has four indicators that measured it, namely Y2-1 to Y2-4. In addition, company competitiveness has six indicators that measured it, namely, Y3-1 to Y3-6.

Related to these results, the level of implementation is grouped into five categories: (1) 1.00-1.80 = very good / very high / very important; (2) 1.81-2.60 = good / high / important; (3) good enough / high enough / important enough; (4) not good / low / not important; and (5) not good / very low / not important. Completely, results of descriptive analysis of the variables and indicators of this study can be presented in the table.

Variable/ Symbols	Indicators	Mean	Std. Deviation	Description
External Factors (X <sub>1</sub> )	X1-1	4.27	0.742	Very good
	X1-2	4.10	0.671	Good
	X1-3	3.97	0.560	Good
	X1-4	3.35	0.675	Good enough
	X1-5	4.02	0.740	Good
	X1-6	3.99	0.832	Good
Organizational Resources (Y <sub>1</sub> )	Y1-1	3.98	0.701	Good
	Y1-2	4.11	0.668	Good
	Y1-3	4.24	0.723	Very good
	Y1-4	3.32	0.765	Good enough
	Y1-5	4.08	0.701	Good
Organizational Capabilities (Y <sub>2</sub> )	Y2-1	3.79	0.670	Good
	Y2-2	3.25	0.679	Good enough
	Y2-3	3.77	0.677	Good
	Y2-4	4.10	0.777	Good
Company Competitiveness (Y <sub>3</sub> )	Y3-1	4.37	0.646	Very good
	Y3-2	4.15	0.577	Good
	Y3-3	3.76	0.869	Good
	Y3-4	3.96	0.876	Good
	Y3-5	4.19	0.847	Good
	Y3-6	3.18	0.935	Good enough

*Table 3. Description of Research Indicators and Variables*  
Source: Data processed, 2019

Based on the table above, it can be explained that variable of external factors has 6 valid indicators. From value of mean, it can be inferred that X1-1 indicator, namely social economic aspect has a higher mean value of 4.27, whereas X1-4 indicator, namely competitor aspect has a lower mean value, which is 3.35. Then, variable of organizational resource has 5 valid indicators. From value of mean, it can be inferred that Y1-3 indicator, namely market and marketing network aspects has a higher mean value of 4.24, while Y1-4 indicator, namely aspect of production technology has a lower mean value, which is 3.32.

Furthermore, it can be concluded that variable of organizational capability has 4 valid indicators. Based on value of mean, indicator Y2-4, namely the ability to build external partnerships (suppliers, distributors, and customers) has a higher mean value of 4.10, while indicator Y2-2, namely ability to develop products has a lower mean value, which is 3.25. In addition, variable of company competitiveness has 6 valid indicators. Based on value of mean, indicator Y3-1, namely cost aspect has a higher mean value of 4.37, whereas indicator Y3-6, namely aspect of product innovation has a lower mean value, which is 3.18.

Therefore, in accordance with the results of descriptive analysis, it can be inferred that there are some important aspects that need to be improved by managers of creative industries in order to get high company competitiveness i.e.: aspects of competitor analysis and competition production technology, products development, and product innovation aspects.

### 3.2. Confirmatory Factor Analysis

The results of confirmatory factor analysis (CFA) on external factors variable showed that there were 6 valid indicators that forming construct of external factors, namely: socioeconomic aspects (X1.1), information technology advanced aspects (X1.2), government policy aspects (X1.3), competitors aspects

(X1.4), suppliers aspects (X1.5), and customers aspects (X1.6). The completely results of confirmatory factor analysis can be shown in the table.

Indicators <--- Variable	Estimate (Standardized)	C.R.	Prob.	Description
X1.1 <--- External Factors	0.654	Fix		Significant
X1.2 <--- External Factors	0.776	6.760	0.000	Significant
X1.3 <--- External Factors	0.598	6.152	0.000	Significant
X1.4 <--- External Factors	0.329	3.705	0.000	Significant
X1.5 <--- External Factors	0.416	4.553	0.000	Significant
X1.6 <--- External Factors	0.463	5.005	0.000	Significant

*Table 4. Variable of External Factors – CFA*  
Source: Data processed, 2019

Based on the table above, it can be known that indicators X1.1, X1.2, X1.3, X1.4, X1.5, and X1.6 are valid indicators that forming construct of external factors (X1). These results supported by probability value of each indicator variable that smaller than standard  $\alpha$  value (prob. < 0.05), and critical ratio (C.R.) value of each indicator is greater than t-table value (C.R. > 1.965). Furthermore, it can be inferred aspects of information technology (X1.2) was a very important indicator that forming construct of external factors with a loading factor or estimate of 0.776 which is greater than other indicators in the construct. Meanwhile, aspects of competitors (X1.4) has a lower loading factor value (0.329) if compared by other indicators in the construct.

Then, the results of the confirmatory factor analysis (CFA) on organizational resource variables indicate that there were 5 valid indicators that forming construct of organizational resources, namely: raw material aspects (Y1.1), labor aspects (Y1.2), market and marketing networking aspects (Y1.3), production technology aspect (Y1.4), and financial aspects (Y1.5). Briefly, the results of the confirmatory factor analysis can be seen in the table.

Indicators <--- Variable	Estimate (Standardized)	C.R.	Prob.	Description
Y1.1 <--- Organizational Resources	0.782	Fix		Significant
Y1.2 <--- Organizational Resources	0.689	8.655	0.000	Significant
Y1.3 <--- Organizational Resources	0.708	8.889	0.000	Significant
Y1.4 <--- Organizational Resources	0.753	9.399	0.000	Significant
Y1.5 <--- Organizational Resources	0.498	6.210	0.000	Significant

*Table 5. Variable of Organizational Resources – CFA*  
Source: Data processed, 2019

Data in the table above explains that indicators Y1.1, Y1.2, Y1.3, Y1.4, and Y1.5 are valid indicators that forming organizational resources construct (Y1). These results are supported by probability value of each indicator variable is smaller than standard  $\alpha$  value (prob. < 0.05), and critical ratio (C.R.) value of each indicator is greater than t-table value (C.R. > 1.965). Then, it can be inferred that raw material aspect (Y1.1) was a very important indicator that forming organizational resources construct with a loading factor value or estimate of 0.782 which is greater than other indicators in the construct. Meanwhile, financial aspect (Y1.5) has a lower loading factor value (0.498) if compared with other indicators in the construct.

The results of the confirmatory factor analysis (CFA) on organizational capability variables indicate that there were 4 valid indicators that forming construct of organizational capability, namely: human resource planning ability (Y2.1), product development ability (Y2.2), aspect of information technology (Y2.3), and ability to build external partnerships (Y2.4). Completely, the results of the confirmatory factor analysis can be seen in the table 6.

Based on the table 6, it can be known that indicators Y2.1, Y2.2, Y2.3, and Y2.4 are valid indicators that forming construct of organizational capability (Y2). These results are supported by probability value of each indicator variable that smaller than standard  $\alpha$  value (prob. < 0.05), and critical ratio (C.R.) value of

Indicators <--- Variable	Estimate (Standardized)	C.R.	Prob.	Description
Y2.1 <--- Organizational Capabilities	0.571		Fix	Significant
Y2.2 <--- Organizational Capabilities	0.722	6.615	0.000	Significant
Y2.3 <--- Organizational Capabilities	0.803	6.817	0.000	Significant
Y2.4 <--- Organizational Capabilities	0.659	6.299	0.000	Significant

*Table 6. Variable of Organizational Capabilities – CFA  
Source: Data processed, 2019*

each indicator which is greater than t-table value (C.R.> 1.965). Therefore, it can be concluded that the ability to use information technology (Y2.3) is a very important indicator that forming organizational capability construct with a loading factor or estimate of 0.803 which is greater than other indicators. Whereas, the ability to plan human resources or labor (Y2.1) has a lower loading factor value (0.571) than other indicators in the construct.

Then, the results of confirmatory factor analysis (CFA) showed that construct of company competitiveness has 6 valid indicators that formed it. include cost aspects (Y3.1), quality aspects (Y3.2), flexibility aspects (Y3.3), speed of delivery aspect (Y3.4), speed of product introduction in the market aspects (Y3.5), and product innovation aspects (Y3.6). Briefly, the results of confirmatory factor analysis as in the table.

Indicators <--- Variable	Estimate (Standardized)	C.R.	Prob.	Description
Y3.1 <--- Company competitiveness	0.383		Fix	Significant
Y3.2 <--- Company competitiveness	0.372	4.964	0.000	Significant
Y3.3 <--- Company competitiveness	0.658	4.769	0.000	Significant
Y3.4 <--- Company competitiveness	0.937	5.080	0.000	Significant
Y3.5 <--- Company competitiveness	0.785	5.012	0.000	Significant
Y3.6 <--- Company competitiveness	0.430	3.984	0.000	Significant

*Table 7. Variable of Company Competitiveness – CFA  
Source: Data processed, 2019*

The results in the table showed that indicators Y3.1, Y3.2, Y3.3; Y3.4, Y3.5, and Y3.6 are valid indicators that building construct of company competitiveness (Y3). These results are supported by probability value of each indicator variable that smaller than standard  $\alpha$  value (prob. < 0.05), and critical ratio

(C.R.) value of each indicator is greater than t-table value (C.R. > 1.965). Then, the aspect of product delivery speed is a very important indicator that forming company competitiveness construct with a loading factor or estimate of 0.937 which is greater than other indicators. Whereas, aspect of product quality has a lower loading factor (0.372) if compared with other indicators in the construct.

### 3.3. Structural Equation Model Analysis

Process of structural equation models (SEM) analysis can be conducted through two stages i.e.: (1) testing the suitability of the model, and (2) analyzing the relationship pattern or effect among variables. Testing the suitability of structural equation model is based on the cut-off value each standard criterion. Briefly, the results of testing the fit of structural model of the relationship between variables of external factors toward organizational resources, organizational capabilities, and company competitiveness can be presented as follows.

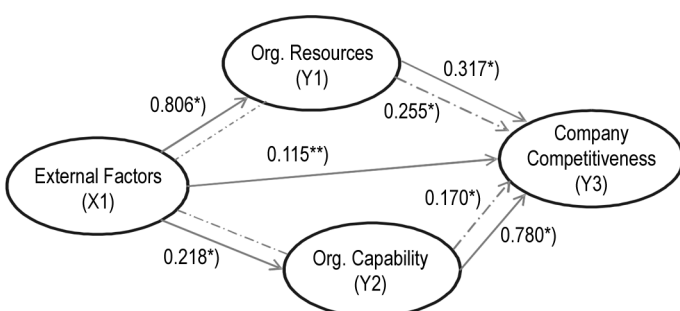
Criterion Standard Value	Result	Conclusion
Chi-Square = expected small	22.118	Marginal
CMIN/DF $\leq$ 2.00	1.708	Fit/ good
GFI $\geq$ 0.90	0.984	Fit/ good
RMSEA $\leq$ 0.08	0.063	Fit/ good
CFI $\geq$ 0.95	0.977	Fit/ good
TLI $\geq$ 0.95	0.968	Fit/ good

*Table 8. Result of Goodness of Fit Test  
Source: Data processed, 2019*

Based on the table above, it can be known that from six criteria used, there were five criteria met the standard (CMIN/DF, GFI, RMSEA, CFI, and TLI), whereas Chi-Square value didn't met criteria standard (marginal). Therefore, this model can be used for further analysis purposes, especially in testing the research hypothesis. Completely, the results of testing the empirical model of the effect of external factors on organizational resources, organizational capabilities, and company competitiveness can be presented sequence way in the table 9 and figure 2.

Hypotheses	Mediating Variables	Path Coefficient	Critical Ratio (C.R.)	Sig.	Description
Direct Effect (H1 - H5)					
Ext. Factors $\rightarrow$ Org. Resources	-	0.806	8.160	0.000	Sig. (H1, supported)
Ext. Factors $\rightarrow$ Org. Capability	-	0.218	2.447	0.024	Sig. (H2, supported)
Ext. Factors $\rightarrow$ Comp. Competitiveness	-	0.115	1.880	0.068	Not sig. (H3, not supp.)
Org. Resources $\rightarrow$ Comp. Competitiveness	-	0.317	3.133	0.005	Sig. (H4, supported)
Org. Capability $\rightarrow$ Comp. Competitiveness	-	0.780	6.180	0.000	Sig. (H5, supported)
Indirect Effect (H6- H7)					
Ext. Factors $\rightarrow$ Comp. Competitiveness	Org. Resources	0.255			Sig. (H6, supported)
Ext. Factors $\rightarrow$ Comp. Competitiveness	Org. Capability	0.170			Sig. (H7, supported)

*Table 9. Results of Research Hypothesis Testing  
Source: Data processed, 2019*



\*) Significant at  $\alpha = 5\%$   
\*\*) Not Significant

*Figure 2. Empirical model*

Based on above results, it can be concluded that variable of external factors have a direct effect and significant on organizational resources. This result is supported by value of critical ratio (C.R.) which is greater than value of t-table (8.160 > 1.965) and also supported by significance value (sig.) which is smaller than the standard  $\alpha$  value = 5% (0.00 < 0.05). Therefore, it can be inferred that the first hypothesis (H1) is supported by empirical data. Then, external factors have a direct effect and significant on organizational capability. This result is proven by value of critical ratio (C.R.) which is greater than value of t-table (2.447 > 1.965) and also supported by significance value (sig.) which is smaller than standard  $\alpha$  value = 5% (0.024 < 0.05). Based on this result, it can be concluded that the second hypothesis (H2) is supported by empirical data. Additionally, variable of external factors have a positive direct effect but non-significant on company competitiveness. It can be seen from the

value of critical ratio (C.R.) which is smaller than t-table value ( $1.880 < 1.965$ ) and value of significance (sig.) which is greater than standard  $\alpha$  value = 5% ( $0.068 > 0.05$ ). Based on this result, it can be inferred that the third hypothesis (H3) is not supported by empirical data.

Furthermore, the results of the analysis also showed that organizational resources have a direct effect and significant on company competitiveness. It can be known from value of critical ratio (C.R.) which is greater than value of t-table ( $3.133 > 1.965$ ) and significance value (sig.) which is smaller than standard  $\alpha$  value = 5% ( $0.005 < 0.05$ ). Therefore, it can be concluded that the fourth hypothesis (H4) is supported by empirical data. Organizational capabilities also have a direct effect and significant on company competitiveness. This result is proven by value of critical ratio (C.R.) which is greater than value of t-table ( $6.180 > 1.965$ ) and significance value (sig.) that smaller than standard  $\alpha$  value = 5% ( $0.000 < 0.05$ ). Based on this result, it can be inferred that the fifth hypothesis (H5) is supported by empirical data.

The results of this study showed that external factors have an indirect influence on company competitiveness through the mediating role of organizational resource variables with an estimated value of 0.255. Therefore, it can be concluded that the sixth hypothesis (H6) is proven, or in other words supported by empirical data. Meanwhile, the influence of external factors indirectly on company competitiveness through the mediating role of organizational capability variables is also significant with an estimated value of 0.170. Therefore, it can be concluded that the seventh hypothesis (H7) is proven, or in other words supported by empirical data.

The positive influence of external factors on organizational resources can be seen in the path coefficient value of 0.806. It means that 80.6% variation in organizational resources is determined by external factors. This finding support some previous studies such as Ongori & Nigoro (2010), Huhtala et al. (2014), and Roostika et al. (2015) that external environmental factors was important element in increasing quality of organizational resources like production technology, human resource development, and marketing network. Then, external factors also give positive impact to organizational capabilities. the value of path coefficient of 0.218 means that 21.8% increase or decrease value in organizational capability is influenced by external factors variable. Therefore, the more positive to external factors value will be lead to the increased organizational capabilities of creative industries. The results of this study support the findings of Hall et al. (2008), Lages et al. (2009), Terziovski (2010), and Satria & Prameswari (2011) that organizational capability is strongly influenced by organizational external environment. Consequently, the ability to manage human resources, the ability to build external partnerships, and product development are affected by external factors.

The results also showed that external factors have a direct effect, but insignificant on company competitiveness with a value path coefficient of 0.115 or 11.5%. This finding is in line with research by Nenny (2008), Fristia & Navastara (2014), and Syarif et al. (2015), company competitiveness will be decreased when government role was less in supporting small-medium enterprises include creative industries. Nevertheless, efforts to increase company competitiveness can be conducted indirectly through improvement in organizational resources with a path coefficient of 0.255 or 25.5% and organizational capability with a path coefficient of 0.170 or 17.0%. The results of this study are in line with Lee & Hsieh (2010), Hamid & Susilo (2011), Kiziloglu (2015), and Munizu et al. (2017) who found that company competitiveness was influenced by important factors such as innovation, information technology support, quality management, supply chain management, marketing network, and organizational capabilities in planning business activity efficiently as well as effectively.

Organizational resources give positive effect and significant

on company competitiveness. The path coefficient value of 0.317 means that a number of 31.7% increase in company competitiveness is influenced by organizational resources. Therefore, the more positive value of organizational resources will be lead to increasing the company competitiveness of the creative industry in South Sulawesi. Organizational capabilities include some abilities that organizations own to plan human resources, to develop products, to use information technology, and to build external partnerships. Organizational capabilities have a direct effect, and significant on company competitiveness. The path coefficient value of 0.780 means that a number of 78.0% increase in company competitiveness is influenced by organizational capabilities. Therefore, the more positive the variable value of organizational capability will be lead to increasing the company competitiveness of the creative industries in South Sulawesi. The results of this study are in line with Barney (1991), Parida et al. (2009), Najib & Kiminami (2011), Agyapong et al. (2016), Roostika (2019), and Munizu et al. (2019) that organizational competitiveness is affected by some important factors within an organization such as innovation capabilities, technological capabilities, and managerial capabilities. Organizational capability consists of a number of capabilities owned by the company both tangible and intangible. Moreover, it related to the ability to develop products and services, ability to build partnership relationships with suppliers, suppliers, and customers.

Refer to findings of this study Porter (1990), Wheelen & Hunger (2006), and David (2011) have been emphasized the importance of optimizing organizational resources and capabilities as a source of competitive advantage in the global market. Furthermore, Barney (1991) stressed that each organization will be able to produce quality products, unique, difficult to imitate, and different from competitors through internal resources owned, and organizational capabilities that are developed and improved continuously.

## 4. Conclusions

Variable of external factors that consists of social-economic aspects, information technology aspects, government policy aspects, competitors aspects, suppliers aspects, and customer aspects will improve organizational resources as well as organizational capabilities. Even though, external factors didn't have a significant effect on company competitiveness directly. Then, external factors can affect company competitiveness indirectly through the mediating role either organizational resources or organizational capabilities. Furthermore, this study also finds that organizational resources variables that consist of aspects of raw materials, human resource/labor, market and marketing, production technology, and financial aspects will increase company competitiveness. Additionally, the variable of organizational capability that includes human resource planning ability, product development ability, information technology ability, and ability to build external partnerships (suppliers, suppliers, and customers) will increase company competitiveness.

The findings of this study generate several important suggestions both for academic development and practical purposes. The implication for managers of creative industry related to management activities in formulating policies, programs, and strategies in improving organizational competitiveness should refer to these concepts and variables. Then, improvement activities should refer to indicators that are still low in their implementation as a priority scale such as analysis of competitor aspect, product innovation, marketing aspect, and product development capabilities in order company competitiveness will be increased both national and international levels. In addition, future research is expected to develop this study by adding other variables that have not been accommodated in this study such as creativity, innovation, and entrepreneurship orientation.

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## Model of Organizational Culture Dynamics – Works on Increasing Confidence

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### Abstract

*The originality of the paper lies in the treatment of organizational culture as a dynamic system whose current state and evolution is dictated by a web of influences resulting not only from various organizational aspects (e.g., organizational constitution, adoption of IT&C, motivation etc.), but, most importantly, from the specific type of leadership adopted by key decision-making actors. The G.VALI model which is described in the paper is founded on Social Systems science and General Systems Theory. This approach of the interrelations between leadership and organizational culture is fairly different from past attempts which have placed particular emphasis on the static assessment of organizational culture and leadership. The G.VALI model, which was validated based on data collected from five Romanian SMEs, provides researchers with a means to test the empirically proven fact that organizational cultures evolve even in the absence of specific interventions for change, an aspect which until recently has not been recognized by other theoretical models.*

**Keywords:** leadership; organizational culture; causal loop modeling; systems dynamics.

### 1. Introduction

Every organization, city, economy or country behaves as a complex (more or less) adaptive social system whose behaviour is dictated not only by the interactions between its constitutive elements, but also by its interactions with its environment. More often than one would think, causes and effects are not obviously connected, but remote in time and space, their multitude hindering the best understanding and resolution of organizational issues (Forrester, 1968; Forrester, 1999; Ackoff, 1971; Senge, 1999; Mitleton-Kelly, 2003). The continuous interactions among the parts of social systems and their nonlinear interdependence functions hamper even more the intuitive judgement. Hence the recommendation for computer simulations which enable researchers to compress or expand time spans and to run the models backwards and forwards in order to facilitate the analysis of the behaviour of the system (Hanneman, 1988; Sterman, 1989).

If organizational dynamics look rather difficult and even controversial to model and simulate, the validation of potential models raises even more disagreements among researchers. Most scholars argue that it is essential to test models by means of statistical methods and data, whereas the advocates of Complexity Theory and General Systems Theory question the possibility of dissociating among the multitude of causes triggering one single effect, and of accurately measuring and quantifying the evolution of its influence exerted over the other variables of the model. The latter propose the gradual increase of confidence as the outcomes of the model are confronted with historical reality (Forrester and Senge, 1979). They adhere to the idea that models cannot be truly validated, but only be considered valid until someone proves they are wrong (Barlas and Carpenter, 1990), and that even though all models are

essentially wrong, some of them are useful (Burgoyne and Draper, 1987).

These could be some of the reasons for the dearth of studies on and models of organizational culture dynamics. Despite the cornucopia of papers focused on defining and measuring different organizational culture dimensions (e.g. Rousseau's concentric circles, Herman's iceberg, Hofstede's cultural dimensions, Harrison and Handy's four types of culture, Denison and Mishra's cultural traits, Hatch's cultural dynamics model etc.) (Ghinea, 2015c), none of the existing models considers the evolution of organizational culture as a result of the influence of both its own internal parts and leadership. Schein is the sole exception, his model taking time as an evolutionary axis (Schein, 1992).

### 2. Research methodology

The current paper addresses the validity of the Gradual Value-Added Leadership Integrator model, G.VALI (see Fig. 1), which presents leadership and organizational culture as two major points of influence and confluence with a definitive impact on organizational dynamics. The model is composed of an upper section (I) which evidences the influence of the manager on organizational behaviour and culture, and a lower section (E) which evidences the continuous changes brought by learning to the leadership behaviour of the manager.

The development of the model was described in previous articles (Ghinea and Ghinea, 2012; Ghinea, 2014; Ghinea, 2015a; Ghinea, 2016), and later used in Ghinea (2015b) and Dima and Ghinea (2016) for the study of human resources processes and the modelling of academic leadership.

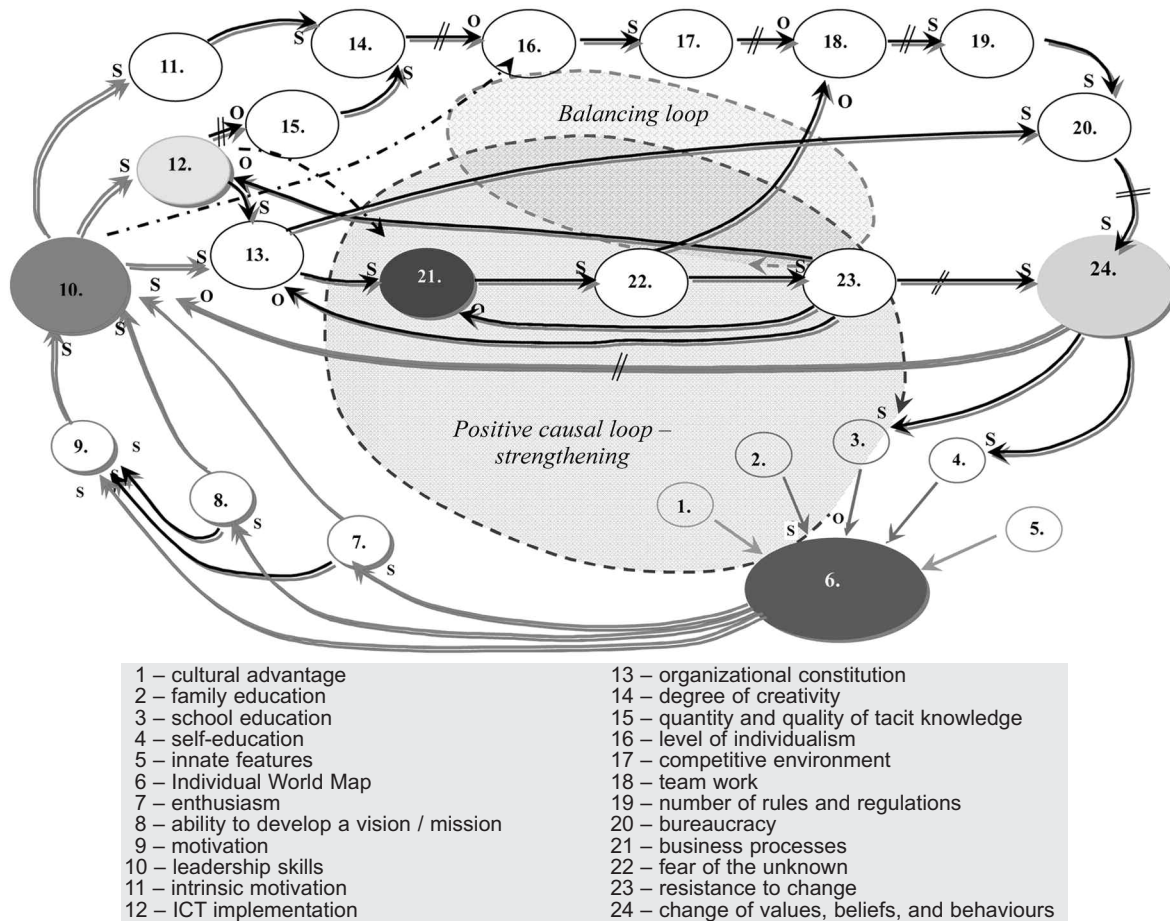


Figure 1. G.VALI model of organizational culture dynamics

In this paper, we describe the implementation of the G.VALI model in TRUE (Temporal Reasoning Universal Elaboration) and the subsequent changes that were made to the model after empirically testing the various causal loop diagrams.

The empirical data was collected using both quantitative and qualitative methods from 5 Romanian SMEs with a history of at least 10 years and the majority of the employees with ages between 20 and 40.

For the quantitative measurement of leadership we applied the Multilevel Leadership Questionnaire (MLQ), and for the assessment of the organizational culture – the Organizational Description Questionnaire (ODQ), both of them developed by Bass and Avolio (Bass and Avolio, 2003; Bass and Avolio, 1992). In addition, we also constructed a questionnaire measuring the organizational interinfluences present in the model. All three questionnaires were filled in by a sample of 76 employees from the five participating SMEs.

For the qualitative part, we conducted in-depth interviews with three of the managers in order to uncover the influence of the determining factors of leadership.

Both types of data were analysed and interpreted in order to change the configuration of the theoretical version of the G.VALI model. After this, we ran the model and compared the findings with historical information, and then reconfigured certain relations of influence in terms of their initiation and/or shape of the influence curve.

### 3. Research results

#### 3.1. Lower section (E)

As factors of influence for the type of leadership adopted by managers, we considered the impact of innate features, together with that of culture and education.

According to Lareau, innate features with which a person is

born such as personality type, cognitive dominance (convergent vs. divergent thinking) (De Bono, 1971; Mintzberg, 1990) and emotional intelligence (Denis and Legerski, 2006), have only a 30% influence on the subsequent evolution of the individual (Lareau, 2011). The cultural advantage encompasses the socio-cultural, economic, political and legislative factors.

In what regards education, we considered family education, school education and self-learning. Family education (including the assimilation of class, language and religious attributes) is considered to have a major impact in the first years of development and a lesser one later on in life (Wellisch et al., 2010; Izard, 2007). The educational system tends to stimulate convergent, systemic and vertical thinking, and, according to available studies, exerts most of its influence in the median segment of the standard educational program (Gamble and Blackwell, 2001). In contrast, self-learning reaches its highest level of influence after high school graduation with maximum levels in the first years of the second decade of the individual's life. As an exemplification, in Fig. 2 we show the influence curves for the three types of education on the accuracy of an individual's world representation.

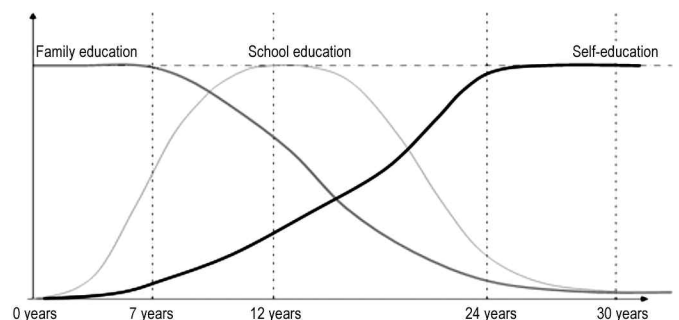
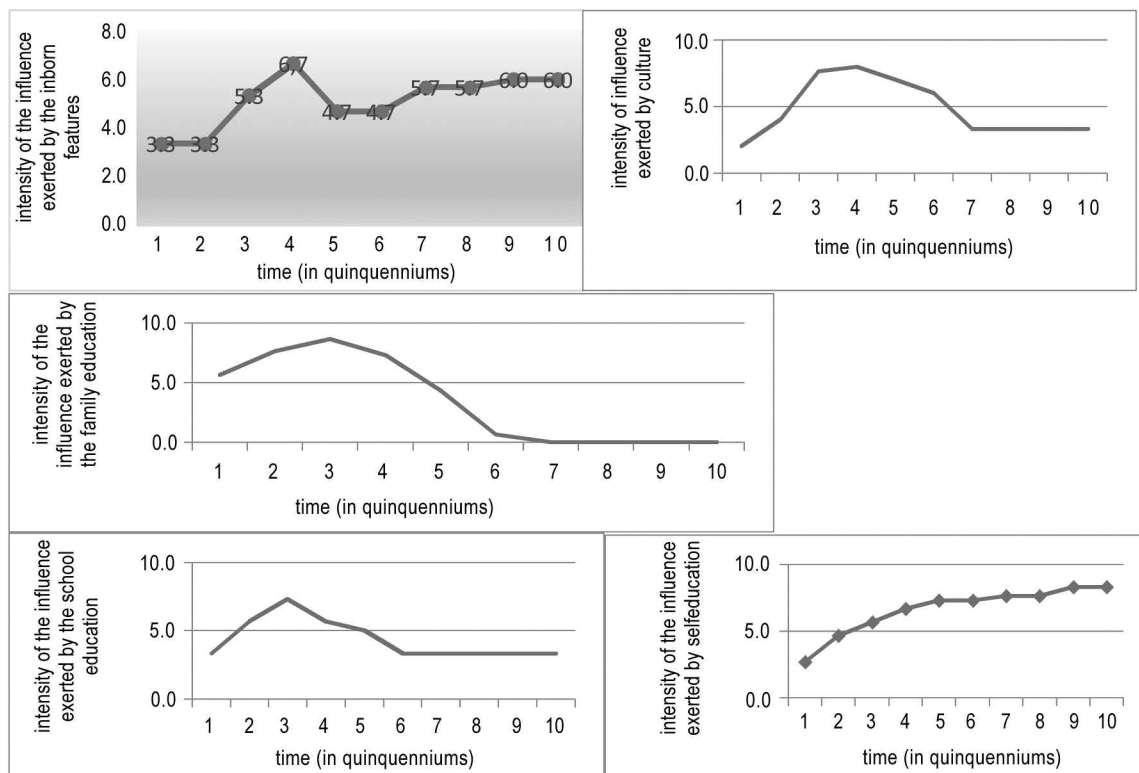


Figure 2. Evolution of the influence of education on the accuracy of individual's world representation



**Figure 3.** The evolution of the cumulated influence of  
 a) native features; b) cultural advantage; c) family education; d) school education; e) self-education

Although the interviews with the managers confirmed the patterns of influence that family education, school and self-education have over the individual, the cultural advantage element revealed some inconsistencies in what regards its initial modelling (see Fig. 3). The latter was seen to exert a considerable influence only until approximately 35 years of age, its subsequent influence gradually decreasing later on. Consequently, we changed the TRUE programming codes to match the empirical findings.

The compilation of the MLQ results provided the average values for each dimension of leadership exerted by the analysed decision-makers (see Table 1).

Leadership dimensions	Org1	Org2	Org3	Org4	Org5
Transformational leadership	3.19	3.23	2.99	3.07	3.45
Transactional leadership	2.82	2.80	2.66	2.92	2.93
Passive-evasive behaviour	1.59	1.51	1.38	1.33	1.11

*Table 1.* Leadership scores

### 3.2. Upper section (I)

The G.VALI model starts from the leadership abilities that characterize the manager and the ways in which these influence the manager's decision making and behaviour. According to De Bono (1971) and Goleman et al. (2001), a leader that motivates employees intrinsically inspires a positive attitude in facing obstacles, encouraging a culture of sharing, trust and risk taking. This leads to a higher level of creativity in the organization. Thus, the G.VALI model considers an S type causality between intrinsic motivation (variable 11) and the level of creativity in the organization (variable 14). This was confirmed by 86% of the answers received from the employees.

The degree to which managers encourage the adoption of IT&C is strongly influenced by their type of leadership. Generally, a transactional leader is more inclined towards new

technologies than a transformational leader. Davenport and Prusak (2000) showed that extensive usage of the Internet can decrease creativity and increase competition, thus reducing the amount of knowledge sharing in organizations [8]. Consequently, IT&C (variable 12) and tacit knowledge (variable 15) were considered to have an antagonistic type O evolution, with a delay given by the inertia of human behaviour (double slash). The survey showed that 46% of the respondents consider the extensive use of IT&C as incompatible with the tacit knowledgeable employee. We find the percentage highly relevant as 82% of the surveyed employees work in environments heavily relying on IT&C (60%). The type O relationship between IT&C adoption and tacit knowledge was thus confirmed.

The type S causality considered in our model between the quantity and quality of the individual's tacit knowledge and the ability to identify creative solutions was confirmed by 92% of the employees surveyed. The answers are highly relevant as 63% of the positions occupied by those surveyed require creative thinking in a proportion higher than 60%. Regarding the relation between creativity (variable 14) and individualism (variable 16), we set a type O causality, with a delayed manifestation (Senge, 1999; Burgoyne et al., 2004). When tested by the application of the survey, this was confirmed by 77% of the respondents.

While the positions held by the employees covered the whole range of possibilities regarding teamwork (15% with a proportion of independent work between 0-20%, 7% between 20-40%, 26% between 40-60%, 30% between 60-80% and 22% with a position that mostly requires independent work), almost half of the employees (48%) agreed that the inability to work in a team and individual work lead to unnecessary competition even within the same team, thus confirming the type S relation of influence between variables 16 and 17 in the model. Similarly, 40% of the employees agreed (41% were indecisive) that competition itself (variable 17) has a negative impact on the level of teamwork (variable 18), thus confirming the type O connection between the two. According to their opinion, the intensity of the competition weakens teamwork over time as a result of accumulated tensions, but teamwork tends to stabilize after a while.



An analysis of the empirical support for the influences between the following pairs of variables: 12 →15, 14 →16 and 17 →18, shows that these influences manifest with a certain delay (hence the large proportion of undecided answers), making it difficult for observers to intuitively understand the complex innerworkings of the social system (Dima and Ghinea, 2016). A similarly high level of indecisiveness was also identified in the case of the following inter-influences. For example, only one in three employees considered their work affected by rules and regulations, while 54% of them viewed teamwork as a driver of the multiplication of rules and regulations, thus confirming the type S causality between variables 18 and 19 in the G.VALI model. Moreover, the influence of the number of rules and regulations (variable 19) on bureaucracy (variable 20) modeled in G.VALI was confirmed by only 45% of the respondents. The high percentage of indecisive answers (28%) could be justified by the difficulty of identifying a causality between the two characteristics of the organization, which led us to introduce a delay in the reaction (double slash). Similarly, 26% of the respondents said that they occupied positions affected by bureaucracy to a 40-60% degree, while 27% stated a degree higher than 60%. Yet, in the case of the influence of bureaucracy (variable 20) on the change of values, beliefs and behaviors (variable 24), only 53% confirmed the direct relation, while 38% had no opinion. This also required the introduction of a delay in the interaction between the two.

Moving to the relation between the adoption of IT&C (variable 12) and organizational constitution (variable 20), and the subsequent influence that this relation has on business processes (variable 21) and bureaucracy (variable 13), 78% of the respondents agreed that increasing the use of IT&C leads to changes in the organizational constitution, and 86% agreed that these changes also lead to changes in business processes, while only 47% noticed a positive causality between organizational constitution and bureaucracy (understood as an exaggerated reliance on a high number of written rules and formalities).

Based on previous research and theories, the G.VALI model considers that there is a type S causality between modifications in organizational constitution and the anxiety to new (variable 22), similar to the relation between the anxiety to new and resistance to change (variable 23). Resistance to change affects the change process, delaying or slowing down (double slash) the implementation of new business processes (variable 21), increasing costs (Ansoff and McDonnell, 1990), and leading the organization towards inertia (Maurer, 1996). This suggests a type O relation between resistance to change and the adoption of IT&C, similar to that between resistance to change and organizational constitution. The survey results did not confirm the 21 → 22 type S relation, as 34% of the opinions were confirmatory and 40% were indecisive. Even if only 41% of the respondents confirmed the existence of a diminishing acceptance of change in the presence of high anxiety to new, 43% were indecisive. In contrast, 81% of the employees confirmed the type O relation between resistance to change and the implementation of new business processes, and 77% also confirmed the type O relation between resistance to change and the adoption of IT&C.

As research in the field of psychology has shown that anxiety to new can lead to either isolation or an accentuation of teamwork, the G.VALI model assumed a type O causal relation between variables 22 and 18. However, the employees contradicted this assumption as 60% of them were of the opinion that a higher level of anxiety increases the desire to work in a team, which led to a change of the model from a type O to a type S relation. Moreover, Kark and van Dijk showed that a higher resistance to change negatively influences the ability of the employees to modify their values, beliefs and behaviors (Kark and van Dijk, 2007). However, this is not true in the case of bureaucratic organizations where most processes are based on the obedience of strict rules and regulations, which are subject to change. These two influences were set in G.VALI model as a

type O and, respectively type S, relation of influence. The survey results led to the confirmation of the type O relation between variables 20 and 24, with 53% affirmative responses, and of the type S relation between variables 23 and 24, with 61% affirmative responses.

After compiling the results from the interviews and the surveys, several changes were implemented in the programming of the G.VALI model in TRUE (for more details on the software see (Ghinea, 2015c). In order to establish the interconnections between the various variables, specific programming scripts describing the way in which each variable is influenced by its predecessor were introduced. The G.VALI frame-model contains threshold parameters set based on initial empirical data and previous research in the field. In order to customize the frame-model on the present analysis, the time span (30 years) was changed to 65 years (thus covering the age range of the respondents). System I was set as inactive for the first 36 years, while system E accumulated influences on the leadership variable. For the last 29 years, system I became active and began to influence the activity of system E.

Then, in conformity with the above-mentioned findings of the present study, we changed the programming sequences for the influence that native features, culture, and education have on the accuracy of the manager's representation of the world. Moreover, we modified the chronology of the influence exercised by family education and self-learning, from 2 (as in the frame-model) to 1, based on the employee's opinions. School education thus became the only education variable which began to exert its influence only after enrollment in the educational system (chronology 2).

The IWM variable (chronology 3), reflecting the accuracy of the manager's representation of the reality (Korzybski, 1933), was obtained by adding the influence of the five upstream variables (Hanneman, 1988):

```
//customized code for "IWM"
y = 0.3*Fvalue("cultural education")
y+= 0.3*Fvalue("native element")
y+= Fvalue("family education")
y-= Fvalue("school education")
y+=Fvalue("self-learning")
y=Round(y,3)
```

To bound the intervals between which a manager can be considered a transactional or transformational leader, we first harmonized the scales and the major results of the MLQ and ODQ questionnaires. Thus, the values of  $TF_i \in (3.00; 3.38)$  and  $TA_i \in (2.44; 3.21)$  became  $TF_f \in (21; 23.66)$  and  $TA_f \in (17.08; 22.47)$ . This facilitated also the analysis of the concordance between the manifested leadership and the organizational culture of the same company. Furthermore, in order to customize the threshold parameters for the actions which describe the evolution of the variables which are directly dependent on the leadership variable (intrinsic motivation, IT&C, organizational constitution and individualism), we converted the resulted values of leadership to the scale (0,10) of the G.VALI frame-model.

Thus, transformational leadership takes values between 7.5 and 8.45, while transactional leadership is situated in the interval (6.1; 8.025), which means that in the interval (7.5; 8.025), transformational and transactional leadership overlap. However, we made a distinction between the ways in which these types of leadership manifest:

- between 8.025 and 8.45 – the emphasis is on intrinsic motivation, leading to an increase in employee creativity, a decrease in individualism etc.;
- between 7.5 and 8.025 – emphasis on the adoption of IT&C, negatively influencing the level of tacit knowledge accumulated by the employees and diminishing creativity;
- between 6.1 and 7.5 – the prevailing manifestation is the transactional leadership, seeking to increase organizational efficiency by redesigning the organizational constitution.

Considering these, the new programming scripts were introduced in TRUE, as shown in the examples below:

<pre>//customized code for "intrinsic motivation" x,centre,pente is real centre=p:repeat/2 x=nbt-centre pente=40 zz are currency zz= (Fvalue("leadership"))/10 IF zz&gt;8.025 y=zz/(1+Exp(-x/pente)) y=Round(y,3) ELSE y=zz/(1.05+Exp(-x/pente)) y=1-y END y=Round(y,3)</pre>	<pre>//customized code for "IC&amp;T adoption" zz are currency zz= (Fvalue("leadership",False,nbt-5))/10 prs are currency prs = Fvalue("resistance to change", False, nbt-5) x,centre,pente is real centre=p:repeat/2 x=nbt-centre pente=30 y=1/(1+Exp(-x/pente)) IF zz&gt;8.025 y=(1-y)*zz+(1-y)*prs ELSE y= y*zz +(1-y)*prs END y=Round(y,3)</pre>
<pre>//customized code for "reengineering of the organizational constitution" zz are currency zz= (Fvalue("leadership"))/10 mno are currency mno = (Fvalue("resistance to change", False, nbt-5))/100 prs is currency prs = Fvalue("IC&amp;T adoption") x,centre,pente is real centre=p:repeat/2 x=nbt-centre pente=40 y=1/(1+Exp(-x/pente)) IF zz&lt;7.5 y=(zz+prs)*y+mno*(1-y) ELSE y=zz*(1-y)+prs*y+mno*(1-y) END y=Round(y,3)</pre>	<pre>//customized code for "level of individualism" zz are currency zz= (Fvalue("leadership",False,nbt-4))/10 x,centre,pente is real centre=p:repeat/2 x=nbt-centre pente=40 y=1/(1+Exp(-x/pente)) prs are currency prs = Fvalue("level of creativity")*(1-1/(1+Exp(-x/pente))) IF zz&gt;7.5 y=(1-y)*zz +prs ELSE y= y*zz +prs END y=Round(y,3)</pre>

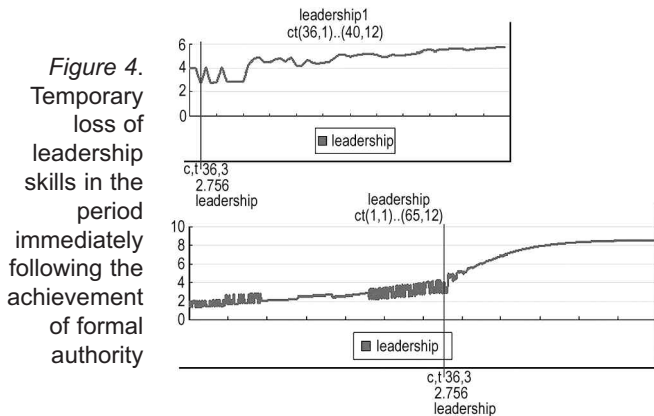
Similarly, we reset the programming sequences corresponding to each of the frame-model variables, we introduced a number of delays, and we changed causalities and chronologies to match the opinions of the surveyed employees. For example:

- The chronology of teamwork was set to 11 instead of 13, that of rules and regulations was changed from 14 to 12, and that of bureaucracy from 15 to 13. As resistance to change appeared to have an immediate impact on organizational culture flexibility, the chronology of the latter was set to 12 instead of 16.
- The causality between anxiety to new and teamwork was modified from S to O. We also changed the relation between leadership and bureaucracy into a type O causal relation.

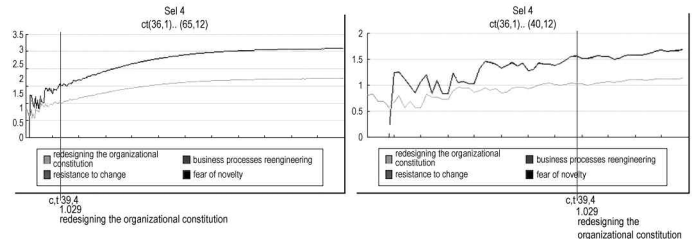
## 4. Discussion

The customization of the G.VALI transposition into the tenet of the TRUE software was followed by its forwards and backwards running. The analysis of the data resulted from the simulation has revealed the following:

Despite the fact that leadership has a constant ascending evolution, periods of sudden decreases are registered as well, such as that experienced around the age of 36, the average age at which the managers included in our sample gained their managerial positions (Fig.4).



Comparing this with the other evolution curves, we can speculate that, after being newly appointed to a managerial position, the manager chooses the most visible means to mark his presence, i.e. changing the organizational constitution and business processes (Fig.5).



**Figure 5.** Comparative evolution of the variables: organizational constitution, business processes, fear of new, resistance to change

Unfortunately, this strategy is usually badly received by the employees, which is clearly evidenced by the evolution of the variable measuring the (self)motivation which goes through a syncope and by the diminishing rate of intrinsic motivation and creativity among employees (see Fig. 6). These happen at the same time as the organization experiences an increase in individualism and an accentuation of the level of internal competition. Coincidental or not, during this period, teamwork registers segments of total absence, while organizational culture stagnates as a result of a high degree of inertia.

One year later, the analysis of the same evolution curves shows that, as a result of self-learning, the manager does not significantly increase his knowledge (the ability of setting a vision and the level of enthusiasm are approximately the same) but gains a greater diplomacy and versatility. This is proven by the increases in the variables measuring leadership and teamwork, even though the employees are still experiencing increasing levels of anxiety to new. At the same time, organizational culture gains greater flexibility.

Moving ahead to the age when the value of leadership is equal to the lower threshold for transformational leadership (47 years), we notice a stagnation of the manager's abilities and

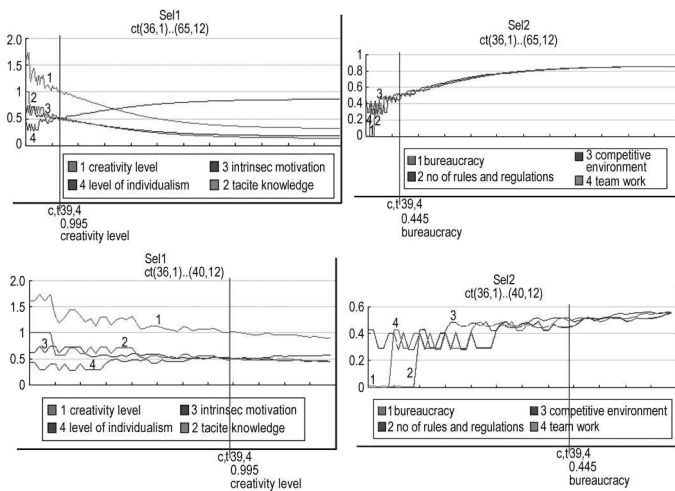


Figure 6. Comparative evolution of the variable: a) intrinsic motivation, creativity level, tacite knowledge and individualism level; b) competitive environment, teamwork, rules and regulations, bureaucracy

knowledge, but also an improvement in interpersonal skills. In spite of this, the values for intrinsic motivation, level of tacit knowledge and even creativity end up close to zero, which cannot be said about individualism which tends to increase rapidly. The level of competition grows higher and higher, in line with previous interpretations. However, strangely enough, teamwork seems to be highly valued, especially on the background of an increased bureaucratization. Organizational changes are relatively frequent and the dominant feeling is that of anxiety to new.

In what regards organizational culture, after the initial period which is filled with slopes and returns to previous states, it seems that it gains a degree of flexibility and adaptability as a result of a process similar to systematic desensitization.

A comprehensive explanation of all the observations previously made should consider the field of activity of the organization. For example, if the organization is focused on sales (as it is the case for the SMEs included in our sample), then an encouragement of extrinsic motivation and an increased competition no longer appears paradoxical. In this case, transformational leaders most of the times use their entire potential in order to follow procedures which have proven successful, which means accepting bureaucracy and continuous changes of organizational constitution, accepting the state of anxiety and learning to dissimulate feelings of enthusiasm or satisfaction.

## 5. Conclusions

The G.VALI model is an important addition to the study of organizational culture dynamics because it offers a holistic perspective on the evolution of organizational members and the organization itself. The model sees behavior as a result of the aggregate influence of inborn predispositions, inherited assumptions, unconscious assimilation of the cultural elements, and learning experiences, and it follows the behavior reconfiguration as a result of social experience, throughout the organization. G.VALI also reveals the impact of an either transactional or transformational manifestation of leadership, and the continuous reconfiguration of the leadership style adopted by managers triggered by the straight or intermediate impact of the organizational culture, and of the feedback loop itself.

Most importantly, G.VALI disproves the homeostasis of the organizational system, in general, and of organizational culture, in particular. Running the model proves that maintaining the status-quo over long periods of time, in light of the variability of the external environment and of the constitutive elements of the system, is highly unlikely, if not impossible. Even benefic

changes, such as an improvement in teamwork, can lead the organization beyond its current equilibrium point. By using G.VALI, managers can simulate the results of new organizational policies and of new leadership strategies while taking into consideration not only their personal characteristics, but also the characteristics of the organization itself.

The social system approach adopted by the G.VALI model is also helpful for the development of the theory in the field of leadership and management, as it brings an innovative perspective that runs counter to the prevalent belief that organizational cultures are static systems based on continuity and tradition. However, it is necessary to continue to test the validity of the model and the accuracy of its predictions.

Thus, future research should focus on testing the model in extreme conditions which would enable the discovery of omitted variables and of non-linearities or behavioral asymptotes that need to be incorporated into the model. Moreover, in order to increase the level of confidence in the model, it is necessary to run the model using large data sets that would help highlight behavioral abnormalities.

Finally, increasing the degree of trust in the capacity of the model to predict organizational behavior relies on future researches focused on running individual simulations with data from particular organizations. These studies should identify and discuss unexpected behaviors, test the predictability of behavior (the degree to which the generated behavior is reflected by the historical behavior of the real system through causality, symptomatology, frequency, etc.).

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## Customer Perceptions among Product and Brand Alternatives: Analysis and Consolidation of Models of Brand Choice Behavior

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### Abstract

*Understanding how consumers evaluate product and brand alternatives and perceive their quality should be of paramount importance to marketing, product development and quality management. Several brand choice behavior models have been researched in literature, from utility maximization models in traditional economics, to attribute-based sequential elimination or selection models and heuristics in behavioral economics, to two-stage models combining some of these principles. Previous attempts to provide an overview of these models have been incomplete. We provide an analysis and exhaustive, up to date, consolidation of brand choice behavior models, and conclude selected shortcomings and opportunities for improvement in current research literature. This consolidation is a one-stop shop for consumer behavior researchers, and marketing, product development and quality management professionals, who want to understand the different models, processes or steps adopted by consumers in evaluating brand and product alternatives and making their choice.*

**Keywords:** brand choice behavior; customer behavior; consumer choice.

### 1. Introduction

Understanding how consumers perceive the quality of products and brands, how they evaluate alternatives during their buying process, and how that perceived quality affects their final choice, should be of paramount importance for product development and quality management functions, as it is for sales and marketing functions. Research literature in product development and quality management has focused rather on how to translate customer requirements or preferences into product specifications (ex. through QFD – quality function deployment), however insufficiently on how customers form their requirements or preferences, and how they evaluate products based on those requirements or preferences.

Traditional or neoclassical economics assumes people are utility maximizers. When faced with an abundance of choices, with various attributes, they will be able to accurately assess all attributes of all alternatives and based on some smart utility or value ‘formula’ arrive at the one ideal alternative that scores highest utility or value for their choice. This is also the assumption behind most research in product development and quality management in how the importance of different product or brand attributes are assessed in QFD. But behavioral economics shows people in fact don’t have the capacity to maximize, so they do their best in choosing given the constraints they face – a satisficing behavior that is. Therefore, several other brand choice models have been researched over time to show how consumers evaluate and choose between alternatives (brands or products), beyond the utility maximization models, with few distinct ‘branches’ of thinking.

Previous attempts have been made to consolidate and cla-

ssify such brand choice behavior models, however each attempt left aside different types of models from our perspective, so a more consolidated view is missing, and it is required. We perform a review of such studies and individual papers and provide a more consolidated list of types of brand choice behavior models researched so far. This list covers models based on utility maximization principle, attribute-based sequential elimination or selection principles, heuristics, or two-stage approach models (combining other principles).

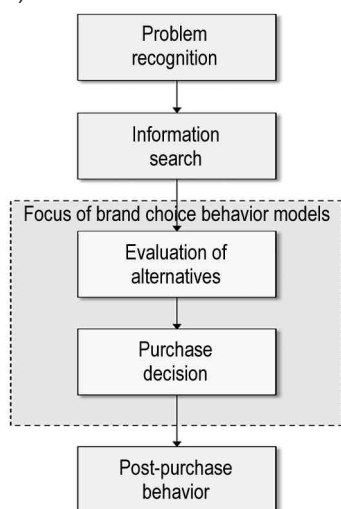
This consolidation is not a critical review of models existing in the research literature, rather a synthesis and classification of types of models. We provide a brief explanation of each of the models included in this consolidation, to facilitate quick understanding of the principles without needing to read in detail the original research of the respective models. We do however highlight, as conclusions, few shortcomings or opportunities for improvement in current research literature.

The objectives of this paper are twofold. One, to provide a one-stop-shop up to date consolidation of models of brand choice behavior to consumer behavior and brand choice behavior researchers, and to marketing researchers and professionals. Two, to equip product development and quality management professionals and researchers with a better understanding of the different ways consumers evaluate product and brand alternatives and make their choice. In this way, product development and quality management processes can be improved, especially how customer requirements and preferences should be assessed, and how they should be translated into product design and specifications, in order to maximize consumers’ choice of the product or brand. This also means the product will be able to deliver higher value to the consumer and respond better to his needs.

## 2. Types of brand choice behavior models: consolidation

In scientific literature many models of consumer behavior have been developed, with notable examples like Nicosia model, Engel-Kollat-Blackwell model and Engel-Blackwell-Miniard model, or Howard Sheth model. Aside the fact that some are only pseudo-theories or models (not the mentioned ones, but many others) or utilized in practice in sub-optimal or wrong ways, such models are not captured in our consolidated view because they refer to the wider consumer journey and environment. Our consolidation refers to models of how multiple brand or product alternatives are evaluated, and one of them chosen, which are often just two one steps in previous mentioned types of models of consumer behavior. Figure 1 illustrates the scope of this paper and of brand choice behavior models in general, along the typical five-stage consumer buying process/model (Kotler & Keller, 2016).

Figure 1. Five-stage model of consumer buying process



Understanding how a brand (or product) is chosen from multiple alternatives available in the market is essential for marketing and product development sciences. There is a considerable amount of research on models of brand choice behavior – specifically how consumers evaluate and choose between alternatives (brands or products).

Several review studies have attempted throughout the last 30 years to consolidate and provide overviews of such models. We reviewed most comprehensive and cited such studies, like (in chronological order) (Friedman, 1988), (Manrai, 1995), (Mellers, et al., 1998), (Manrai & Andrews, 1998), (Bettman, et al., 1998), (Baltas & Doyle, 2001), (Chandukala, et al., 2007), (Hauser, et al., 2009), (Russel, 2014), selected consumer

behavior books that address some brand choice models, like (Kardes, et al., 2011), (Mothersbaugh & Hawkins, 2015), (Kotler & Keller, 2016), selected handbooks of research studies related to adjacent topics yet reviewing choice models, like (Foxall, et al., 2007), (Wierenga & van der Lans, 2008), (Hess & Daly, 2010), (Golder & Mitra, 2018), and additionally several standalone papers.

We do not intend to make a detailed critical review of these papers or of the brand choice behavior models, nor to dissect and explain them in detail here. We aim to construct an exhaustive, up to date, consolidated list of the types of brand choice behavior models existing in literature, and to offer brief sufficient explanation of these models, as well as to make relevant critical commentary only where it is required for understanding the models and differences between. We show this consolidation in Table 1.

The consolidation and therefore Table 1 are structured as follows. We first separate between models by the number of stages the models assume (one or two). Stages here refer to the distinct phases in which the consumer adopt one way or another of evaluating alternatives and choose. Even if more than one evaluation (step) exist (i.e. for more than one brand or product), but those evaluations (steps) are done in a similar way or mechanism, that is considered a stage. We also differentiate between compensatory and non-compensatory models. Compensatory decision rules give a product or brand the chance to make up for its shortcomings, i.e. willingness to offset good attributes/characteristics against bad ones. Non-compensatory rules do not assume this possibility, i.e. a brand/product with low score on one attribute cannot make up for this by being better in another attribute. We then classify the types of models by the main principle behind and describe those principles. Lastly, for each model we show selected notable papers/authors: either papers that have developed the model in the first place, or papers that have reviewed and provided detailed explanation of the model in those cases where the model has significantly evolved since its origination or it can be hardly attributed to only one particular source or author(s).

The following sections, after Table 1, provide short descriptions or explanations of the considered models for their rapid understanding. For more and technical details, we invite the readers to refer to the cited papers and authors.

The main scope of this paper to consolidate and discuss the types of models that can be assumed to resemble consumers' real life steps taken in evaluating alternatives and making their choice. Therefore models of brand choice behavior that focus purely on the mathematical modeling of the final choice, but can be hardly assumed to be adopted like that in real life by consumers (as steps or process) are not in the focus of this paper; these are the various random utility models (RUM) and some two-stage models.

Number of stages	Compensatory / Non-compensatory	Main principle	Brief description	Types of models
One stage	Compensatory	Utility maximization – random utility theory	Models based on the economic principle of utility maximization, yet assuming a random or error term exists for variations in behavior that the models cannot explain, i.e. modeler's uncertainty regarding unobserved consumers' tastes and behavior, unobserved attributes, measurement errors, instrumental variables, etc.	Various random utility models (RUM) developed since 1950s to today: from independent multinomial logit (MNL), generalized logit, generalized multinomial probit, generalized extreme value or heteroskedastic extreme value, nested MNL, to nonparametric mixed random utility models and latent class modeling of unobserved heterogeneity or even more advanced mathematical models. For summaries see (Manrai, 1995), (Baltas & Doyle, 2001), or (Russel, 2014)
One stage	Compensatory	Utility maximization – non-random utility (typically expected utility or value)	Models based on the economic principles of utility maximization, assuming an expected utility or value exists based on deterministic parameters, i.e. there is a utility function for the various attributes that can determine the best alternative with no error	Unweighted linear compensatory model / simple additive rule (Parkinson & Reilly, 1979), (Laroche, et al., 2003) Weighted linear compensatory model / weighted additive rule (Parkinson & Reilly, 1979), (Laroche, et al., 2003) q-compensatory additive model (Yee, et al., 2007)

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Number of stages	Compensatory / Non-compensatory	Main principle	Brief description	Types of models
One stage	Non-compensatory	Sequential elimination	Alternatives are evaluated sequentially, and eliminated based on different criteria, until one alternative remains (or in some cases, until a final/smaller consideration set remains)	Elimination by aspects (EBA) (Tversky, 1972) PRETREE – Preference Tree, incl. Elimination by tree (EBT) or Hierarchical elimination by aspects (HEBA) (Tversky & Sattath, 1979) EBA with price (Rotondo, 1986) Elimination by cut-offs (EBC) (Manrai & Sinha, 1989) Elimination by dimensions (EBD) (Gensch & Ghose, 1992)
One stage	Non-compensatory	Sequential selection	Alternatives are evaluated sequentially, but unlike in sequential elimination models, typically the first alternative that meets the expected criteria is selected, therefore the choice process continues only until that moment, (or in some cases, until a final/smaller consideration set is obtained)	Conjunctive rule (Parkinson & Reilly, 1979), (Laroche, et al., 2003) Disjunctive rule (Parkinson & Reilly, 1979), (Laroche, et al., 2003) Subset conjunctive rule (Ordóñez, et al., 1999), (Jedidi & Kohli, 2005) Probabilistic subset conjunctive model (Jedidi & Kohli, 2005) Lexicographic preference rule (Fishburn, 1974), (Parkinson & Reilly, 1979), (Laroche, et al., 2003) Satisficing lexicographic model (Kohli & Jedidi, 2007) Binary lexicographic model (Kohli & Jedidi, 2007) Binary-satisficing lexicographic model (Kohli & Jedidi, 2007) Mixed-rule lexicographic by aspects (LBA) (including Lexicographic by Features – LBF, and Acceptance by Aspects – ABA) (Yee, et al., 2007) Disjunctions of conjunctions (DOC) (Hauser, et al., 2010)
One stage	Mixed. Typically: compensatory	Sequential comparison	Alternatives are evaluated sequentially, in pairs, with one alternative surviving in each pair-wise comparison, until one is left/selected.	Additive difference / Majority of confirming dimensions models (Tversky, 1969), (Russo & Doshier, 1983)
One stage	Non-compensatory	Sequential satisficing search	Sequential evaluation of alternatives until a 'good enough' alternative is found which is then selected. 'Good enough' means satisfactory and sufficient, or 'satisficing'	Satisficing choice behavior (Simon, 1955) Satisficing model with satisficing stopping/choice rule (Stüttgen, et al., 2012) Satisficing model with reservation stopping rule (Caplin, et al., 2011)
One stage	Mixed. Typically: non-compensatory	'Fast and Frugal' heuristics	Mental shortcuts through which part of information is ignored, with the goal of making the decision/choice more quickly, frugally than more complex methods. There are two views about the accuracy of the decision in this case: traditional behavioral economics view (accuracy of decision is lower), and Gigerenzer's Fast and Frugal view: decision is more accurate or more efficient from an outcome per effort perspective. (Better decision, but not best decision, which in real life is considered unknown in most cases.)  Few main types can be distinguished: (a) decisions based on one cue or reason (b) decisions based on more cues or reasons, and possibly trade-offs between (c) decisions based on recognition, recall, memory (d) decisions based on a mix of recognition and recall and cues or reasons that justify the choice	One cue/reason: Take the best heuristic (Gigerenzer & Goldstein, 1996), (Gigerenzer & Gaissmaier, 2011) More cues/reasons, trade-offs: Tallying (Gigerenzer & Goldstein, 1996), (Gigerenzer & Gaissmaier, 2011) Weighted tallying (Gigerenzer & Goldstein, 1996) Frequency of good vs bad features (FRQ) (Alba & Marmorstein, 1987)  Recognition, recall, memory: Recognition heuristic (Gigerenzer & Gaissmaier, 2011) Fluency heuristic (Gigerenzer & Gaissmaier, 2011) Take the first heuristic (Johnson & Raab, 2003)  Mixed: Affect referral rule / affective choice (multiple authors/sources/views, (Park, 1993) for a review thesis)

Number of stages	Compensatory / Non-compensatory	Main principle	Brief description	Types of models
Two stages (pseudo)	Compensatory	Reference point formation, then choice	In the first pseudo stage, a certain reference point is formed (about an attribute), which weighs significantly in the further choice making.	Reference price formation models (ex. (Winer, 1986), or (Briesch, et al., 1997), (Winer, 2013) for summaries) Multi-attribute reference points models (ex. (Hardie, et al., 1993))
Two stages	Mixed. Typically: non-compensatory in first stage, compensatory in second stage	Consideration/choice set formation, then choice	In the first stage, a smaller choice set is formed, from which final choice is made in second stage.  First stage is rather non-compensatory, typically assumed to be attribute-based (versus brand-based), and typically occurs by (a) sequential selection (recalling or recognizing alternatives based on memory or stimulus/context) or (b) by sequentially eliminating or considering alternatives based on aspects or dimensions.  Second stage is rather compensatory, and almost always (in literature) consisting of a utility maximization type of model.	Sequential selection in first stage: One aspect/feature screening model ex. promotion screening by (Fader & McAlister, 1990), general model by (Andrews & Manrai, 1998) Multiple attributes screening model (ex. (Bronnenberg & Vanhonacker, 1996) or (Mehta, et al., 2003)) Dynamic heuristic model (Siddarth, et al., 1995)  Sequential elimination in first stage: Consideration by aspects (CBA) (Andrews & Manrai, 1998) or (Manrai, 1995) Economic screening rules (Gilbride & Allenby, 2006)  A combination of multiple rules in first stage: ex. a choice model with conjunctive, disjunctive and compensatory rules (Gilbride & Allenby, 2004)
Two stages	Mixed. Typically: non-compensatory in first stage, compensatory in second stage	Consideration/choice set formation, then choice – cost-benefit models	Trade-offs considered between costs and benefits to either build the consideration/choice set in first stage, or choose in second stage	Two-stage process with cost-benefit trade-offs in first stage (ex. (Roberts & Lattin, 1991)) Two-stage process with cost-benefit trade-offs in both stages (ex. (Hauser & Wernerfelt, 1990))

Table 1. Models of brand choice behavior

## 2.1. Utility maximization models

It is beyond the purpose of this paper to explain the mathematics behind random utility models (RUM), but rather focus on the general other types of models consisting of logical steps or rules that consumers might utilize in real life evaluation of alternatives and choice. It is unarguably unrealistic to assume that any consumer might utilize in real life even the simplest RUM and its mathematical steps, but at most, additive models (see below). Therefore, we invite readers to refer to the cited sources in Table 1 for more information on RUM.

**Unweighted linear compensatory model/simple additive rule** ((Parkinson & Reilly, 1979), (Laroche, et al., 2003)): brand attributes are measured, summed and averaged, and the brand with the highest score is selected. Some authors assume through simple additive rule that the alternative which has the largest number of positive attributes is selected. This may sound similar at first glance with, yet it is a completely different concept than tallying – see Fast and Frugal heuristics. In simple additive rule ratings of attributes can influence the final score, whereas in tallying only if the attribute scores positively or not is considered (not how much, i.e. a rating).

**q-compensatory additive model** (Yee, et al., 2007): additive model where no feature's importance is more than q times as large as another feature's importance. (A feature's importance is the difference between the maximum and minimum partworths for that feature).

Note: non-linear additive models have been used in literature such as the geometric compensatory model. This is not truly compensatory though, because if the aspects partworths follow a geometric sequence (ex.  $2^{1-n}$  for the  $n^{\text{th}}$  aspect), no set of lower ranked aspects can compensate for the lack of a higher ranked aspects, in simpler words some aspect(s) may become so important that it is de facto the only important one(s). In this case the additive model produces a lexicographic process, i.e. choosing based on the most important attribute(s)

only, regardless of the scores on other attributes – see below. Therefore, many models (non-linear but also linear) include various constraints for partworths so that the presence of other aspects can compensate for the lack of an important aspect (Yee, et al., 2007).

**Weighted linear compensatory model/weighted additive rule** ((Parkinson & Reilly, 1979), (Laroche, et al., 2003)): brand attributes and their weights are measured, attributes multiplied by their weights are summed and averaged, and the brand with the highest score is selected.

**Note on additive rule models:** some authors or branch of thinking in literature consider that in the additive rule models consumers consider a brand/product only if its 'utility' or score (determined through simple or weighted additive rule) is above a threshold T, which accounts for search and processing costs – see (Hauser, et al., 2010) for a summary.

## 2.2. Sequential elimination models

**Elimination by aspects (EBA)** (Tversky, 1972): gradually/sequentially reduce alternatives/brands in the choice set, by comparing brands on one aspect at a time (in order of importance of aspects) and eliminate those that do not include the selected aspect. Aspects are determined probabilistically, proportional to their weights. In further utilizations of EBA there are cases where aspects are deterministically considered (i.e. a certain aspects order is given), but the principle remains the same. EBA is sometimes considered to combine elements of the lexicographic and satisficing rules – see them below.

**PRETREE – Preference Tree, incl. Elimination by tree (EBT) and Hierarchical elimination by aspects (HEBA)** (Tversky & Sattath, 1979): EBA original model presents the issue of large number of parameters. Tversky and Sattath propose EBT – elimination by tree model, which requires only a subset of brands sharing aspects to form a hierarchical structure



on that set; and HEBA – hierarchical elimination by aspects model, in which a single prespecified sequence of binary choices is used. Both models are mathematically similar and referred to as PRETREE. In PRETREE, each alternative is represented as a measurable collection of aspects, and the entire ensemble of aspects is assumed to have a tree structure; a consumer selects an aspect, i.e. a branch from the tree (with probability proportional to its length), and eliminates the brands that do not include or belong to that branch; process continues until one alternative remains.

**EBA with price** (Rotondo, 1986): as price is inherently a continuous variable, it must be treated as such (as opposed to as a binary variable, which is how an aspect is treated in original EBA). Therefore, an alternative EBA model with price as continuous variable is developed.

**Elimination by cut-offs (EBC)** (Manrai & Sinha, 1989): extension of the EBA model in a continuous multi-attribute space; it uses ratings on multiple perceptual attributes derived from the location of competing brands in a perceptual map and yields choice probabilities in the EBA sequential elimination framework. In simpler words: each brand has a utility score on each of the relevant aspect; at each sequence of evaluation of alternatives, the brand which scores, across all aspects, less in terms of total relative utility versus other brands, is eliminated.

Note: this model should not be confused with conjunctive and disjunctive rules because of using the wording of cut-off levels – see below. They are quite different. In EBC there are no minimum cut-off levels on attributes, the ‘cut-offs’ are rather lower rankings and utility scores compared to other brands. Also, brands are rather eliminated one by one for having lowest rankings and relative utilities across aspects, until one final alternative remains; with conjunctive and disjunctive decision rules the choice process stops (often) before all alternatives are evaluated. Therefore, the choice depends on the order in which the alternatives are evaluated, whereas in case of EBC the process goes through all alternatives until one remains.

**Elimination by dimensions (EBD)** (Gensch & Ghose, 1992): relatively similar with EBC principles above but using continuous dimensions and not aspects to represent competing brands. Dimensions are in fact underlying latent dimensions (factors or factor scores) derived from the attributes’ ratings, and they are matched to preference trees. Consumers use those dimensions or preference trees to eliminate alternatives hierarchically. EBD therefore takes further the ideas from PRETREE and solves some issues previously identified with PRETREE that made it less used.

### 2.3. Sequential selection models

**Conjunctive rule** ((Parkinson & Reilly, 1979), (Laroche, et al., 2003)): a minimal cut-off point level for each attribute is set. If an alternative does not meet the cut-off level of any attribute it is removed from consideration. The first alternative that meets the minimum standard for all attributes is selected. For example, a consumer may have a minimum accepted level on several attributes of a car, like consumption, power, acceleration, number of seats, etc. The car that meets all those levels is selected.

**Disjunctive rule** ((Parkinson & Reilly, 1979), (Laroche, et al., 2003)): (can be considered also as opposite of conjunctive rule): a minimal cut-off point level for each attribute is set. The first brand that meets the minimum standard on only one attribute is selected. Sometimes (Hauser, et al., 2009) a brand that meets the minimum standard on a set of attributes can be considered (vs on one attribute only). In a disjunctive rule, the other attributes do not matter. For example, a consumer might consumer all hybrid cars or all SUV cars; hybrids are considered even if they are not SUV, and SUVs are considered even if they are not hybrid.

Notes: Conjunctive and disjunctive rules are often considered two types of satisficing methods – see Satisficing below, for their obvious resemblance from practical perspective (especially between conjunctive and satisficing). We present these and Satisficing as separate models as they appear as standalone methods in scientific literature. Conjunctive and disjunctive rules are most often used to consider or not an alternative (acceptable or unacceptable), therefore in consideration/choice set formation, less for a final selection or choice. Satisficing on the other hand is more a model of final selection or choice.

**Subset conjunctive rules** (Ordóñez, et al., 1999): a brand is considered if at least a subset of S attributes, from all attributes, are found at an acceptable level. Subset conjunctive generalizes both disjunctive ( $S = 1$ ) and conjunctive ( $S = \text{number of features}$ ); any S of the features need to be above the threshold. For example, if a consumer values quality, power and handling in a car, then a subset conjunctive model ( $S = 2$ ) means a car is selected if it is above minimum accepted levels in [quality and power], or [power and handling], or [quality and handling].

**Probabilistic subset conjunctive model** (Jedidi & Kohli, 2005): generalizations of the conjunctive and disjunctive screening rules. Consumers use any number or subset of decision criteria when screening alternatives – therefore a relaxation of the requirement that an acceptable alternative must be satisfactory on one criterion (disjunctive) or on all criteria (conjunctive), and they can be uncertain about what are the acceptability of attributes levels until they actually see alternatives (i.e. probabilistic approach instead of deterministic).

**Lexicographic preference rule** ((Fishburn, 1974), (Parkinson & Reilly, 1979), (Laroche, et al., 2003), and (Kohli & Jedidi, 2007) for variants of the rule): attributes are ranked according to perceived relevance or importance. Then different alternatives are compared in terms of the most important attribute. If one brand scores sufficiently high\* on that attribute, it will be selected, regardless of the score on any other attribute. In case of a tie, or no single brand can be selected, ‘surviving’ brands are compared in terms of second most important attribute, and so on. When attributes run out, choice is random among remaining brands. Lexicographic rule only orders alternatives, however, it demands often stronger judgements than those necessary for binary classifications (ex. it has or not a feature/aspect), stronger judgements such as conjunctive, disjunctive or subset conjunctive rules.

\*Literature seems to be inconclusive in what means “sufficiently high”. Some authors suggest it means above certain cut-off level; others suggest it means the highest score among all brands.

**Satisficing lexicographic model** (Kohli & Jedidi, 2007): allows indifference among attribute levels; it occurs when a consumer finds that any higher value of an ordered attribute (ex. amount of computer memory) is no more valuable beyond an upper threshold. For nominal attributes, indifference among attribute levels can reflect absence of preference over a subset of attribute levels (ex. color, physical style, etc.).

**Binary lexicographic model** (Kohli & Jedidi, 2007): relaxes the assumption that a consumer evaluates alternatives one attribute at a time; a consumer rather orders the importance of the attribute levels, not the importance of the attributes. This means the consumer can switch back and forth across the attributes while still making lexicographic judgements. The consumer classifies alternatives into those with the most preferred level across attributes, and those without it; further into those with the second most preferred level across attributes, and those without it; process continues until all still-tied alternatives are discriminated. Note: standard lexicographic

model is a special case of the binary lexicographic model where all levels of an attribute are considered one after another by a consumer.

**Binary-satisficing lexicographic model** (Kohli & Jedidi, 2007): a combination of the two previous variants. A consumer is indifferent among the levels of some attributes, and orders the alternatives over the combined pooled levels, possibly switching across attributes in the process. It is considered one of the most general lexicographic models.

(Yee, et al., 2007) differentiate between few important variants of lexicographic models. To ensure understanding, we need to clarify terminology: attribute is any characteristic of a brand or product, in the sense used until now. Feature is an attribute, ex. brand or engine type or body-type in case of cars. Features can be ordered/ranked in importance, ex. BMW > Mercedes > Audi. Aspects are features transformed into binary descriptions of those features, having or not the respective characteristic, ex. it is BMW or not, it is diesel or not, it is coupe or not. An aspect therefore is characterized by existence or negation of existence (negation is still an aspect that can be considered). Aspects can be ordered/ranked in importance and this can be done by intercalating features if needed, ex. I prefer BMW, then diesel, then Mercedes, then coupe, then Audi.

**Lexicographic by Features (LBF)** is where a consumer ranks brands based on the most important feature for him, then ranks on the second most important feature, and so on. This resembles the general lexicographic preference rule described before.

**Acceptance by Aspects (ABA)** is where a consumer ranks by aspects: first accepting brands with a certain aspect desired, then those with another aspect desired, and so on. ABA is closely related to Tversky's Elimination by Aspects (EBA) in which consumers successively eliminate alternatives that do not have or meet desired aspects.

**Mixed-rule lexicographic by aspects (LBA)** (Yee, et al., 2007) – lexicographic by aspects nests the non-compensatory rules of LBF, ABA, and EBA. All these models are mostly used in defining ordering/ranking of brands or products, therefore in choice de facto.

**Disjunctions of conjunctions (DOC)** (Hauser, et al., 2010): an alternative is considered if one or more conjunctions are satisfied. Brands/products have aspects (binary descriptions of features, ex. "sedan"); a pattern is a conjunction of aspects (ex. "sedan" and "hybrid"); size  $s$  of a pattern is the number of aspects in the pattern (ex. pattern "sedan" and "hybrid" is size 2); a brand/product  $j$  matches pattern  $p$  if brand/product  $j$  contains all aspects (or their negations) in pattern  $p$ ; consumers consider a brand/product if the profile matches one or more target patterns; each pattern is thus a conjunction, and model is thus called disjunctions of conjunctions. The model is a generalization of decision rules such as disjunctive (disjunctions of patterns of size 1), conjunctive (patterns of size  $F - F =$  number of features), lexicographic and subset conjunctive rules (patterns of size  $S$ ). Model is used more for predicting consideration (set) rather than final choice. For example, a consumer may prefer a sedan if it is hybrid and has five seats or a sporty car that has great handling. The sporty car doesn't have to be a hybrid necessarily, while the hybrid doesn't have to have great handling necessarily.

## 2.4. Sequential comparison models

**Additive difference / Confirming dimensions strategy models** ((Tversky, 1969), (Russo & Doshier, 1983)): Alternatives are processed in pairs of two, along all attributes, and the alternative with the better overall attribute values is retained; the retained option is then compared to the next alternative; process

continues until one option remains. For determining the 'better overall attribute values' for one alternative versus the other, all relevant attributes are typically assigned weights which count when comparing the alternatives (i.e. importance weights are multiplied by the differences in the values of the two alternatives' attributes and summed). This however resembles and is a simple weighted linear compensatory model / weighted additive rule. Different other mechanisms or models of choice summarized here might be adopted in fact when comparing each pair of alternatives.

## 2.5. Sequential satisficing search models

**Satisficing** (Simon, 1955): Alternatives are evaluated one by one, as they appear; if one alternative fails to meet the minimum accepted level on any attribute considered relevant, it is eliminated; process continues until an alternative passes the cut-offs levels for all attributes considered relevant.

**Satisficing model with satisficing stopping rule** (ex. (Stüttgen, et al., 2012)): Alternatives are evaluated based on their attributes (including conjunctive rule – each attribute has a minimum cut-off level) until overall utility derived for one alternative is considered minimum acceptable level. Minimum acceptable level is defined by the combination of the attribute-level acceptability judgements. When that minimum acceptable level is achieved, choice is made – strict satisficing rule (Simon, 1955). In this model an additional verification stage can appear repeating the evaluation (relaxing version of the strict satisficing model), and choice will soon be made based on random choice between all satisfactory alternatives. Notes: 80% of consumers were shown to go to this second verification stage. Satisficing choice depends on the order in which alternatives are evaluated, therefore the sequential search will almost always be incomplete, and the objectively best option may not be chosen. The model itself does not rely on compensatory trade-offs at all (unlike two-stage choice models with compensatory rules in second stage), therefore, is classified as non-compensatory, although technically can be considered also a two-stage choice model with a random choice in second stage.

Two important extensions of the model proposed: (1) probabilistic conjunctive rule instead of deterministic (based on probabilistic version of the conjunctive rule, (Jedidi & Kohli, 2005)), meaning that the consumer has a probability of whether he finds a certain attribute level acceptable whenever he sees it during (i.e., independent decisions are made on the spot whenever he encounters the attribute level); the original model assumes that the consumer decides before the decision process starts what is acceptable to him (leading to thresholds that are constant across choice sets) – a deterministic approach that is. (2) considering that only some, not all, attributes are used in the evaluation, i.e. only some attributes are important, therefore consider importance of attributes.

**Satisficing model with reservation stopping rule** (Caplin, et al., 2011): similar in principle with satisficing model with satisficing rule above, with few notable differences: (a) It adds the concept of cost  $k$  to search for and evaluate an additional alternative, therefore at each step the consumer can choose from any of the already evaluated alternative the one with biggest utility  $U$  already found or pay cost  $k$  and evaluate a new alternative. When utility of the new alternative  $U^*$  is sufficiently high so that  $U^* - U$  (marginal utility) covers cost  $k$ , search continues; when  $U^*$  is not sufficiently high compared to  $U$  to cover  $k$ , search stops and the alternative with the biggest utility found until then ( $U$ ) is chosen – this is called reservation stopping rule. (b) utility calculation is rather based on additive model and does not include any non-compensatory rules like conjunctive rule; in other words, there is no differentiation between alternatives based on minimum accepted cut-off levels of the attributes.

## 2.6. 'Fast and Frugal' heuristics

Take the best heuristic (Gigerenzer & Goldstein, 1996), (Gigerenzer & Gaissmaier, 2011): When evaluating alternatives, search through cues (in order of their validity – see below explanation) and stop when finding the first cue that discriminates between the alternatives (cues assessed binary, one alternative with value of 1, one alternative with value of 0); the alternative with the positive cue value (1) is inferred as higher criterion value and selected. Further variants of the search stopping rule have been proposed, for example the 'confirmatory' stopping rule – stop after two cues are found to point to the same alternative (Karelaia, 2006).

Explanation of cue validity: cue validity is given by the number of correct inferences when a cue discriminates divided by the sum of correct inferences when the cue discriminates and number of wrong inferences; in simpler words, how well the cue actually discriminates between the alternatives, meaning value of 1 for one alternative and value of 0 for the other, no alternative with value unknown or under a question mark.

Note: 'Take the best' heuristic may resemble a lot with the lexicographic preference rule, especially from a practical perspective, because of the use of only one cue or attribute to evaluate alternatives and choose the 'winning' alternative on that cue or attribute. Lexicographic rule usually assumes a high enough score (above a cut-off level) or highest score needs to be obtained by an alternative, on the most important attribute, to be selected; and, hence, attributes can be ranked in terms of importance, to start evaluation based on the most important one (then second, third, and so on). 'Take the best' heuristic assumes a cue is simply met or not (binary, value of 1 or 0); cues are ordered according to their validity, i.e. how well they discriminate between the two alternatives, and the highest ranking cue is considered best cue. Also, theoretically, the original model says that once a cue that discriminates between the alternatives is found, then search for cues (that discriminate) stops. So, the best cue (higher ranked) may not necessarily be the most important attribute or factor of choice for the consumer, but it does discriminate best between alternatives. Another important difference is that in 'take the best' heuristic, the cues do not necessarily have to be actual attributes of the brand/product but can be something considered related to those. For example, a person can use the existence of a football team or not as a cue for the size of a city. When such cues are valid, meaning they predict correctly the target, it is called they have 'ecological validity'.

**Tallying** (Gigerenzer & Goldstein, 1996), (Gigerenzer & Gaissmaier, 2011): Tallying refers to counting the number of cues favoring one alternative in comparison to others (ignoring weights, i.e. all cues considered equal in importance). Search through cues in any order, stop after a number of cues is evaluated (number equal to or less than the total number of cues), then select the alternative that is favored by most cues. In this case, cues are considered 1 if value is positive, and 0 if negative or even unknown. Therefore, a cue that would be considered 'not valid' based on the above definitions in 'Take the best' heuristic (i.e. value unknown for some of the alternatives under evaluation) here it is considered (as long as it has positive value for at least one alternative).

**Weighted tallying** (Gigerenzer & Goldstein, 1996): Tallying (above) treats all cues as equal; weighted tallying weights each cue according to their 'ecological validity' (see definition above in Note to 'Take the best' heuristic)

**Frequency of good vs. bad features** (Alba & Marmorstein, 1987): Consumers evaluate and choose alternatives based on the number of counts of good and bad features of the alternatives; consumers develop cut-offs for what means good or bad features, and depending on their focus (i.e. good features,

bad features, or both) different versions of this strategy can be developed. Note that if the features are transformed into binary attributes, called aspects, this strategy may resemble EBA; it can also resemble conjunctive or disjunctive rules depending on how cut-offs for the different attributes/features are set/expressed; in general, however, since the rule refers only to the 'count' of good and/or bad features, it is considered as a standalone model.

**Recognition heuristic** (Gigerenzer & Gaissmaier, 2011): If one alternative is recognized and the other(s) is/are not, then the recognized alternative is inferred to have higher value with respect to the criterion. The recognition heuristic can be considered also as a possible first step in the formation of the smaller consideration/choice set, as it allows a quick reduction in the number of alternatives. This idea is aligned with the concept of brand familiarity in marketing, i.e. familiar brands are more likely to be considered than non-familiar brands.

**Fluency heuristic** (Gigerenzer & Gaissmaier, 2011): If alternatives are recognized but one is recognized faster, that one is inferred to have higher value with respect to the criterion.

**Take the first heuristic** (Johnson & Raab, 2003): An alternative of fluency heuristic, applicable when alternatives are not given but need to be generated from memory, i.e. sequentially retrieved rather than simultaneously perceived: choosing the alternative that comes to mind first.

**Affect referral rule / Affective choice** (multiple authors/ sources/views. (Park, 1993) for a review thesis): make the choice based on recalled affect towards brands in memory, bypassing reevaluation of the brands and comparison processes. Some authors view this as an effort-minimizing heuristic, i.e. rare phenomenon wherein recalled affect solely guides choice behavior. Others view it rather as a rule, affect being retrieved and utilized in the decision process whenever affect is available in memory. The affect stored in memory is constructed most often based on past experience with the brand/product or based on a past choice model applied which was considered to lead to a good decision, but it can sometimes be based also on holistic impressions or emotions associated with a brand, or based on global or social attitude towards brand (even social biases like bandwagon effect). Some authors connect affect referral rule also to evaluations of the sort of "highest overall rating" of the product (i.e. social attitude in the moment of decision making as opposed to a memory or general perception). Because such social attitude or perception of others can act as a criterion, even with a cut-off level, affect referral rule could be classified also as a non-compensatory sequential selection type of model instead of 'fast and frugal'.

Note: even though the word 'affect' is used in this case, it does not refer to emotions, not even to 'affect' as per its correct definition. 'Affect' is often confused with emotions or feelings, even in psychology literature, yet it is different. Affect refers to the basic sense of feeling, ranging from unpleasant to pleasant (valence), and from agitated to calm (arousal). Emotion is a much more complex construction. See more details in (Barrett, 2017) for a neuroscientific view, or (Shouse, 2005) for a psychology view (even though between these two views there are differences as well). 'Affect' in this case refers rather to a basic appreciation, often stored in memory, about the brand or product, of how well it met in the past or it meets some relevant criteria; that criteria can sometimes be but rarely is, an emotion associated with the brand or product.

For heuristic decision making see more in (Gigerenzer & Gaissmaier, 2011) and (Gigerenzer & Goldstein, 1996), and in (Shah & Oppenheimer, 2008) a summary of effort-reduction principles underlying heuristics and their role in decision making behavior.

## 2.7. Two-stage models (pseudo): reference point formation, then choice

**Reference price formation models** (ex. (Winer, 1986), or (Briesch, et al., 1997), (Winer, 2013) for summaries): models where reference prices are considered to form a price perception which is further utilized in probabilistic choice modeling next to the effect of observed prices. Winer pioneered the concept in 1986, Briesch et al 1997 discuss reference price formation through stimulus vs memory, and Winer 2013 provides a detailed review on reference price models. While these models are clearly not specific for evaluation between alternatives and selection, we include them as type of model or principle here because of the importance of price and of reference price in the choice process.

**Multi-attribute reference points models** (ex. (Hardie, et al., 1993)): similar models of forming a reference point yet with regards not only to price but to more attributes. Such models departed from the idea of value function and different asymmetric values given to gains and losses from prospect theory (Kahneman & Tversky, 1979). We mention these models here because of the importance of reference points in the choice process.

We call these two-stage models 'pseudo' because the first stage of reference point formation is often not performed as a distinct stage, in a specific time interval of information collection, processing and evaluation, but rather it is an 'impression' formed which is then used in the second stage in an evaluation process per-se.

## 2.8. Two-stage models: consideration/choice set formation, then choice

**Two-stage choice models** assume in the first stage a smaller consideration/choice set is formed, from which the final choice is made in the second stage (Shocker, et al., 1991). (Roberts & Lattin, 1997), and (Hauser, et al., 2009), provide an overview of how consideration sets are formed. In the second stage a multinomial (MNL) type model is typically used to predict choice, i.e. consumers would use in real life as equivalent a utility maximization model such as additive or weighted additive. Most consideration set models assume this applies in consumers' idiosyncratic consideration sets (Russel, 2014)).

Forming the set in the first stage is done through:

- a) sequential selection: recalling or recognizing alternatives capable of meeting the relevant need or criteria,
- b) sequential elimination: eliminating alternatives that are not desirable or capable of meeting the relevant need or criteria, or
- c) a combination of the above two processes.

Further, choice set formation is characterized by few characteristics – see (Manrai & Andrews, 1998) for details:

(i) memory based versus stimulus-based choice set formation, or both. Memory based means consumers retrieve the contents of the choice set from memory without any cues from external environment; stimulus-based means consumers form the choice set based on alternatives physically present in their environment at the time of choice.

(ii) naive versus theoretical choice set formation. Naive means not only memory does not affect choice set formation, but neither does consumer and/or brand characteristics, therefore choice set is formed randomly or based on consumer's purchase history

(iii) attribute-based versus brand-based choice set formation. Research showed that choice processing tends to be attribute-based, and judgement processing tends to be brand-based (Alba, et al., 1991): it is easier to compare brands on each attribute sequentially (non-compensatory approach) than to integrate all information about each brand into a single overall

evaluation and choose the alternative with best overall evaluation (compensatory approach). Some research argues that choice set formation is rather attribute-based (most often), and information processing by brand is more likely when number of alternatives is small (ex. a choice set is already formed) than when there are many alternatives (Bettman, et al., 1991). This however appears sometimes counter-intuitive as, not rarely, consumers actually form a first short list of alternatives or a choice set based on brand (without integrating all information by brand and doing overall evaluations of the brands, but using brand as a cue, for example for quality).

(iv) static versus dynamic choice set formation. Static means the set does not change over choice occasions. This can be when choice is formed based on brand attributes that do not change in short term or consumer characteristics which typically do not change between choice occasions. Dynamic means the set can change between choice occasions. This can happen when brand or product attributes change, or the buying environment/context changes between occasions, or when past purchasing history affects the choice set formation as purchasing history is changing itself in time (i.e. loyalty to brand or other attributes is an important determinant of choice).

**Sequential selection in first stage (recalling or recognizing alternatives) examples:** consideration/choice set formation by screening based on one aspect or feature such as screening by promotion (ex. (Fader & McAlister, 1990), or general model by (Andrews & Manrai, 1998)) – in this case rather stimulus-based (but also memory-based), and attribute-based. Consideration/choice set formation based on price levels, brand salience and other variables (ex. (Bronnenberg & Vanhonacker, 1996) – in this case both memory-based and stimulus-based, and both attribute-based or brand-based; or when facing uncertainty about the prices of the brands, consumers may use what they learn about brand quality therefore their quality perceptions to assemble a consideration set (ex. (Mehta, et al., 2003)) – in this case memory-based and rather brand-based. In some cases, the consideration/choice set is formed based on dynamic heuristics that can change depending on consumer purchase histories, for example brand loyalty can be used in screening alternatives (ex. (Siddarth, et al., 1995)) – in this case again memory-based, and both attribute-based and brand-based.

**Sequential elimination in first stage examples: Consideration by aspects (CBA)** ((Andrews & Manrai, 1998) or (Manrai, 1995)): in the first stage an EBA-like approach is taken to reduce the initial set of alternatives to a smaller one, and in the second stage a MNL type model is used to predict choice, i.e. consumers would use a utility maximization model such as additive or weighted additive. In CBA model each attribute is given an importance weight. The above mentioned models by Fader and McAllister 1990 (selection based on one aspect like promotion) and Siddarth et al 1995 (selection based on dynamic heuristics) are nested within the CBA model. Economic screening rules (Gilbride & Allenby, 2006) can be considered another example, where consumers screen out alternatives with certain attribute levels and then choose from the remaining alternatives, using a compensatory function of all the attributes; the economic screening rule model gives an economic justification as to why certain attributes are used to screen alternatives.

**A combination of multiple rules in first stage:** the consideration/choice set is formed by mixing different screening rules (conjunctive or disjunctive) and even mixing them with compensatory rules, ex. a choice model with conjunctive, disjunctive and compensatory rules (Gilbride & Allenby, 2004).

## 2.9. Two-stage models with costs-benefits evaluation

**Two-stage process with cost-benefit trade-offs in first stage** (Roberts & Lattin, 1991): forming a consideration set by

adding products until the change in expected maximum utility of the set is not justified by the increased cognitive costs of the choice set evaluation; in the second stage a MNL type model is used to predict choice, i.e. consumers would use a utility maximization model such as additive or weighted additive.

**Two-stage process with cost-benefit trade-offs in both stages** (Hauser & Wernerfelt, 1990): forming a consideration set from a larger set of alternatives, then choice. Trade-offs occur in both stages, (a) cost of evaluative search and the expected incremental benefits of including an alternative in the consideration set, and (b) incremental benefits expected at the consumption stage relative to the expected incremental decision costs.

Multiple other two-stage models have been researched, yet, as in the case of RUM models, many are focused on the mathematical modeling to predict the final choice, and not on practical steps that consumers might actually take in evaluating alternatives and making their choice, therefore we do not review them here (for this, refer to the studies mentioned at the beginning of this section).

### 3. Conclusions

The typical product development and quality management process, in translating customer requirements or preferences into product specifications (first step in building the house of quality in QFD), assumes consumers are utility maximizers (i.e. able to assess all product or brand attributes among all alternatives, and accurately determine which alternative obtains a 'highest score' of utility), therefore all attributes or customer requirements will be rated in terms of their importance. This basically assumes consumers evaluate alternatives and choose based on a (un)weighted linear compensatory model / weighted additive rule. As this paper shows, this is only one of more than thirty distinct models of brand choice behavior. Understanding these models and when and how they will be adopted by consumers can greatly improve the accuracy and precision of translating customer requirements and preferences into product specifications.

Doing this review, we also notice few major shortcomings or opportunities to improve theory, all leading to the conclusion that research literature is inconclusive, still, in explaining which type of models of brand choice behavior consumers adopt, when, why, and how.

Overall it seems that research has been focused on building mathematical models, attempting to predict the choice, rather than understanding the real behavior/process/steps leading to that choice – in fact, whether a mathematical model performs in predicting the choice made by a consumer, it does not automatically mean that the consumer took the same steps as in the model to make his choice. Additionally, research has been focused on defending an own model and proving it fits, but not also on investigating if another model might fit better than own, or even if and how different models might be combined in the same choice process and context. In other words, there is no comparative analysis of which type of brand choice behavior model consumers adopt, when, why, or how. A simple question like "Do consumers that value factor X, or with characteristic Y, adopt choice behavior A, or B?" does not have an answer, and has not been researched so far to the best of our knowledge. Finding a way to better understand this is however critical for marketing, sales or product development functions in any firm. (To clarify: questions like "Do consumers that value factor X, or with characteristic Y, choose brand N, or M?", i.e. which brand is chosen, have been researched extensively; the previous type of question, i.e. which choice behavior/process/steps up to the final choice are adopted, has not been).

Additionally, as we consolidate views in Table 1, it becomes evident that beyond the two-stage choice behavior models,

there has been little to no attention in literature given to potentially more stages, or other types of staging, or potential recurrence of stages. Another recent research paper (Shao, et al., 2008) noted similarly that up until its writing, there was no focus beyond the two stages approach to choice behavior modeling, and further on that most consumers do not construct a particular choice set to make the final purchase decision (which is the 'mantra' of the two stage choice models), but their 'journey' is comprised of more waves. To the best of our knowledge, even after this paper the situation remained relatively the same. But choice bracketing or decision staging notion exists in behavioral economics, and refers to breaking down the different stages of the choice process and explore those options successively, stage by stage (Johnson, et al., 2012). Given complex or long decisions, when narrowing down options people tend to screen the alternatives based on a subset of attributes, and then compare alternatives – therefore choices are between both attributes and alternatives, from stage to stage, not only between alternatives. Examples of such multiple staging can be found in (Levav, et al., 2010), (Häubl, et al., 2010), (Shao, et al., 2008), or as a particular case when consumers are new to a market (Heilman, et al., 2000). This approach of multiple staging of the decision has been largely neglected by the previously mentioned review studies and analyzed papers, therefore it is not included in Table 1, yet this could be considered as a distinct type of brand choice behavior models.

Factors driving brand choice behavior, and which model of brand choice behavior is adopted, when and why, are another shortcoming and opportunity for improvement in current research literature.

Firstly, brand choice behavior models research rarely addresses emotions, feelings, personal values or motivations. When it does so, it refers to rather conscious emotions anticipated or triggered during the choice process or related to the choice process – cognitively determined that is. There is little attention given to emotions beyond that, such as the feelings, emotions, personal values, motivations of the consumer in relation to or elevated by the brand or product. These are subjective areas, which can be hardly codified mathematically, and maybe therefore they have not been in the focus of the more technical scientific brand choice behavior research. They are undoubtedly though highly important and their role should be treated – without considering such factors, choice models would be incomplete and missing, argued even by Daniel McFadden, Nobel prize winner for his contributions to choice modeling (Hess & Daly, 2010).

Secondly, most brand choice behavior models, if not all, are focused on 'hard' attributes of brands or products (or emotions), and how these are evaluated, somehow assuming those attributes are objectively defined the same by all consumers. Price for example may be easier to think it is so – consumers will likely assess it as 'cost' (although research in price perception shows different findings). Yet quality, a significantly important aspect in brand choice behavior, has among its components the 'perceived quality' (Garvin, 1987): it is defined differently, and it is perceived differently, by each consumer (even influenced by brand, or price, or context). We highlight therefore the importance of understanding how quality is defined and perceived by the consumer, in each choice context, and how it can influence brand choice behavior. A recent study shows how quality perception can be influenced and varies along the customer journey and the role cognitive biases and heuristics play in forming those perceptions (Teleaba & Popescu, 2019).

Lastly, research has not addressed sufficiently how other factors may influence brand choice behavior and more specifically which brand choice behavior models are adopted by consumers, however separate research in behavioral economics or psychology has shown they influence greatly consumer choice. Such other factors include: context dependent changes in preferences and choice (evaluability hypothesis (Hsee, 1996) and distinction bias (Hsee & Zhang, 2004), trade-off contrast

and compromise effect (Simonson & Tversky, 1992), asymmetrically dominated choice or decoy effect (Huber, et al., 1982), transaction utility (Thaler, 1983) and procedural utility (Frey, et al., 2004), pain of paying (tightwads versus spendthrifts, (Rick, et al., 2008).), reason based choice (Mellers, et al., 1998) and cognitive dissonance (Festinger, 1957), or inertia/status-quo bias versus variety seeking (Bawa, 1990) and 'try-new' bias (Teleaba & Popescu, 2018).

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## Decision-Making and the Applying of Decision-Making Techniques in SMEs in Kosovo

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### Abstract

*The purpose of this article is to provide a theoretical and practical overview of decision-making and decision-making techniques applied to small and medium-sized enterprises in Kosovo. This was made possible through the survey of a sample of 50 enterprises of this type throughout the territory of Kosovo, which enabled direct observations to be obtained from the managers of these enterprises. The objective of this article is to provide original results on the extent to which employees are allowed to participate in decision-making, which decision-making techniques are most commonly applied in SMEs, and how effective the is the application of these decision-making techniques within enterprises.*

**Keywords:** decision-making; SMEs; participation; decision-making techniques; effectiveness.

### 1. Introduction

This article is designed in order to have a clearer and closer look at how the decision-making process in SMEs in Kosovo is realised, giving a theoretical and practical approach to research. Given the fact that enterprise leaders are required to make decisions during their business activities, it follows that the decision-making process is crucial to the effective functioning of enterprises.

Managers are saddled with the responsibility of leading their organizations to achieve objectives and stated goals. This does not only require versatility and prowess, but more adequate knowledge management with excellent decision-making (Abubakar M. A., et al., 2019). Organizations should assess the nature of their culture and appropriate style of decision-making; as well choose the best decision-making process that is most effective in the organization. Also, it is recommended that managers determine who can be share in the process of decision-making, consider how decisions will affect employees, motivate and empower the staff to make and apply decisions, as well use communication effectively to keep leaders and staff informed, and determine the obstacles that can hindering the organization from effectively making and implementing decisions. They agreed that by being more proactive in the making decisions, would help managers accomplish appropriate conclusions and prevent them from being caught in last minute. In making organizational decisions, the managers have various styles while making decisions. The styles of decision making are differing in its nature, effectiveness, and results. The style of manager in any organization affects the subordinates' personal life and their

attitudes related to work. Managerial decision making style is directly related to life satisfaction, self-esteem, self-efficacy, and stress. Further, decision making style of manager is directly related to organizational outcomes like job satisfaction, turnover intention, job performance and organizational performance. The effective organization usually depends on the leader effect who is also a professional decision maker. Thus, decision making is the fundamental and basic function in any organization. This is due to the quality of decisions that made affected by the effectiveness of the managers and consequently, affects the success of the whole organization. The success of the manager in all roles reflects the decisions that he or she made in the organization. Also, the manager must be first good decision maker before he or she can be a good planner, organizer, leader and controller in the organization (Abood, S. A. & Thabet, M., 2017).

The first consideration in taking any decision in an organization is the philosophy and goal of the institution. However the leader cannot implement the decision alone, he needs the support of his subordinates, therefore, it is then imperative on the leader to find means to convince his/her subordinates (Kayode, B. K., Mojeed, A. Q. & Fatai, I. A., 2014).

Decision-making is almost universally defined as choosing between alternatives. It is closely related to all the traditional management functions. For example, when a manager plans, organizes, and controls, he or she is making decisions. The classical theorists, however, did not generally present decision making this way. Pioneering management theorists such as Fayol and Urwick were concerned with the decision-making process only to the extent that it affects delegation and authority, whereas the father of scientific management, Frederick W.



Taylor, alluded to the scientific method only as an ideal approach to making decisions. Like most other aspects of modern organization theory, the beginning of a meaningful analysis of the decision-making process can be traced to Chester Barnard. In *The Functions of the Executive*, Barnard gave a comprehensive analytical treatment of decision making and noted: "The processes of decision...are largely techniques for narrowing choice" (Luthans, F., 2011).

Decision making can be viewed as an integral part of planning in that key decisions have to be taken throughout the planning process. Decision making can be defined as "the selection of a course of action from among alternatives". In this sense decision making is at the heart of planning: for plans to be formulated and implemented, decisions on certain courses of action have to be taken. Some commentators have even argued that decision making can be viewed as the most fundamental managerial activity of all. Decision making is discussed primarily within the context of planning; but despite the link with planning, decision making is a fundamental element of the entire management process (Tierman, S. D. & Morley, M. J., 2013).

## 2. Literature review

Management involves coordinating and overseeing the work activities of others so that their activities are completed efficiently and effectively. Efficiency refers to getting the most output from the least amount of inputs. Effectiveness is often described as "doing the right things" – that is, doing those work activities that will help the organization reach its goals. According to the functions approach, managers perform certain activities or functions as they efficiently and effectively coordinate the work of others (Robbins, S. P. & Coulter, M., 2012). The four basic management functions-activities that make up the management process are: planning, organizing, influencing and controlling (Certo, S. & Certo T., 2016). The fact that managers are generally judged not by their performance but by the performance their subordinates achieve, has led many scholars to admit that "achieving results through other people" is among the most widespread definitions of management (Tahiri, A. & Kovaçi, I., 2017).

Planning is the first function of management to include forecasting and decision-making as other important parts. Forecasting is that part of planning that relies on the tendency to measure the uncertainty of future events, those that can and cannot be controlled and can influence the realization of the organization's goals (Ramosaj B., 2013). Decision-making is typically described as choosing among alternatives, but this view is overly simplistic. Why? Because decision-making is a process rather than the simple act of choosing among alternatives (Robbins S., DeCenzo D. & Coulter M., 2013). Sometimes decisions defy purely step-by-step logic. To be effective, companies also should embrace intuitive or action oriented forms of decision making. How should decisions be made? First define the problem, then diagnose its causes, next design possible solutions, and finally decide which is best. And, of course, implement the choice (Nutt, P. and Wilson, D., 2010).

Integral decision theory provides a unique system of decision making and/or unique integral decision within the temporal and spatial segments. Within this integral decision we discover four elements: objective element, subjective element, factual element and evaluative element (Sikavica P., et al., 2008).

It is possible that some managers will allow employees to participate in decision making. Here comes the question: So what explains why some employees learn to make better decisions than others? Answering that question requires understanding how employees learn, what kind of knowledge they gain, and how they use that knowledge to make decisions. Employees learn from a combination of reinforcement and observation, and that learning depends in part on whether they are learning-oriented or performance-oriented. Some of that learning results in increases in explicit knowledge, and some of that learning results in increases in tacit knowledge (Colquitt, J. A.,

LePine, J. A. & Wesson, M. J., 2015).

Decision-making techniques or assistive techniques in the decision-making process are intended to provide tools that assist managers in the decision-making process as well as provide them with more complete information so that they can make more informed decisions (Robbins, S., P., DeCenzo, D. and Moon H., 2011). There are numerous decision making techniques available. In our case we will mention some on the basis of which the research data were also collected. The decision making techniques that we will mention are: Operations Research, Probability Theory, Decision Tree, Brainstorming Technique, Nominal Group Technique and Delphi Technique.

Operations research is the combination of different techniques to apply scientific methods to solving complex problems in the organization. The essence of OR lies in using scientific models to represent real situations (Ramosaj B., 2013). In practice, OR does not offer a single general technique for solving all mathematical models. Instead, the type and complexity of the mathematical model dictate the nature of the solution method (Taha, H. A., 2017).

Probability theory is a decision-making tool used in risk situations-situations in which decision makers are not completely sure of the outcome of an implemented alternative. Probability refers to the likelihood that an event or outcome will actually occur, which is estimated by calculating an expected value for each alternative considered. Specifically, the expected value (EV) for an alternative is the income (I) that the alternative would produce, multiplied by its probability of producing that income (P). In formula form,  $EV = I * P$ . Decision makers generally choose and implement the alternative with the highest expected value (Certo, S. & Certo T., 2016).

Decision tree is an important tool in the decision-making process that is essentially the "map" of possible solutions through the various stages of the decision-making process. The decision tree is appropriate when the manager is required to make subsequent decisions which affect subsequent stages of the problem of placement (Ramosaj B., 2013). A decision tree is a graphic decision-making tool typically used to evaluate decisions involving a series of steps (Certo, S. & Certo T., 2016). The advantage of the decision tree is that it allows managers to consider the more complex alternative. We can say that the decision tree is a simple graphical technique for analyzing the possible outcomes of a complex decision. It provides an adequate way to reflect the link between today's decisions, potential events, and future decisions, enabling managers to assess fairly the opportunities that exist when they make a decision at a given point in time (Llaci, Sh., 2010).

Brainstorming, which became popular in the 1950s, was developed by Alexander Osborn to facilitate the development of creative solutions and alternatives. Brainstorming is solely concerned with idea generation rather than evaluation, choice or implementation. The term effectively means using the brain creatively to "storm" a problem. It is based on the belief that when people interact in a relaxed and unrestrained setting they will generate creative ideas (Tierman, S. D. & Morley, M. J., 2013). On the basis of brainstorming technique ideas, the idea that best suits the resources, affinities, ambitions and objectives of the business leader should be selected (Mustafa, M., et al., 2006).

The nominal group technique is another useful process for helping groups make decisions. This process is designed to ensure that each group member has equal participation in making the group decision (Certo, S. & Certo T., 2016).

The Delphi technique was developed in the early 1960s as a means of avoiding the undesirable effects, while retaining the positive aspects, of group interaction. The Delphi technique consists of a panel of experts formed to examine a problem. Rather than physically meeting, the various members are kept apart so that social or psychological pressures associated with group behaviour cannot influence them (Tierman, S. D. & Morley, M. J., 2013).

### 3. Methodology

This paper is designed on the basis of research in various management and other related literature. The theoretical part relates to the definitions and explanations of the various authors, and the data were collected through a structured questionnaire addressed to SME managers in Kosovo. This questionnaire enabled the collection of primary data, receiving direct responses from the managers of these enterprises to come up with clearer and more realistic results. The questionnaire interview was conducted in 50 small and medium-sized enterprises in Kosovo, through a face-to-face approach. During the interview, managers were also open and provided additional clarifications regarding the operation of the enterprises they lead.

### 4. Results

After collecting primary data from direct research, that data was processed and systematized in such a way as to provide a clear overview of the topic that is discussing. In the 50 enterprises surveyed we were able to understand quite well their functioning in relation to decision-making as an integral process of the work of leaders.

We have mentioned that there are cases when managers allow employee participation in the decision-making process and in this aspect it has been found that in Kosovo enterprises, employee participation in decision-making reaches a very high level, respectively in 78% of enterprises employees participate in decision-making at a high level, 20% on the average allow their participation and only 2% of enterprises disregard employees' opinions when making organizational decisions. All departments within the enterprise work together to reach a decision. This is because of being as effective as possible and not making the wrong decisions. So, department managers are involved in decision-making on the Board of Directors, each as a representative of the employees and work of the respective department.

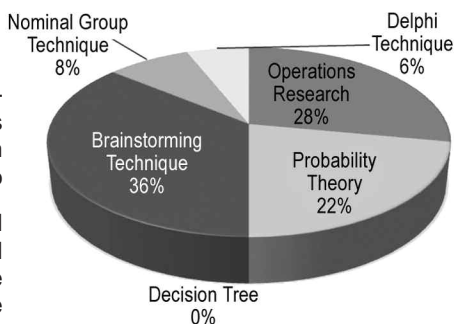
The decision-making process is mainly group-based, with 90% of Kosovo SMEs make decisions in groups. This way of making decisions is perceived by managers as more effective because it reduces the chances of making the wrong decisions.

To make a decision easier, managers apply one of the decision-making techniques (explained above). Which of the decision-making techniques SMEs apply in Kosovo are presented in Table 1 and Figure 1.

	Frequency	Percent	Valid Percent	Cumulative Percent
Operations Research	14	28%	28%	28%
Probability Theory	11	22%	22%	50%
Decision Tree	0	0%	0%	50%
Brainstorming Technique	18	36%	36%	86%
Nominal Group Technique	4	8%	8%	94%
Delphi Technique	3	6%	6%	100%
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>100%</b>	

Table 1. Decision-making techniques applied in SMEs in Kosovo  
Source: Compiled by the author based on the results of the questionnaire

Figure 1. Decision-making techniques applied in SMEs in Kosovo



Source: Compiled by the author based on the results of the questionnaire

The decision making techniques most commonly used by SMEs in Kosovo have turned out to be in the following order:

1. Brainstorming technique applicable to 36% of surveyed enterprises,
2. Operations Research applicable to 28% of enterprises,
3. Probability Theory applicable to 22% of enterprises,
4. Nominal Group Technique applicable to 8% of enterprises,
5. Delphi technique applicable in 6% of enterprises, and
6. Decision Tree finds no application in any of the enterprises in the studied sample.

Also, the results have shown that the decision-making technique applied by the companies is highly effective, i.e. the decisions made are very effective.

### 5. Conclusions

In summary we come to the conclusions that:

Mostly, employee participation in the decision-making process is above the average, which represents a satisfactory level of their incorporation into processes where they have a responsibility to stand behind their ideas in order to reach the decisions that lead to the solution organizational problems.

In the surveyed enterprises, there was a 45:5 ratio of decision-making, which means that only a small number of enterprises practice individual decision-making, while the rest of them practice the group decision-making, allowing employees to express their ideas and opinions so that decisions made can positively impact their work, provide an appropriate organizational climate, good working conditions, and so on.

From the research sample we came to the conclusion that the decision-making techniques most commonly used in Kosovo enterprises are:

- Brainstorming Technique,
- Operations Research and
- Probability Theory.

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## Project Management in Moroccan Companies: Qualitative and Quantitative Approaches

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### Abstract

*SME “small and medium enterprises” are a crucial element in international economy. They employ a big percentage of employees. They have a special structure and characteristics. They also have a lot of weaknesses that need be addressed. Project management is a modern tool, which has proved its effectiveness to help the SME all over the world.*

*The article is a summary of a study about project management in Moroccan companies. The study is a combination of two types of approaches: qualitative and quantitative.*

*In both phases we asked people about projects information, the level of using project management as an official process and the implication of top management in supporting project management inside the company.*

**Keywords:** project management; SME; quantitative; qualitative.

### 1. Introduction

The Small to Medium-sized enterprise (SME) is a complex concept (Zinovieva et al., 2016) with different definitions. In Morocco, a SME is defined as an enterprise:

- With a permanent employees' number fewer than 200 people;
- Having achieved over the last two years, a turnover not exceeding 75 million Moroccan dirhams (Bulletin official (Maroc), 2002).

The General Confederation of Enterprises of Morocco “La CGEM: Confédération générale des entreprises du Maroc” (CGEM, 2018) made an SME classification as described below:

- ❑ The self-entrepreneur “L’auto-entrepreneur”:
  - Less than 500,000.00 MAD, for commercial, industrial and craft activities;
  - Less than 200,000.00 MAD, for services.
- ❑ The very small enterprise “La TPE: La très petite entreprise”:
  - Turnover  $\leq 10$  MDHS.
- ❑ SME (Small and Medium Enterprise) “La PME: Petite et moyenne entreprise”:
  - $10 \leq$  Turnover  $\leq 200$  MDHS.
- ❑ GE (large enterprises) “Les GE: grandes entreprises”
  - Turnover  $> 200$  MDHS.

These enterprises:

- Represent around 90% of the industrial companies;
- Contributes up to 40% of the Moroccan industrial turn over;
- Employ more than 50% of the workforce (Caisse Centrale de Garantie, 2009).

These statistics and many articles of research (Antony et al., 2005; CUMENAL, 2015; Pollack and Adler, 2014) prove the importance of the SMEs.

On the other hand, project management became one of the

strongest used tools (Morris, 2010). Its use has increased greatly in recent years (Meister, Walter, 2006)). Thanks to many international studies, it has demonstrated that:

- Well used project management practices have positive effects on projects (Meister, Walter, 2006; Rwelamila and Purushottam, 2012; Thomas, 2008; Wells, 2012);
- The importance of projects in SMEs (Turner et al., 2012);
- There are differences between project management required in enterprises depending on their size (J. Rodney Turner et al., 2009; Turner et al., 2012, 2010).

In our study, we decided to combine the quantitative and qualitative approaches, researcher and practitioner (Walker et al., 2008). Our primary aim is:

1. To identify some characteristics of projects in Moroccan SMEs;
2. To determine the extent to using project management in Moroccan SMEs.

### 2. Methodology

The study is divided into two phases:

- In the first one, we conducted long interviews with eighteen Moroccan companies;
- In the second one, we made an online questionnaire. We had answers from fifty companies. We had nonparametric data. We used spearman correlation coefficient.

#### 2.1. Qualitative samples

The qualitative study (Oukennou et al., 2017) was made during the year 2016. It concerned 18 companies from different industries.

Table 1 gives an idea of the surveyed companies in qualitative study.

Name	Type	Activity area	Turnover (million MAD Moroccan Dirham)*	Number of employees	Interviewed Entity
CD	Large	Agri-food	9000	7000	QHSE
I C	Large	Telecom	7000	1100	IP Stream
W A	Large	Insurances	6000	300	Information system
M C	Large	Telecom	5500	1160	Special Infrastructure projects
M C	Large	Telecom	5500	1160	Information system
M C	Large	Telecom	5500	1000	Data and voice services
LF	Large	Construction materials	5000	1000	Supply Chain
DET	Large	Retail industry	450	450	Expansion
S M	Large	Audio-visual	300	800	The whole Enterprise
O T	SME	SI consulting	200	20	The whole Enterprise
I CM	SME	Network Installer	170	120	The whole Enterprise
TE	SME	Industrial air conditioning and cooling systems	30	20	The whole Enterprise
DF	SME	Finance	22	20	The whole Enterprise
SES	SME	Aerospace	5	150	The whole Enterprise
V C	SME	Recruitment, Training, Project Coaching	3.5	1	The whole Enterprise
MCC	SME	Training and consulting	3	7	The whole Enterprise
C S	SME	IT services	1.5	10	The whole Enterprise
SM	SME	Informatics services	1	2	The whole Enterprise

Table 1. Surveyed companies

The sample covers different areas and contains large and small enterprises.

The choice of including the large companies in the survey was done because:

- There is a large relation of interaction between large and small companies in the Moroccan market;
- The majority of the Moroccan officials in Moroccan companies work first in large firms before creating their own start up;
- To speak about differences in project management between large firms and SMEs suppose that we have information about the two types of enterprises.

### Nota Bene

To get maximum benefit of the large companies' information and to be closer to the SMEs context, we used an approach of "entity" instead of the whole enterprise.

## 2.2. Quantitative samples

To distribute the form, we used mailing lists and we contacted people directly. We do not have the exact number of Moroccan SMEs so we cannot calculate the response rate. We had 50 enterprise replies. The Table 2 presents a summary of these enterprises.

We classified enterprises by turnover (as defined in the introduction).

Size	Number	Percentage
AE	4	8%
TPE	12	24%
PME	9	18%
GE	25	50%

Table 2. Enterprises by size

Table 3 shows the repartition of enterprises by age and size (the size is based on turnover). We have more responses from older companies. It can be due to the reason that when an enterprise is older, it gets bigger with more staff and so the probability to have one contact inside becomes easier.

ESize/EAge	2-3 years	3-5 years	5-10 years	> 10 years	Total
AE	0	0	3	1	4
TPE	1	1	3	7	12
PME	0	0	3	6	9
GE	0	2	4	19	25

Table 3. The repartition of enterprises by age and size

## 3. Results

### 3.1. Analysed parameters

The two studies covered multiple areas of project management. We will focus on:

- Dimensions of projects (Projects number, Project duration and Project resources);
- Project Management Dimension (The use of project management as an official process and the position of the top management of project management)

We will try to analyze each parameter by the qualitative and quantitative approach.

### 3.2. Dimensions of projects

#### 3.2.1. Qualitative study

##### A. Projects Number

The results show a low correlation between the company size or and the number of projects. Half of the companies have an average of projects less than 10 projects per year. The other half between 10 and 60. The Telecom installer was the only company to say they have an average of three hundred projects per year, albeit short ones.

##### B. Projects Duration

The results of the interviewed sample were divided into three categories: less than one year, an average of one year and more than 2 years. We noticed that the SMEs tend to use projects of small duration. If we count the small projects (the duration is shorter than a month).

##### C. Projects Resources

For all the SMEs, the number of projects members is smaller than 10 people. The same remark is done for the large companies, except two enterprises in telecommunication field.

All employees of the companies have projects on which they work. The same resources work on several projects in addition to daily operational work.

#### 3.2.2. Quantitative study

##### A. Projects Number

Enterprise Size/Projects Number	1 <= ... <10	10 <= ... <30	>= 30
AE	75%	25%	0%
TPE	92%	8%	0%
PME	78%	11%	11%
GE	24%	40%	36%

Table 4. The projects number by enterprise size

All the very small enterprises (AE and TPE) have less than 30 projects in a year. 11% of TPE have more than 30 projects in a year. The big enterprises are more likely to have more than 30 projects in a year (36% of the GE have more than 30 projects by year).

These results claim the correlation between the projects number and the enterprise size. This is not the same result as the qualitative study found.

## B. Projects Duration

Enterprise Size / Projects duration	<3 months	3 months <=...<6 months	6 months <=...<9 months	9 months <=...<12 months	>12 months
AE	25%	0%	0%	25%	50%
TPE	8%	42%	17%	17%	17%
PME	11%	0%	11%	44%	33%
GE	4%	12%	4%	36%	44%

Table 5. The projects duration by enterprise size

Except the AE, when the enterprise gets bigger, its project duration gets bigger. The TPE have more projects (42%) with a duration between 3 and 6 months. The PME have more projects with a duration smaller than 12 months. The GE have the biggest number of projects with a duration longer than 12 months.

The qualitative study confirms these results: the small companies prefer small projects in duration whereas the big ones prefer long projects.

## C. Projects Resources

When calculating the correlation between the enterprise size and the project team number we found that the parameter Enterprise Size is positively correlated with the parameter Project Team Number. The Spearman coefficient ( $r_s = 0.366$ ;  $p < 0.05$ ). Which indicate that the number of a project team members is proportional to the enterprise size.

For more details, we made a classification of enterprises sizes by the project team number. The table shows the results of this classification.

Enterprise Size / Project Team Number	1 <= ... <10	10 <= ... <30	> 30
AE	75%	25%	0%
TPE	83%	17%	0%
PME	78%	11%	11%
GE	44%	32%	24%

Table 6. The number of projects employees by enterprise size

The number of project members is smaller than 10 people for the majority of AE, TPE and PME. The GE have more than 56% of projects with more than 10 members. We conclude that as the enterprise gets bigger, the number of project team members becomes bigger.

## 3.3. Project Management Dimension

### 3.3.1. Qualitative study

#### A. Use of Project Management as an official process

We were looking for the answer to the question of project management use. The answer was positive for all the participants. The difference lay on the level of the use and what are the conditions required before saying we use project management. There were two exceptions: two large firms (Agri-food and insurance) where the project management is defined as an official process but not used a lot. The reasons were that the employees have a low academic background to use literally the process. The second case is an IT department in an insurance company. The constraints of time do not give employees a chance to use formalities of project management.

Then we asked if the project management is an official process in the company. The large number confirming that was from the large companies. The SMEs do not have this maturity.

There were three exceptions justified as follows: one SME is a subsidiary of an international group and apply the group policies. Another SME has a mission of project consulting and help companies to use project management. The last exception is a project-oriented company.

#### B. The Position of the Top Management of Project Management

All the answers we had confirm that the top management has a good knowledge about the project management. It exceeds to the program and portfolio management. This does not mean that the boss (CEO or founder) supports the use of project management. It depends on the size and the importance of the projects and his available time. Many bosses devote almost all of their time to daily activities. The same result is valid for the SMEs and for the large companies.

### 3.3.2. Quantitative study

#### A. Use of Project Management as an official process

Enterprise Size/Existence of an official process	Yes	No
AE	50%	50%
TPE	25%	75%
PME	56%	44%
GE	64%	36%

Table 7. The Existence of an official process by enterprise size

Except AE, we remark that the percentage of enterprises using project management as an official process is correlated with the size of the enterprise. While just 25% of the TPE use it, 56% of PME do that and 64% large enterprise do too.

#### B. The Position of the Top Management of Project Management

Enterprise Size/TopManagementSupport	Yes	No
AE	75.00%	25.00%
TPE	58.30%	41.70%
PME	77.80%	22.20%
GE	84.00%	16.00%

Table 8. Top Management Support by enterprise size

Except AE, the results show that the top management gives more support to projects when the structure is bigger. We see that 84% of large companies managers are supporters, that 77% of the PMEs are supporters too whereas just 58% from TPE are that.

## 4. Conclusion

- ❑ The two types of studies (qualitative and quantitative) showed there are differences between very small, small and large companies in using project and project management.
- ❑ We focused on two main parameters:
  - Dimensions of projects (Projects number, Project duration and Project resources);
  - Project Management Dimension (The use of project management as an official process and the position of the top management of project management).
- ❑ Generally, we see that projects and project management have better opportunities in large enterprises and that small ones are still struggling to develop these conditions.
- ❑ As for projects number
  - The two studies have different results about this point. Whereas the qualitative study shows there is no correlation between the projects number and the enterprise size, the quantitative one affirms there is a strong corre-

lation between the two parameters. This means, that the large companies have the biggest number of projects per year.

- ❑ As for the project duration
- ❑ Project duration is a parameter depending of the size of the enterprise. The SMEs have a tendency to use small projects (less than 6months). The large enterprises have a significant percentage of projects longer than 12 months. The results were confirmed by both the studies.
- ❑ As for the project resources  
If we analyze the outcomes of the two studies, we can say that the number of project resources do not exceed 10 persons for the small companies in the two cases. If the company is large, this rule is no longer valid: more than half of the large companies have projects with more than 30 members.
- ❑ As for the use of project management as an official process  
All the enterprises claim to use project management, but the official using is restricted to the large ones. Whereas more than 60% of large companies do that, the quarter of the very small enterprises do so.
- ❑ As for the position of the top management of project management  
The main result in this part is that top management become supporter of project management practices when the enterprise is bigger, or the project is important.

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## Cluster Analysis to Assess the Quality of Educational Conditions in Educational Institutions

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### Abstract

*The article deals with the cluster approach to the quality of education and training conditions in educational organizations. The proposed more precise definition of the “quality of conditions” that results from the spiral development process enriches the framework of concepts in the researched area. The authors assume that clustering of educational organizations should be performed using quality parameters to assess educational environment. A methodology of a multi-dimensional approach to describing educational organizations is presented in terms of comparative analysis. The criteria that characterize the quality of educational conditions are determined. The results of the clustering of state educational organizations in Leningrad Region providing adaptive learning programmes are estimated. Practical application of the cluster approach helped in identifying a group of organizations (clusters) that were offered a particular set of measures to maintain and create conditions for the development of educational environment.*

**Keywords:** quality; education; quality of conditions; education and training; educational organization; cluster analysis.

### 1. Introduction

The growing requirements for educational organizations and demand for the changes in the assessment technique of the content-related part of education quality both on the part of the civil society and governmental organizations, and an increasing competition on the market of educational services leads to the need to explore the methodology used in estimating educational conditions provided by educational institutions. A dynamic quality assurance of education and training, a developing market of educational services, the changes in the system of socio-economic relations between the participants of educational process, all of these determine significance and relevance of the problem related to a research into reforms of the educational process, commitment of educational organizations to occupy the leading positions on the market in terms of quality of education conditions and education environment.

Shaping conditions for education and training is one of prioritized areas in the national educational policy aimed to ensure an open educational system, public information sources referred to organizations, comfort of the environment, customer satisfaction with the quality of education, accessibility of services for the people with disabilities, and social well-being of all the participants in the educational process.

Etymology of the concept “condition” is defined as “a situation that is stated as necessary in order for something to exist, or an environment where something happens” [Ozhegov, S.I., 1981, Khazova, S.A., 2010]. Conditions for educational activities are considered as “specific features of the key factors, processes and phenomena related to educational processes, including most important requirements to organization of educational activities” [Bekhtenova, E.F., 2006]. The arguments provided by the other authors are defined as a system of objective possibilities and cases of the pedagogical process

which are designed and realized in the educational sphere, and ensure solution of the aims of teaching [Kokorev, V.N., 2007, Moshkin, V.N., (2002), Vikhansky, O.S., Naumov A.I. 2013]. Aspirations related to the conditions required for educational environment, the content-related characteristics, and specific features of education and training environment applied to achieve the required outcome, also determine the choice of optimal conditions.

Within a single information and educational space, education and training conditions should be interpreted as a type of organization of educational process with a total number of means, methods and forms of its organization, specific ways of social interchange, informational content of education, specific psychological climate, which ensure a possibility for target-oriented education.

The notion of “quality of conditions” is of particular interest to researchers; even of more concern is the content of the given concept in the context of the notions “education” and “quality”. As a result of the spiral model of development, the “quality of conditions” is a component of quality of education along with the “quality of the process” and “quality of the outcome,” and it is a significant factor within a whole general education system, an object of multifaceted properties (the level of material and technical facilities; quality of teacher training; engagement of education authorities in the given process; students’ personal qualities; the level of educational and methodological facilities; the quality of internal and external estimation procedure) [Kaldybaev, S.K., Beishenaliev, A.B., 2015].

Solution to the issues relating estimation of quality of educational conditions provided by educational organizations in the context of a single information and educational space lies within the framework of legal environment. According to the Federal Law No. 273-FZ dated December 29, 2012 (amended on June 17, 2019) “On Education in the Russian Federation”,



Art. 95.2 (amended on December 5, 2017 No. 392-FZ) [Federal Law, 2012], "estimation of quality of conditions for education and training is carried out by organizations in line with the following criteria:

- transparency and availability of information related to educational organizations;
- quality of environmental conditions provided for the teaching and learning process;
- friendliness and courtesy of educators;
- meeting requirements for education and training provided by organizations;
- accessibility of educational services for the people with disabilities".

To decompose the mechanism of estimating conditions for education and training in educational organizations, it is suggested to use the cluster approach to increase competitive advantages of the education system on the regional level, in particular, the cluster analysis method which a priori does not require information about the set of data.

## 2. Materials and Methods

A distinctive characteristic of the proposed cluster analysis method is the absence of a priori assumptions about the information set, restrictions to represent the organizations under study, a possibility to analyze the variables in the compared scales, and visualization of the obtained results. In practical application of the quantitative research tools, there is a possibility to solve a number of problems, including the following:

- typology of educational organizations;
- schematization of groups of educational organizations;
- approval of the data for research.

The stages of cluster analysis are presented in Figure 1.

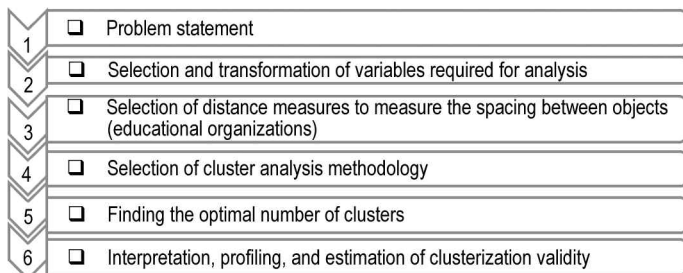


Figure 1. The stages of cluster analysis of educational organizations

Criterion	Characteristics of a criterion
Transparency and availability of information about educational organizations	Transparent and publicly available information resources in the information network, including an organization's website aimed to standardize monitoring procedure of the education system
Quality of educational environment	An Infrastructure of an institution, a system of health care, psychological and pedagogical support to the learner, and intellectual and emotional comfort
Friendliness and courtesy of staff members	Favorable psychological climate, a teacher's professionalism, competence, and professional ethics
Satisfaction with educational conditions provided by organizations	Quality of material and technical facilities in compliance with the Federal State Education Standards, fire safety standards and Sanitary Regulations and Norms, updating requirements for teaching and learning activities
Accessibility of services for the disabled	Conditions for accessibility of facilities, availability of educational services, adaptation of buildings and facilities for other uses, availability and access to roads and sites, identification using accessibility signs

Table 1. Criteria to characterize the quality of educational conditions

A methodology of multidimensional description allows for comparison between educational organizations according to the selected parameters and educational conditions within the framework of comparison analysis. The research variables are the criteria which characterize the quality of education and training conditions provided by educational organizations (Table 1).

The main tools to obtain the source data are as follows:

- a total survey of the content of official websites of educational organizations;
- a review of the bulletin boards in the offices of organizations;
- an online sociological survey;
- personal interviews;
- questionnaires for the customers of educational services.

For the distance between the objects (educational organizations), let us take the Euclidean distance (Formula 1), and use the algorithm of agglomerative hierarchical classification

$$p(x_{i,j}) = \sqrt{\sum_{l=1}^k (x_{il} - x_{jl})^2} \quad (1)$$

where  $i, j$  are the objects of research;  $l$  – the properties;  $k$  – the number of features.

Among the numerous clustering methods, it would be reasonable to use the "nearest neighbour" method or the method of single-linkage clustering with the matrix of minimum values between objects aimed to combine into clusters. The distance between the two clusters is defined as a measure of distance between a pair of observations close to one another, where each observation is derived from its own cluster.

Clustering of educational organizations will allow for grouping the institutions that will require a particular set of measures to maintain and create conditions needed to develop the educational environment. The resulting clusters are subjected to informal description and interpretation to solve the problems related with analysis of the cluster constituents, defining the delta between the variables, finding out the reasons for transition of objects into clusters with higher or lower educational potential, respectively [Bozhenko, S.V., Brut-Brulyako, A.A., 2008].

## 3. Results and Discussion

For research purposes, we selected twenty four state educational organizations of the Leningrad Region that implement adaptive educational programmes (Table 2), based on the results of independent evaluation of the quality of education [Zhukovitskaya, N. and dr., 2018]. The target respondents were experts in the education area, as well as students over 14 years of age and their official representatives. The data was collected by analyzing the questionnaires on the website of the Committee for General and Professional Education of the Leningrad Region, and analyzing responses found on the official website [www.bus.ru](http://www.bus.ru).

Educational organization	Variable symbol
Volosovskaya Boarding school	$x_1$
Volkhovskaya school	$x_2$
Vsevolozhskaya boarding school	$x_3$
Efomovskaya boarding school	$x_4$
Kirishskaya boarding school	$x_5$
Kirovskaya boarding school	$x_6$
Boarding school "Krasniye Zori"	$x_7$
Laryanskaya boarding school	$x_8$
Lesobirzhskaya boarding school	$x_9$
Luzhskaya boarding school	$x_{10}$
Luzhskaya boarding school-sanatorium	$x_{11}$
Mginskaya boarding school (for children with visual impairment)	$x_{12}$
Nokolskaya boarding school	$x_{13}$
Podporozhnaya boarding school	$x_{14}$

Educational organization	Variable symbol
Primorskaya boarding school	$x_{15}$
Priozerskaya boarding school	$x_{16}$
Siverskaya boarding school	$x_{17}$
Sosnovoborskaya boarding school	$x_{18}$
Slantsevskaya boarding school	$x_{19}$
Syasstroykaya boarding school	$x_{20}$
Tikhvinskaya boarding school	$x_{21}$
Yukovskaya boarding school	$x_{22}$
Naziysky Centre for social and labour adaptation and career guidance	$x_{23}$
Pavlovsky centre for psychological and pedagogical rehabilitation and correction "Logos"	$x_{24}$

Table 2. Objects of research: state educational organizations implementing adaptive educational programs

Each educational organization (OO) is represented by a vector in a sixteen-dimensional space of indicators (Formula 2):

$$OO_{xi} = (OO_{xi1}, OO_{xi2}, \dots, OO_{xi16}), \quad (2)$$

where  $i = 1, 2, \dots, 24$

Comparative and complementary indicators used in the analysis of quality of educational conditions are presented in Table 3.

No.	Indicator
1	Completeness and relevance of information on the official website of an educational organization
2	Information about the staff members of an organization on the official website
3	Possibility to interact with customers of educational services via telephone, e-mail, E-services provided on the organization's official website, including a possibility to make proposals aimed to improve the organization's work
4	Accessibility of information on consideration of complaints
5	Material, technical and information support of an organization
6	The required conditions for health care and catering
7	Conditions for face-to-face work with the students
8	Availability of supplementary education services
9	Possibility to develop students' creative abilities and hobbies, including their participation in competitions and olympiads (all-Russian and international), exhibitions, show-contests, physical training and sporting events, official sporting competitions, and public events
10	Possibility to provide psychocological, pedagogical, medical, and social assistance to students
11	Conditions to organize education and training for the students with reduced capabilities and disabled students
12	Proportion of consumers of educational services who positively assess friendliness and courtesy in the total number of educational service consumers who participated in the survey
13	Proportion of consumers of educational services satisfied with the competence of the staff members in the total number of consumers who participated in the survey
14	Proportion of consumers of educational services satisfied with material and technical services in the total numbers of consumers – participants in the survey
15	Proportion of consumers of educational services satisfied with the quality of education services in the total number of consumers – participants in the survey
16	Proportion of consumers of educational services who will recommend the organization services to the relatives or friends in the total number of consumers of educational services surveyed

Table 3. Indicators of quality of educational conditions in educational organizations [Zhukovitskaya, N. and dr., 2018]

For calculation purposes, we collected data from two types of questionnaire:

- questionnaires with 1-11 indicators completed by the staff members of an operator organization; estimation is

made according to a 10-point scale; the average number is taken into account;

- questionnaires with 5-16 indicators released to the public and filled in by consumers of educational services; estimation is made according to a 10-point scale; the average number is taken into account.

The result of the cluster analysis is merging the objects (state educational organizations of the Leningrad Region that implement adaptive educational programmes) into fairly large groups (clusters), based on the points of similarity in indicators which determine the quality of educational conditions. The merging procedure was based on the "nearest neighbour" principle of the cluster method. Classification of the object hierarchy [Venetsky, I.G., 1974] is shown in Figure 2 in the form of a dendrogram, which is used to distinguish between the two clusters

$$S_{(8,14,22,13,21,16,24,5,10,12,17,4,6,23,15,19,20,7,18)} \cdot S_{(1,3,2,9,11)}$$

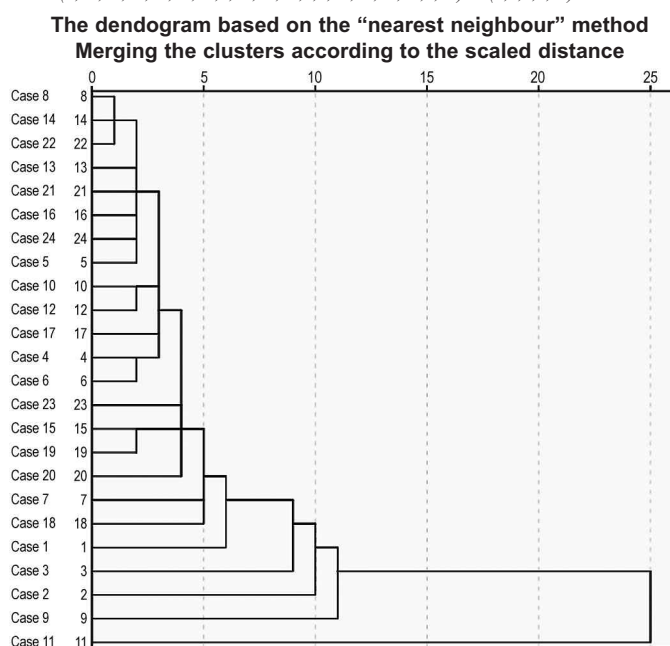


Figure 2. The dendrogram to the method of single-linkage clustering of educational organizations

## 4. Conclusions

A detailed cluster analysis of educational organizations of the Leningrad Region which implement adaptive educational programs revealed the necessity to develop two programmes aimed to systematically and continuously improve the quality of educational conditions.

In the first cluster, heads of educational organizations should place particular attention to the following problems:

- accelerate the feedback procedure with consumers of educational services to provide a detailed consideration of appeals;
- enhance health care processes;
- continuously improve the conditions for health care maintenance and health promotion;
- strengthen the mechanism motivating students' creative abilities [Solovova, N.V., Samodurova, T.V., Khairullin, L.R., Filippova, A.V., Fedorchuk, Yu.M., Valeyeva, G.Kh., Pashentsev, D.A., Shelevoi D.G., 2018];
- ensure comfortable conditions for training students with disabilities.

In the second cluster, in addition to the above mentioned problems, heads of educational organizations should focus their activities on the following:

- intensify remote outreach with consumers of educational services;

- update the data and documents of educational organizations;
- timely analyze the demands of consumers of educational services;
- timely devise the plans aimed to eliminate deficiencies found in the course of quality evaluation procedure;
- present a structured information on the site (relating the work of psychological, pedagogical, medical or social assistance services), etc.

Thus, finding prompt solutions to the problems will encourage competition in the education area, dissemination initiatives relating effective experiences that ensure quality of education environment, and decision-making processes targeted to stimulate evolution of the general education system in the region.

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## Design and Development of New Products: Survey on Training Specific Instrument Needs

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### Abstract

*The survey below was conducted over 2 years in SMEs and large companies, facing major challenges and wanting to improve performance in new products development (NPD)\*.*

*\*Note: generation changes, emergence of "rapid prototyping" brings changes of mentality and cleavages; we expect to highlight importance of development transfer to production (to floor level).*

*Purpose is to develop leadership potential in Romanian companies through training, advice and transfer of skills and assistance to improve the competitive position of companies. The results of the study expect to identify specific training needs and to define actions to improve or adapt activities along the strategic axes of projects related to NPD.*

**Keywords:** DMADV; design; development; projects; training needs; performance; effectiveness.

### 1. Introduction

Training needs analyses promote methods of identifying differences in relation to main needs of employee performance in line with strategic axes. The aim is to identify the differences between:

- The actual level of training of employees and what is desired in terms of employee performance;
- The level of organization's objectives and estimated ability to achieve them based on competences.

For differences identified between expectations and reality, one possible solution is the training, where there are discrepancies identified based on "gap analysis". Conducting the process of identification training needs means collecting and processing information. The process is designed and conducted as a research. Involved are key people of Organizations, by answering questions contained in questionnaires, focused on the functionality of NPD (Anderson, 2014).

What distinguishes this survey from others is the practical approach, through face-to-face interview with decision-makers and total avoidance of informal surveys (on internet) surveys to which responsible factors answer with great reluctance and lack of motivation.

*Note:* After an advertising campaign that led to a low rate of responses, and insignificant interest (2.5% rate of responses compared to submission); decision was to descend on production premises.

Objectives of the survey-based research:

1. Identifying the situation of training in a particular field (what employees already know and have the necessary knowledge to carry out NDP) and how it is correlated with the level of human resources training required in order to achieve strategic and operational objectives;
2. Identifying training needs of employees (what employees have to learn in order to improve their performance) – (Jones, 2014) "knowledge management" context, correlated to the level of QMS.
3. Identifying the perception of key people in the company on

operational types of training;

4. Identifying ways to assess the increase of knowledge and skills.

### 2. Research on NPD Training Need & Subsequent Value Added

#### 2.1. Population and sample

Employees with managerial tasks and responsibilities in project management focused on the NPD as well as entrepreneurs from companies within Romanian industry integrating R&D processes.

Questionnaires in-line with requirements identification were answered by > 80 companies, all manufacturing (no developing services involved). Sample can be considered as representative of survey with +/- 3% margins of error. Interviews were conducted on >120 persons.

#### 2.2. Research methods and techniques

*The approach:* Research was carried out through functional analysis (problems considered to be important are those of NPD projects performance. Organizational analysis consists in overall study, and functions on particular axes (analysis to highlight poor performance).

Prospective field visits were carried out, decision-makers were interviewed: top management, human resources, production or quality. They provided useful information for identifying specific training needs, knowledge transfer and skills. The general purpose of visits is the search on company's management interest for proposed training and assistance programs (relation between needs and expectations) and raise awareness of specific training and assistance tools.

*The methods:* Data needed to carry out these analyses were obtained by means of interviews with senior staff aimed at collecting reliable data on degree of correlation between the operational objectives of departments vs. level of performance

and general profile of employees.

The tools:

- Identification forms for requirements and expectations of the potential customer gathering;
- Answer grid for the "customer requirements and expectations identification sheet";
- Visit report (with list of persons from the company interviewed);
- Statistics of gathered findings (represented into Graphs).

A questionnaire was conducted "Customer Requirements and Expectations Identification Sheet" handled directly by the author and addressed, discussed, operated with one or more key persons. The questionnaire consists of open questions – asked to facilitate dialogue – the rest being closed questions – in order to facilitate decision-making.

### 2.3. Data analysis and interpretation

In order to understand the needs of potential beneficiaries, responses provided by the companies were collected through the questionnaire response grid. Those data have been entered in graphs in a way that makes interpretation as easy and reliable as possible in Pie Diagram graphs.

Nor were comments – verbatims – offered by the interviewees neglected either; they were included in the analysis, with author's comments where answers were not sufficiently reliable. It should be pointed out that certain comments are not available in the case of online surveys, hence the quality of this study is pushed towards confession and facts, based on evidence. This is almost impossible in case of online surveys. As a result, the following outputs have been obtained.

### 2.4. Development of new and upgraded products (DMADV – define, measure, analyze, design, verify)

**Question 2.4.1:** *Do you plan new or improved product assimilation programs?*

Of the total companies surveyed in this segment (i.e. 81 companies) only 20 provided additional information to this question; design of complex products is often foreign culture for Romanian companies, as multinationals are still in the process of transferring technological or design centers from West. It was found that 60% of companies plan to assimilate at least one new product per quarter, while 0.15% assimilate 1 to 2 new products per year. Companies can assimilate (Bhise, 2013) several new products per year (include those developing from 2-3 to max 25 new products per year).

Question	(% ) percent		
	YES	NO	required
2.4.1	69%	31%	0%

Table 1. Program planning chart – Assimilation of NPD or New/Improved Product

Most of the companies interviewed do more technological and less completely new product constructive design. Most receive the product already designed from customers or from their own research/development centers – this implies assimilation of products designed and developed upstream – but not by close to them Design and Development service. The role of these companies as production centers is thus limited only to technological development process, or, even more simply, take-over of the ready-designed product, with CAD plans, and even with the technical and execution drawings, respectively technical ready-made specifications. It cannot be yet a preparation for complex products (Bhise, 2013) but foundations are created for integrating (IATF, 2016) software.

**Question 2.4.2:** *Did it happened to develop not feasible plans?*

Romanian companies participating in the survey consistently

say they are considering the feasibility of new or upgraded products when assimilating. In the framework of positive responses (Yes) were also included answers of the type: partially or sometimes, highlighting gaps in the application of their methods of feasibility analysis (and explaining low level of profitability).

An important element between influencing factors present at the time of the survey is the economic context reflected in the share of production sites (>70%).

Question	(% ) percent		
	YES	NO	required
2.4.2	60%	36%	4% – do not know

Table 2. Feasibility of NPD or New Product Design Plans

Those who answered "I don't know" to this question were generally people who did not have information on the feasibility of projects carried out in the companies they manage, which was considered to be worrying (they were part of Committees involved in feasibility analyses!).

**Question 2.4.3:** *Did you experienced communication problems in planning your teams?*

In this case we can say that the answers were closer to reality and to the perception of the author resulting from knowledge of the industrial environment. To a large extent (over 63% of the people interviewed), company management said they were facing problems in communication process between different departments and organizational structures in internal. A requirement often mentioned – as an observation recorded by the evaluator – was: the need to include in training courses, principles and methods of communication, to approach and work in multidisciplinary teams. Thus, it emerged that many trainings contracted up to that time by companies, avoid the aspect of developing skills or focus only on skills without being involved in practice.

Question	(% ) percent		
	YES	NO	required
2.4.3	63%	33%	4% – do not know

Table 3. Communication problems in the NPD design team

Another issue related to communication is that planning teams and the customer.

**Question 2.4.4:** *Are there invalidated projects for which you consumed time and effort?*

A high percentage of the Managements of the firms surveyed (58%) acknowledged that they had also invalidated projects – either internally or externally. Responses were prompt, but not based on KPIs. The degree of acceptance of new projects depends on several factors, of which we remember: client's requirements, company's ability to meet them, economic situation, etc. A solution to this can be to present a product development approach in order to achieve a higher level of quality in design, R&D, in parallel with a pragmatic analysis of feasibility. In automotive industry, leadership is ensured by a proper adaptation to changes (Banfield, Eriksson & Walkingshaw, 2017) related to the product and functional characteristics, i.e. – at the end – its validation or qualification.

Question	(% ) percent		
	YES	NO	required
2.4.4	58%	37%	5% – reloaded

Table 4. Invalidated projects involving non-recovered resources

**Question 2.4.5:** *Do you perform risk analyses during planning /development?*

Within interviewed people 71% said they were carrying out risk analyses on projects. All affirmative responses were considered, regardless of the method used. Companies that have carried out such analyses have expressed their desire that

during the trainings to have examples on their projects, products, with emphasis on issues (customer claims).

Question	(%) percent		
	YES	NO	required
2.4.5	67%	33%	0%

**Table 5.** Risk analysis on development projects (for product and process preventive approach)

*Note:* One of the conclusions (proved to be objective) was related to the formalism of risk analyses.

In cases of companies that did not apply such methods, it was found as interesting, a practical exercise on products and the presentation of good practices: DMADV technique being not known.

**Question 2.4.6:** *Are control plans used in process standardization and product approval?*

CP – Control plans are large-scale engineering documents and enjoy constant development. Although there were many positive responses, it was possible to identify from the answers that not all of these CP were initiated by Management, but were often imposed by explicit requirements of customers. However, even though the majority of companies answered in the affirmative, 70% of those, also expressed a desire to understand concepts in more detail (homogenization of participants' knowledge of CP), those who opted for courses at their premises – in-house trainings.

Question	(%) percent		
	YES	NO	required
2.4.6	67%	33%	0%

**Table 6.** Design and use of Control Plans (engineering and technology for manufacturing & control)

Often, CP are considered an obligation, few companies consider it a necessity (except those in Risk Industries that even feel their necessity). Among companies, a large % demonstrate poor use of the QMS implementation guide – ISO 9004. The level of its use is clearly below the expected level. In industries other than risk industries that are not regulated and not audited by customers, this worries for good; as a consequence, it follows that CE mark is (or can be) formal, without solid substance.

**Question 2.4.7:** *Do processes remain under control on the basis of statistical, monitoring techniques and analysis of measurement systems?*

Generally, answer was Yes. Thus 59% of the interviewees stated that they use these techniques in production sites. However, the answer was given for the general use of statistical techniques, not the use mainly of techniques in the field of analysis of production capability (Cmk – equipment capability, Cgk – measurement facility capability, capacity of production processes).

Question	(%) percent		
	YES	NO	required
2.4.7	59%	41%	0% – do not know

**Table 7.** Use of statistical and measurement analysis techniques

There are industries where certain statistical techniques are mandatory, especially if required by the customer, OEM (automotive industry). The fact that these techniques contribute to increasing manufacturers' confidence in their own manufacturing methods led to their use in large-series industries. The transfer to non-auto industries motivated the author to develop the self-interest and potential beneficiaries in the use of these techniques. In development of new products (and not only, and therefore also in process re-engineering), companies rely on measurable indicators (Kerzner, 2017). It is right to adequately

address statistical techniques, as they are the basis of vision on reliability and quality lines. Project management becomes more objective when based on measurable indicators, and these techniques lead to a higher success rate across the entire R&D, production and delivery chain.

**Question 2.4.8:** *Do you apply product validation/approval processes?*

It can be seen that 85% of managers surveyed answered YES. This denotes that they are approaching through structured analyses, which is good to consider. Companies feel the need to carry out a project (new or upgraded products) that provides confidence. If the response to the survey is mainly positive, instead solutions are different: each company has or can have its own approach; the presentation of a reliable, validated alternative such as the PPAP/PPF Manuals (AIAG, 2010) & (VDA, 2016) or even the CE Mark, has been accepted, each of which can present opportunities for improvement – both for the analysis, and for the review of the existing product/process existent. With great care must be treated not only the development of the product, but also, above all, the making of its modifications. From author's experience, it is relevant that it becomes harder to modify than to design new product (!)

Question	(%) percent		
	YES	NO	required
2.4.8	85%	14%	1% – do not know

**Table 8.** Validation/approval of products (for series production)

*Note:* The terms differ for this action: thus, some managers focus on the product made and which is "validated" by the customer or internally by the Management through the Technical Department. From the manufacturer's point of view, the product is "qualified", i.e. the initial sample will be 100% reproduced in any quantity as the process is qualified to produce; in other word all the products to be made from this moment will be identical a real "twin" of initial sample. Approval, from the point of view of the Regulatory Bodies (conform) also intend to eliminate suspicion of non-compliance with legal and regulatory requirements.

**Question 2.4.9:** *What other requirements you have regarding training related to efficiency of the planning, design, development, assimilation process?*

It should be noted that most managers in visited companies already have a level of expertise on training and training programs, so they can issue critical opinions in relation to what can be promised to them as objective(s) of a training program. Majority of respondents (60%) of companies surveyed in this field highlighted the need to carry out a training program with a strong practical character. The practice is intended to be supported by examples made on products/processes of the beneficiary firm, and preferably by the presence of a lecturer who has general knowledge in the company's field of activity (e.g. knowledge of injection molding, where this activity is predominant).

Question	NEEDS		
	(figures are counting Nb. or % of Companies)		
	ITEM A	ITEM B	ITEM C
2.4.9	Additional materials	Practical content	Mentoring and coaching
	16	55	14

**Table 9.** Identification of training requirements related to the development of new serial production

Another frequently expressed requirement was that of exemplifying steps to be taken into account for product assimilation projects in accordance with customer requirements. Thus, methods such as APQP (advanced product quality planning) have often been mentioned by those who had expertise, as it is intended to apply best-in-class method in the field and to understand steps, roles and responsibilities of project team, as well as knowledge of resources management within projects.

A smaller proportion (20%) out of the 50 companies surveyed

expressed a preference for mentoring/coaching activities to follow training activities. In these activities it is intended to deepen some methods and adapt them to the specifics of the company and their clients (e. g.: TRIZ (Harrington, 2017), SPC-statistical process control, TAG-test of aptitude – graphical, MSA-measurement system analysis, teamwork & development of skills: leadership, communication, negotiation, facilitation, etc.).

The fact that there are still companies that do not understand the role of mentoring (coaching) as an influence factor in increasing the applicability of the methods learned, may give some thought: the author considered it justified only under conditions of confidentiality issued by the beneficiary.

The fact that only 20% want training be followed by coaching, was considered necessary to record (I considered it as a risk with high priority level) in order to be turned into training objectives (on any kind of trainings). To this end, the stipulated objective becomes to (predominantly) carry out dual-type programs: training and coaching, with practices and Quality Assessment of Projects.

**Question 2.4.10:** *What are currently your company's needs in terms of training to streamline the planning and implementation of the product assimilation program?*

A large number of firms plan to increase carriers through training. Where resources are reduced, or have already been allocated in certain predetermined directions, projects – including European funds – are also considered welcome, but also with sustainability in terms of ensuring effective support for the company's own effort, and in particular not a waste of time.

Question	NEEDS (figures are counting Nb. or % of Companies)		
	ITEM A	ITEM B	ITEM C
2.4.10	Possibility to train more employees	Specific trainings to perform	Not decided
	16	53	14

Table 10. Training – vector of efficiency for NPD assimilation planning (product approval)

Results highlights a large % of companies that need to increase the level of knowledge and skills of employees in relation to certain methods used in programs to assimilate new products. More often than not, the need to raise awareness of the importance of teamwork – in particular, when working in multidisciplinary teams has been highlighted. Among the notions and concepts related to teamwork were mentioned: team responsibilities, time management, methods of reducing the project's leading time (from the start – to the validation and release of the product). There were also opinions on certain other methods. And to this question there were many answers that refer directly to APQP – coming mainly from companies that also have products intended for automotive industry.

**Question 2.4.11:** *What are students' expectations of such courses?*

It can be noted that 57% of those surveyed said that students' expectations would be related to the applicability of the information received. They expect to be able to use what they have learned in the course in everyday life at work. Although some of the participants have participated in similar courses before, they want to deepen their knowledge and be able to make improvements in their own work. Effective and efficient methods of teaching and implementation (without complex learning mechanisms, mathematical calculations difficult to understand and apply) are therefore desired.

Assimilation must therefore be quick and same time effective and efficient – to consume minimum resources. Managers were interested in previous individual expertise of lecturers. From previous experiences, the author is declining a 100% success in the effectiveness of training (see conclusion 8) in order to provide potential beneficiaries with a clear picture of the rate of success.

Question	NEEDS (figures are counting Nb. or % of Companies)		
	ITEM A	ITEM B	ITEM C
2.4.11	Ease of application of information received	Recognition of involvement through participation in courses	Do not know
	57	15	16

Table 11. Trainees expectations concerning training for assimilation of new products

A very small percentage 0.2% of the businesses surveyed said they did not know what students' expectations were. This can be explained by the fact that management representatives didn't wanted to express students' expectations, but to give them the opportunity to express themselves (!).

**Question 2.4.12:** *Are there other requirements and expectations in terms of training (methods to increase planning efficiency) that you want to know?*

More of surveyed managers (>50%) had reservations in expressing expectations other than those defined in the questionnaire presented. Some considered that it was sufficiently exhaustive, others were slightly overwhelmed by the scale and quantity of methods/methodologies, and some felt that if feasible and effective targets were to be set, it did not make sense to increase the scope.

Most management representatives who also had additional requirements expressed their desire to be presented to them in the courses with notions of QFD; VDA 6.3; FTA; 8D; DOE; Core Tools, ...

Question	NEEDS (figures are counting Nb. or % of Companies)		
	ITEM A	ITEM B	ITEM C
2.4.12	YES	NO	#
	43%	57%	0%

Table 12. Other training requirements on assimilation of NPD by effective methods

**Question 2.4.13:** *What are actual students' skills? Score 1 to 10 the level of knowledge:*

- Planning tools and methods (CT – APQP, CP, FMEA, SPC, MSA, PPAP);
- Analysis Methods (& problem solving – level I;
- Analysis Methods (& problem solving – level II;
- Methodologies implementation for corrective actions (8D, QRQC, Pulman).

Tables are presenting the results of the survey, in order to create a perception of the level of knowledge of methods and methodologies considered. Significant % of response is: **I do not know the method**. In the table it is noted that the set of solving problems methods Level II, QRQC, and Pulman are unknown, leading cumulated ranking at almost 45 % (13%, 15% and 18% off total).

Answers are achieving high % when answers are noted 1 (i.e. not knowing the method) for most of the tools and methods presented. Results highlight needs to introduce them in training program – even basic – related to knowledge of methods. Some tools can be presented in more detail. According to questionnaire of pre-existing skills, low level proficiency values are observed (students' ability to explain methods and why do we use them?) and to carry out the steps of method implementation. This highlights the theoretical level of knowledge, but also different levels of knowledge and application from organization to organization (non-homogeneous approaches).

Author anticipated a level of efficiency driven by human factors: obviously the role of the lecturer going to perform will increase. Thus, it is sufficiently clear that the lack of practice through direct application of methods (guidance techniques during coaching) will no longer be accepted.

Question	NO knowledge of Methods / Core Tools									
	APQP	CP	FMEA	SPC	MSA	MAPG I	MAPG II	8D	QRQC	Pulman
2.4.13	10%	6%	7%	8%	10%	5%	13%	8%	15%	18%

Table 13. Methods and level of knowledge (which of tools are less known)

**Question 2.4.14:** Have you defined the following:

- Project teams, functions, activities?
- How to lead multidisciplinary teams?
- How to implement methods of planning, milestone reviews, tracking, validation?
- Output documents of the planning (deliverables)?

The results highlight a consistent % of affirmative answers to all 4 questions. It should be noted that in the context of this research the project means the development of a new product.

It was pointed out that negative responses should not be treated in the manner: DO NOT KNOW – but we want to sustain T/C projects. Management became aware of both the VA of the T/C project and the need to involve management, engage in escalations if objectives prove difficult to achieve.

Question	NEEDS Companies in figures		
	YES	NO	DO NOT KNOW
2.4.14	Project team activities		
	Y=35	N=15	DNK=0
	Approach to lead multidisciplinary teams		
	Y=30	N=20	DNK=0
	Approach to implement methods for tracking planning and validation milestones		
	Y=32	N=18	DNK=0
2.4.14	Deliverables output (of) planning		
	Y=34	N=13	DNK=3

Table 14. Definition of resources for training & coaching at Company Level

**Question 2.4.15:** For the project team are there customer constraints for:

- Planning/scheduling deadlines for the NPD?
- Planning costs associated with a new project compared to a previous one?
- Quality problems and risk?

Customers are the ones who, on one hand are claiming productive activity of suppliers, but on the other they want an improvement in suppliers' organization – for the reliability of partnership but based on lower price, without discounts on quality. Constraints and paradox therefore live together.

Question	NEEDS Companies in figures		
	YES	NO	DO NOT KNOW
2.4.15	Terms/deadlines of planning and design of NPD		
	Y=39	N=9	DNK=2
	Costs associated with NPD vs. previous ones		
	Y=35	N=14	DNK=1
2.4.15	Quality Risks (and quality problems)		
	Y=41	N=8	DNK=1

Table 15. Highlights Customers' constraints on the project management side

It can be seen that most of the answers are affirmative. As customers' requirements are constantly changing, businesses want to develop skills that allow them to feedback quickly, fully, and reliably. In all areas – both directly productive and service-related, agile approach (Rothman, 2016) of managerial skills becomes a necessity both for survival and adaptation (accurately and pragmatically) to business.

### 3. Conclusions and Recommendations (DMADV Study)

1. Small adaptations and upgraded products are being designed in Romanian companies, including foreign-owned (multinational) companies. It does not address completely new or complex products.
2. There may be shortcomings in the feasibility analyses built on the idea of setting out pragmatic objectives – often capacity & capability objectives are not achieved as expected. Let us clearly state our position in relation to Production Design (Anderson, 2014): we have great problems with design for manufacturing; cleavage occurs from simultaneous engineering and deepens later.
3. There is a need for reliable transfer of production from development centers to production thus for production centers the transfer of know-how from research, functional design, prototyping, engineering-pre-launch should be close(r) to manufacturing platforms who could develop applicable research centers according to their own facilities as they are constrained to finally make adaptations.
4. Training programs requires a much more practical skills development approach in parallel with theoretical knowledge, exemplified by the evolution of the FMEA, provides us with at least 2 – two – necessary skills: that of animator [FMEA facilitator] for the definition of an FMEA consistent with other Core Tools and that of auditor, for reverse FMEA, a field analysis of its functioning.
5. CT knowledge and application assessment (project risks, planning/development for product), demonstrates a low level compared to expectations, justifying training projects for this area, one of the directions of action being that of awareness of how to integrate CT methods.  
*Note:* a fact that focused attention during the survey, was the understanding of the risk principle evolution: it was not known and also passed on to subsequent approaches: risk analysis, FMEA, is a living document, unknown aspect by company staff, therefore often difficult to implement.
6. Companies have problems with approval of new products, which can only be done through careful and pragmatic organization and standardization of defining phase of assimilation projects. As to problems mentioned, the range of approval names being also called validation, qualification, homologation, certification, according to CSR or cultures/countries originating these requirements.
7. Practical courses are desired, but if solutions are also desired, students will have to be warned that lecturer comes up with solving methods, not solutions: this is long-term sustainable philosophy.
8. An approach linking theory to practice may concern lecturers, but does not guarantee a 100% success rate, given that this could also be about subjectivity: both lecturers and trainees can be subjective. Apart from subjective factor, the question of processes and related experience is also to be taken into account: lecturers can't acknowledge all design/engineering practices.  
*Note1:* Finding from training: often (after courses at various organizations) it turned out that very good lecturers were considered old-fashioned because they were more attached to pragmatic, serious / humorless approaches. Friendly ones have better appreciations, even if the approach is superficial. There we can face compatibility issues of target group vs. lecturer.



*Note2:* Other causes of 100% failure in project implementation are due to: lack of management involvement, transmission of managers' frustrations to trainers, or non-involvement of students.

9. The human factor, the lecturer's training is analyzed before trainings, considering it an initial risk factor: prior training, examinations, test, but also team buildings are to be carried out,...

*Note:* Lecturer training has also been assessed along the way. Development potential is to be found in some of the lecturers, who have also managed a double-edged adaptation of efficiency.

10. Unavailability of students was considered to be one of the most impactful risks. Absenteeism cannot be admitted. Although it was taken into account from the outset, it proved to be a disruptive factor of high impact and ultimately is leading to greater efforts and resources allocated – more than 10% more than planned (but acceptable in relation to the allowable rate of 20%).

11. The results of survey can lead to certain adaptations, such as: sending lecturers considered to be suitable for more advanced enterprises (providing more competent lecturers). The author, as coordinator, appreciated that sending less competent lecturers but good practitioners may be suitable for companies with a lower culture in terms of the development of new products.

*Note:* The approach to sending practitioners lecturers has yielded notable results; however, supervision made by coordinator(s), involved in training/coaching, is not to be

neglected.

12. There are still ways to solve problems totally or largely unknown by the management of Companies. For example, level II methods are not known ((Harrington, 2017) so it is not surprising that TRIZ nor other problem-solving methodologies aren't known.

Methods are the basis of methodologies; their ignorance creates risks in terms of effective application, or may even lead to serious lack of flexibility: management does not master alternative methods – so it will not have alternative solutions. The lack of practice with regard to the applicability of methods can only lead to an endemic lack of efficiency in companies.

13. Customer constraints were taken into account and could be a disruptive factor: lecturers processed this risk before starting training on the idea of identifying potential brakes, but also with the aim of turning their risks into opportunities and their threats into mobilizing factors.

*Note:* The idea that went on was to emphasize the need for long-term thinking – projects lead to solutions to important problems vs. unimportant problems and further need to address the hierarchy and approach of what is "urgent and important" instead of what is "urgent but unimportant".

14. Not least, but the last step in addressing new product development projects is feedback: a new project starts from older experience. Here we see (Harris & Harris, 2014) in Romania lack of capitalization of previous projects and lack of LEAN production knowledge as a success factor for business.

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## The Mediating Role of Employee Quality to Enhance Employee Performance

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### Abstract

*The purpose of this study is to analyze determinant of employee quality toward employee performance. Respondents in this work are employee from microfinance shariah industries in Pekalongan and Banyumas, Indonesia. The tool used to analyze this study is structural equation modelling by AMOS program. The study result shows that work motivation have positive affect toward employee performance through employee quality, work motivation have a positive affect toward employee quality through work discipline, work discipline have a negative affect toward employee performance through employee quality, and employee quality have a positive affect toward employee performance with quality of work employee as composite indicator. Future research can explore more determinant of the quality of employee.*

**Keywords:** *employee quality; work motivation; work discipline; employee performance.*

### 1. Introduction

Previous study describe the model of employee performance (Hermina & Yosepha, 2019) are not clearly. We examined that model again with employee quality as mediating affect toward employee performance. Quality of work is the key to enhance employee performance (Gunawan & Amalia, 2015). Many factors that affect employee performance include work motivation. Even if an employee has good operational ability if he or she has no motivation at work. With high work motivation, employees will work harder in carrying out their work. Conversely with low work motivation employees do not have the spirit of work, easily give up, and difficulties in completing their work (Harwiki, 2016). Two personal needs variables, need for achievement and need for power, as potential antecedents motivating political behavior at work (Y. Liu, Liu, & Wu, 2010). Spirituality and religiosity personal are the intrinsic motivations to manifest behavior in the workplace (El-Bassiouny, 2016).

Another factor that affects the decline in employee performance is work discipline. Work discipline is a form of employee self-control and regular implementation and shows the level of sincerity of the work team within an organization. Good work discipline refers to the amount of a person's sense of responsibility towards the tasks assigned to him. Discipline that is not sourced from human conscience will result in a weak and not lasting discipline. The application of work discipline for employees aims to encourage employees to be willing and willing to follow various standards or rules that apply in a company, so that abuses of work can be overcome (Arenofsky, 2017).

The wage factor (salary, allowance, overtime, increment, remuneration and sanctions) are not affect on employee performance without quality of work (Gunawan & Amalia, 2015).

We proposed the mediating role of quality employee in this study to enhance employee performance. Performance is influenced by factors of internal acting self and external factors acting. Factors that is in the internal acting self are quality (competence, skills, knowledge, discipline and experience) and motivation.

### 2. Literature Review

#### 2.1. Work Motivation

Employee motivation in many research used theories of motivation. There is positive relationship between employee motivation and performance (Setiyani, Djumarno, Riyanto, & Nawangsari, 2019). Work environment is a part of the organizational environment designed related to some works within the organization that create a conducive atmosphere for the workers (Riyadi, 2019). Spirituality and religiosity as intrinsic motivation are the important work motivation than materiality in shariah industries environment (El-Bassiouny, 2016). Shariah values are the prior adoption in that environment (Mursid, Suliyanto, & Rahab, 2019) as the old value logic, we called that as the shariah value logic that positive affect to enhance employee performance (Mursid, 2018). This research used basic human needs, spirituality, and religiosity as the indicator variable of the work motivation.

#### 2.2. Work Discipline

Discipline is a particular condition where people who are members of the organization are subject to the existing rules with pleasure. Work discipline can be defined as an attitude of respect, respect, obedience and obedience to applicable re-

gulations, both written and unwritten and also awareness of a person to obey all company rules (Hermina & Yosepha, 2019). Furthermore (Yang et al., 2016) states that discipline is the awareness and willingness of a person to obey all company rules and prevailing social norms. Work discipline is the attitude of employees to behave in accordance with the rules that have been established where he works (Badawai and Treshia, 2018).

### 2.3. Employee Quality

Quality of work is quasi moderators that affects toward employee performance (Gunawan & Amalia, 2015). Great employees as the measure for employee quality are reliable, dependable, proactive, diligent, great leaders, and great followers. They possess a wide range of easily defined but hard to find qualities. A few hit the next level. Some employees are remarkable, possessing qualities that may not appear on performance appraisals but nonetheless make a major impact on performance. Quality of communication experienced by individuals plays a significant role in the outcomes of employee quality (L. A. Liu, Chua, & Stahl, 2010).

### 2.4. Employee Performance

Performance has been measured in different ways (Gotteland and Boule, 2006). Performance comes from the word job performance or actual performance, which means work performance or actual achievement achieved by someone. Work performance is the work quality and quantity achieved by an employee in carrying out his function in accordance with the responsibilities given to him (Hermina & Yosepha, 2019). According to (Al Mehrzi and Singh, 2016) performance is the result or level of success of a person as a whole during a certain period in carrying out tasks compared to various possibilities, such as work standards, targets or targets or predetermined criteria that have been mutually agreed upon. Employee performance is an action what employees do in carrying out the work done by the company. Performance in carrying out its functions is not independent, but always relates to employee job satisfaction and the level of reward given, and influenced by individual skills, abilities, and traits. All of them mediated by the quality of employee.

### 2.5. Hypothesis

Basic of the literature and previous research, we propose five hypothesis as the shown in the research model. Work motivation have positive affect toward employee performance through employee quality, work discipline have positive affect toward employee performance through employee quality, work motivation have positive affect toward employee quality through work discipline, work discipline have positive affect toward employee quality through work motivation, employee quality have positive affect toward employee performance.

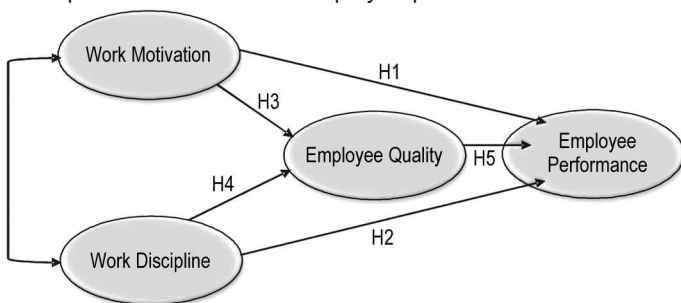


Figure 1. Research Model and Hypothesis

## 3. Research Method

The population of this study is employees from shariah microfinance industries in Indonesia. Respondents in this work

are 170 employees from microfinance shariah industries in Pekalongan and Banyumas, because that regional can described shariah microfinance industries in Indonesia for the growth and development industries in central java. The tool used to analyze this study is structural equation modelling by AMOS program.

## 4. Results

### 4.1. Validity and Reliability

The validity on SEM is tested by looking at the value of factor loading resulted from the standardized loading for each indicator (Ferdinand, 2005). An indicator is valid and appropriate as a composing construct if it has the factor loading of > 0.40 (Hair, 1998). The reliability of constructs framing the model is analyzed by using construct reliability and variance extract. The requirement of minimum value for construct reliability is at least 0.70, and for variance extract is at least 0.50 (Ghozali, 2008).

Variable	Indicator	Factor Loading	Validity
Work Motivation	X1	0.869	Valid
	X2	0.722	Valid
	X3	0.657	Valid
Work Discipline	X4	0.842	Valid
	X5	0.891	Valid
	X6	0.865	Valid
Employee Quality	X7	0.670	Valid
	X8	0.826	Valid
Employee Performance	X9	0.819	Valid
	X10	0.873	Valid
	X11	0.782	Valid

Table 1. Validity Test

Variable	Construct Reliability	Variance Extract	Conclusion
Work Motivation	0.796	0.569	Reliable
Work Discipline	0.900	0.750	Reliable
Employee Quality	0.720	0.566	Reliable
Employee Performance	0.865	0.681	Reliable

Table 2. Reliability Test

### 4.2. Goodness of Fit Test

The tested research model may be categorized as a good model, if the Chi-square value is low. The lower value of Chi-Square reflects the greater research model (Ferdinand, 2005). The value of Chi-Square of this research model is 44.938, which is lower than the value of table Chi-Square of 215.812, with the margin of error is 1% and degree of freedom of 170. The value shows that the tested model is accepted at the good category. The resulted probability value is 0.204, which is higher than its cut-off value of 0.05, so the model is accepted at the good category. The value of CMIN/DF of this research model is 1.183, which is lower than its cut-off value of 2.00, thus it indicates that the model is accepted at the good category. The resulted value of GFI in this research model is 0.957 which is lower than 0.90. The value indicates that the degree of the weighted proportion-fit from the variance of sample covariance matrix which is explained by estimated population matrix, is accepted at the good category. The value of AGFI of this research model is 0.926, which is higher than the cut-off value of 0.90. Thus, the

Goodness of Fit Index	Analysis Result	Cut-off Value	Model Evaluation
X <sup>2</sup> Chi-Square	44.938	<215.812	Good
Probability	0.204	>0.05	Good
CMIN/DF	1.183	<2.00	Good
GFI	0.957	>0.90	Good
AGFI	0.926	>0.90	Good
TLI	0.987	>0.95	Good
CFI	0.991	>0.95	Good
RMSEA	0.033	<0.08	Good

Table 3. Goodness of Fit Test

model can be accepted at the good category. The goodness of fit test result shows that the value of TLI is 0.987, which is higher than the cut-off value of 0.95 so the model is accepted at the good category. The value of CFI in this research model is 0.991, which is higher than the cut-off value of 0.95 so the model can be accepted at the good category.

### 4.3. Hypothesis Testing

P-value is used to consider the hypothesis. A requirement in accepting the hypothesis is the p-value of  $< 0.05$ . The below table is the summary of the causal relationship result between variables in this study. Based on the table above, it can be seen that the p-value of the second, third, fourth, and fifth hypothesis is higher than the statistic value of alpha of 0.05 in which it indicates that the hypothesis are rejected. For the first hypothesis, it can be seen that the p-value of 0.009 is lower than 0.05, then the first hypothesis is accepted.

Causal Relationship	C.R.	P	Conclusion
Work Motivation → Employee Quality	2.621	0.009	Supported
Work Discipline → Employee Quality	-0.671	0.502	Not Supported
Work Motivation → Employee Performance	1.178	0.239	Not Supported
Work Discipline → Employee Performance	1.913	0.051	Supported
Employee Quality → Employee Performance	1.914	0.052	Supported

Table 4. Regression Weight for Hypothesis Testing

### 4.4. Direct, Indirect, and Total Effect

Work motivation indirect significantly affect toward employee performance through employee quality. Work discipline have direct positive affect toward employee performance, but indirect have negative affect toward employee performance through employee quality.

Causal Relationship	Direct	Indirect	Total
Work Motivation → Employee Quality	0.326		0.326
Work Discipline → Employee Quality	-0.064		-0.064
Work Motivation → Employee Performance	0.116	0.064	0.180
Work Discipline → Employee Performance	0.169	-0.013	0.157
Employee Quality → Employee Performance	0.197		0.197

Table 5. Direct, Indirect, and Total Effect

### 5. Discussion

The value of direct influence work quality toward employee performance is bigger than the indirect effect. These results indicate that work discipline decreased employee performance through quality employee if the company cannot controlled employees through rewards, then company managers can improve employee performance through employee quality with company programs. Employees who have high work discipline will have a great responsibility in completing their work on time. Nevertheless, companies need to pay attention to motivational factors, because motivation is a means that can encourage employees to complete the tasks that are charged (Halbesleben and Wheeler, 2008).

Indirect influence turns out to be smaller compared to direct influence. This indicates that more effective work discipline directly affects employee performance than through motivation. The application of discipline is very important for the company, because with this discipline all the rules that are set can be obeyed by each employee. When discipline cannot be enforced, then the level of productivity through performance cannot be achieved or achieved but is less than optimal (Badawai and Treshia, 2018). Employee that have high quality must controlled intensive in work discipline to increase their performance.

The results of this study are in line with the theory which states that motivation is one of the most important operative functions of human resource management, because the better the work motivation (in this case spirituality and religiosity

motivation), the work performance can be achieved. Without good employee discipline, it is difficult for the organization to achieve optimal results. The results of this study are consistent with the results of previous studies such as (Badawai and Treshia, 2018). Employee quality with composite indicator have direct positive affect toward employee performance as shown in figure 2.

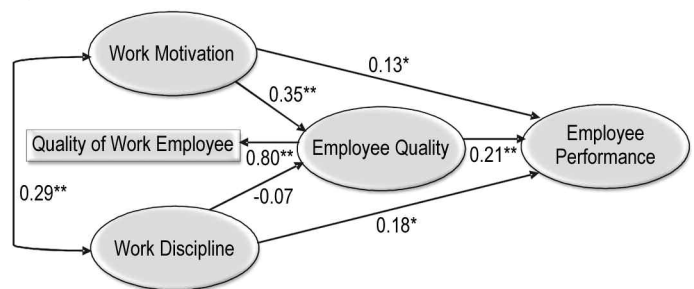


Figure 2. Research Analysis with Composite Indicator Employee Quality

### 6. Conclusion

The study result shows that work motivation have positive affect toward employee performance through employee quality, work discipline have negative affect toward employee performance through employee quality, work motivation have positive affect toward employee quality through work discipline, work discipline have positive affect toward employee quality through work motivation, employee quality have positive affect toward employee performance. Quality of work employee as composite indicator have positive affect toward employee quality. Future research can explore more determinant of the quality of employee, specified in quality of work employee.

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## Improving Operational Performance through Supply Chain Collaboration

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### Abstract

*The objective of this research is to construct a model that describes the improvement of corporate performance through supply chain collaboration. Research object is Micro, Small & Medium Enterprises (MSMEs). Method of research is quantitative approach. Analysis technique in this research uses Structural Equation Modeling (SEM) and the process is facilitated by computer software called Smart-Partial Least Square (Smart-PLS). Sample involves 225 MSMEs in Indonesia. Data analysis has given some results. One of them is that trust and technology has been proved as capable to improve supply chain collaboration. Other finding shows that trust and technology can also improve corporate operational performance. Result of analysis finally indicates that supply chain collaboration is able to improve corporate operational performance. It is expected that results of this research will not only be contributive to the development of model that describes the improvement of operational performance of MSMEs but also be useful to the development of the body of science, especially management science.*

**Keywords:** trust; technology; supply chain collaboration; operational performance.

### 1. Introduction

One priority in national economic development is developing Micro, Small & Medium Enterprises (MSMEs). The government considers MSMEs as potential business for their capability to make people understand about entrepreneurship. It is good to have many people become entrepreneurs because entrepreneurship not only strengthens national economic but also allows local resources, local workers, and local financing to be absorbed and utilized optimally (Felício et al., 2016). Both optimum absorbance and utilization are not only challenges but also opportunities to MSMEs, especially when they can solve the problems of distribution and access. The access to information and raw materials can be strengthened through establishing partnership with other members in supply chain (Ojha et al., 2014).

Partnership is an interaction between trust and collaboration of several companies. Collaboration is one of few strategies to design and plan supply chain management. Collaboration is built based on a premise that one company cannot compete successfully if working alone. Therefore, in supply chain system, partnership is defined as interaction involving trust and collaboration of several companies (Ryu et al., 2009). In general, the company decides to collaborate with either supplier or customer in order to improve their performance. Good relationship with partners is created on a belief that both sides can improve performance successfully by collaborating one another (Hidayat et al., 2015).

Fawcett et al. (2011) explained that supply chain collaboration has developed into a capability that can provide the company with a lot of benefits, such as enables the company to build global network with another companies at supply chain, secures the company's strategic position in supply chain, and makes the company focusing more on developing and

improving financial performance. Very few companies have all resources and capabilities needed to compete at global scale. One reason is possibly that the competitiveness of supply chain still depends on the access to capabilities that cannot be shared through collaboration. One opinion (Autry et al., 2014) says that collaboration is aimed to develop a cooperation to maintain business exchange relationship. Until now, many scholars focus their studies on supply chain collaboration, supply chain collaboration level, performance as collaboration output, and information technology as the instrument enabling supply chain collaboration.

One approach to collaboration is supply chain collaboration. There is an opinion (Fawcett et al., 2011) saying that supply chain collaboration is a vital dynamic capability that can provide *differential performance*. Supply chain collaboration is one of various changes predicted to occur in supply chain trend in the future. Supply chain collaboration can be created through trust and technology. Collaboration between two or more companies can only be successful if it is based on trust. When trust is present, supply chain members will try to overcome their differences for the benefit of all members. Supply chain collaboration is always based on trust, and therefore, lack of mutual trust is a fatal factor that can dissolve partnership in supply chain.

Besides trust and information as two important aspects in supply chain management, information technology also enables the management to make business decisions quickly and accurately. The advancement of information technology that supports communication, including *electronic data interchange* (EDI) and internet, has provided instruments enabling the companies to handle their complex relationship with suppliers and buyers. Indeed, the complexity of supply chain management has been forcing the companies to use online communication system. Recalling the fact that information plays important role in improving supply chain performance, then

managers must understand how information is collected and analyzed (Kim et al., 2013).

## 2. Review of Literatures

### 2.1. Operational Performance

The goal behind the establishment of a company is to gain competitive advantage in sustainable way (Ma, 2000, Peraningin, 2015). To maintain their sustainability, the companies always improve their operational performance. Performance appraisal is one of several ways done by the management not only to fulfill its obligations to company owner (stakeholders) but also to achieve the goals set by the company (Salam, 2017). An opinion said that operational performance can produce performance improvement only if there is trust among organizations at the same company (Zacharia et al., 2009).

The relationship between suppliers, customers, and companies must be managed properly and always be improved so that there would be sustainable relationship because suppliers are willing to take responsibility over the quality of their product and its distribution from upstream to downstream, in manner of on time, to the end customers (Vos et al., 2016). Therefore, having good relationship and mutual trust in long term between companies, suppliers and customers, is always needed to attain company performance more efficiently (Vikas and Prashant, 2016).

### 2.2. Supply Chain Collaboration

Partnership relationship, in the context of supply chain, has long-term orientation. Partnership is always borned from relational approach. Partnership relationship can be differentiated into several types, namely contractual, cooperative, collaborative and alliance. Collaborative relationship is more durable relationship because each party tries to bring organization into a new structure with full commitment, same vision and mission, and high level of trust (To, 2016).

Supply chain collaboration can be defined as a long-term relationship in which entrepreneurs generally engage in work relation, share information and jointly plan and even modify their business practices to improve performance (Whipple et al., 2010). For the sake of successful collaborative relationship, it is important for the parties in collaboration to work together in planning and coordinating their activities, as well as in solving problems (Salam, 2017).

Relationship with partners is considered good only if it is built on trust. This position is supported by Ryu et al. (2009) who argue that in addition to enhancing collaboration, trust is very important in building commitment. Companies that trust in their partners will have strong intention to continue their working with them (Wu et al., 2014). It is less surprising to say that commitment and trust are main factors that support company's collaboration with suppliers.

### 2.3. Trust

Trust is defined as an attitude to ensure that the needs of one party in relationship would be satisfied in the future by the actions carried out by the other party. Many studies about collaborative relationship have very often mentioned trust as a variable that determines the success and quality of long-term relationship (Xie et al., 2016). Trust has also been perceived as the extent to which supply chain partners consider each other as credible and benevolent. Trust is the base of business, and building trust through long-term relationship with customers is an important factor to create customer loyalty. Trust may not be easily acknowledged by other parties in relationship or business partners. Therefore, trust is always built from scratch and proving its worthiness over times. Trust is a form of excellency to have commitment to organizational cooperation. It must be noted that organizational cooperation is conducted on a belief

that cooperative relationship will provide benefits expected by both parties, which is measured by indicators of openness in communication, sharing important information, honesty, responsibility, and experience (Rehme et al., 2016).

Trust is described as a readiness to take a risk, and such readiness is only obtained through believing in partners and a willingness to build integration through interaction (Kwon and Suh, 2004). One of the most important things that the company must have in supply chain network is trusting in another organization. Good relationship with partners is only obtained if the relationship is built on trust. Therefore, one opinion (Muazu, 2019) emphasized that successful cooperation is not only achieved through having good relationship but also by ensuring that this relationship will improve operational performance.

Dubey and Ali (2015) have proved that trust has positive effect on supply chain collaboration. It is consistent with Ryu et al. (2009) who argued that besides strengthening collaboration, trust is also very important in building commitment. Companies that believe in the integrity of their partners will have strong intention to continue working with these partners. Therefore, it can be said that building collaboration in supply chain is about building trust. When the relationship is the interdependence among supply chain partners, then trust plays crucial role in this relationship (Zeng et al., 2015).

Based on the description above, two hypotheses are proposed as following:

*H1: High trust level is associated with high level of operational performance.*

*H2: High trust level is associated with high level of supply chain collaboration.*

### 2.4. Technology

In general, information technology (IT) has been widely recognized as an important factor in supply chain because of its contribution in improving the performance of companies and overall supply chain. Technology infrastructure has been proved as capable to facilitate the companies to build stable and close relationship with their partners in supply chain (Ajamieh et al., 2016).

The intention to produce collaboration cannot be separated from electronic mechanism. This mechanism is associated with the use of technology that allows parties in collaboration to share information, and that is why this technology is then called information technology. It is less surprising to say that information technology plays important role in supply chain collaboration, especially through the presence of electronic data interchange, internet and so on. Indeed, information technology is really helpful to the exchange of information among business partners. One previous study (Marinagi et al., 2015) found that technology has strong impact on improving supply chain performance.

Supply Chain Management is aimed to support organizations in supply chain by providing technological instruments that enable organizations to connect with their partners and then ensuring that those technologies are in line with organizational capabilities of supply chain members. Information technology has not only changed greatly the rule of game that each business should obey but also intensified the level of competition that each business must cope with (Tripathy et al., 2016). To deal with today's economic competition, policy making process in companies is demanded to be always effective and efficient in order to keep them survive in business.

Information technology must be used effectively to improve company performance, and therefore, everyone in the company is required to use this technology properly. Setiawan et al. (2019) proved that information technology has positive effect on the effectiveness of company operationals.

Information technology not only has important contribution to supply chain collaboration through the presence of electronic data interchange, internet and so on, but also enables the

companies in supply chain to exchange information they need (Lin, 2017). Moreover, information technology facilitates the creation of partnership quickly by providing appropriate information. If companies want to develop *enterprise resource planning* (ERP) system, then they must do organizational restructuring. The implication is that to make this restructuring successful, surely the companies are required to invest on information technology, to engineer their business process, and to have knowledge about market orientation, employee relations, and workforce characteristics (Li and Lin, 2006).

Supply chain collaboration has been proven as related with the improvement of company's operational performance. Whipple et al. (2010) found that external collaboration can improve company's competitive performance because it helps the company to increase its responsiveness to customer demand. This collaboration is benefiting in various ways. Long-term relationship can be created through continuous collaboration between all parties involved in supply chain management, and such collaboration might only be realized through good and mutually benefiting cooperation. The no less important is that supply chain collaboration involves what so called *process integration* where all activities in supply chain are integrated to make them run smoothly (Kale and Singh, 2009).

Pursuant to the description above, next hypothesis has been made as following:

- H3: High technology level is associated with high level of supply chain collaboration.
- H4: High technology level is associated with high level of operational performance.
- H5: High level of supply chain collaboration is associated with high level of operational performance.

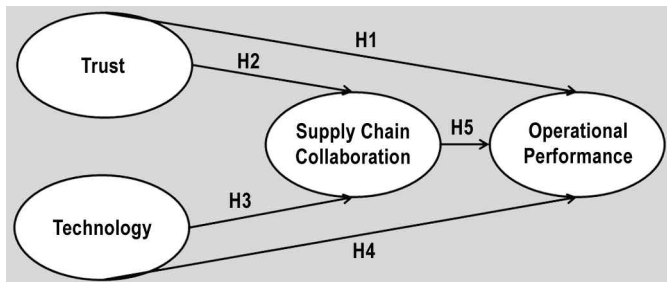


Figure 1. Proposed Model

Source: Model is developed for this research (2019)

## 3. Research Methodology

### 3.1. Research Objective and Analysis Unit

The effect level of various relationships proposed in this research is determined by Structural Equation Modeling (SEM). Result of this determination helps researcher to make predictions. Type of data used by this research is primary data that were obtained in the field, and taking form of respondents' answers to questionnaire of MSMEs' operational performance. Quantitative data were often collected by using structured questionnaire (Sekaran and Bougie, 2016).

### 3.2. Population, Sample and Analysis Technique

Research population is Micro, Small & Medium Enterprises (MSMEs) in Indonesia. Sampling technique is *purposive random sampling*. This technique requires researcher to determine few members of population as base sample before making random selection over the other sample. The obtained sample was 225 MSMEs with alpha level of 10%. Data analysis in quantitative research was carried out using Structural Equation Model (SEM) facilitated by Partial Least Square software (Garson, 2016, Hair et al., 2014), and following this suggestion, this research analyzes the data with *Structural Equation Modeling* (SEM) and the process is facilitated by computer software called *Smart-Partial Least Square* (Smart-PLS).

## 4. Data Analysis Process and Model Testing

### 4.1. Validity and Reliability

Outer model, or also called measurement model, is used to test the relationship (*loading value*) between indicators and constructs (*latent variables*). In assessing outer model in Smart-PLS, there are three criteria involved. One of them is *Convergent Validity*, while the other two are *Discriminant Validity*, which is in the form of *square root of average variance extracted* (AVE), and *Composite Reliability*. Convergent validity of outer model, which in this research is reflexive indicators, is assessed through the correlation of item scores with component scores, and the correlation value is estimated with Smart-PLS software. Reflexive indicators are said to be high if the value of their correlation with the measured construct (latent variable) is more than 0.7. However, one scholar (Lin, 2017) said that if research was the pioneer, loading value ranging from 0.5 to 0.6 is considered adequate.

The indicator of certain variable is considered reliable if its correlation value is above 0.7. For pioneer research, correlation value of 0.5 is still acceptable. Indicators that explain variable of Trust do not have value less than 0.5. Therefore, it can be said that the value of those indicators as outer model or the correlation of indicators with the explained variable has fulfilled the precondition of *convergent validity*. Considering the fact that the requirement of adequacy of the model is satisfied, then the precondition of *discriminant validity* is also fulfilled.

Result of data processing using Smart PLS shows that the loading value of indicators that explain variable of Technology does not have value less than 0.5. Therefore, the value of those indicators as outer model, or the correlation of the indicators with the explained variable has fulfilled the precondition of *convergent validity*. The indicators that explain variable of Supply Chain Collaboration are considered reliable, and its correlation of these indicators as outer model with the explained variable has fulfilled the precondition of *convergent validity*. Loading value of indicators that explain variable of Operational Performance does not have a value less than 0.5, which based on this result, the value of those indicators as outer model, or the correlation of the indicators with the explained variable is already fulfilling the precondition of *convergent validity*. Complete results of data processing are depicted in Figure 2.

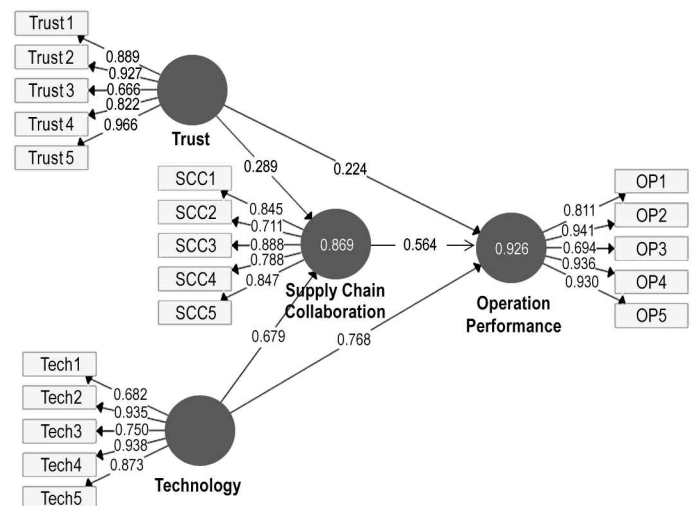


Figure 2. Results of Data Processing based on Overall Model  
Source: Primary data are processed with Smart-PLS (2019)

Furthermore, the measurement of R-square value is done in this research to understand goodness-of-fit level of the proposed model. Table 1 presents R-square value for two variables, precisely Operational Performance and Supply Chain Collaboration.

As indicated by table above, R-square value for Operational



Construct	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Values
Operational Performance	0.965	0.969	0.006	152.074	0.000
Supply Chain Collaboration	0.791	0.806	0.033	24.208	0.000

*Table 1. R-Square Value*  
Source: Primary data are processed (2019)

Performance is 0.965 while Supply Chain Collaboration has value of 0.791. If R-square is high, then the possibility that exogenous variable can explain endogenous variable is also high. This condition also reflects a situation that structural

No.	Hypothesis	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Values	Result
1.	Trust → Operational Performance	0.079	0.085	0.041	1.927	0.055	Accepted
2.	Trust → Supply Chain Collaboration	0.263	0.270	0.108	2.430	0.015	Accepted
3.	Technology → Supply Chain Collaboration	0.670	0.667	0.097	6.932	0.000	Accepted
4.	Trust → Operational Performance	0.079	0.085	0.041	1.927	0.055	Accepted
5.	Supply Chain Collaboration → Operational Performance	0.564	0.549	0.046	12.252	0.000	Accepted

*Table 2. Results of Test over Inner Model*  
Source: Primary data are processed (2019)

As presented in table above, the relationship between Trust and Operational Performance is positive. This positivity is indicated by coefficient value of 0.079, t-count value of 1.927 and P-value of 0.055 (at t value of 1.96). Based on this result, it can be said that Trust has positive and significant effect on Operational Performance at probability value of 0.10.

The relationship between Trust and Supply chain collaboration is positive. This positivity is confirmed by coefficient value of 0.263, t-count value of 2.420 and P-value of 0.015 (at t value of 1.96). Pursuant to this result, it can be said that Trust has positive and significant effect on Supply Chain Collaboration at probability value of 0.10.

Moreover, the relationship between Technology and Operational Performance is positive that is indicated by coefficient value of 0.382, t-count value of 7.268 and P-value of 0.000 (at t value of 1.96). In regard of this result, it can be said that Technology has positive and significant effect on Operational Performance.

Meanwhile, the relationship between Technology and Supply Chain Collaboration is positive. This positivity is explained through coefficient value of 0.670, t-count value of 6.932 and P-value of 0.000 (at t value of 1.96). Based on this result, it can be said that Technology has positive and significant effect on Supply Chain Collaboration.

Furthermore, the relationship between Supply Chain Collaboration and Operational Performance is positive, which it is confirmed by coefficient value of 0.564, t-count value of 12.252 and P-value of 0.000 (at t value of 1.96). This result indicates that Supply Chain Collaboration has positive and significant effect on Operational Performance.

## 5. Conclusion and Implication

High trust in members of supply chain can improve operational performance of the company in supply chain. This high trust also strengthens the commitment of supply chain members to have business with the company. Better use of information technology can improve operational performance of the company. Indeed, information technology has become the main factor of successful performance. Therefore, having excellent technology is always helpful to the company to increase its operational performance.

Results of research have few implications. One implication is that management plays very important role in maintaining trust, technology and performance of the company, and this role is manifested through supply chain collaboration. The company's operational performance in supply chain is considered impro-

equations of both variables are good. Therefore, it can be said that the model has fulfilled goodness-of-fit precondition.

## 4.2. Hypothesis Testing

Inner model is the description of relationship across latent variables as suggested by *substantive theory*. By this theory, inner model is sometimes called as *inner relation* or *structural model*. The test over inner model is done by investigating the relationship across the constructs, determining significance value and calculating R-square value of research model. Results of inner model test are given in the following table.

ving when the company has more flexibility and more dependability in satisfying customer demand. Besides those characteristics, the improvement of operational performance is also indicated by on-time delivery of company products, operational cost reduction, and optimum operational. Another implication is that management plays crucial role in building and maintaining trust among all members of supply chain system. The use of information technology in supply chain system is then becoming urgent if the company wants to achieve optimum operational performance.

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# The Effects of Principal Leadership and Teacher Competence on Teacher Performance: The Role of Work Motivation

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## Abstract

*This research aims to empirically examine the effects of principal school leadership and teacher competency on intermediate school teacher performance mediated by teacher motivation. By using purposive sampling, 340 teachers in the city of Palembang, South Sumatera Province – Indonesia, is determined as the sample. Data are analyzed using structural equation modeling with Amos 22 software. This research reveals that principal school leadership, teacher competency, and teacher work motivation have a positive effect on public intermediate school teachers' performance. In contrast to the expectation, teacher work motivation does not become a mediating variable in this model.*

**Keywords:** school principal leadership; teachers' competence; work motivation; performance.

## 1. Introduction

The key to future development is education (Spring, 2017). To achieve high-quality of human resources, the Indonesian government has made various efforts to improve the quality of education include leadership training for school principals, teacher competencies enhancement training, and improving the facilities and education infrastructure quality, school management, and performance of teachers (Yukl, 2012). In general, the lack of education quality would result in some students who do not pass in a national final exam. This condition is a result of various school factors coming from both sides, internal and external. The internal factors consist of (a) the low performance of teachers to lead to the low effectiveness of the teaching and learning process, (b) the school facilities and infrastructure that is inadequate, (c) the unequal distribution of teachers. The external school factors that affect the quality of education are the minimum role of parents, community, and the government itself. Al-Khalifa and Peterson (2004) argued that the performance of teachers would increase when the teacher felt are satisfied to look at his work and motivated to do their job. Low teacher's performance is alleged by low teachers to work motivation.

Some factors could influence the poor performance of the teachers: (a) some teachers do not work fully because they still work outside of working time to fulfill their daily needs. Consequently, they have no enough time to read and write improving their skill and professional knowledge as teachers, (b) lack of teachers professional standards as found in most developed countries, (c) some teachers were resulted from low quality level colleges or universities, (d) lack of teacher motivation to increase their own quality because teachers are not compulsorily to do research such as the lecturers in a higher education (Hasan, 2003).

The school principals play a prominent role in improving the quality of education. Rofuth and Piepenbring (2019) state that the quality of school principals related to various aspects of

school life, such as school discipline, the cultural climate of the school, and reduced delinquent behavior of learners. Therefore, the principal is responsible for education management, which is directly related to the learning process in the schools. The principles of leadership capability have a crucial role in increasing the quality of the schools. The school principles have multi-tasking work. According to the regulation of the Republic of Indonesia Ministry of National Education number 28, 2010, chapter 1, verse 1 performs that the principle of the school is a teacher who was given the additional task to lead the schools.

There are 55 secondary schools principal in Palembang, 28 graduated from bachelor degrees, and 27 graduated from masters degrees. Johnson, Shearron, and Hensel (1974), and Lynch (2012) argued that the competence of a teacher consists of five components, namely: the teaching subject component, the professional component, the process component, the adjustment component, and the attitude component. The embodiment of teacher competence is a component of the performance, which is a set of behaviors exhibited by a teacher while giving lessons to students and can be seen from the number of graduates successfully. The teachers-students ratio in Palembang is 1:24, where this matter causes some teachers to teach subjects outside their expertise. Some teachers also teach 24 hours per week. The teacher-student ratio that is unbalanced can lead the teacher to less motivated.

## 2. Literature Review

### 2.1. Performance of School Teacher

The management has to provide strong support in motivating employees to achieve high performance in line with their expectations and organizations. Noe, Hollenbeck, Gerhart, and Wright (2017) argued that performance is the result obtained from some work activities, both individuals and groups, for a specified period. Performance is a combination of individual

motivation, ability, and external factors. According to Dessler (2006), performance is the level of individual performance, which is the result of individual behavior. Performance is the appearance of one's work in the form of quality or quantity within an organization. Performance can be an individual or group. Ivancevich, Matteson, and Konopaske (1990) argued that individual performance is the foundation for the organization's performance. While Mathis and Jackson (2011) revealed that excellent performance for individuals and groups in the center of attention to boost the performance of the organization.

The theory of reasoned action (TRA) by Fishbein and Ajzen (1977) explains the relationship between attitudes and behaviors within human action. The ideas of TRA have to do with an individual's primary motivation to act. TRA says that a person's intention to perform a behavior is the main predictor of whether or not they perform that behavior. Intention to perform a particular behavior would reflect as actual behavior. Behavioral intention comes as a result of a belief that performing the behavior will lead to a specific outcome. Behavioral intention is vital to the theory because attitudes to behaviors and subjective norms determine these intentions. TRA action suggests that stronger intentions lead to increased effort to perform the behavior, which also increases the likelihood of the behavior to perform.

## 2.2. Work Motivation of Teacher

The motivational theories discussed in this research are intrinsic and extrinsic motivation to find out what their possibilities influence on those two constructs. Two-factor Theory by Herzberg (1966) believes that job-related factors consist of two categories: hygiene factors and motivators. Hygiene factors consist of pay, security, co-worker, working condition, company policy, work schedule, and supervisors. Motivators consist of responsibility, growth, challenge, stimulation, independence, variety, achievement, control, and exciting work.

Increasing work motivation is by giving incentives in the form of financial or non-financial. Saleem, Mahmood, and Mahmood (2010) described that there are many benefits of an organization associated with work motivation. The effectiveness of work motivation will result in employees to work more excitedly. Work motivation creates job satisfaction. Satisfied employees would be more committed to the job and then improve their job performance.

## 2.3. Competency of Teacher

Competence, according to Moqvist (2003), is the light of actual circumstances relating to the individual and work. Grote and Grote (1996) state that competency is an essential characteristic of an individual that is related to criterion-referenced effective and superior performance in a job. It is a description of an action, behavior, or outcome which a person should be able to demonstrate. There are three types of teachers competencies include (a) *professional competence*. Teachers should have a piece of vast knowledge, select and use a variety of teaching methods in the teaching-learning process, (b) *social competence*. Teachers should communicate well with students, fellow teachers, and the wider community, and (c) *personal competence*. Teachers should have a stable personality and become a role model (Ministry of Education Republic of Indonesia regulation no. 16/2007).

In the USA, the standard of teacher competency follows the National Board for Professional Teaching Skill (2002). The five teacher based competencies are: (1) teachers are committed to students, (2) teachers know the subjects they teach, (3) teachers are responsible for student learning, (4) teachers think systematically, (5) teachers are members of learning communities. According to Sowondo (2004), there are twelve good specific characters of teacher's competencies. (1) developing learning plans. (2) implementing learning. (3) assessing learning

achievement, (4) carry out follow-up research achievements of learners, (5) understanding the foundation of education, (6) understanding education policies, (7) understanding level of education of students, (8) understanding the learning approaches inappropriate learning materials, (9) reinforce cooperation in the work, (10) utilizing advances in science and technology in education, (11) mastering science and skills appropriate learning materials, (12) developing the profession. It is necessary to align good cooperation between principals, teachers, school employees, and other stakeholders.

## 2.4. Leadership of School Principal

According to Lussier and Hendon (2017), leadership is a conscious effort made to influence the leadership of its members to carry out duties following the expectations. Owens Jr and Valesky (2014) suggested that leadership is a process of influencing others to achieve the development or goal of the organization. Colquitt, Lepine, Wesson, and Gellatly (2011) argued that leadership is the process of affecting the activity of the group to achieve organizational goals. School is one form of educational organizations. Educational leadership is a process affecting, moving, motivating, and directing people in the organization of education to achieve educational goals. As educational leaders, school principals have several duties and responsibilities. School principals need to apply the main leadership style effectively.

School leadership is a significant energy source in the achievement of the objectives of school education. Fullan and Kirtman (2019) also confirmed that school leadership is the leading vehicle to achieve organizational goals of education. The characteristics of the success of leadership are self-esteem, initiative, intelligence, fluency, creativity, including traits and physical. Shields (2010) mentioned three characteristics that demonstrate effective leadership of the school principal: personality, ability, and social skills.

## 3. Materials and Methods

The research is explanatory. The first step of the research is constructing measurement. In this step, the measurement sim to measure the validity and reliability of principal leadership, teacher competence, work motivation, and teachers' performance. The population in the research is 2,668 public intermediate school teachers in Palembang. The total respondents under this study were 340 teachers. The sampling technique was proportional stratified sampling. Data collected by using questionnaires with a Likert scale 1-5. The scale varies from 'strongly disagree' to 'strongly agree' – data analysis by using Structural Equation Modeling (SEM) with AMOS 22.0.

## 4. Results and Discussion

### 4.1. Model Validation

According to Hair et al. (2014), SEM analysis consists of Measurement Model and Structural Model. The measurement model is used to confirm the dimensions of the constructs. The test used a Confirmatory Factor Analysis (CFA). Meanwhile, structural model concerns with relationship structure that forms the causality between measurement and structural model. The full model SEM is shown in Figure 1.

### 4.2. Measurement Model

The measurement model of all constructs used a significance test of standardized loading factors, construct reliability (CR) and variance extracted (AVE), given in Table 1.

Based on Table 1, all items have a loading factor > 0.5, which means all the questions were valid. Construct reliability (CR) ≥ 0.6 and variance extracted (AVE) ≥ 0.5 explain that all constructs were valid and reliable.

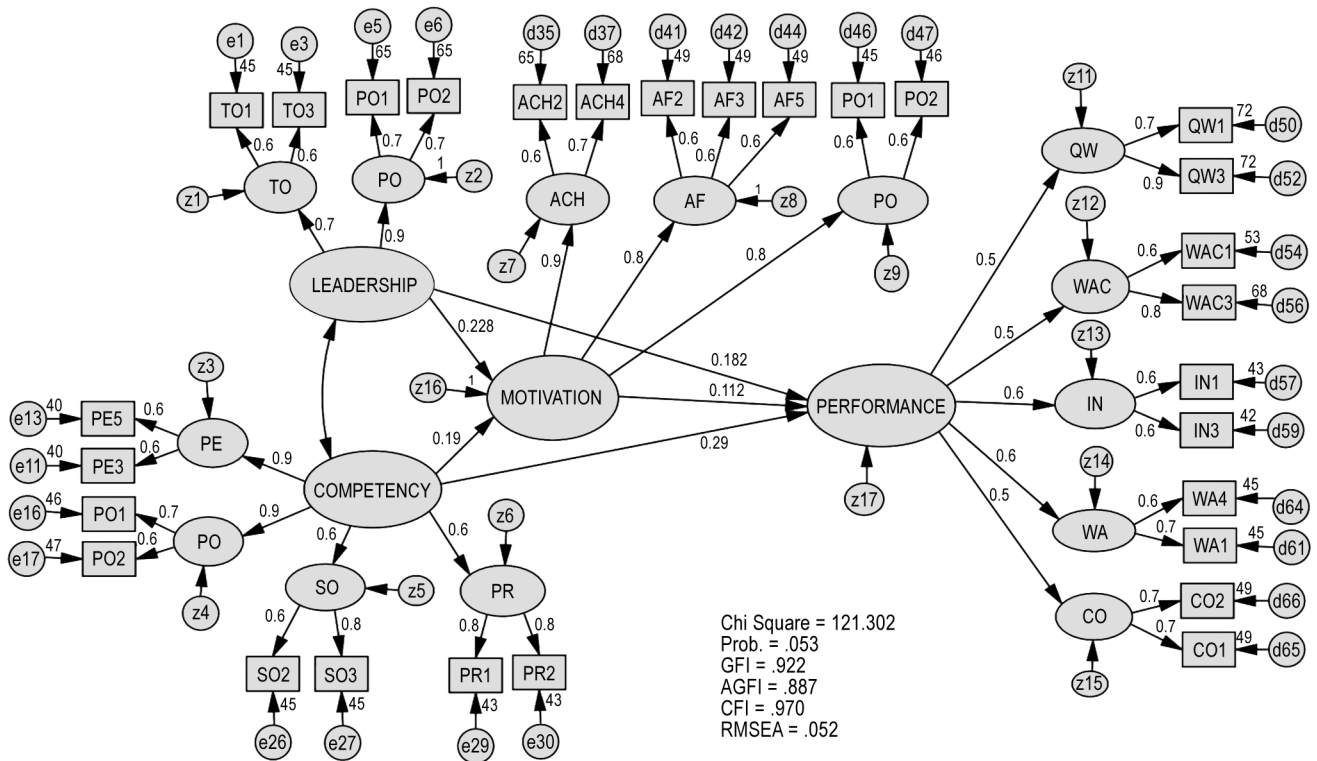


Figure 1. Research Framework

Reflective scale items	Standardized loading factor	Construct reliability	Variance extracted
<b>School Principle Leadership</b>			
1 <sup>st</sup> CFA			
Task-Oriented (TO)		0.6	0.5
TO1: Preparing of a work plan,	0.6		
TO2: Establishing procedures for achieving goals	0.6		
People-Oriented (PO)		0.7	0.5
PO1: Good relationship with co-workers,	0.7		
PO2: Trust each other,	0.7		
2 <sup>nd</sup> CFA			
School Principle Leadership		0.9	0.9
Task-Oriented	0.7		
People-oriented	0.9		
<b>Teachers' Competency</b>			
1 <sup>st</sup> (CFA)			
Pedagogic Competence (PE)		0.6	0.5
PE3: Understanding curriculum development	0.6		
PE5: Understanding the learning process and methodology	0.6		
Personal Competence (PO)		0.7	0.5
PO1: Excellent personality	0.7		
PO2: Stabil personality	0.6		
Social Competence (SO)		0.7	0.6
SO2: Utilizing IT	0.6		
SO3: Involving with the students	0.8		
Professional Competence (PR) with two relevant indicators:		0.8	0.7
PR1: Understanding the concept of subjects	0.8		
PR2: Preparing the subjects thought at school	0.8		
2 <sup>nd</sup> CFA			
<b>Teachers' Competency</b>		0.9	0.8
PE: Pedagogic Competence	0.9		
PO: Personal Competence	0.9		
SO: Social Competence	0.6		
PR: Professional Competence	0.6		
<b>Teachers' Work Motivation</b>			
1 <sup>st</sup> CFA			
The need for Achievement (ACH)		0.6	0.5
ACH1: Active competition with other teachers	0.6		
ACH2: Achieving for recognition	0.7		
The need for Affiliation (AF)		0.6	0.5
AF2: Enthusiastic at work together with other teachers	0.6		
AF3: Enthusiastic in obeying the law and regulation	0.6		
AF5: Like to get along with other teachers	0.6		
The need for Power (PO)		0.6	0.5
PO1: Always trying to be respected	0.6		
PO2: Always trying not to be underestimated	0.6		
2 <sup>nd</sup> CFA			
<b>Teachers' Work Motivation</b>		0.8	0.6
ACH: Need for Achievement	0.9		
AF: Need of Affiliation	0.8		
PO: Need for Power	0.8		

Reflective scale items	Standardized loading factor	Construct reliability	Variance extracted
<b>Teachers' Work Performance</b>			
1 <sup>st</sup> CFA			
Quality of Work (QW)		0.8	0.6
QW1: Preparing teaching plan	0.7		
QW3: Careful in teaching	0.9		
Work Accuracy (WAC)		0.7	0.6
WAC1: Giving actual and contextual case in teaching	0.6		
WAC3: Establish good cooperation with class management	0.8		
Initiative (IN)		0.8	0.6
IN1: Always try to do new things in teaching	0.6		
IN3: Students achievement is filed up in orderly	0.9		
Work Ability (WA)		0.7	0.5
WA4: Trying to be a role model for the students	0.6		
WA1: In teaching embedding a national way of life	0.7		
Communication skills (CO)		0.7	0.5
CO2: Giving particular advice to the troubled students	0.7		
CO1: Encouraging the shy students in the class	0.7		
2 <sup>nd</sup> CFA			
<b>Teachers' Work Performance</b>			
QW: Quality of work	0.5	0.8	0.6
WAC: Work accuracy	0.5		
IN: Initiatives	0.6		
WA: Work ability	0.6		
CO: Communication skills	0.5		

Table 1. Scale Item for Measures Fit Model

### 4.3. Structural Model

The theoretical model at a conceptual framework of research is fit if supported by empirical data. The overall goodness of fit test results showed that the model is fit. It indicates that the research model meets the standard criteria and suitable for the subsequent analysis. Table 2 shows the result.

No.	GFI Criterion	Cut off Value	Results	Conclusion
1	Chi-Square	< 122.74	121.86	Fit
2	p-value	≥ 0.05	0.061	Fit
3	GFI	≥ 0.90	0.992	Fit
4	CFI	≥ 0.95	0.970	Fit
5	TLI	≥ 0.95	0.959	Fit
6	CMIN/DF	≤ 2.0	1.752	Fit
7	RMSEA	≤ 0.08	0.062	Fit

Table 2. Test Results of Goodness of Fit

Table 3 indicates the standardized path coefficients of the relationship between the effect of principal school leadership and teachers' competency on teachers' motivation and its implications on public intermediate school teachers' performance in Palembang City – Indonesia.

Hypothesis	Structural path	Standardized path coefficients	t value	Prob.	Conclusion
H <sub>1</sub>	School Principle Leadership → Teacher	0.228	2.658	.008	Accepted
H <sub>2</sub>	Teacher Competency → Teacher Work	0.190	2.492	.013	Accepted
H <sub>3</sub>	School Principle Leadership → Teacher	0.182	2.242	.025	Accepted
H <sub>4</sub>	Teacher Competency → Teacher Work	0.112	1.983	.047	Accepted
H <sub>5</sub>	Teacher Work Motivation → Teacher Work	0.290	2.944	.003	Accepted

Table 3. Path Analysis Model (N = 340)

Note: \*Significant at  $p \leq 0.05$ ; if  $(t) \geq 1.96$

Based on Table 3, the first hypothesis is accepted. The basic pathfinding indicated there was a significant and positive relationship between the school principals' leadership and teachers' work motivation ( $t = 2.658 > 1.96$ ,  $p\text{-value} = 0.008 < 0.05$ ). This study supports the research by Chowdhury (2014), who has revealed that leadership significantly impacts employee motivation. Another study by Khuong and Hoang (2015), Shahab, Sobari, and Udin (2018), Udin, Handayani, Yuniawan, and Rahardja (2019) implied a strong influence of leadership in retaining and developing employee motivation. Other studies have given the same results, that there is a positive and significant relationship between leadership and work motivation (Naile & Selesho, 2014; Rawung, 2013).

The second hypothesis is accepted. There was a significant

relationship between teacher competence and teacher work motivation ( $t = 2.492 > 1.96$ ,  $p\text{-value} = 0.013 < 0.05$ ). The result of this study is in line with the research finding from Aziz, Akhtar, and Rauf (2014), Murgianto (2016), and Sukrapi, Muljono, and Purnaningsih (2014), who indicated that there was a significant and positive correlation between competencies and work motivation.

The third hypothesis is also accepted. There was a significant relationship between school principal leadership and teacher work performance ( $t = 2.242 > 1.96$ ,  $p\text{-value} = 0.025 < 0.05$ ). This study supports the research of Akbar, Udin, Wahyudi, and Djastuti (2018), Jyoti and Bhau (2015), Ha and Nguyen (2014), Handayani, Udin, Yuniawan, Wikaningrum, and Supriyati (2018), Pradeep and Prabhu (2011), Suhana, Udin, Suharnomo, and Mas'ud (2019), Sulistiyan, Udin, and Rahardja (2018), and Wang, Sui, Luthans, Wang, and Wu (2014), who implied a strong influence of leadership styles in retaining and developing employee motivation.

The fourth hypothesis is accepted. The verification result for hypothesis four found that there was a significant and positive relationship between the teacher competency and teacher work performance ( $t = 1.983 > 1.96$ ,  $p\text{-value} = 0.047 < 0.05$ ). This research result supports the previous research by Kolibáčová (2015), Sriekeaningsih and Setyadi (2015), Winarno and Perdana (2015), Sukrapi et al. (2014), and Zaim, Yaşar, and Ünal (2013).

Hypothesis five is also accepted. The verification result for hypothesis five found that there was a significant and positive relationship between the teacher work motivation on teacher work performance ( $t = 2,944 > 1.96$ ,  $p\text{-value} = 0.003 < 0.05$ ).

This research support research by Chowdhury (2014), Aarabi, Subramaniam, and Akeel (2013), Muogbo (2013), Abasilim and Ubani (2014), and Sukhumvito, Yuniawan, Kusumawardhani, and Udin (2020).

## 5. Conclusion

Public intermediate principal leadership and teacher competency significantly affect teacher work motivation. It indicates that the teachers expect a good and balanced school principal leadership style between tasks and human relation oriented. School teachers need to increase their competency in all dimensions: pedagogic, personal, social, and professional competence to increase their work motivation.

This research has also indicated that principal school leadership, teacher competency, and teacher work motivation

have given positive and significant influence on teacher work performance. The schools need to provide proper motivation techniques such as: fulfilling their needs of achievement, affiliation, and power. Right working conditions by improving hygiene factors and motivators will also improving their motivation and its impact on the desired performance. By improving public school principal leadership, teacher competency, and teacher work motivation simultaneously, it is expected that excellent teacher work performance could increase.

This empirical study recommendation to improve performance is by increasing school principal leadership through teacher work motivation because it has the second-biggest total effect. The next research agenda will need to assess further the mediating role of teacher work motivation because it is not significant. Another approach needs to be developed, such as the combination of a qualitative and quantitative approach (mixed methods). This research verified the theory from Fishbein and Ajzen (1977), which is commonly known as reasoned-action theory. Several factors determine teachers' attitudes in teaching performance in this study. The factors include principal school leadership, teachers' competency, and teachers' work motivation.

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# Job Autonomy and Innovative Work Behavior of Marketing Employees in the Automotive Industry in Indonesia: The Mediating Role of Organizational Commitment

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## Abstract

*This research intends to analyze the influence of job autonomy and organizational commitment on the innovative work behavior of marketing employees in the automotive industry in Indonesia. A total of 230 questionnaires were distributed to marketing employees located in Bandung, West Java, Indonesia, and finally, 209 questionnaires were collected and used as a sample in this study. The data analysis method used Structural Equation Modeling using AMOS version 23. The results of the research prove that job autonomy and organizational commitment significantly influence innovative-work behavior of marketing employees in the automotive industry in Indonesia. Job autonomy also influences employee commitment positively and significantly. The indirect effect between job autonomy through organizational commitment on innovative work behavior has a larger effect than the direct effect of the job autonomy on innovative work behavior. We suggest to improve the organizational commitment of marketing employees and also job autonomy to enhance innovative work behavior. Originality/value of our study, the model proposed can be applied successfully, which suppose the job autonomy and organizational commitment to innovative work behavior. We also find that organizational commitment has a role as mediating or intervening variable between job autonomy and innovative work behavior of marketing employees in the automotive industry in Indonesia.*

**Keywords:** job autonomy; organizational commitment; innovative work behavior.

## 1. Introduction

Based on data released by Gakindo (Indonesian Automobile Manufacturers Association), the automotive industry sales in Indonesia have decreased in 2019 compared to 2018 (www.marklines). The data released is available until September, therefore we make a comparison until September 2019. Table 1 shows the sales of the vehicle down in 2019 compared to the previous year. A comparison of automotive industry sales between 2018 and 2019 can be seen in the following table:

Month	2018	2019	Year on Year
January	95.892	79.608	-12.7
February	94.261	81.684	-13.4
March	101.674	90.189	-11.4
April	102.256	84.029	-17.8
May	100.498	84.146	-16.3
June	58.837	59.539	1.2
July	107.431	89.110	-17.1
August	102.197	90.443	-11.5
September	93.103	92.943	-0.04

Table 1. Indonesia New Vehicle Sales  
Source: www.marklines.com

reached -17.8. The second-largest decline occurred in July, from 107,431 units in July 2018 to 89,110 units in July 2019. This condition must be able to overcome by the firm of the automotive industry in Indonesia. Marketing has a very important role in achieving the performance outcomes (Saleh, 2014). In paper conducted by Kasseeah, (2013) said that the quality of employees is one factor to get the competitiveness of the firms. With the increasing business competition, employees must be innovative at work. Innovative work behavior has become an important factor in supporting the performance of the firm (Kasseeah, 2013; Awa & Javed, 2015). If organizations want to become more successful, the organization must encourage the employees to be innovative and creative at the workplace (Afsar & Badir, 2016). According to the previous study, job autonomy can make an employee more innovative in working. Job autonomy enhanced employee creativity, and also directly related to innovative work behavior of employee (Spiegelaeer et al., 2014). Another research also found that the more autonomy given to an employee will enhance the innovative behavior of employees (Orth & Volmer, 2017).

Employee commitment also is a factor that can improve employee innovation at the workplace. Previous research conducted a study about the role of commitment to innovative work behavior of employees in Malaysia, the finding showed that the dimension of affective and normative commitment have an influence to employee innovative behavior, while continuance

commitment not significantly affect to employee innovation (Hakimiah, Farid, & Nazari, 2016). The research in Australia also found the effect of organizational commitment to employee innovation (Xerri & Brunetto, 2013). They only test one dimension in their research, namely affective commitment positively effect on employees' innovative work behavior.

The autonomy provided by the organization to an employee at the workplace, also predict can enhance the commitment of employee to the organization. The employee will be more committed to the organization if they feel free to determine the procedure or method in achieving the goal of the firms. Previous research concluded that autonomy at work and commitment of employees correlated significantly (Sisodia & Das, 2008). The research to the employee in the fast-food sector in Pakistan also found that autonomy at the workplace had a significant and positive impact on the commitment of employees (Sisodia & Das, 2008). However, different results also found that job autonomy didn't influence employee commitment (Nwosu, O, & M, 2013). Therefore, we want to fill the gap and give a better understanding of job autonomy and organizational commitment to innovative work behavior in the case of marketing employee in the automotive industry in Indonesia. Then, we determine the purpose of this research to find:

1. The influence of job autonomy on the organizational commitment of marketing employees in the automotive industry in Indonesia?
2. The influence of job autonomy on innovative work behavior of marketing employees in the automotive industry in Indonesia?
3. The influence of organizational commitment on innovative work behavior of marketing employees in the automotive industry in Indonesia?
4. The mediating role of organizational commitment in the relationship between job autonomy on innovative work behavior of marketing employees in the automotive industry in Indonesia?

## 2. Literature Review

### 2.1. Innovative Work Behavior

Innovative work behavior of an employee is all employee actions directed in generating of the new idea at work, processing the idea, and implementation of new ideas to do a task, including new product ideas at work, the use of new technology, work procedures or working processes (Nijenhuis, 2015). Employee innovative work behavior (IWB) at work is not limited only talking about the processes of working, the procedures of working, and products, but the implementation of ideas at work (De Jong & Den Hartog, 2010). Another opinion defined that individual innovation as new and potentially useful products or working processes developed and applied in a particular work context in solving problem at work (Messmann & Mulder, 2012). If an organization want to be innovative, the human resources of the organization need to make use of them to achieve a high level of innovation performance (Yesil, Sozbilir, & Akben, 2016). There are four dimensions of innovative work behavior of the employee, the exploration of an idea, the generation of an idea, the championing of the idea, and implementation of the idea (De Jong & Den Hartog, 2010). Another opinion, employee innovative work behavior can be distinguished from employee creativity for two reasons. First, creativity focuses on the generation of the idea phase, while innovative work behavior related the process of innovation. Second, creativity traditionally refers to the creation of something absolutely new (Spiegelaere et al., 2014).

### 2.2. Job Autonomy

Job autonomy can be defined as the degree to which the task that given to employee provides substantial freedom to

employee, independency on doing the task, and discretion to an employee to make the schedule of work and to determine the procedures or the method in working (Hackman & Oldham, 1976). Another opinion also states that job autonomy is the degree to which a person has the freedom to decide how to perform the tasks (Sisodia & Das, 2008). Autonomy is the degree of freedom of employee and control rendered to a person to conduct various activities of a work (Shahzad, Farrukh, Ahmed, Lin, & Kanwal, 2018).

### 2.3. Organizational Commitment

An employee with high commitment always wants to stay as part of an organization (Yen, Campbell, Irianto, & Fadilah, 2014). Employee's organizational commitment as involving and loyalty at the workplace. An employee will do the best in working in achieving the goal of an organization, and employee wants to maintain membership of the organization (Yesil et al., 2016). Employee organizational commitment is an attitude of an employee and employees know and understand that they are bound to his organization. An individual with high commitment to the organization is likely to see that himself as an organization member (Griffin & Moorhead, 2013). There are three components of commitment of employee to his/her organization: a) employee has strong belief and recognition of organization's goals and values (identification), b) employee has more determination to do high effort for organization success (involvement and participation), c) employee loyalty (Porter, Steers, & Mowday, 1974).

There are three dimensions of organizational commitment form of an employee, a desire or affective commitment, a need or continuance commitment, and an obligation or normative commitment (Meyer & Allen, 1991). An affective commitment related to employee commitment based on his emotional perspective with the organization of the workplace. Normative commitment related to the employee commitment based on employee feeling about an obligation of the employee to an organization. Continuance commitment related to the employee commitment based on employee perceived costs, perceived of economic and social if employee leave the workplace (Meyer & Allen, 1991). An employee with affective commitment will be more strongly identifies to the goals of his organization and has a high desire to be a part or to be a member of the organization and try to achieve the goal or vision of the organization. Continuance commitment related to the need of workers to stay in the organization because an employee feels that employee has invested many things to the organization and if employee leaves the organization would be very costly. Normative commitment is characterized by the employee's belief that there is an obligation to stay or not leaving the workplace because of employee has personal loyalty or allegiance to an organization (Jafri, 2010).

### 2.4. Hypotheses and Research Model

#### 2.4.1. Job Autonomy on Organizational Commitment and Innovative Work Behavior

Job autonomy correlates with innovation outcomes (Burcharth, Cabral, & Horizonte, 2017). Besides that, job autonomy is one of variable influence organizational commitment and the more autonomy of employee, the sense of responsibility for the job will increase (Harun & Karim, 2010). Job task characteristics cover job autonomy, is important to the organization and receives feedback the more the employee commits himself, clarity of objectives, which positively influences employee involvement (Zannad & Rouet, 2003), and employee will produce more creative work when employee perceive themselves to have a choice regarding how employee to accomplish their job (Burcharth et al., 2017). Based on these arguments, the authors suggest the following hypothesis:

*H1: Job autonomy positively influence the organizational commitment of marketing employees in the automotive*

industry in Indonesia.

H2: Job autonomy positively influences employee innovative work behavior of marketing employees in the automotive industry in Indonesia.

## 2.4.2. Organizational Commitment to Innovative Work Behavior

Job attitude such as organizational commitment can influence employee innovation at work (Michaelis, Stegmaier, & Sonntag, 2009). The previous research conducted a study on the relationship between employee organizational commitment and innovative behavior in the Retail sector. The results show that affective commitment positively related to employee innovative behavior, while continuance commitment has a negative effect on innovative work behavior (Jafri, 2010). Organizational commitment influence innovative work behavior (Hakimiah et al., 2016). The research found that commitment at both the group and organizational level have stronger effects on innovative behavior than at the individual level (Lee, 2008). From the argument, we make a hypothesis:

H3: Organizational commitment of employee positively can influence employee innovative work behavior of marketing employees in automotive industry in Indonesia.

Based on the literature has been reviewed, we proposed the conceptual model below:

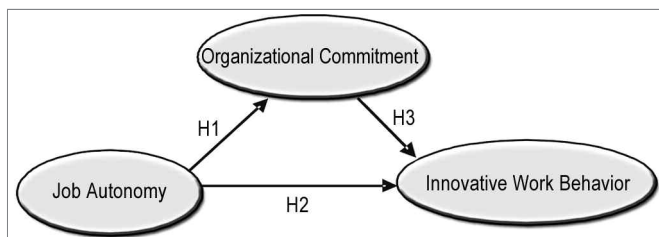


Figure 1. Conceptual Framework

## 3. Research Methodology

### 3.1. Participants

The research was analyzed by using Structural Equation Modeling which was processed using AMOS Software version 23. The population in this study were marketing employees in the automotive industry that sales four-wheel vehicle located in West Java, Bandung, Indonesia. A total of 230 questionnaires were distributed, and 209 questionnaires were collected, so that the sample in this research obtained 209 of employees.

### 3.2. Measures

The measurement of job autonomy in this research adopted from James Breugh's Instrument (Breugh, 1999), we used seven statements to measure job autonomy in this research. Each statement was rated from 1 to 5, 1= very low to 5 = very high. Employee organizational commitment use three dimensions (Meyer & Allen, 1991) namely, affective commitment, continuance commitment, and normative commitment. In the study, there were six statements related to the affective dimension,

Variable	Dimensions	n item
Job Autonomy (Breugh, 1999)	1. Method 2. Procedure 3. Criteria	7
Organizational Commitment (Meyer & Allen, 1991)	1. Affective Commitment 2. Continuance Commitment 3. Normative Commitment	4
Innovative Work Behavior (De Jong & den Hartog, 2010) and Messmann & Mulder, (2012)	1. Opportunity Exploration 2. Idea Generation 3. Idea Champion 4. Idea Implementation	4

Table 2. Construct and Measurements

continuance dimension, and normative commitment dimension. Each item or statement was rated from 1 = very low to 5 = very high. Innovative work behavior using nine scales was adopted from relating to the idea of exploration, idea generation, idea championing, and the implementation of an idea. Each item rated from 1 = very low to 5 = very high.

## 4. Finding

### 4.1. Normality Testing

The multivariate normal distribution is the most important assumption of the Maximum Likelihood (ML) estimation method (Schumacker & Lomax, 2010). The skewness and kurtosis values are used to examined and determine whether the variables in the data set are normally distributed or not, In this case, the values between -2 and +2 are considered normal (Civelek, 2018). Meanwhile, according to (Schumacker & Lomax, 2010) said that to determine the normality of the data, the skewness, and kurtosis values between 1.0 to 1.5 and the critical ratio must not exceed  $\leq 2.58$ .

The result of normality testing in table 3 shows that the data are normally distributed, this can be seen from the value of  $cr < \pm 2.58$  ( $\alpha = 0.01$ ). Statistics on skewness and kurtosis of all manifest variables (indicators) are below 2.58. The multivariate test results gave a value of  $cr = 2.476$ . This shows that the  $cr$  value is smaller than 2.58. Thus the data used in this study are normally distributed.

Variable	Skew	C.R.	Kurtosis	C.R.
JA1	-.112	-.661	-.240	-.707
JA2	-.317	-1.868	-.161	-.474
JA3	-.327	-1.928	-.184	-.543
JA4	-.244	-1.443	-.502	-1.480
JA5	-.063	-.372	.115	.340
JA6	-.075	-.445	-.362	-1.069
JA7	.103	.610	-.664	-1.960
OC1	-.006	-.033	-.634	-1.872
OC2	-.107	-.632	-.458	-1.352
OC3	-.123	-.726	-.253	-.747
OC4	-.375	-2.213	.433	1.279
OC5	-.404	-2.383	.385	1.138
OC6	-.014	-.082	-.467	-1.377
IWB1	-.022	-.131	-.833	-2.458
IWB2	-.085	-.504	-.662	-1.953
IWB3	.111	.654	-1.100	-3.245
IWB4	.054	.321	-1.209	-3.567
IWB5	.101	.598	-1.378	-4.065
IWB6	-.077	-.456	-.879	-2.593
IWB7	-.199	-1.172	-.275	-.813
IWB8	-.069	-.410	-.589	-1.739
IWB9	.062	.364	-1.270	-3.748
Multivariate			11.131	2.476

Table 3. Normality Testing

### 4.2. Measurement Model

The measurement model explains the relationships between manifests and latent variables. Loading factor value, the composite reliability, and variance extracted was used to see the convergent validity test. The recommended loading factor exceeds 0.5 (Bagozzi, Yi, & Sing, 1991), while the recommended composite reliability value is 0.70 and the variance extracted exceeds the value of 0.5 (Hair Jr, Hult, Ringle, & Sarstedt, 2013).

The result of the loading factor of all statement items used in this study has a value exceeded 0.5. The highest value of the loading factor is 0.84 while the lowest loading factor is 0.57. So that the factor loading value is in accordance with the recommended value. The reliability composite value also has a value exceed 0.70. The results of composite reliability are in the

Variables	Dimension	Indicators/ Statements Item	Factor Loadings	CR	VE
Job Autonomy	Method	JA1: My organization give me autonomy, how can I complete my work to achieve the goal.	0.794	0.874	0.501
		JA2: I am free to choose the methods at working	0.798		
	Procedure	JA3: I have control over the scheduling of my work	0.618		
		JA4: I have some control over the sequencing of my work activities	0.749		
		JA5: My job is such that can decide when to do particular work activities.	0.749		
	Criteria	JA6: I am able to modify what my job objectives are (what I am supposed to accomplish).	0.559		
		JA7: I have some control over what I am supposed to accomplish (what my supervisor sees as my job objectives)	0.653		
Organizational Commitment	Affective Commitment	OC1: I feel very happy to be a member of this organization	0.693	0.858	0.502
		OC2: I am committed to achieving the organizational goals and values at work	0.695		
	Continuance Commitment	OC3: I feel loss if I leave the organization	0.701		
		OC4: I feel I need a job at this firm	0.739		
	Normative Commitment	OC5: I feel that I have obligations to this organization	0.701		
		OC6: I feel that I will not leave this organization	0.719		
Innovative Work Behavior	Opportunity Exploration	IWB1: I always pay attention to issues that are not part of daily work	0.809	0.928	0.592
		IWB2: I wonder how things can be improved in marketing method?	0.831		
	Idea Generation	IWB3: Search out new working methods, techniques or instruments	0.754		
		IWB4: I always Generate original solutions for problems	0.788		
	Idea Champion	IWB5: Make important organizational members enthusiastic for innovative ideas	0.775		
		IWB6: Attempt to convince people to support an innovative idea	0.642		
	Idea Implementation	IWB7: Systematically introduce innovative ideas to another employee	0.755		
		IWB8: Contribute to the implementation of new ideas	0.788		
		IWB9: Put the effort in the development of new things	0.766		

*Table 4. The Measurement Model*

range 0.94-0.98. The extracted variance results also show exceeded the recommended value of 0.5. The extracted variance results in the range 0.81-0.95.

The result of the loading factor of all statement items used in this study has a value > 0.50. The high value of the loading factor is 0.831 while the lowest loading factor is 0.559. So that the factor loading value is on the recommended value. The Composite Reliability (CR) value shows value > 0.70, and all Variance Extracted (VE) value show value > 0.5. It means the data in this study are valid and reliable.

### 4.3. The Goodness of Fit Test of the Model

In Structural Equation Modelling, we need to analyze the goodness of the model. Some model-fit criteria are used to test the data whether the data fit to the model or not i.e probability value  $\geq 0.05$ , Adjusted GFI (AGFI) exceeds 0.90, the value of Goodness of Fit Index (GFI) exceeds 0.90, the value of CFI exceeds 0.90, TLI value over 0.90, RMSEA is not exceeded 0.08, and RMR value does not exceed 0.05 (Hair, Hult, Ringle, & Sarstedt, 2017), (Schumacker & Lomax, 2010). The goodness

The Goodness of Fit Index	Cut off Value	Result	Decision
Cmin/DF	$\leq 2.00$	1.033	Good Fit
P-value	$\geq 0.05$	0.362	Good Fit
Adjusted Goodness of Fit (AGFI)	$\geq 0.90$	0.901	Good Fit
The goodness of Fit Index (GFI)	$\geq 0.90$	0.923	Good Fit
Comparative Fit Index (CFI)	$\geq 0.90$	0.997	Good Fit
Tucker Lewis Index (TLI)	$\geq 0.90$	0.997	Good Fit
Root Mean Square Error of Approximation (RMSEA)	$\leq 0.08$	0.013	Good Fit

*Table 5. The Goodness of Fit Index Statistics*

of fit test result as shown in Table 1 indicates that the model in this research is acceptable. The Probability value has a value of 0.362 and this value greater or equal to 0.05. Adjusted Goodness of Fit (AGFI) has a value of 0.901 and this value greater or equal to 0.90. The value of the Goodness of Fit Index (GFI) has a value of 0.923 and this value greater or equal to 0.90. Comparative Fit Index (CFI) has a value of 0.998 and this value greater or equal to 0.90. Tucker-Lewis Index (TLI) has a value of 0.997 and this value greater or equal to 0.90. RMSEA value of 0.013 < 0.08. It means that, the model in this study in good fi criteria.

### 4.4. Hypotheses Testing

The test statistic to test hypotheses is the critical ratio (C.R.) and probability value (Byrne, 2010). The critical ratio needs to be >  $\pm 1.96$  and a probability level of .05 (Byrne, 2010).

There are three hypotheses in this research: 1) job autonomy positively influence on innovative work behavior of marketing employees in automotive industry in Indonesia, 2) organizational commitment of employee positively influence on innovative work behavior of employee, and 3) job autonomy has a positive influence on organizational commitment of marketing employees in automotive industry in Indonesia.

The data processing result of the study shows that all the hypothesis proposed in this study can be accepted. The results show that all forms of relationships between exogenous variables (job autonomy and commitment) on an endogenous variable (innovative work behavior) have a critical ratio larger than 1.967 and a probability not exceed the value of 0.05. Thus, it can be explained that job autonomy in this study has a positive and significant effect on innovative work behavior in footwear industry in Indonesia, organizational commitment also influences

Relations		Estimate	CR	P	Decision
Innovative Work Behavior	<- Job Autonomy	0.394	3.34	.000	Supported
Innovative Work Behavior	<- Organizational Commitment	0.585	4.44	.000	Supported
Organizational Commitment	<- Job Autonomy	0.830	8.06	.000	Supported

*Table 6. Hypothesis Testing Result*

innovative work behavior positively and significantly, and the last, job autonomy also influence the organizational commitment of employee significantly.

## 4.5. Discussion

In this paper, we focus to discuss the influence of job autonomy and organizational commitment on innovative work behavior marketing employees in the Automotive Industry in Indonesia. The first hypothesis proposed in this study is job autonomy positively and significantly influences employee innovative work behavior of marketing employees in the automotive industry in Indonesia. Based on the result of hypothesis testing, job autonomy positively and significantly influences employee innovative work behavior of marketing employees in the automotive industry in Indonesia. The critical ratio value between job autonomy on the innovative work behavior of an employee is 3.347 with a probability value of 0.000. Both of these values provide information that the effect of job autonomy on innovative work behavior is acceptable because it meets the requirements critical ratio above 1.967 and probability value smaller than 0.05. The research results also show that the coefficient of job autonomy on innovative work behavior is 0.394.

The regression coefficient shows a positive value. It means that job autonomy can improve employee innovative work behavior. The more employees have job autonomy in working, the higher employee innovative work behavior at work. Conversely, if employees have low autonomy at work, this will lead to low innovation at work. Employees will feel stressed. Therefore the firms must provide support to employees by giving employees autonomy while working to achieve the goals of the organization. This study consistent with research conducted in the paper (Orth & Volmer, 2017) found that employees with more innovatively on workdays characterized by greater specific well-being of employee and employee has a stronger perceptions of job resources (i.e., situational autonomy). Another research also found that three of the work autonomy dimensions, namely, work method, work schedule, and work criteria autonomy have a direct positive effect on employee creativity at the workplace (Sia & Appu, 2015). This means that the greater autonomy provided by the organization will make an employee more creative and innovative at the workplace.

The second hypothesis that we want to prove in this study there is positive and significant influence between organizational commitment on employee innovative work behavior of marketing employees in the automotive industry in Indonesia. Based on the results of the hypothesis testing, the critical ratio value between the variable of organizational commitment to innovative work behavior was 4.448 with a probability of 0.000. Both of the values (critical value and probability value) provide information that the influence of the organizational commitment on innovative work behavior was acceptable, because it meets the requirements above 1.967 for the critical ratio ( $1.967 > 4.448$ ) and less than 0.05 for probability value ( $0.000 < 0.05$ ), so this result informed to us that if employee has high commitment at workplace, it will influence innovative work behavior of employee at work. The coefficient between organizational commitment to innovative work behavior is 0.585. It means that organizational commitment has a positive coefficient, so it can be explained that the higher employee

commitment to an organization, the employee will be more innovative in working. The results of our study consistent with the previous research that examined the link of organizational commitment to employee innovative work behavior (Yesil et al., 2016). They found that affective organizational commitment was positively related to individual innovation behavior in working and can enhance organizational innovation performance. They also argued that the result reinforces the importance of affective organizational commitment for individuals and organizations. A high level of affective organizational commitment leads to an increase the employee innovation behavior level in the organizations. In the paper (Abdullah, Shamsuddin, Wahab, Aziati, & Hamid, 2011) also found that employees with high organizational commitment positively and significantly affect employee innovation at the workplace.

The third hypothesis in this study tries to investigate the influence of job autonomy on organizational commitment of an employee in the footwear industry Indonesia. From the data output, show that the critical value of the influence between job autonomy variables on organizational commitment is 8.068, and the probability value is 0.000. These two values provide information to us that the influence of job autonomy on organizational commitment can be accepted because it meets the requirements above 1.967 for the critical ratio value and less than 0.05 for the probability value ( $0.000 < 0.05$ ). Thus, hypothesis three in this study was accepted. In other words, job autonomy provided by the firms will make an employee more committed to the organization at the workplace and the employee will try to do more effort in achieving the goal of his/her organization. The result, consistent with previous research in Malaysia also found that job autonomy correlates significantly to organizational commitment. They also said that if organization giving more autonomy to university librarians workers in Malaysia, it might increase their level of organizational commitment of employee (Harun & Karim, 2010).

Based on the results of direct effect and indirect effect, we can see that organizational commitment's direct has a larger effect on innovative work behavior of marketing employees with a value of 0.585. While the direct effect of job autonomy on innovative work behavior is 0.394. Job autonomy's indirect effect through organizational commitment to innovative work behavior is 0.485. It means that the indirect effect between job autonomy through an organizational commitment to innovative work behavior has a larger influence (0.485) than the direct effect (0.394) between job autonomy on innovative work behavior.

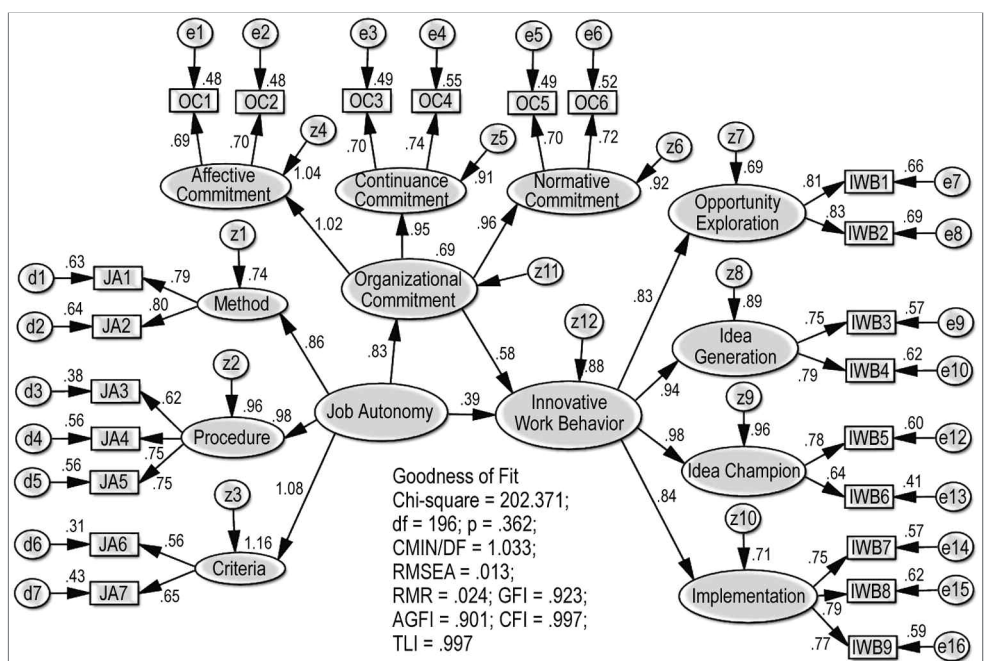


Figure 2. The Full Model of Structural Equation Modeling

## 5. Conclusion

Based on the result research discussion, we conclude that that the variable of job autonomy and employee organizational commitment positively and significantly influence on innovative work behavior of marketing employees in automotive industry in Indonesia. Then the variable of job autonomy also has a positive and significant influence on employee organizational commitment. Organizational commitment has the greater direct effect than job autonomy on innovative work behavior. The indirect effect of job autonomy is larger than direct effect of job autonomy on innovative work behavior. It means that organizational commitment in this study has a role as intervening variable which can mediate the effect of job autonomy on innovative work behavior.

## 6. Implication

Organizational commitment has the larger effect on marketing employee's innovative work behavior in automotive industry in Indonesia. It means that the automotive firms in Indonesia must be able to increase the organizational commitment of marketing employees, for example providing organizational support such as a good reward system, creating good organizational culture, and also give proper compensation.

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## Satisfaction with the Quality of Life in Employees of Russian Enterprises in the Social Partnership System

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### Abstract

*The present research aims to identify the characteristics of satisfaction with the quality of life in employees of Russian enterprises: elected trade unionists, trade union members, and non-union workers. Methods used in the study include a questionnaire, detailed focused interviews, participant observation, and content analysis with further data analysis using IBM SPSS Statistics 22. An original version of the questionnaire has been constructed using the Likert scale. Results: The mass dissatisfaction of all categories of workers with received salary is revealed. The results indicate that the level of workers' satisfaction with the quality of life depends on their affiliation with trade unions and participation in the organization of trade union activity. Satisfaction with the quality of life in employees of Russian enterprises is largely dependent on their status, membership in a trade union, and the geographical location of the enterprise. Moreover, the level of non-union workers' satisfaction with various aspects of the quality of life is generally higher than that of trade union members. For the first time, the authors comprehensively study the problems of enterprise employees' satisfaction with the quality of life from the standpoints of elected trade unionists, regular union members, and non-union workers. The practical implications of the study are found in the possibility of improving the effectiveness of social partnership and workers' satisfaction with the quality of life. The main advantage of the study lies in the identification of a stable relationship: the longer the employee's working experience, the more they are dissatisfied with the value of their work at the enterprise; satisfaction with wages depends on the employee's status and the duration of their work at the present enterprise.*

**Keywords:** satisfaction; quality of life; social partnership; trade union; social dialogue.

### 1. Introduction

The intensification of the struggle on almost every economic issue in the international arena makes employers look for ways to involve workers in business processes. Simultaneously, management and owners of enterprises with various forms of ownership are trying to find their rightful place in the system of social partnership. An active search for forms and ways of improving the quality of life and the effectiveness of social and labor relations takes place (Daneshjo et al., 2019; Ibrahim et al., 2019).

Scholars find it expedient to approach the quality of life and labor relations systemically (Dunlop, 1958; Salamon, 1987; Moerel, 1994). This approach ensures better protection of the employees in the labor market (European Parliament, 2016). However, the data provided by the International Labor Organization indicate that traditional labor relations cover only about one-quarter of workers (International Labour Organization, 2015), which affects the quality of life negatively (Mühlberger, 2009). The resolution of the said problem is complicated by the dynamically developing digitalization of the economy and society (Rasca, 2018; Coordination of European, national & regional initiatives, 2017).

Cross-sector social partnerships (CSSP) produce a positive

effect on the quality of life, especially if the partners in forming teams are chosen (Intindola et al., 2019). Employers strive to improve working conditions (Bronkhorst et al., 2015; Rogach et al., 2016), achieve social stability (Awan et al., 2020) and participate in attaining the goal of sustainable development (Ridho et al., 2018).

Despite the high income in dynamically developing sectors of the economy, the issue of increasing the loyalty of oil and gas sector employees by improving the quality of life is becoming ever more acute (Chulanova et al., 2018b). A number of scholars suggest increasing the loyalty of talented employees through the use of artificial intelligence (Antonescu, 2018; Vinichenko et al., 2019a) and improvement of workers' motivation (Belle & Cantarelli, 2015; Karácsony et al., 2018), especially in the younger generation (Chulanova et al., 2018a).

The gender differences in satisfaction with social life in mobile work conditions (Nisic & Kley, 2019), and the process of overcoming racial, ethnic, and gender discrimination are examined (Oseev et al., 2018; Demeneva, 2007). Studies also address the possibilities of partner relationship development and improving satisfaction with the quality of life for mentally healthy and unhealthy individuals with high involvement of the employers (Deckert & Statz-Hill, 2016). The role of public-private partnerships (PPP) in improving the satisfaction in enterprise

workers (Badasyan & Riemann, 2019), in the leadership system in the public service, and in society as a whole is increasing (Bolden et al., 2020).

Unresolved social issues result in tension in social and labor relations and in deterioration of the quality of life at local and regional (state) levels (Duval & Furceri, 2018). Complications emerge in performing labor functions in part-time or seasonal employment (International Labour Organization, 2011), as well as in precarious and unstable employment (Fudge, 2011; Cranford et al., 2003). Wage arrears appear and sometimes increase (Kalleberg, 2014). Labor unions fight against such phenomena, but not always successfully. Further, this can result in more active forms of protest, especially among the younger generation (Demchenko et al., 2018), which will negatively affect the economic indicators of the enterprise, the economy, and, consequentially, the quality of life.

Social partnership is one of the most effective instruments for attaining satisfaction with the quality of life. The social partnership allows finding a compromise between the employer and employees in a civilized manner (Frolova et al., 2016). In the current period, research is conducted on the issues of increasing the negotiation process efficiency in the system of social partnership at the local level by improving the unified negotiation campaign (Vinichenko et al., 2019b).

Despite the high need for the development of social environment and a large number of scientific works on improving the quality of life, research on identifying workers' satisfaction with the quality of life in the system of social partnership in modern conditions is not presented. This factor determined the need for conducting the present study.

## 2. Methods

The research methodology developed by us was based on general scientific approaches, as well as on general and special research methods, united by a common goal.

**Research objective:** to identify the manner of satisfaction with the quality of life in employees of Russian enterprises: elected trade unionists, trade union members, and non-union workers.

The following **research tasks** were solved in order to attain the main research objective:

1. Assessing the satisfaction with the system and the size of wages;
2. Identifying the degree of satisfaction with labor safety and work and rest regime;
3. Determining the effectiveness of social dialogue (partnership) between the trade union, the employer, and authorities of different levels.

We proposed the following hypothesis: the degree of satisfaction with the quality of life in employees of Russian enterprises depends on their affiliation with trade unions and participation in the organization of trade unions' activity.

### Limitations of the study, method of participant involvement

The quality of life was studied with a limited number of indicators determined in a pilot survey aimed to identify the indicator significance for various categories of employees of Russian enterprises.

The sociological research was conducted during August, September, and October of 2019. The range of participants included trade union members and elected unionists, workers of enterprises in the oil and gas industry, industrial, and construction enterprises.

The main research methods included a questionnaire, detailed focused interviews, participant observation, and content analysis.

The questionnaire was administered on 4,258 participants in 3 types (No. 1 for labor union members, No. 2 for non-union workers, No. 3 for the elected members of primary trade unions).

The detailed focused interview was implemented in order to discover opinions of representatives of the social partnership parties at enterprises, as well as of representatives of the executive, legislative, and municipal authorities of regions (territories). The interviews were conducted using three types of interview questionnaires (for enterprise executives or managers authorized for the interview by an executive; for chairmen of trade union committees; for representatives of authorities), as well as using detailed non-standardized interviews for the representatives of the industry social partnership parties. Participant observation and analysis of documents (collective agreements, publications in the press, samples of informational work of trade union organizations, letters, resolutions and other documents collected during the field phase of the study and necessary to disclose its problem) were used in order to enhance the reliability of the obtained results.

The study involved multistage and regionalized sampling methods; the corporate affiliation of enterprises and socio-demographic characteristics of the respondents were also taken into account.

The research was conducted at 11 enterprises in 9 cities (regions) of Russia: "Slavneft-Megionneftegaz" OJSC, Megion, Tyumen region; "Surgutneftegas" OJSC, Surgut, Tyumen region; "Centrsibnefteprovod" (Closed Administrative-Territorial Formation (CATF) Seversk) ("Transneft" OJSC), Tomsk; LUKOIL-Perm LLC, Perm; two industry service organizations in Ukhta, Komi Republic: SeverNIPgaz – a branch of "VNIIGAZ" LLC; Ukhta State Technical University; "Voronezhskintezkauchuk" OJSC, Voronezh; "Astrakhangazprom" LLC ("Gazprom" OJSC), Astrakhan Oblast; "NK Rosneft – Dagneft" OJSC, Republic of Dagestan; two service industry organizations in Moscow: "Giprotruboprovod" OJSC and Institute of Geology and Combustible Mining (IGCM).

*Characteristic of the sample of trade union workers, N = 4,258 respondents. By gender: 56.5% male, 43.5% female. By age: 19.6% of respondents – under the age of 30, 28.7% – 31 to 40 years old, 34.3% – 41 to 50 years old, 15.9% – 51 to 60 years old, 1.5% – over 60 years old. By work experience at the present enterprise: 4% of respondents – with less than one year of experience, 23% – 1 to 5 years of experience, 26.4% – 5 to 10 years of experience, 46.6% – over 10 years of experience. By status in the production hierarchy: 8.4% – middle or lower-level managers, 43.3% – engineers and specialists, 48.3% – enterprise workers. By trade union membership status: 3.1% – elected trade unionists, 96.9% – regular union members.*

*Characteristics of the sample of non-union workers, N = 678 respondents. By gender: 59.9% male, 40.1% female. By age: 24.9% of respondents – under the age of 30, 29.7% – 31 to 40 years old, 34.7% – 41 to 50 years old, 7.6% – 51 to 60 years old, 3.1% – over 60 years old. By work experience at the present enterprise: 4.5% of respondents – with less than one year of experience, 28.7% – 1 to 5 years of experience, 35.2% – 5 to 10 years of experience, 31.6% – over 10 years of experience. By status in the production hierarchy: 9.7% – middle or lower-level managers, 49.6% – engineers and specialists, 40.6% – enterprise workers.*

*Characteristic of the sample of elected trade unionists, N = 370 respondents. By gender: 45.8% male, 54.2% female. By age: 8.1% of respondents – under the age of 30, 23.8% – 31 to 40 years old, 41.5% – 41 to 50 years old, 22.7% – 51 to 60 years old, 3.8% – over 60 years old. By work experience at the present enterprise: 1.5% of respondents – with less than one year of experience, 15.8% – 1 to 5 years of experience, 24.6% – 5 to 10 years of experience, 58.1% – over 10 years of experience. By status in the production hierarchy: 11.2% – middle or lower-level managers, 59.2% – engineers and specialists, 15.8% – enterprise workers. By trade union membership status: 48.5% of respondents are engaged in union work at the trade union committee level, 48.5% – at the level of the manufactory committee level, 18.1% – at the level of trade union groups (trade union bureau).*



Data processing was performed digitally via Excel and IBM SPSS Statistics 22; open questionnaire items were processed manually with the further systematization of the received responses.

All three categories of questionnaire participants (trade union members; non-union workers; elected trade unionists) were asked about the level of their satisfaction with such essential aspects of the quality of life in their organization as the size of wages, wage system, work and rest regime, labor safety, social benefits, and the attitude of the management towards employees.

## 3. Results

### 3.1. Characteristics of employees' satisfaction with the wage system

#### Assessment of the size of wages

The analysis of data presented in Figure 1 allows concluding that the dissatisfaction of the industry workers with the size of their wages can be called a mass phenomenon. Complete or partial dissatisfaction with the current monetary value of their work was reported by 68.6% of trade union members, 58.7% of non-union workers, and 67.7% of elected trade unionists.

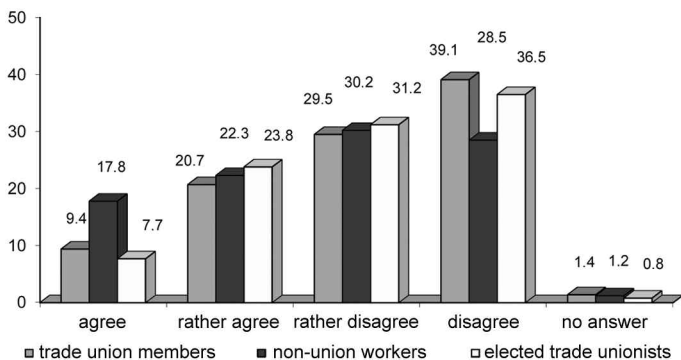


Figure 1. The results for the questionnaire item “Are you currently satisfied with such an aspect of your work at the enterprise as the size of your wage?” (percentage of the total number of respondents in each category)

Source: Designed by the authors

The maximum level of dissatisfaction was recorded in regular trade union members in Megion (the proportion of “rather disagree” and “disagree” answers summed – 100%), Voronezh (92.8%), Dagestan (84.7%), Samara (81.7%), and Orel (79.1%). An increased level of dissatisfaction in all aspects of labor relations was recorded among the trade union members from the “Slavneft-Megionneftegaz” OJSC. However, the size of this sample subgroup is statistically insignificant (24 respondents) and it had to be excluded from further analysis of the results. The most satisfaction with the size of wages was demonstrated by trade union workers from Astrakhan (the proportion of “rather agree” and “agree” answers summed – 63.6%) and Tomsk (55.1%).

Among non-union workers, the results of the questionnaire indicate that the Megion sample subgroup had an approximately equal percentage of respondents satisfied and unsatisfied with the size of their wages. In the “other enterprises” sample subgroup three quarters (76.3%) of the sample experience dissatisfaction with the salary.

#### Employees' attitude to the wage system

As shown in Figure 2, the wages system at the enterprises caused mixed feedback from the respondents, with a slight prevalence of positive responses.

In a survey of trade union members the greatest level of dissatisfaction was found in Dagestan (proportion of “rather disagree” and “disagree” answers summed – 66.9%), Moscow (65.6%), and Surgut (60.5%). The respondents from Tomsk

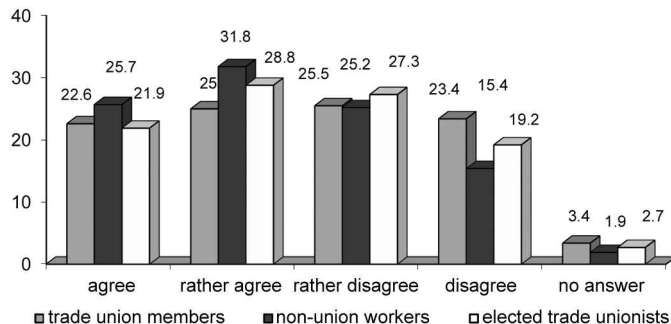


Figure 2. The results for the questionnaire item “Are you currently satisfied with such an aspect of your work at the enterprise as the wage system?” (percentage of the total number of respondents in each category)

Source: Designed by the authors

(74.2%), Astrakhan (73.5%), and Perm (67.2%), on the other hand, were the most satisfied with the wage system established at their enterprises.

According to the survey of non-union workers, in the “Megion” subgroup of the sample, the present wage system satisfied 65.4% of respondents, while in the “other enterprises” subgroup it satisfied 42.3% of workers.

### 3.2. Satisfaction with working conditions at the enterprise

#### Assessment of work and rest regime

Analysis of the data presented in Figure 3 shows that the work and rest regime aspect of labor satisfied the most part of all categories of the respondents.

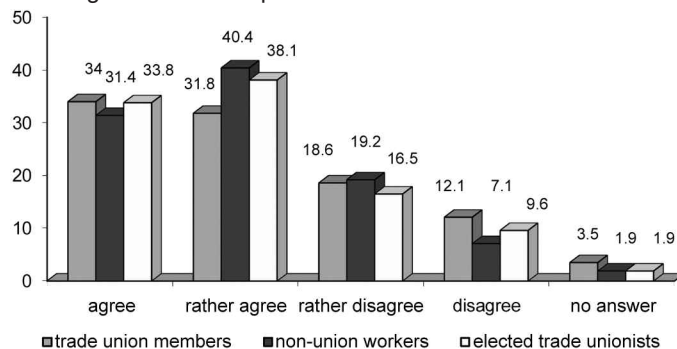


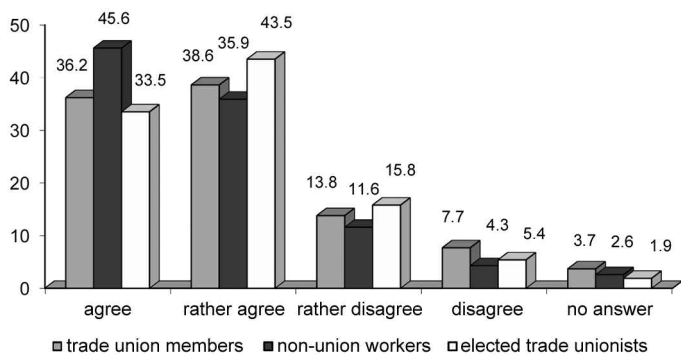
Figure 3. The results for the questionnaire item “Are you currently satisfied with such an aspect of your work at the enterprise as work and rest regime?” (percentage of the total number of respondents in each category)

Source: Designed by the authors

The situation differed across various regions. The most satisfaction with the work and rest regime at the enterprise was reported by trade union workers from Astrakhan (81.5%), Perm (75.7%), Voronezh (73.4%), and Orel (73.3%). Maximum dissatisfaction was reported by respondents from Surgut (60.5%), Moscow (59.5%), and Dagestan (50.8%). Among the non-union workers, in the sample subgroup from Megion, satisfaction with the work and rest regime was reported by 79.4% of respondents, and in the “other enterprises” sample subgroup – by 56.9% of workers. Differences were also observed in the aspect of gender – men reported lower satisfaction with the work-rest balance aspect than women (the proportion of “rather agree” and “agree” answers summed – 63.5% and 68.9% for men and women respectively).

#### Labor safety

As the research indicates, labor safety can be considered the most “impeccable” aspect of labor at the examined enterprises (Figure 4).

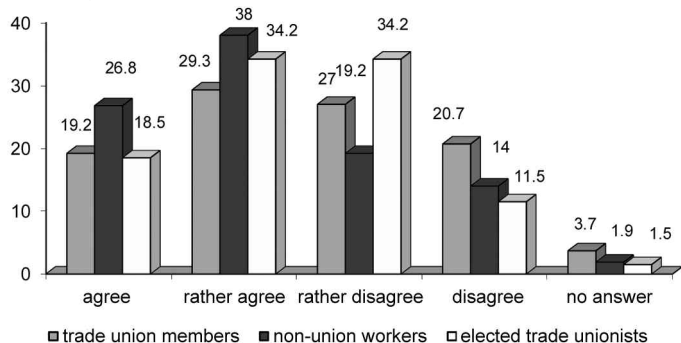


**Figure 4.** The results for the questionnaire item “Are you currently satisfied with such an aspect of your work at the enterprise as labor safety?” (percentage of the total number of respondents in each category)  
Source: Designed by the authors

The most satisfaction with labor safety among the trade union members was reported by respondents in Perm (88.1% in sum), Astrakhan (88%), and Tomsk (82.1%); among non-union workers – in Megion (83.4%). The greatest dissatisfaction with that aspect was displayed by trade union members from Moscow (32.9%) and Dagestan (27.7%).

### Social benefits

Opposite attitudes were found in the respondents regarding the social benefits provided by the enterprise (Figure 5). Positive and negative feedback was almost equal in value.



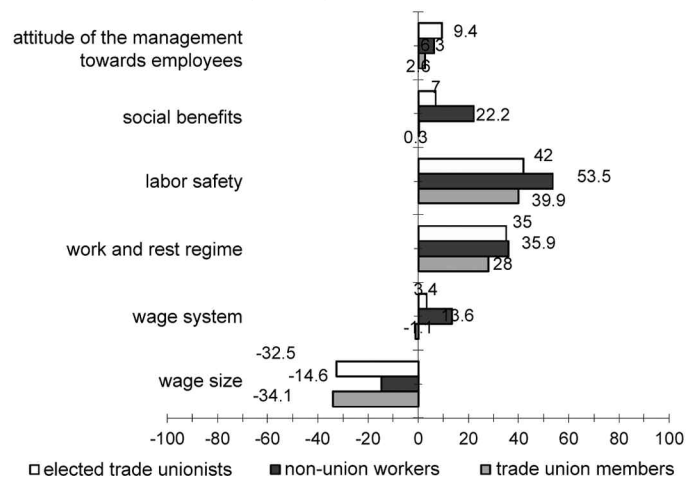
**Figure 5.** The results for the questionnaire item “Are you currently satisfied with such an aspect of your work at the enterprise as social benefits?” (percentage of the total number of respondents in each category)  
Source: Designed by the authors

The most satisfaction with the social benefits was reported by trade union workers in Astrakhan (74.6%), Perm (74%), and Samara (57.7%). The most dissatisfaction was found in trade union workers in Dagestan (75.8%) and Orel (62.2%). The most part (72.6%) of non-union workers from Megion was satisfied with the social benefits package provided by the enterprise, while among the non-union workers from other enterprises this index was lower (50%).

### 3.3. Overall assessment of satisfaction with the quality of life in the labor collective

Summary indicators obtained as a result of survey data processing using IBM SPSS Statistics 22 are reflected in Figure 6. In the process of calculation, the obtained data were summed, the values “agree” and “disagree” were multiplied by the coefficients “1” and “-1” respectively, and the values “rather agree” and “rather disagree” were multiplied by the coefficients “0.5” and “-0.5” (i.e. were considered to be averaged indicators of partial satisfaction or partial dissatisfaction respectively). The scale presented in Figure 6 has a maximum value of 100 obtainable in case of 100% of participants responding “agree”

and the minimal value of -100 obtainable in case of 100% of participants responding “disagree”.



**Figure 6.** Summary indicators of satisfaction with the aspects of the quality of life  
Source: Designed by the authors

To the greatest extent, workers in the industry were found to be satisfied with labor safety, as well as with the work and rest regime in their organizations. Satisfaction with the social benefits and attitude of management towards employees was in the zone of weak positive values. Satisfaction with the wage system was in the zone of weak negative values as reported by trade union workers and in the zone of weak positive values for the answers of non-union workers and elected trade unionists. Finally, all three categories of workers were unsatisfied with the size of wages. Dissatisfaction was most actively reported by elected and regular trade union members and reached the zone of medium negative values.

The diagram clearly indicates that the level of non-union workers’ satisfaction with the various aspects of quality of life (with the exception of corporate culture considered in terms of the attitude of the management towards employees) was generally higher than in trade union workers (regular and elected trade union members).

## 4. Discussion

The analysis of satisfaction with the quality of life in Russian enterprise workers allowed us to establish that the level of satisfaction depends on the workers’ affiliation with trade unions and participation in the organization of trade union activity.

Dissatisfaction with the current size of wages was characteristic of all respondents. It was found to be a mass phenomenon in the studied organizations and regions. The most discontent was reported by trade union members and elected trade unionists. This effect is explained by the more radical standpoint of these categories of workers, their active life position, and struggle for their rights (Lang & Rumsey, 2018; Liu & Perry, 2016).

The presented result appears to be paradoxical at first sight, since the wages of most of the enterprises covered by the study significantly exceed the average level of wages in the region (with the exception of only a few industry service organizations in Moscow and the Komi Republic). Observations made at the research objects and communication with respondents during the survey lead to the conclusion that the main source of employee dissatisfaction is the incoming information about the increase in world energy prices and the company production volumes, as well as rumors and fragmentary information on the incomes of top managers, all compared with their own financial situation.

The answer received in one of the surveys to the question of

what should the trade union committee of the enterprise pay increased attention to can be considered the leitmotif of the identified attitudes: "Salary and its ratio with the income of the enterprise and its managers. Oil is getting more expensive and we are getting less and less".

A stable relationship can be observed: the larger the work experience, the greater the worker's dissatisfaction with the value of their work at the enterprise. In the group of trade union members with over 10 years of work experience, 74.7% of respondents were completely or partially dissatisfied with the size of wages, while in the group of workers with 5 to 10 years of experience this percentage reached 66.3%, in the group with 1 to 5 years of experience – 65.7%, and in the group with less than 1 year of work experience – 50.6% of respondents.

Satisfaction with the size of wages was found to be dependent on the respondent's status. Among the non-union workers, this aspect completely or partially satisfied 65.9% of middle or lower-level managers, 43.5% of specialists and only 29.9% of regular workers. Dissatisfaction with the received salary was reported by 31.7% of managers, 54.5% of specialists, and 70.1% of workers. In the trade union members subcategory of the sample, dissatisfaction with wages was reported by 57.6% of managers, 62.6% of specialists, and 75.7% of workers.

The degree of satisfaction with the wage system was also found to be largely dependent on the longevity of work experience in the organization. Among the regular trade union members with over 10 years of work experience, positive judgments were made by 44.5% of the respondents, while among the workers with less experience this ratio reached 64.8%. Considering the age distributions, the salary system was most satisfactory for young people (57.4%); in older age groups, satisfaction with this aspect decreased and among trade union workers aged 51 years old and older, the salary system was suitable for a little over 40% of respondents.

Satisfaction with working conditions at the enterprise lied in the positive zone. This especially concerns the assessment of work and rest regime. Prioritizing the construction of favorable working and resting conditions for workers in order to increase the efficiency and competitiveness of the enterprise correlates with several prior studies (Shi, 2019; Bronkhorst et al., 2015). The vital factor significantly affecting the activity of any enterprise is safety, especially in conditions of artificial intelligence use (International Conference on CSIA, 2019; Neri et al., 2019). The majority of respondents expressed satisfaction with industrial safety, which is indicative of the modern management approaches to the organization of the production process.

Social benefits matter for the workers. A wide range of research is indicative of that (Guerci et al., 2019; Rasca, 2018). The study revealed the dependence of satisfaction with social benefits on the duration of work at the enterprise: the greater the working experience at the present enterprise, the less the satisfaction with provided social benefits. This indicates a slight deterioration in the sphere of social benefits both at a particular enterprise and compared to other enterprises. Workers who had been working at the enterprise for a long time (over 10 years) and were able to compare the previous amount of social benefits with the current one, expressed dissatisfaction with this aspect much more often (in 50.5% of the responses of trade union workers) than workers who came to work at the enterprise recently (31.4%). A rather high level of dissatisfaction with the provided social benefits was found in the group of elected trade union members (58.3%).

In general, all respondents expressed the most satisfaction with the aspects of labor safety and work and rest regime. All three categories of surveyed workers were united in a negative opinion on the size of wages. Comparative analysis revealed a higher average satisfaction with the studied quality of life indicators in non-union workers. This may be indicative of higher standards for the studied aspects of quality of life among regular

and elected trade union members, their increased social activity, and the desire to obtain more favorable conditions from the employer.

## 2. Conclusion

The social partnership system involves improving the quality of life that is satisfactory for all the members of the labor process. Practice indicates that currently, the system does not satisfy either non-union workers or regular and elected trade union members. Herein, the degree of Russian enterprise workers' satisfaction with the quality of life depends on their affiliation with trade unions and participation in the organization of trade union activity. This confirms the proposed research hypothesis.

The study results demonstrate that satisfaction with the quality of life in Russian enterprises in the aspects of size of wages, wage system, work and rest regime, labor safety, and social benefits are largely dependent on the respondents' status, trade union membership, and the geographical location of the enterprise.

The stable dependencies of employee satisfaction with the size of wages on the longevity of work experience at the enterprise, social status, age, and geographical location of the enterprise revealed during the study indicate the need to create a flexible, responsive wage system depending on changes in social factors. This will increase staff loyalty and labor productivity.

Elements of working conditions, especially work and rest regime and labor safety, well-worked out by the enterprise management, work in favor of the employer. This is indicative of a high level of production organization. At the same time, social benefits have not yet found their rightful place in ensuring favorable working conditions and quality of life. This is noted especially clearly by the workers with long work experience in the enterprise. The standard social package no longer satisfies experienced employees who notice some lag from other enterprises in this issue. A delay in resolving this problem may increase the tension in the workforce and adversely affect enterprise performance.

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## The Economy of the North-West: Systemology Aspects of the Restructuring

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### Abstract

*The North-West of Russia urgently needs a change in the structure of the regional economy in order to reduce its dependence on the commodities exports, as well as on the import of the innovative products and advanced technologies. The article describes the individual provisions of the methodology of restructuring, arising from consideration of the economy as a hierarchical system covering the levels of a region, a municipality, an enterprise, an employee. It is assumed that the main goal of the "Region" system is to improve the population life quality. The following elements of quality of life are considered: the level of health and longevity, the standard of living, lifestyle. The article describes the role of the economy restructuring in improving the population life quality. It shows the necessity of using the standards of life quality and living standards to justify the restructuring strategy. The article also describes the hierarchy of systems, goals, processes and results of the economy restructuring. To simplify the procedure of goal-setting, the authors propose a systematic list of decomposition levels and a generalized structure of the elements of the goals structure and restructuring tasks. The article proposes the criteria for the formation of the regional economy structure. The paper proves the necessity of synchronization of measures to improve the population life quality between regional and municipal levels. It formulates the basic systemology provisions of the regional economy restructuring methodology, covering the hierarchy of necessary system descriptions, the needs of the population and business structures, the distribution of tasks to improve the population life quality across the identified hierarchy levels, the role of government, the criteria for forming an expedient economic structure, requirements for coordination and synchronization of the interactions between hierarchy levels in the "Region" system, etc.*

*These scientific statements describe the most important properties of the hierarchical socio-economic system "Region" and its elements, which should be taken into account when justifying the strategy of economy restructuring of the North-West regions.*

**Keywords:** methodology; economy restructuring; life quality; management hierarchy.

### 1. Introduction

The problem of the restructuring of the Russian economy has been discussed for more than 25 years. During this time, the next stage of restructuring has already been completed in the world economy. Advanced countries introduce a new technological paradigm (Glaz'yev, 2016). In Russia, for the time being, the problem does not go beyond the scientific discussions. Moreover, the overwhelming majority of authors agree on one thing: we need to restructure the country's economy, refuse the high (and almost non-declining) dependence of the economy on the commodity exports, and also on imports in the critical segments of life-support and production (Grinberg, 2008; Chernoy, 2007; Pykhteyev, 2010; Kuz'bozhev, Skulova, Belyayeva, 2009; Bodrunov, 2010; Pogosov, Sokolovskaya, 2010).

In recent years, we observe a tendency of deterioration in the quality of the economy structure in the North-West Federal District. The share of manufacturing industries for the period

from 2005 to 2016 decreased from 24% to 19.5%, while the share of construction practically did not change, and the share of mining operations decreased from 7.6% to 6.8%. As a result, the share of the manufacturing sector fell from 38.2% to 32.9%.

We observed the multidirectional processes in the regions which had the average level of the manufacturing industries development in 2005. In the Arkhangelsk and Kaliningrad regions the share of manufacturing industries increased and exceeded 22%. In three regions (Vologda and Murmansk regions, and St. Petersburg) there was a decline in the share of manufacturing industries: significant decline in the Vologda region, and critical decline in the Murmansk region (up to 9.2%, meaning that the Murmansk region is losing manufacturing industries as a specialization). In St. Petersburg, the structural changes in the manufacturing industry were less pronounced, but their share of 16.7% indicates that the city is facing the loss of the laurels of an industrial region.

The reduction in the share of industrial production in the

North-West Federal District regions and the growth of branches of the tertiary sector cannot be interpreted as a transition to a post-industrial economy, since we do not observe steady dynamics of industrial growth with positive developments in favor of the knowledge-intensive industries. The shifts in the direction of growth of service industries with a pace, that is higher than that of the manufacturing industries growth, could be justified only in the face of raising the labor productivity in industrial production. However, the labor productivity in Russia remains low (Sharafanova, Fedosenko & Skhvediani, 2017; Kudryavtseva, Skhvediani & Arteeva, 2019).

The reduction in the share of the manufacturing sector of the modern economy of the NWFD regions is a negative trend, creating a real threat to the socio-economic development of the district. The economy of the district needs restructuring. Among the factors that impede restructuring there is the weak coordination of efforts of the regional and municipal authorities, as well as the insufficient interaction with business structures (Mikhailov, Sokolitsyn & Ivanov, 2018).

A lot of works of the foreign researchers of the 20th century is devoted to problems of the structure of the economy, mechanisms of its transformation, structural crises. The foundations of the theory of structural change were developed in the second quarter of the 20th century by Alan Fisher and Colin Clark (Clark, 1949), and later elaborated by Jean Fourastie (Trekhtsektorov teoriya, 1980); and R. Barr (Barr, 1995).

Among the Russian scientists who have devoted most of their research to the topic of the structural transformation, the first we should name Academic Yu.V. Yaremenko, (Yaremenko, 1999; Yaremenko, 2000), then O.S. Sukharev (Sukharev, 2012; Sukharev, 2016), O. Yu. Krasilnikov (Krasilnikov, 2017), S.A. Suspitsin (Suspitsin, 2017), A.S. Novoselov (Novoselov, 2011), V.E. Seliverstov (Seliverstov, 2013), A.S. Marshalova (Marshalova, Novoselov, 2012) and others.

These studies have greatly expanded the understanding of the structure impact on the economy efficiency. However, the issues of inter-level interaction in the process of strategic management of the regional economy modernization were not considered there.

The purpose of this study is to identify and formulate the basic provisions of the restructuring methodology arising from the consideration of the regional economy as a multi-level hierarchical system.

## 2. Methods

In recent years the systematic approach, the general theory of systems and systems analysis have been increasingly used as a methodological basis for solving the problems of managing the socio-economic processes. The methodology of the systems is a well-proven tool of scientific knowledge, adequate to the content of the considered problem of the regional economy restructuring. Therefore, it has been chosen as a scientific and methodological platform for the presented work. The basic concepts formed in the methodology of systems are described in the work (Mogilevskiy, 1999). The certain aspects of the systems approach and systems thinking related to business systems are reflected in the canonical works (Senge, 2018) and (O'Konnor, McDermott, 2014). In recent years, the works by G. B. Kleiner (Kleiner, 2010; Kleiner, 2009; Kleiner, 2007; Kleiner, 2011; Kleiner, 2014) have introduced a new concept of the "system resource of the economy" into the theory of systems and economic theory. The terms described in the listed works will be used in the text without additional explanations.

## 3. The economy restructuring as a way to increase the population life quality

In the article we will study the problems of the strategy for developing economy restructuring through the lens of the needs

of the region and its population.

Since the region and the economy of the region are considered by us as socio-economic systems, in order to establish the reasons for the emergence of the needs in the economic restructuring, we will use the following distinguished systems theory chain: *need* → *goal* → *system*. This scheme illustrates the following idea: the need is primary; the goal in all cases is aimed at meeting some objective need; to achieve the goal a system is created (modernized or used). As the needs of people change over time, the systems that exist to meet them are forced to change: develop or disappear. This is how the need for development (change) of the system arises. As a result, a cyclic sequence of causal relationships, described in (Yakishin, 2014), is realized. This scheme is universal in nature and equally applicable to any of the systems that make up the economy of the region. In the "region" system the need is formed by the population and business structures.

In recent years, the needs of the population are most often expressed in improving the quality of life, creating favorable living conditions, or in other related requirements. The origin of the need is a change in the public perception of the life quality that occurs under the influence of socio-economic processes within Russia, as well as under the influence of globalization processes (Skhvediani & Kudryavtseva, 2018; Rodionov, Kudryavtseva & Skhvediani, 2018). The stages of raising the living standard of the population and their duration objectively depend on what needs of the population are already satisfied, and what remains to be met, and what resources are available for this (Dvas, Lyukevich & Kulagina, 2018; Kichigin, Nadezhina, Degtereva & Ovsyanko, 2018).

Business structures are the fundamental elements of a market economy. Briefly, their needs can be expressed as the need for a favorable business environment. In the "regional economy" system, these needs give rise to the goal of "improving the business climate".

An analysis of the current regional strategies of the North-West Federal District showed that among the eleven regions of the Russian Federation that make up the district, seven have chosen the improvement of the population life quality as their general goal. In four regions (in the Kaliningrad, Leningrad, Pskov regions and the Republic of Karelia) the need to improve the population life quality is clearly seen in the strategic objectives of the first and second levels. A similar phenomenon is observed at the municipal level.

The business needs are also reflected in regional strategic planning documents, but to a much smaller extent.

The quality of life is a relatively new category that appeared in the social sciences in the middle of the twentieth century. In recent years the study of the problems of the population life quality has been significantly intensified. A detailed analysis of the domestic and foreign publications in the considered area has been carried out (Liga, Shchetkina, 2011; Glushakova, 2012; Sergeeva, 2011; Argunova, Pankratova, 2010; Shelomentseva, Userbayeva, 2008; Krylova, Simakina, 2013; Shishmakov et al., 2011), the understanding of its various aspects has been broadened and a practical assessment of the population life quality in several regions has been carried out.

Based on the analysis of the works listed, as well as the works (Bestuzhev-Lada, 2001; Bobkov, Maslovskiy-Mstislavskiy, 1998; Yadov, 2008; Zherebin, 2012), for the purposes of this article, the "quality of life" will be considered as a complex characteristic of the economic, political, social, ideological, environmental and other factors that determine a person's position in society and the conditions of their life. Among the structural components of the quality of life, we can distinguish (mostly on a provisional basis, because there are certain interrelations between them) the following main components: the level of health and longevity of the population, the standard of the living, and lifestyle of the population.

Allocation of the component "the level of health and longevity of the population" as one of the main structural components of

the quality of life is due to the fact that in the world practice the health level, dynamics of health indicators, and longevity are put in the first place when assessing the living conditions, since they are considered as a basic human need, the main condition of human life.

Another important component of the life quality is the population living standard, which expresses the degree of satisfaction of people's material and cultural needs, their provision with consumer goods, the state of social welfare. At the same time, the level of provision with consumer goods is estimated both in absolute terms (average per capita income in rubles, household appliances provision in a unit per family, food expenses in rubles, etc.) and in terms of satisfaction with the available volume and quality of these goods.

And finally, the third main structural component of the population life quality is the lifestyle. This category makes it possible to consider the content of the following life aspects comprehensively in their relationship: position and development of an individual, their social activity, people's attitude to work, to the governmental policies, to the institution of family and marriage, to the rule of law, value orientations of various social groups and etc.

If the regional economy is not able to meet the existing requirements for the quality of life and business conditions in society, then it is necessary to change the existing economic system (or build a new one) and to revise the parameters of the business environment (Shabunina, Shchelkina & Rodionov, 2018; Rudskaya & Rodionov, 2018). In the work (Yakishin, 2014) it has been shown that any changes in the economy (industry, technology, commodity, etc.) ultimately result in a change in its structure. In a favorable business environment and from the standpoint of the problem of improving the quality of life, the primary positive result of the economy restructuring will be an increase in the number of jobs with high wages, as well as an increase in the mass of goods and services, level of health and longevity of the population.

The secondary result will be an increase of:

- ❑ the money supply in the form of wages of the extra budgetary employees and payments from social funds of enterprises (due to economic growth), public sector employees (due to an increase in budget revenues), non-working (due to increased social transfers);
- ❑ the tax revenues to the budgets;
- ❑ the funds allocated by the enterprises for charity and social actions.

In the proposed methodological approach, we will proceed from the assumption that the required quality of life can be achieved only with the joint efforts of the population, business structures (including infrastructure companies) and authorities. The participants of the process cannot solve this problem on their own.

To consider the population life quality while developing a strategy for the economy restructuring, it is better to use the idea of the enlarged standard of the average statistical level of the population life quality at the end of the planned period. These two standards should be distinguished:

- ❑ the standard of life quality, covering all elements regardless of the source of funding, i.e. including the elements of life quality that are realized at the expense of the population's monetary funds;
- ❑ living standards covering the elements of life quality that are financed by the budget.

The living standards are part of the life quality standards. They fix those parameters of life quality that a person (individual) cannot achieve on his own, because they require the use of collective, i.e. social efforts. The management of the life quality assurance process is the responsibility of the executive authorities with the involvement of infrastructure companies (Gutman, Zaychenko & Rytova, 2017).

The peculiarity of the strategic management of the region and municipalities is that the authorities can directly manage

only their own economy, i.e. objects in regional and municipal ownership, respectively (Dubgorn, Ilin & Lepekhn, 2018; Zaychenko, Ilin & Dubgorn, 2018). They can influence business structures indirectly by the economic methods or through a regional and urban economy.

## 4. Systemology aspects of the region economy restructuring methodology

These provisions allow us to proceed to the description of the systemology aspects of the methodology for restructuring the regional economy.

In the development of a strategy for the economic restructuring, the most difficult stage from a methodological point of view is the stage of formulating goals and tasks. When building a tree of goals and tasks, it should be remembered that the immediate result of the planned transformations should be a rational structure of the economy. The criterion for choosing a rational structure is the ability of the economy to ensure the provision of the required number of jobs and the budget replenishment, as a necessary condition for achieving the desired population life quality.

It is obvious that the system of goals and tasks for the development of the regional economy should be a hierarchical tree.

In the paper (Yakishin, 2014) the well-known approaches to the decomposition of goals have been analyzed. It is shown there that all of them apply only to classical hierarchies, in which participants make decisions on their own within the established authority, but taking into account the general goal of the system at the top level of the hierarchy.

In the paper (Yakishin, 2018; Glotov, Pavel'yev, 1984) it is shown that the regional economy belongs to hierarchical systems with weak connections. The elements that can act autonomously, i.e. not coordinating their decisions with the higher system, are municipalities (in some cases), private enterprises, individual entrepreneurs and employees.

When structuring the goals of the regional economy restructuring, one should remember one of the main tenets of system theory: the hierarchy of goals must correspond to the hierarchy of systems and processes, finding a one-to-one correspondence in the hierarchy of results. Applying the described methodological provisions to the problem under study, we can describe the structure of the population life quality ensuring process, reflecting the hierarchy of systems, processes and results obtained at each level of the hierarchy, as well as the final result. Figure 1 identifies four levels of stratification: region, municipality (city), individual (employee). Until now, speaking of the restructuring of the economy, we have considered only the first three levels of previously mentioned ones. The employees have not been considered, while they, of course, still are the participants in the restructuring process. The restructuring carried out at the macroeconomic level affects them directly and to the greatest extent. The employees play an active role in the process of ensuring the life quality. They receive wages for their work at the enterprises and pay the costs of those elements of life quality that they have to bear on their own. In addition, employees, like all members of society, should lead a healthy lifestyle, adhere to the generally accepted standards of morality, ethics and other rules of the society in social behavior and in communication with people. Therefore, it is necessary to consider the process of meeting the needs of employees of enterprises when studying the hierarchy of processes of ensuring the quality of life of the population.

Each of the processes forms such elements of the quality of life which are assigned to it. The combination of these elements (taking into account the elements of the population life quality, provided by the activities of federal authorities) forms the required population living standard in the region. For the successful achievement of the goal in weak hierarchies, the

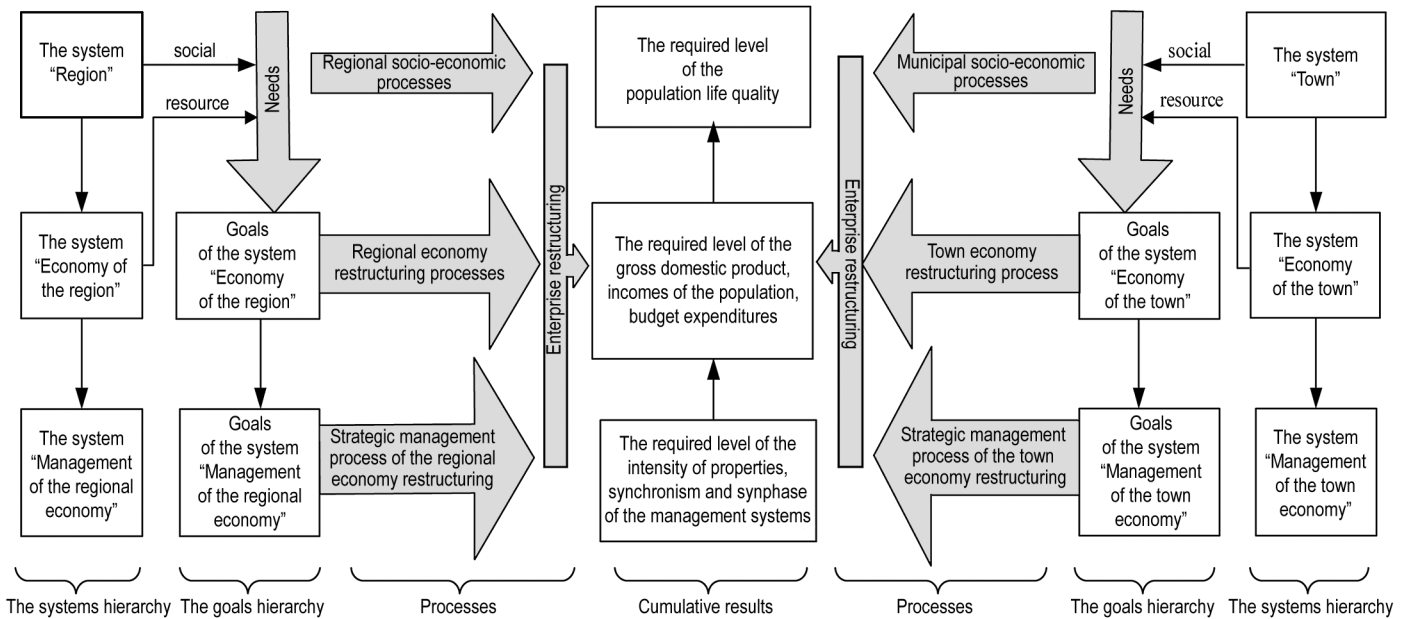


Figure 1. The structure of the process of ensuring the population life quality in the region

interaction between the levels should be organized. In Russian practice, this interaction is most often absent. Each of the authorities organizes a process within its jurisdiction according to its own plan. The composition and content of the regional and municipal plans are not coordinated; synchronization of the events is not carried out. Moreover, current legislation does not provide for such coordination of plans. Inconsistency of the different levels authorities' actions leads to an imbalance in the development of various components of the population life quality. This drawback can be eliminated only by coordinating the activities of regional and municipal authorities.

By deploying each of the lines across the levels of the hierarchy of its constituent systems, it is possible to obtain a hierarchy of systems, goals, processes, and results of the regional economy restructuring, which is shown in Figure 2.

Figure 2 shows that the actions of each level should be subordinated to the solution of the global task facing the "Region" system – the achievement of the required level of the population life quality in the region. Therefore, the criterion for evaluating the operation of any subsystem is its contribution to the functioning of the entire system. The general goal of the subsystem "Economy of the region" should be subordinated to the goals of the region. The resources allocated for its achievement should be sufficient, but no more than that: the surplus is unacceptable. They should be used in other public interests, and only the top level, fully informed, can make a decision about it. Similar rules apply to municipalities.

In order to achieve the required level of the population life quality in a given time frame, all systems involved in the process must act synchronously and in phase. This seemingly simple

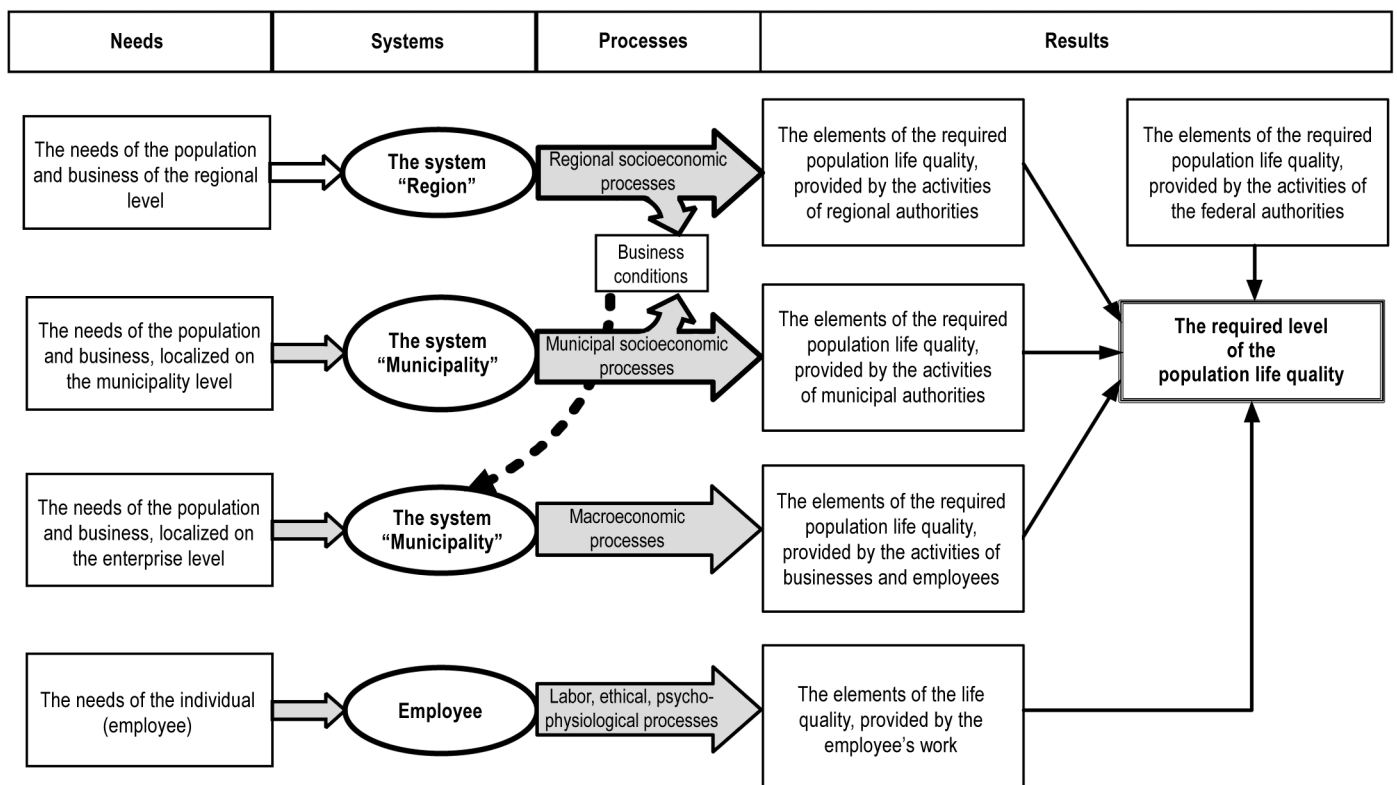


Figure 2. The hierarchy of systems, goals, processes and results of the regional economy restructuring



task is difficult to implement, since local government is an independent branch of government, not subordinate to regional bodies. In this case, the basis of interaction can be mutual understanding and negotiations arranged in the form of agreements.

The sequence of formation of the goals and tasks of the regional economy restructuring can be as follows:

- define a certain idea for each system (the region and all municipal formations) about the future needs of the population (expressed through population income levels and living standards), as well as budget support needs, first in general and then in a form of a specific knowledge. The objectives of the regional economy should take into account the objectives of the Russian Federation, the unmet needs of the region, as well as the needs of municipalities that they cannot meet on their own. The objectives of the municipalities should reflect their own unmet needs and be consistent with the goals of the region;
- define the general objectives of the systems and their quantitative description so that the identified needs can be met;
- form a preliminary model of the intended result and estimated the possibility to achieve the general goal by the allocated funds and known methods under the predicted conditions; the goals of the region, municipalities, as well as infrastructure companies and business shall be intertwined, balanced and synchronized;
- unfold the process of achieving the goal in time, formulate the alternative versions of the goals of the next levels, i.e. the goals of the first, second levels, etc.;

- exclude unimportant and competing (i.e. not endowed with resources) goals;
- select the best option and assess the significance of goals, using the methods of decision theory and evaluation criteria for selection;
- form a set of goals and tasks of the regional economy restructuring in a tree of goals and tasks.

To simplify the procedure, we have proposed a systematized list of levels of decomposition and a generalized composition of the elements of the goals and tasks structure of the “Region” system economy restructuring (Table 1). The elements of the second, third and subsequent levels in relation to the elements of the previous level are deployed on the principle of “nesting”. The number of stratification levels is determined by the research objectives. This scheme is also applicable for managing the economy restructuring of the municipalities.

In some difficult cases when the researchers are not sure that all aspects have been actually considered in the process of structuring goals, it is advisable to use the dichotomous (binary) division procedure described in (Zherebin, 2012), compare the trees of goals and tasks obtained by different methods and combine them into one tree.

The goals must be realistic. Therefore, it is necessary to compare the proclaimed goals, methods and means of achieving them with the available resources. Next you should make a choice of ways and means to achieve it. To do this, we should formulate the requirements for the ways and means to achieve the goals on the basis of successively refined formulations of the components of the goal, and then we formulate the totalities of the objective ways and means of achieving the stated goals logically and structurally related in terms of goals and time.

Levels of goals decomposition	The goals classes by levels					
0. General goal	The general goal of the regional economy restructuring					
1. Strategic Directions (Goals) of the economy restructuring	Strategic Directions (Goals) of the regional economy restructuring					
	Goals to achieve the required GDP level	Goals to create new jobs	Goals to achieve the required population income level	Goals to achieve the required level of the budget revenues	Other goals	
2 Goals of economy restructuring by the sectors	The goals of economic restructuring by the priority sectors (activities)					
	Branches of the goods production (mechanical engineering, chemical, light, food industry, etc. branches)		Service industries (education, health care, public transport, culture, etc.)		Other types of activity	
3. Provision types development goals	Goals to provide the investment development	Staff development goals	Goals to develop the information and analytical assurance	Energy supply development goals	Water supply development goals	Development goals for the other types of the provision
4. The goals of the support subsystems (for example, human resourcing)	Goals of the vocational schools for the development and use of the staff	Goals of the technical schools...	Goals of the universities for the development and use of the staff	Goals of the educational institutions of advanced training and retraining	Goals of the other support subsystems elements	
5. Goals of the next level of detail						

Table 1. Levels of decomposition and the generalized structure of the elements of the goals and tasks of the regional economy restructuring

## 1. Conclusion

Summarizing everything said above, we will list and briefly describe the basic systemology provisions that should be used in the methodology of the regional economy restructuring.

1. The proposed methodology for the regional economy restructuring is based on a study of the need – goal – system chain. In the regions the needs are formed by the population and business structures. They are expressed now in the desire to improve the quality of life and ensure the development of business conditions. We will proceed from the fact that improving the population life quality is the main socio-economic goal of the region.

The socio-economic system “region's economy” is considered as a system that is able to provide the formation of the material basis of the population life quality. The main goal formulated above can be achieved by consistently changing (improving) the

structure of the economy, among others, through a transition from the structural imbalances and a shift in the direction of primary industries to the economy oriented to the diversified innovative production. The latter quality is achieved through the interaction with the business structures and improvement of the business climate.

2. The region should be considered as a hierarchical system, structured in two grounds: the hierarchy of administrative systems (region, municipalities) and the hierarchy of socio-economic systems (multifunctional systems “region”, “municipality”, “enterprise”) and the corresponding functional systems: economic and governing. The administrative hierarchy is taken into account during allocation of the areas of responsibility for the authorities to achieve the required quality of life for the population in the region; the functional hierarchy is used to assess the effectiveness of economic restructuring.

3. The required level of life quality can be achieved only with

the joint efforts of the population, business structures and authorities.

The task of an able-bodied person (individual) is to work and, at the expense of wages for labor, satisfy their vital needs.

The task of business structures is to create jobs and provide employees with fair and decent wages.

The task of the authorities is to promote the business development and the creation of a sufficient number of jobs, as well as to organize the provision of public services to the population.

4. The authorities of various levels of federal, regional and municipal participate in ensuring the population life quality.

The participation of the federal center in ensuring the population life quality of the region in the proposed methodology is taken into account as a given, but is not studied in detail.

To assess the contribution of regional and municipal authorities, it is proposed to use the enhanced standards of life quality, including living standards. Responsibility for achieving the living standards rests with the authorities.

5. When forming a tree of goals and tasks of an economic modernization strategy, one should take into account that the planned transformations should immediately result in a rational structure of the regional economy. The criterion for the formation of an appropriate structure is the ability of the economy to provide the required number of jobs and the budget replenishment which are needed to achieve the desired level of quality of life of the population.

To simplify the procedure of forming goals and tasks for the regional economy restructuring, it is advisable to use the systematized list of structural levels proposed above (strategic directions for restructuring, economic restructuring goals by industry, development goals for security types, etc.) and a generalized element structure of the goals and tasks structure.

6. Each of the levels of the functional hierarchy of the above-mentioned systems contributes to the hierarchy of cumulative results, using the following types of system resources of the economy to achieve it: object, environmental, process and project resources. As a result, taking into account the elements of the population life quality, provided by the activities of federal authorities, the final result – the required level of life quality in the region – is achieved.

7. Currently, the processes of ensuring the population life quality at the regional and municipal levels are poorly coordinated. Each of the authorities organizes a process within its jurisdiction according to its own plan. The coordination of the composition and content of the regional and municipal plans is not carried out. Inconsistency in the actions of the authorities of different levels leads to an imbalance in the development of various components of the population life quality. In order to achieve the required level of life quality within the specified (desired) time frame, it is necessary to ensure the economic coherence, balance and synchronization of the strategic planning documents of the region and municipalities, as well as infrastructure companies and businesses.

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## How Core Job Characteristics Impacts Employees' Creativity?

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### Abstract

*Does employees' creativity differ from job to job? The current study aims to examine the impact of four core job characteristics (skill variety, task identity, job autonomy, and job feedback) on employees' creativity in Octal Company, Oman. To achieve the objective of this study, 92 questionnaires were collected from employees working in Octal Company. Data were analyzed using a multiple regression analysis. The results show that only three core dimensions of job characteristics (task identity, job autonomy, and job feedback) impact employees' creativity. These findings emphasize the role of job characteristics in employees' creativity. Implications and future research have been outlined.*

**Keywords:** job characteristics; employee creativity; Octal; Oman.

### 1. Introduction

Creativity was defined by Zhou and George (2001) as the novel and improved ways to do things. It has been recognized to be a crucial factor for many important performance outcomes (Zhou & Oldham, 2001). The concept of creativity is still lacking a clear understanding (Anderson et al., 2014). Hence, researchers have continued to examine the antecedents of employee creativity. Previous studies have provided empirical support for the interlink between creativity and several variables such as curiosity (Schutte & Malouff, 2020), conflict styles (Durrah et al., 2018) leadership (Gu et al., 2020; Rabbani et al. 2014), optimism (Rego et al., 2018), positive mind-set (Tien et al., 2019), culture (Kwan et al. 2018) and organizational pride (Durra et al., 2020). However, previous creativity literature pays little attention to the relation of creativity with the dimensions of job characteristics (e.g. Cai et al., 2019).

The second stream of this study, job characteristics refer to the variety and nature of the tasks linked to a certain job and how it is accomplished. It was reported that higher task variety is related to greater employee productivity (De Varo et al., 2007). Task refers to a set of predetermined activities an employee performs during working hours (Griffin, 1987). Tasks are important aspects of an overall job. Typically, various tasks are combined to form a job (Dunnette & Hough, 1990).

Although previous studies suggest that employees' outcomes differ according to characteristics of job (e.g., Wang et al., 2014), the mainstream of research considered one dimension of job characteristics e.g., autonomy (Wang & Cheng, 2010). Taber and Alliger (1995) also suggested that investigating a process at a job and task levels provides more insights. Shalley and Gilson (2004) suggested that job characteristics could enable employees to utilize their resources to pursue

creative ideas. Thus, this paper argues that employee creativity may vary with different job characteristics.

In literature, the research that examine the link between job characteristics and creativity is still scarce and done mostly in the European context (e.g. Cai et al., 2019). The present study is an attempt to explore this relation in-depth within Arab context specifically in Oman. Overall, this research addresses the following research question: Does job characteristics influence employees' creativity in Oman specifically in industry sector.

### 2. Theoretical Framework and Hypothesis

#### 2.1. Job Characteristics and its Underlying Theory

Originally, Job Characteristic Model was developed by Turner and Lawrence (1965), later in (1971) Hackman and Lawler reviewed the model, described its six dimensions (variety, autonomy, task identity, job feedback, dealing with others, and friendship opportunity), and divided the six dimensions into two categories: The first included four dimensions (variety, autonomy, task identity, and job feedback) and labeled "core dimensions". The second category included two dimensions (dealing with others, and friendship opportunity). The focus of this study will be on the core dimensions of the Model which relate to how the job is performed and the nature and variety of tasks related to a specific job (Dunnette & Hough, 1990).

The theory postulates that enriched and motivating job characteristics could stimulate employees' skills and talents used to perform tasks. Job characteristic theory also postulates that job characteristics could advance employees' motivational level by developing three psychological conditions: meaningfulness of work (task identity, and skill variety), responsibility (autonomy), and knowledge of job outcomes (job feedback;

Hackman & Oldham, 1976).

*Meaningfulness of work* is considered as the main generator of intrinsic motivation that could be achieved with *Skill Variety and Task Identity*. *Skill Variety* refers to the level of knowledge and range of skills needed by employees to accomplish their tasks. Employees will find their work to be more meaningful with skill variety (Bratton & Gold, 2007). *Task Identity*, which relates to an employee's ability to identify his/her job performed as more holistic and complete that would lead to more pride in the outcome (Hackman & Oldham, 1975). It refers to which extent the employee is seeing the results and completion of his job.

Responsibility, derived from *Autonomy*, implies that sufficient independence of self-decision would ensure employees' success in his/her job. Autonomy refers to the extent the employee has independence, freedom, and flexibility in choosing the resources, processes, and methods to accomplish their tasks (Lawrence, 2001). Job autonomy creates a sense of responsibility among the employees (Colarelli et al., 1987).

The knowledge of job outcomes, derived from *Job Feedback*, provides information (e.g. customer satisfaction scores) on the job performed by an employee that can be used to improve their performance (Hackman & Oldham, 1975; 1980). This is part of the rights of workers to know how they succeed in carrying out their roles, tasks, and responsibilities within the organization (Yami, 2005). Job feedback should not be delayed but should be precise and timely. It is part of employees' rights to know how they progress in carrying out their duties, tasks, and responsibilities within the organization (Gupta & Upadhyay, 2012). Gomez-Mejia et al. (2007) found that job characteristics involves expanding work by increasing the depth and scope of the job, which involve adding challenges to the tasks in which the staff member are assigned and giving them more challenging responsibilities.

## 2.2. Creativity and Job characteristics

Since creativity is least likely to be computerized (Frey & Osborne, 2017), employee creativity is receiving more attention increasingly among practitioners and researchers (Durra et al., 2020). It refers to any novel idea, procedure, or product potentially useful and beneficial to organizational success (Amabile & Pratt, 2016; Oldham & Cummings, 1996). Employee's creativity can refer to an individual who has new ideas for his/her work or working style.

Job Characteristic Model (JCM) of Hackman and Oldham (1975) posit psychological influences on creativity (Oldham & Cummings, 1996). Skill variety is considered as a significant component of creativity (Amabile, 1996). The expertise in utilizing skills in problem-solving allows individuals to combine knowledge to develop and execute new ideas (Noefer et al., 2009).

*Autonomy* is also found to be an important determinant of creativity (Liu et al., 2011; Zhou, 1998). *Task identity* strengthens the meaning of the task linked with innovation by increasing the feelings of accomplishment and responsibility (Shalley et al., 2004). Individuals with a higher level of task identity are more able to bring out their creativity (Loher et al., 1985). Lastly, via job feedback, individuals can track their tasks and improve their performance (Zhou, 1998). In this way, job feedback reinforces employees' creativity. Thus, based on the literature review, the following hypotheses were formulated to examine the proposed impact of the four dimensions of Job Characteristics on employees' creativity (Figure 1):

- H<sub>1</sub>: Skill variety has a significant influence on employee creativity.
- H<sub>2</sub>: Tasks identity has a significant influence on employee creativity.
- H<sub>3</sub>: Job autonomy has a significant influence on employee creativity.
- H<sub>4</sub>: Job feedback has a significant influence on employee creativity.

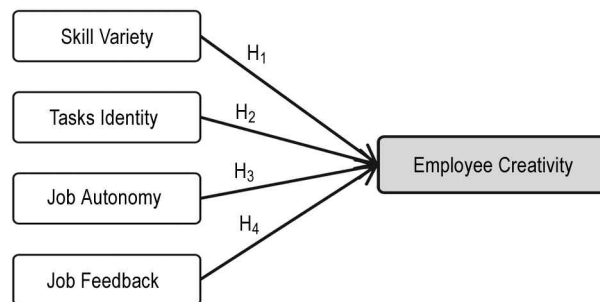


Figure 1. Proposed Theoretical Model

## 3. Methodology and Analysis

### Respondents

Data were collected from Octal company, Dhofar Governorate, the Southern Region of Oman. Out of 520 employees working in Octal, 110 employees respond to the survey, where 18 questionnaires were removed due to missing information, leaving 92 final questionnaires. 82.6% of respondents were male, and 56.5% were less than 30 years old. Regarding education, while 47.8% of the respondents had HSS or Diploma, 41.3% had bachelor degrees, and 10.9% had postgraduate degrees (Table I).

Variables	Categories	Number	Percent
Gender	Male	76	82.6
	Female	16	17.4
Age	Less than 30	52	56.5
	30 - 40	31	33.7
	41 - 50	8	8.7
	Above 50	1	1.1
Educational Level	HSS	12	13.0
	Diploma	32	34.8
	Bachelor	38	41.3
	Postgraduate	10	10.9
Total		92	100%

Table I. Demographics characteristics of respondents

### Measures

Job Characteristics were measured with a 33-item scale adapted from Sims Jr, Szilagyi and Keller (1976) and Tsigilis and Koustelios (2019). Task variety (8 items), task identity (9 items), autonomy 7 items), and job feedback (9 items). Employee creativity was measured using a 13-item scale developed by (Zhou and George, 2001). Five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree was utilized.

### Descriptive Statistics

Table II show that all dimensions of job characteristics were at high levels; the highest was skill variety (4.07), the lowest was job autonomy (3.68). Besides, the employees' creativity was at a high level (3.59), standard deviation of all variables was around 1. Table II also shows that all variables in this study have high levels of reliability as Cronbach's Alpha values were very high ranged between (.890 – .953).

Correlations of all variables are presented in Table II which

No	Variables	Items No.	M	SD	1	2	3	4	5
1	Skill variety	8	4.07	.914	(.903)				
2	Tasks identity	9	3.97	.912	.739**	(.890)			
3	Job autonomy	7	3.68	1.116	.624**	.661**	(.902)		
4	Job feedback	9	3.80	1.001	.708**	.622**	.675**	(.937)	
5	Creativity	13	3.59	1.068	.653**	.681**	.716**	.805**	(.953)

Cronbach's alphas in brackets; \*\* $p < 0.01$ ,  $n = 92$

Table II. Items no., means, standard deviation, correlation and Cronbach's Alpha

showed strong positive significant relationships among and between all core dimensions of job characteristics and employee's creativity. Skill variety, tasks identity, job autonomy, and job feedback are positively related to employee creativity ( $r = 0.653$ ,  $r = 0.681$ ,  $r = 0.716$  and  $r = 0.805$ , respectively, at  $p < 0.01$ ).

### Regression Analysis

Table III summarizes the results of regression analysis of all core dimensions of job characteristics (skill variety, task identity, job autonomy, and job feedback) with employee creativity. The table shows that skill variety has no significant influence on employee creativity (*Skill variety*  $\beta = -.030$ ,  $p > 0.05$ ), so,  $H_1$  was not accepted. The results show that the other three core dimensions of job characteristics have a positive significant impact on employee creativity (*Tasks identity*  $\beta = .219$ ,  $p < .05$ ; *job autonomy*  $\beta = .229$ ,  $p < .05$ ; and *job feedback*  $\beta = .535$ ,  $p < .001$ ). Thus, hypotheses  $H_2$ ,  $H_3$  and  $H_4$  were accepted (Figure II).

Model	R <sup>2</sup>	F	B	S.E.	$\beta$	t
Constant	.724	57.121***	-.254	.301		-.844
Skill variety			-.036	.113	-.030	-.316
Tasks identity			.275	.113	.219	2.421*
Job autonomy			.218	.080	.229	2.720*
Job feedback			.554	.091	.535	6.072***

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ,  $n = 92$

Table III. Regression analysis of core dimensions of job characteristic with employee creativity

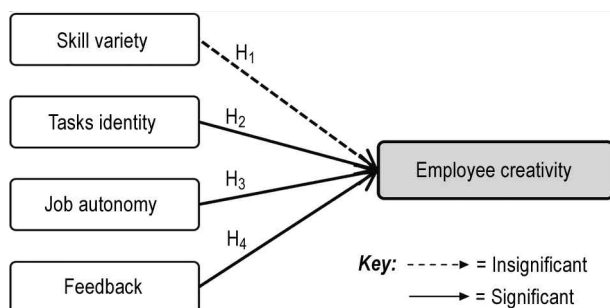


Figure II. Results of the Model

### 4. Discussion and Implications

This study aims to examine the influence of four core dimensions of job characteristics on employee creativity. Interestingly, the results show that the skill variety has no significant influence on employee creativity. This may be due to the nature of work in Octal Company that has industrial and chemical nature. Tasks identity, job autonomy, and job feedback found to influence employee creativity. Job feedback found to have the strongest positive impact on employee creativity.

The findings show a strong relationship between task identity and employee creativity. That is, employees with high task identity will be more creative in organizations. The findings also show a strong relationship between job autonomy and employee creativity. The findings also show a strong relationship between job feedback and employee creativity. Among the three dimensions, job feedback found to be the most effective factor in generating creativity, that may be due to information opportunities that employee can get through job feedback.

By exploring how core job characteristics may stimulate employee creativity, this study contributes to the previous literature by investigating the role of job characteristics in fostering employees' creativity in organizations. It contributes by expanding our understanding on how to foster employee creativity by enriching job characteristics in the organization.

This study also has significant practical implications for helping companies handling employee creativity effectively. It is beneficial to HR professionals to promote creativity specifically when designing the job characteristics. Organizations need to

keep a high level of job feedback by keeping employees aware of the results of their work and keep them acknowledged about the quality of their job.

### 5. Limitations and Future Research

The study is restricted by many limitations. First, employee creativity was measured using a self-report scale, so future studies may concentrate on more objective evaluation of employee creativity. Second, this study introduced the four-core dimensions of job characteristics introduced by Turner and Lawrence (1965) and Hackman and Lawler (1971). Later on, Hackman and Oldham (1975) add one more core dimension to the model that is "Job Significance". Future researcher may examine the five-core dimensions introduced by Hackman and Oldham. Third, this study focuses only on the core dimensions of job characteristics, thus, future study may also consider more dimensions of job characteristics such as knowledge, social and job-context characteristics (Dunnette & Hough, 1990). Fourth, this study focuses on individual creativity, thus, future studies may investigate how job characteristics can affect creativity at the group and organizational levels.

To summarize, core job characteristics are a significant field of creativity research. To bring creativity out of employees, it will be important to design jobs to include tasks that provide task identity, autonomy, and job feedback.

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# Public Service Quality Improvement through Thermal Comfort Assessment for Urban Jakarta, Indonesia

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## Abstract

*A study of public service quality improvement through thermal comfort assessment was conducted in Jakarta Metropolitan Area. The region is divided into 5 (five) administrative metropolitan areas (North, South, East, West, and Central areas). 367 building occupants/managers from typical government buildings (3-4 stories) with Naturally Ventilated (NV) buildings were selected for the survey. For each selected building, the occupants filled a questionnaire indicating the thermal response in different periods of the day by using the ASHRAE thermal comfort scale standard and public service satisfaction index is simultaneously measured to understand the public service quality. The air temperature variation across the neighborhoods was found to be influenced by different region characteristics. The comfort temperature of subjects in Central Jakarta ranged from 27.06°C to 30.06°C, slightly lower than in the North Jakarta (27.29°C to 30.41°C) and the comfort temperature of subjects in South Jakarta ranged from 25.92°C to 31.89°C. The variations of temperature across the regions and different geographical conditions such as land elevation were found to affect indoor thermal comfort. It is concluded that the building locations and land elevation had an impact on the indoor comfort of building occupants and lead to service quality of its public service. This finding could lead to a better strategy in developing sustainable public service facility in the future.*

**Keywords:** public service quality; thermal comfort; sustainable building.

## 1. Introduction

A region in a tropical environment like Jakarta is affected by urban climate. The outdoor heat intensity penetrates the envelope of the buildings so that it possibly increases the indoor temperature. The indoor temperature is indirectly affected by the outdoor temperature; these findings are mentioned by (Humphreys & Fergus Nicol, 2002). Another indirect activity affecting the indoor temperature is the high population density with various activities and traffic emission that will lead to heat intensity (Adunola, 2014) and also land cover (Irawandani, Dipareza, & Hermana, 2018). All of this heat intensity will lead to discomforting experience for the building occupants even worse the service quality in public service facility. The condition will be higher in tropical regions led by inappropriate indoor air quality and workspace thermal discomfort (Damiati, Zaki, Rijal, & Wonorahardjo, 2016) (Yang, Yan, & Lam, 2014). In a metropolis with high reduction of green areas like Jakarta, climate history has recorded that the temperature has increased from 26.4 °C in 1904 to 27.8 °C in 2009 (ICCSR, 2013). The climate change has worsened the condition; therefore, humans should adapt to the higher temperature in the near future.

Environmentally-friendly building act or well known as Green Building policy act has been implemented in Jakarta since 2012, but the energy consumption remains significantly increased (Pemprov DKI, 2016). According to (Zhang, Wang, Hu, & Wang, 2017), the building sector consumed more than 40% worldwide

energy resources and created more than 30% Carbon Dioxide Releases. In this case, the local climate affects thermal comfort and assisted by the air conditioning unit directly impacts thermal comfort for building occupants (Yau, 2010). Indoor and outdoor air temperatures are playing an essential role in thermal climatic factors affecting thermal comfort in the climate of tropics and bring satisfaction to the occupants (Damiati et al., 2016) or (Adenathera, et al., 2019). Building envelope also affects indoor thermal comfort and becomes the main criterion to set better surrounding thermal comfort in a building. It has been stated that buildings must provide a functionally acceptable thermal environment (Holmgren, Kabanshi, & Sörqvist, 2017). Office buildings should present comfortable surroundings suitable for their function as a place to work.

Jakarta Provincial Government during this governing regime pioneered to emphasize civil service employees' productivity and service quality (Pemprov DKI, 2017). In fulfilling its policy and services to 10.37 million inhabitants, Jakarta Provincial Government established 311 regional offices in its districts (267) and sub-districts (44) to enable public services, public gatherings, and other administrative services. Buildings' IAQ becomes a critical part of creating the occupants' comfort (Merabtine, Maalouf, Al Waheed Hawila, Martaj, & Polidori, 2018). Every district office and sub-district office are equipped with air conditioner (AC) in its service area and back office room that consumes more energy to provide better services. Unfortunately, the use of mechanical air conditioner in buildings



has proved to be negative as far as the sustainability of the environment is concerned (Andalas, Kusnopranto, & Koestoe, 2018).

The current condition is not compatible with Sustainable Development principles by Salim and UN's Sustainable Development Goals (Nilsson et al., 2016). Research conducted by (Pomfret & Hashemi, 2017) showed a link between thermal comfort and energy consumptions. Thus, variables also appear in the research by (Barbhuiya & Barbhuiya, 2013) and (T. H. Karyono, 2000) that showed a connection between thermal comfort and work performance in office environment. Humans as a warm-blooded creature have to keep core temperatures at 37 °C in varied climatic environments. Several studies of thermal comfort showed a mutual link and interaction between built environment and climate (Sant'Anna, Dos Santos, Vianna, & Romero, 2018). The role that the physical, spatial, and location characteristics of a tropical urban building is essential in the modification of indoor climatic factors. Jakarta Capital City is a megapolitan and urban center located on latitude 6°12'52.63"S and longitude 6°106'50'42.47"E in the western part of Indonesia (Fig. 1). The city is located in the north of Java coastal area, whose aligned north-south ridge crosses the central part of the city.

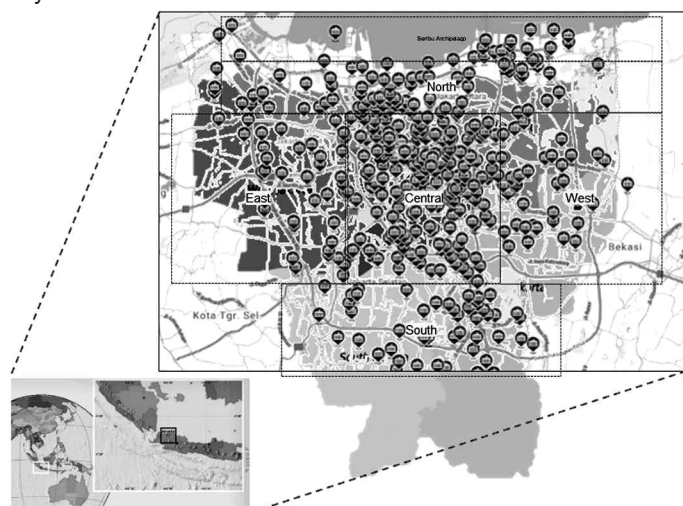


Figure 1. Location of Jakarta Capital City and scatter plot of Public Service Facilities

In Figure 1, the distribution of the state-owned administrative buildings is shown in the scattered plot around the region. Jakarta is located close to the equator line, categorized as a tropical climate with a seasonally tropical classification. The yearly season in Jakarta is dominated by periods of rainfall. During this rainy season, a mixture of solar radiation, high temperature, high humidity, light winds and long periods of still air scatter around the city. In Indonesia or Jakarta, overall we can see two seasonal patterns, namely the dry season (April to June) and rainy season (July to March).

## 2. Materials and Method

This research was conducted in Jakarta Capital City to examine the indoor thermal comfort in the public service facilities in different areas and its correlation to the outdoor air temperature.

Populations in this research are divided into 2 (two) kinds as follows following the method developed by (Andalas et al., 2018): (a) Building Occupants are civil service employees who work in a state-owned (Jakarta Provincial Government) building numbering 67,809 peoples consisting of 33,477 (49.36%) males and 34,332 (50.63%) females and (b) State-owned buildings numbering 311 buildings located in several locations (North, Central, South, East, West) in Jakarta Capital City Territory. Based on Slovin's equation in (Boesono, Setiawan, Prihantoko,

Jayanto, & Malala, 2016) a minimum of 367 samples of civil service employees and based on Tabachnick's equation (Tabachnick & Fidell, 2007), 58 buildings should be examined to conduct the research with typical conditions and shapes like in the Figure 2 below:



Figure 2. Typical Government Office in Jakarta

For each selected building, building occupants or prioritized as building managers filled an e-questionnaire. The feedback regarding the thermal comfort and their service quality in the day was compared to ASHRAE (The American Society of Heating, Refrigerating and Air-Conditioning Engineers)

thermal comfort scale (Kumar, Mathur, Mathur, Singh, & Loftness, 2016) with specific time during standard office hours 08:00-17:00. A specific indoor building thermal comfort assessment was conducted in each location. The survey was completed for a one-day period in the office. The thermal scale was explained and the assessment system was translated to the respondents' mother tongue. The respondents filled the electronic questionnaire independently as they monitored their thermal feelings during the day. The indoor measurements of relevant climatic elements were done in a specific office building. Measured parameters are: outdoor and indoor air temperature (T); relative humidity (RH); outdoor and indoor air velocity (AV) and Mean Radiant Temperature (MRT). The weather-measuring instruments used comprised the following: Microclimate Weather Stations provided by BMKG (Indonesian Board of Climate and Geophysics) that offered immediate update of all outdoor climatic data. All tools were calibrated by the Board of Climate and Geophysics (BMKG) national standard. The indoor thermal data were measured from Questemp® Heat Stress Monitor 34 series. In the respective representative sampled offices from five regions where measurements were taken, the weather stations sensors were positioned straight using a tri legged pod with the height of 1.25 m above the floor and fitted to a covered wall to avoid direct sunshine and precipitation

This research is aimed to get the indoor thermal comfort in each region, and the thermal responses used simultaneously measured climatic parameters' outdoor temperature of the buildings.

The survey was held in the same month and weather condition. A thermal comfort study done by (Sandanyake, Zhang, Setunge, Li, & Fang, 2016) showed that building occupants in an NV building felt comfortable at 28.3 °C, and if compared to building occupants staying in AC building who felt comfortable at 27.7 °C, this condition is 0.6 °C lower. This could be assumed as the condition after being exposed to air

conditioner. It can be concluded, people tend to be more comfortable in a lower temperature when they stay in a lower temperature room than those who choose not to be too exposed to AC.

Data were analyzed using IBM SPSS Statistics version 24.0 by linear regression, compared to ASHRAE method. The method developed by DeDear and followed by Karyono (Richard J. de Dear & Gail Schiller Brager, 1998) (T. H. Karyono, 2000) (T. Karyono, Sri, Sulistiawan, & Triswanti, 2015) is that by examining the position of the subjects, educational level, and the age of the respondents, specific understanding of thermal comfort and its supporting factors based on each geographical location could be examined.

### 3. Results and Discussions

#### 3.1. Results

Furthermore, data analysis and discussion of research findings began with the brief description of demographic attributes (age, gender, and education); out of total 367 respondents, 56.1% were males, whereas 43.9% were females. Standard Deviation (SD) count was 1.3%. The majority of the respondents (almost 37%) were aged between 44 and 45 years (Table 1).

Age (years)	Sum	%	Location	Sum	%
Under 18	0	0%	Central	61	17%
18-24	5	1%	North	62	17%
25-34	83	23%	East	86	23%
35-44	115	31%	South	103	28%
45-44	134	37%	West	53	14%
55-64	30	8%	T.Island	2	1%
	367	100%		367	

Table 1. Demographic data of respondents

In terms of education, 54% of the respondents had a college/university degree, 31% had a Master's degree, and only 8% had a high school certificate. Therefore, the questionnaire's questions were confirmed to be understandable by the respondents. The poll was spread during office hour Greenwich Mean Time (GMT) +7: 07:30-17:00.

Several studies showed a significant result of differences in neutral temperatures in different buildings or locations of elevation in a coastal area (Thapa, Bansal, Panda, & Indraganti, 2018) (Hubbard, Stewart, & Fan, 2014). This research divided Jakarta metropolitan specifically based on topographical data, which classified North Jakarta with land elevation of an average of 6.7 meters above sea level, Central Jakarta 12.1 meters above sea level and South Jakarta 27 meters above sea level. Based on the map in Figure 4, (T. Karyono et al., 2015) (Hamzah, Gou, Mulyadi, & Amin, 2018), it is suggested to measure all variables such as (air temperature, radiant or globe temperature, air velocity, and relative humidity, RH).

#### 3.2. Central Jakarta Thermal Comfort Analysis

During the daily research in October in each public facility office that participated in Central Jakarta, the measured minimum outdoor air temperature ( $T_o$ ) was 24.0°C to 27.6°C with SD of 0.90%, and the maximum temperature was 32°C to 35.4°C with SD 0.88% shown in Table 5. The comfort temperature ranged from 27.06°C to 30.65 °C (Table 2).

	N	Min (°C)	Max (°C)	Mean (°C)	SD
Min( $T_o$ )	31	24.0	27.6	26.5226	.9087
Max( $T_o$ )	31	32.0	35.4	33.2581	.8827
Valid N (listwise)	31				

Table 2. Statistical data of the subjects in Central Jakarta

The measured indoor air temperature was 28.1°C to 31.8°C

and the mean temperature was recorded at 29.65 °C with SD of 0.89% as shown in Table 3. If we compare to the comfort temperature, most buildings had an adequate comfortable temperature fitting in the comfort range.

	N	Min	Max	Mean	SD
TEMP	63	28.10	31.80	29.6556	.89763
Valid N (listwise)	63				

Table 3. Indoor temperature in Central Jakarta

The measurement of indoor air temperatures was done in the waiting area (Figure 2) that is categorized as Non-Ventilated building. The recorded temperature was between 28.10 and 31.8°C, with a mean temperature of 29.65 °C and an SD of 0.89°C. In Central Jakarta, 63 participants joined the survey (Table 7) with physical details of the respondents as follows: minimum height 148 cm and maximum height 177 cm, mean height 162cm and SD of 7.5%, minimum weight 52 kg and maximum 92 kg with mean 68.28 kg, SD counted at 0.8%. The respondents were mostly well educated as seen on Table 7; the mean calculation showed mean education value was >4.58. If compared to the survey tools, most of the respondents had attended college or university.

#### 3.2.1. Neutral Temperature and Comfort Range in Central Jakarta

As this study aimed to examine the neutral temperature (TSV) in a specific location, linear regression analyses were conducted using Microsoft® Office Excel 365 using equations provided, while the statistical test was run by SPSS version 24 and Humphreys' equation (Humphreys & Fergus Nicol, 2002) to measure the thermal comfort.

An ASHRAE seven-point scale thermal vote developed by (Adunola, 2014; Derks, Mishra, Loomans, & Kort, 2018) was conducted in this research and compared to outdoor temperature in a specific region (Central Jakarta).

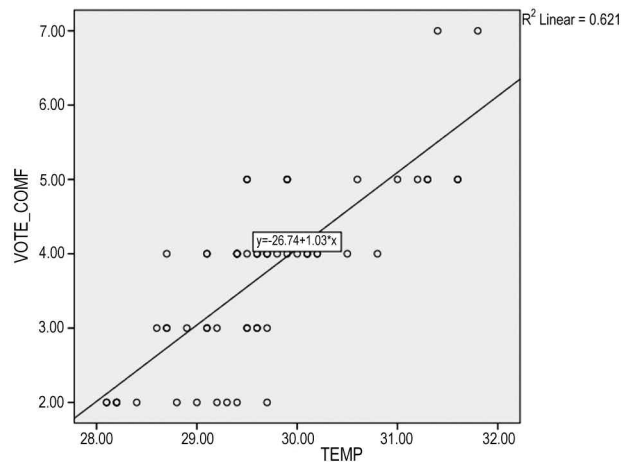


Figure 3. Regression line of TSV in Central Jakarta

Figure 3 also shows the line of regression of thermal sensation votes (TSV) on air temperature ( $T_a$ ) in Central Jakarta. With a coefficient of determination symbolized with ( $R^2$ ) of 0.621, this regression produces an equation of, the optimum service quality will be in the range of:

$$TSV = 1.03T_a + 26.74 \quad (1)$$

	N	Min	Max	Mean	SD
Height (cm)	63	148.00	177.00	162.0159	7.52521
Weight (Kg)	63	52.00	92.00	68.2857	11.12746
Age	63	25-34	55-64	4.2540	.84182
Education	63	High School	Postgraduate	4.5873 (College)	1.01019
Valid N (listwise)	63				

Table 4. Statistical data of the subjects in Central Jakarta

### 3.3. North Jakarta Thermal Comfort Analysis

During the research in October in each public facility office participating in North Jakarta, the measured minimum outdoor air temperature was 24.0°C to 28.1°C with SD of 0.87% and the maximum temperature was 32°C to 35°C with SD of 0.76% as shown in Table 8. The comfort temperature in North Jakarta ranged from 27.29°C to 30.41 °C.

The measured indoor air temperature was 27.2°C to 33.3°C and mean temperature recorded was 29.65 °C with SD of 0.89% as shown in Table 6. If compared to the comfort temperature, most buildings had an adequate comfortable temperature fitting in the comfort range.

The indoor RH ranged between 67% and 80%, with an average of 74.3%. The indoor air velocity was 0.03-0.08 m/s. According to (T. Karyono et al., 2015; Thapa et al., 2018) this speed is categorized as too low; therefore, it can be ignored since it has no direct implication to the human body.

In Central Jakarta, there were 58 participants who joined the survey with the following physical details: minimum height 145 cm and maximum height 180 cm, mean height 164 cm and SD of 7.9%, minimum weight 50 kg and maximum 98 kg (mean 71.95 kg, SD of 11.68%).

The respondents in North Jakarta were mostly well educated as seen on Table 7; the mean education value is >4.46. If compared to the survey tools, most the respondents had attended college or university.

#### 3.3.1. Neutral Temperature and Comfort Range in North Jakarta

To investigate the neutral temperature and comfort range in this region an ASHRAE seven-point scale thermal vote developed by (Adunola, 2014; Derks et al., 2018) was also conducted in this research and compared to outdoor temperature in a specific region (North Jakarta) with a Thermal Sensation Vote (TSV) and resulted below:

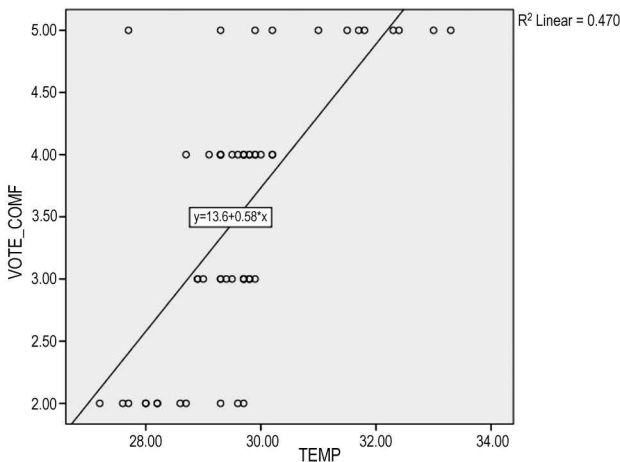


Figure 4. Regression line of TSV in North Jakarta

This regression in Figure 4 of North Jakarta produces an equation of:

$$TSV = 0.58Ta + 13.6 \quad (2)$$

	N	Min	Max	Mean	SD
Min (To)	31	24.0	28.10	26.9548	.87439
Max (To)	31	32.0	35.00	32.8935	.76155
Valid N (listwise)	31				

Table 5. Average Outdoor (To) Temperature in North Jakarta

	N	Min	Max	Mean	SD
Temperature	58	27.20	33.30	29.6552	1.24198
Valid N (listwise)	58				

Table 6. Average Indoor Temperature in North Jakarta

	N	Min	Max	Mean	SD
Height (cm)	58	145.00	180.00	164.4655	7.99389
Weight (Kg)	58	50.00	98.00	71.9552	11.68613
Age	58	2.00	6.00	4.3966	.91651
Education	58	High School	Postgraduate	4.4655	.75430
Valid N (listwise)	58				

Table 7. Statistical data of the subjects in North Jakarta

### 3.4. South Jakarta Thermal Comfort Analysis

Like the other locations, the research in South Jakarta was also conducted in October in each location of public facility offices in South Jakarta. The measured minimum outdoor air temperature was 23.2°C to 25.2°C with SD of 0.68% and the maximum temperature was 33.4°C to 35°C with SD of 0.74% as shown in Table 8. The comfort temperature ranged from 25.92°C to 31.89 °C.

The measured indoor air temperature was 25.1°C to 31.0°C and mean temperature was recorded at 28.4 °C with SD of 1.36% as shown in Table 9.

	N	Min	Max	Mean	SD
Min (To)	9	23.20	25.20	24.4889	.68638
Max (To)	9	33.40	35.40	34.4667	.71414
Valid N (listwise)	9				

Table 8. Average outdoor (To) temperature in South Jakarta

	N	Min	Max	Mean	SD
Temperature	101	25.10	31.00	28.4495	1.36342
Valid N (listwise)	101				

Table 9. Indoor temperature measurement in South Jakarta

The measurement of indoor air temperatures was carried out in the waiting area that is categorized as Non-Ventilated building. The recorded temperature was between 25.1 and 31 °C, with an average of 28.44 °C and SD of 1.3%. The indoor RH ranged around 60%. The indoor air velocity was 0.20-0.22 m/s.

In South Jakarta, 101 participants joined the survey with the following physical details: minimum height 148 cm and maximum height 177 cm, mean height 162 cm and SD of 7.5%, minimum weight 52 kg and maximum 92 kg with mean 68.28 kg, SD of 0.8%. The respondents were mostly 45-54 years old and they were well educated. The mean calculation showed that the mean education value was >4.58. If compared to the survey tools, most of the respondents had attended college or university.

#### 3.4.1. Neutral Temperature and Comfort Range in South Jakarta

Figure 5 shows the regression line of thermal sensation votes (TSV) on air temperature (Ta) in South Jakarta. This

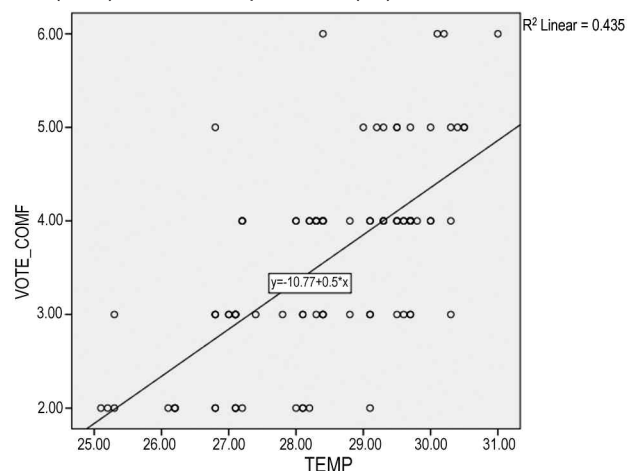


Figure 5. Regression line of TSV in South Jakarta

regression produces an equation of:

$$TSV = 0.5Ta + 10.77 \quad (2)$$

Based on the graph, the comfort sensation of temperature in South Jakarta showed 25.92°C to 31.89°C as shown in Figure 5.

In Central Jakarta, subjects' neutral temperature was 29.9°C, while the comfort temperature ( $T_c$ ) was 27.06°C to 30.65°C. In North Jakarta, subjects' neutral temperature was 30.2°C, and the thermal comfort ranged from 27.29°C to 30.41°C, and in South Jakarta, subjects' neutral temperature was 28.2°C and the comfort temperature was from 25.92°C to 31.89°C.

## 4. Conclusion

As can be seen from Figures 3 to 5 [https://www.mdpi.com/2075-5309/5/3/917/htm-table\\_body\\_display\\_buildings-05-00917-t004](https://www.mdpi.com/2075-5309/5/3/917/htm-table_body_display_buildings-05-00917-t004), the coefficient of determination ( $R^2$ ) in Central Jakarta was 0.621, while, in North Jakarta, the coefficient of determination ( $R^2$ ) was 0.47, and, in South Jakarta, the coefficient of determination ( $R^2$ ) was 0.453. Some research of Non-Ventilated buildings showed different functions (Ferjadi & Wong, 2004; Thapa et al., 2018; Yang et al., 2014). The coefficients of determination ( $R^2$ ) in all three regions were quite low below 0.90 if compared to several previous studies in Non-Ventilated buildings like (T. Karyono et al., 2015) and compared to the study related of thermal comfort in South East-Asia conducted by (T. Karyono et al., 2015), which are expressed in air temperature ( $T_a$ ).

The geographical location and the location of the measurement had an impact on thermal comfort (Lu, Pang, Qi, & Fang, 2018) (Fonseca & Schlueter, 2015). Several studies showed that people who lived in a higher ambient temperature tended to have a higher comfort temperature. This finding showed that people who lived in the tropical region were more comfortable at higher temperatures (Ferjadi & Wong, 2004) than those who lived in a colder climate.

The comfort temperature of subjects in Central Jakarta was from 27.06°C to 30.06°C. The thermal comfort for the naturally ventilated office buildings in Indonesia was slightly higher than in North Jakarta (27.29 to 30.41 °C). The difference was about 0.23°C to 0.35°C, and it is significant at a 95% level of confidence. Compared to comfort temperature of subjects in South Jakarta (25.92°C to 31.89°C), this difference showed us an insight of how the geographical location will have an impact on subjects' thermal comfort. This is other than the variables, such as age, body metabolism, and previous research in an air conditioned room.

Furthermore, comfort temperatures of subjects in this study (27.06°C, 27.29°C, and 25.92°C  $T_a$ ) were slightly higher compared to previous comfort studies in West Java, Bandung, Indonesia (24.7°C  $T_a$ ) (T. H. Karyono, 2008) (Abidin et al., 2011). Bandung has a higher elevation than Jakarta (751 meters above sea level), and the city has a lower ambient temperature than a coastal city such as Jakarta. The main idea to examine thermal comfort in different geographical locations and how elevation affects the ambient temperature is supported in this research paper. The lower land level would affect the environments (higher temperature). People who lived in lower levels tended to be comfortable with higher intensity temperatures than those living in the higher elevation or more moderate temperatures. More comfort then the public service quality will be higher. However, the comfort temperatures of the building occupants in this study (27.06°C, 27.29°C, and 25.92°C) are placed within the range of personal comfort temperature. Previous research papers showed comfort temperature in Asian countries ranged between 24.1°C and 30.0°C  $T_a$ . This fact can have a significant impact in improving quality of public service and planning public service facility development. In the future, The building designer can consider the geographical location to be applied in the building design and specification, such as building envelope, ventilation, or air conditioning system to maximize .

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## Pro-environment Behavior at the Workplace: Role of Leadership and Motivation

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### Abstract

*Environmental sustainability is an essential thing to maintain. A way to generate it is by creating employees' environment-friendly activities in the workplace. This study examines whether the role of leader and external motivation would affect employees' perception, especially in forming their pro-environmental behavior. A qualitative method with a focus group discussion technique was conducted to accomplish the research's objective. Five cities or municipal government institutions became the objects of this research. Moreover about focus group discussion, it used to explore the perceptions towards the role of leader and external motivation in the modification of pro-environment behavior. Finally, this study showed that leader not played only as of the role model, but also necessary to manage direct instruction to form the subordinates' behavior. In addition, external motivation, such as awarding either monetary or non-monetary rewards considerably becomes encouragement in configuring employees' behavior to more environmentally friendly.*

**Keywords:** pro-environment behavior; behavior modification; leadership role; external motivation; green management.

### 1. Introduction

On Thursday, April 26, 2018, an employee in a municipal agency described an effort to promote pro-environment behavior by organizing an activity called Go Wes Bareng (cycling together), a program where the employees agreed to cycle to the office during an arranged period of time. In further discussion the employee revealed the participation of their superiors indicated by their willingness to ride to the office regardless the long ride from the residence to the office. This raises staff's appreciation for the pro-environment behavior shown by their superiors, as expressed by one of the speakers "We have agreed to go to the office by bicycle on Fridays, and as we do so, our Division Head turns out to be the most consistent ...". Employees realize that driving a car to the office brings negative impact on the environment, one of which is the need for larger parking lots, thus reducing the availability of open land, and moreover, increases the pollution from vehicles emission.

The statement above is a small example of concern for environmental issues. Various human work activities have a positive impact on the quality and sustainability of the environment (Chisala, 2013), or else, a negative impact. Previous research shows that it is possible to carry out work activities in an environmentally friendly manner (Bissing-Olson, Iyer, Fielding, & Zacher, 2013) so that it can bring a positive influence on the quality and sustainability of the environment. An example of which is a reduction in the excessive use of various resources or even pollution generating activities. However, it does not mean that pro-environment behavior in the workplace automatically follows. It takes a stimulus or encouragement for individuals to behave pro-environment (Norton, 2016; Norton, Parker, Zacher, & Ashkanasy, 2015; Norton, Zacher, & Ashkanasy, 2014).

Environmental issues are provoking and continue to get the

attention of many parties. This puts pressure on the organization by having to face various regulations and even the rise of environmental care movements have encouraged organizations to operate more environmentally friendly. Previous studies have shown that work activities as the materialization of staff's pro-environment work behavior give a positive impact on the environmental sustainability of human life (Norton, 2016). Because behavior in carrying out various work activities at the office has the potential to contribute to the environment, it encourages further research on the modification of these pro-environment behaviors.

Organizational behavior related to modification of pro-environment behavior are not well researched (Kim, Kim, Han, Jackson, & Ployhart, 2017). Thus research to explain about individual pro-environment behavior is in demand. Previous research found that stimuli were needed in order to transform pro-environment behavior effectively (Unsworth, Dmitrieva, & Adriasola, 2013). This research itself is focused on the role of leaders and external motivation in modifying employee's pro-environment behavior, in the hope that it can contribute to the study of modification of pro-environment behavior through the role of leadership and external motivation.

### 2. Literature review

#### 2.1. Understanding pro-environment behaviour

Office activities potentially can cause damage to the environment through excessive use of electrical energy for lighting, air conditioning, computers and other office equipment as well as the use of water and paper when they are not well managed or wasteful. Inefficient use of electricity directly or indirectly cause damage to the environment because it contributes to the inefficiency of fuel, gas, and coal for generating the electricity. Inefficient use of water will cause a trouble to the hydrological

system in the ecosystem. The use of paper and similar material will boost logging for trees make basic material for paper, causing negative impacts on the natural environment in the future.

Stern (2000) defines pro-environment behavior as a behavior that intensely reduces the negative impact of various human activities on the natural environment. Such behaviors are the use of various electrical energy sources for office electronic equipment, water, fuel used for transportation to offices, paper, etc. in a prudent manner. How the employees behave at the workplace, especially in the use of various resources for work activities in a frugal manner contribute to the quality and environmental sustainability of human life.

## 2.2. Modification of pro-environment behaviour

Behavior modification is a method used so that individuals are willing to try and reduce or improve certain behaviors. Theoretically, behavior modification is in line with the concept of conditioning. Bandura (1977) explained that such behavior emerges as a result of the learning process, both in the form of classical conditioning, operant conditioning and observational learning. Classical conditioning is a behavior that arises as a learning process through a stimulus or signal received, for example, a child will go to the kitchen every time the mother is making cake because of the delicious aroma that the child smells. Operant conditioning is a result of a system of reward and punishment. A classic example of this is a dog trainer who gives rewards such as dog biscuits every time the dog does what the coach instructs. Likewise, in directing individual behavior, various techniques are possible to build certain behaviors or even negate unexpected behavior. While observational learning, also called modeling, explains that individuals can learn by observing others. In 1986 Bandura described that anything can be absorbed by observing others' behavior.

In the perspective of organizational behavior, many factors influence individual behavior that arises in the workplace (Paillé & Boiral, 2013). Individual behavior are directed to meet certain goals through certain stimuli. Likewise, promoting pro-environment behavior of individuals at work requires certain stimuli (Unsworth et al., 2013).

## 2.3. Role of management in building pro-environment behaviour

A number of theories explain that leaders are role models for their subordinates. In this case, certain subordinates may perceive the behavior of superiors differently, and in turn generates a certain positive or negative reactions as a response to what they see and perceive (Smoll & Smith, 1989). This can further influence employee's behavior. Thus, leaders become a reference for employees to behave in the workplace (Brown, Treviño, & Harrison, 2005).

Ideally, a leader is a role model for his subordinates because of his position, status, and power (Brown et al., 2005). As a role model, consequently a consistent leader's behavior gives a sign to subordinates that certain behaviors are appreciated, expected and valued in the workplace. Subordinates also learn from the leader's behavior and the consequences that follow. This is also supported by the results of Robertson and Barling's research which found that leader's behavior as a role model affect the workers' pro-environment behavior (Robertson & Barling, 2013). Likewise, pro-environment behavior of other members can also be built through a modeling process of pro-environment behavior of the leaders. This is in accordance with a research by Kim et al who found that the pro-environment work behavior of superiors give a positive impact and cause the emergence of pro-environment employees' work behavior (Kim et al., 2017). The explanation as well as the previous research by Schein clarifies that organizational culture which is reflected in the way people behave can be transmitted to organizational members through the modeling process of leaders to their

subordinates (Schein, 1995). Learning from these studies, leaders can influence the behavior of subordinates at work through the modeling process.

In modern organizations, environment-friendly organizational behavior is a necessity and parts of the responsibility so it is important for the organization members to demonstrate pro-environment behavior. This has triggered this research, which is to study the role of leaders in modifying the workplace behavior of staff to be pro-environment. The leader becomes an important figure in every organization because of his great role in achieving organizational goals. The process of achieving organizational goals requires the efforts to allow them to direct the behavior of subordinates as expected by the organization.

## 2.4. External motivation in building pro-environment behaviour

In general, motivation is defined as an abstract entity within an individual which encourages him to do something. Motivation becomes an important factor that cause certain behaviors. The study of behavior explains how it can be raised by a drive, learned motives, and incentives. Thus, certain stimuli are needed to trigger individuals' encouragement to behave in a certain way. The encouragement can be from within or outside the individual.

Motivation theory mentions factors that direct and encourage individual behavior as shown by the intensity of effort in achieving some target. Encouragement that comes from outside the individual is known as external motivation. This is often practiced at work in directing and encouraging individuals. Therefore, pro-environment behavior in the workplace can also be influenced by external factors. Previous research conducted by Graves, Sarkis, and Zhu (2013) also explains that environmentally friendly work behavior is also influenced by the existence of a reward system in the organization. The external motivation can be in the form of financial or non-financial rewards. External motivation is also built with negative reinforcement in the form of punishment, which is often used to weaken and even remove unwanted behavior.

## 2.5. Theoretical framework

Related to the previous justification, giving rewards, as a form of positive reinforcement of the behavior to promote pro-environment behavior is insufficient. Hayes and Cone (1977) also explained the importance of punishment as a negative encouragement to disprove certain behaviors that are conflicting with what is desired in an organization.

The study of behavior also explains how leaders have a big role in directing their sub-social behavior. As described by (Graves, Sarkis, & Zhu, 2013) employees need motivation and stimulation to behave pro-environment. External motivation is more effective when the leader as a role model also plays an active role in spreading the environment value through concrete actions such as pro-environment behavior. This underlies this research, to understand the role of Management and external motivation in building workplace pro-environment behavior.

## 3. Research method

This research is an exploration to understand the roles of superiors and external motivations in building employees pro-environment behavior in municipal offices. Qualitative methods are used to explore various perspectives among civil servants on the role of the Management as well as external motivation in building employee's pro-environment behavior.

### 3.1. Informants and data collection

There were 26 informants who were willing to be involved in the focus group discussion (FGD). A number of questions were

asked in the FGD in order to obtain the required data related to the informants' perceptions on the role of Office Management and external motivation in building employee pro-environment behavior.

## 3.2. Data collection method

Data collection was carried out through Focus Group Discussion (FGD) which involved every element in municipal agencies in 5 different regions in Central Java. FGDs were conducted in each region separately in April 2018. Interactive discussions were used to explore and share information that can be used to capture the various perceptions of informants from the research issues discussed.

At the beginning of the FGD, informants were convinced that environmental issues were common yet important problems that needed attention, including from academics. The discussion is intended to express various thoughts or views on the issues being studied.

The main question asked is to expose the views of the informants on the role of the Management such as "What is the role of leadership in encouraging pro-environment behavior of employees in the office?" and "What steps are taken to promote pro-environment behavior of employees in the office?" And a number of related questions are modified using the question word How? or "Can you explain/elaborate it?" and "Why?"

## 3.3. Data analysis

This study used qualitative descriptive analysis to analyze data obtained with various data collection techniques. Data were analyzed qualitatively through four stages of Sugiyono (2005), namely:

1. Data Collection; at this stage the collected data were transcribed, by simplifying the information collected into a more intelligible form of writing. Then, the collected data were selected according to the focus of this research and coded to enable the researcher in categorizing them
2. Data Reduction; At this stage the authors summarize, sort out the main items, focus on the important things, look for themes and patterns from each data obtained in the field. So at this stage researchers sort the data gathered from the interviews. Data reduction provides a clear picture, and make it easier for researchers to conduct further data collection to complete the collection with the missing data. At this stage, the previously coded and grouped data were then summarized to provide a clearer picture.
3. Presentation of Data; The summarized data are interpreted and clarified to answer the research question "what roles the Management plays in modifying environmentally friendly behavior". Data are transformed into a text or narration.
4. Conclusion: At this stage the researcher draws conclusions based on the results of the data analysis process done previously. Conclusions drawn in qualitative research answer the problem questions formulated earlier. Conclusions in qualitative research are expected to be new discoveries that never existed before. The findings construct a clearer description.

## 4. Findings and discussion

### 4.1. Profile of research object

The object in this study is the Environmental Office in a number of municipal/regency whose main function is the agent of development in improving the prosperity of the people. Because of the functions, development activities depend comprehensively on the availability of sufficient natural resources as a driving wheel. Furthermore, the strategic role of the Environmental Office in regencies/cities is that it is in charge of gate-keeping the environmental sector. The institution

accommodates the local government in maintaining the environmental, one of the government's main responsibilities.

The local governments, be the municipals or the regencies, have the obligations and authorities in the protection and management of the natural environment, namely: (1) establishing policies concerning environmental protection and management, at the regency/city level, (2) establishing and implementing Strategic Environmental Assessment (KLHS), (3) establishing and implementing Plans regarding the protection of the Environmental Protection and Management, (4) establishing and implementing policies regarding Environmental Impact Analysis (EIA) and UKL-UPL, (5) conducting an inventory of natural resources and the greenhouse/gas emissions effect at the regency/city level, (6) developing and implementing cooperation and partnerships, (7) developing and implementing environmental instruments, and others.

The Environmental Office carries out the mandate to complete the tasks and conveys the authorities mentioned above. The institutions must be effective and competent to act efficiently and credible before public. One approach in building public credibility is by setting an example, becoming a model in demonstrating awareness and environmentally friendly behavior among all staff (Civil servants/ ASN) of the offices. This can be done by implementing green office concepts in all workplace activities around the Environment Offices.

## 4.2. Findings

### 4.2.1. Management's role in promoting pro-environment behaviour

The position, status and power of the leader with his capacity can be manipulated in promoting the subordinates' pro-environment behavior in the workplace. Various forms of direction can be done either in writing or verbally. This is expressed as follows:

*"We do whatever it takes so that the instructions are executed, the regulations are implemented, the implementation works, "But when the instruction was given, then completed twice or more under supervision, I am sure that slowly the behavior becomes a habit, (SM3).*

Based on the statement above, a leader has a higher authority so he gives instructions or regulations to be completed and implemented by his subordinates. The position, status and power of a leader lead the employees' to pro-environment behavior. Providing clear instructions such as explicit work instructions will encourage employees' behavior as desired, the pro-environment. This was explicitly stated as "Yes, it was clear, there he necessary instructions ... on how to address energy saving and so on (SM1)" to highlight the need for direction from the leaders as an example of pro-environment behavior in the workplace.

The leader's higher position, status and power do not only function in directing subordinate behavior by giving instruction or order, but a leader also becomes a reference for his subordinates to behave in a certain way. Deeds shown consistently by a leader gives a clear signal to his subordinates on appreciated, expected and valued behaviors in the workplace. Thus, the pattern of a leader becomes very important in building pro-environment behavior in an organization. As a staff member expressed "... yes, but the leader's behavior is important, giving the extraordinary effect surely. So if the leader does so, the possibility that the subordinate will follow is 90%, if not definitely. as Easterners they will feel uncomfortable not to" (SM1). This was also confirmed by what other subordinates say, such as "So posting an energy-efficient notice as a reminder is not enough, not like that, even though it is clearly written, when there is no example, it remains the same" (SM3), and reaffirmed by the informant saying "the real example, ... it is what is very important" (SM1).

What has been pointed out by a number of subordinates shows that leader's behavior in the organization consistently



becomes a role model for the subordinates to follow. Even a subordinate as an informant stated that the example of a leader is more effective than the recommendation or even the regulations, as follows:

*"One action speaks louder than one thousand statements. Even if it is only one superior, is willing to set an example by initiating it, automatically the subordinates will follow. They will feel ashamed not to. They would think that if a man of higher level does it, it will be wrong for a subordinate not to". (SM3)*

The leader's consistent behaviors, even if they are simple actions, are well observed by the subordinates, to be learned as things that should be done and those that are not. Some examples of the simple behavior of a leader observed by subordinates are also shown as "so it is easy to give an example to his own subordinates. For example, the staff in the room sees the leader printing double sided, then the employees who witnessed it will follow what the superior is doing" (SM2). Similarly, another informant said, "In office head's room, smoking, when there are no people there, he will not smoke even though he is a smoker. A guest would not smoke when the host doesn't. But when the host smoked, he would dare to smoke, but if the leader did not smoke, the staff would never smoke in the head's room. This is matter of showing respect "(SM1). What is conveyed by the speakers indicates that the leader is the target of observation and serves as a reference for subordinates to act pro-environment in the workplace.

#### 4.2.2. External motivation in building pro-environment behaviour

An example of the role of rewarding as an external motivation is found in one Environment Office, showing that it inspires employees to behave pro-environment. This appears in the expression below:

*"Yes, we received a trophy. It is given publicly every year, usually around the commemoration of the Independence Day on 17 August. The Office announce the winners. That way, it is implied that the ones who do not get the rewards are not good enough. They know it without explicit statements." (KD3).*

Similar thoughts were also conveyed by other informants such as "... we are competing to complete what is missing ...", further revealed "... being motivated over those events ..." (KD1). The informant's statement was also confirmed by others who said "... both the best and the worst are announced. It is embarrassing if you happen to be the worst." (KD2). It was further explained "... so it functions as a motivation for environmental conservation" (KD4).

Competitions and awards given to the employees also motivate them to behave pro-environment. Some statements reveal that appreciation and recognition for the pro-environment behavior encourage employees to act pro-environment more, resulting in positive impact. It is revealed by statements such as, "... there are rewards for those who save the most, for example being awarded 20% of our profits. And on top of that we still get small stuff every year" (MG1). Likewise, a testimony was conveyed by other informants, "... can't go any lower, we have a competition and the prize is quite big, not just 1-2 million, it's 12" (MG1). Even the recognition for environmental awareness for cities, called Adipura, is very meaningful to boost environmentally aware behavior, and eventually includes pro-environment behavior, as expressed by an informant, "other rewards are meaningless without Adipura. That's what makes us motivated" (MG2). Based on what was conveyed by a number of respondents, it was clear that the presence of an award could provide a special encouragement for subordinates to behave pro-environment.

Punishment is a negative form of reinforcement. Thus the existence of punishment itself is necessary to undermine unexpected behavior. In building pro-environment behavior, the existence of punishment brings subordinates to a sense that non-pro-environment behavior is an unexpected and results in

further consequences. It is also supported by the results of the research such as "... sanctions are there to attract further notice, I think it will work" (SM2). While other informants argued "... if a person is caught doing it, he should be criticized directly" (SM1). Another informant also agreed, "... even some pressures are necessary, talking about the office, the regulation, reward and punishment are the keys" (SM3).

The discussion shows that punishment as a consequence of unexpected behaviors can be used to challenge them. Furthermore, it was revealed that both positive and negative reinforcements are needed to modify pro-environment behavior, as disclosed below:

*"Force is also necessary. At first, it is by force, then become a habit, from habit to awareness, I come to realize that what I used to protest strongly, and I had to be forced to do, give good results in the end. An action that seems difficult to do, needs force to manage, inevitably turns out to have a positive impact" (SM2) "... there must also be some kind of punishment" (SM2). "Yes, I personally think that a strong impose is necessary here," (M3).*

Based on the explanation above, it is obvious that in modifying the employees' pro-environment behavior in the workplace, a positive approach such as giving rewards is crucial as it functions as positive reinforcement for expected behavior. Likewise, the negative reinforcement in the form of punishment is necessary to weaken or even eradicate non-pro-environment behavior.

#### 4.3. Discussion

The leader as a role model can effectively encourage pro-environment behavior. This is reasonable considering that the leader has a central role in the organization so an example of a leader's pro-environment behavior becomes influential to the subordinates' behavior. A pattern of the leader's pro-environment behavior is a guide for subordinates to perform pro-environment behavior as expected in the organization. A consistent behavior of the pro-environment leader is a signal for subordinates of the expected pro-environment behavior.

This is also explicitly stated by subordinates in the research results that real actions are no more effective than a thousand words. This reflects that leader's behavior has a much greater influence than a number of suggestions or instructions standing alone without examples of real actions.

The results of this study confirm previous research which reveals the influence of leaders as role models in modifying the behavior of subordinates. The pro-environment behavior that is consistently shown by the leader is interpreted as the expected behavior. The consistency of leaders pro-environment behavior also build subordinate trust in their leaders about what should be done so that it ultimately guide subordinate pro-environment behavior (Graves et al., 2013; Robertson & Barling, 2013; Zhu & Akhtar, 2014). Thus, in directing subordinate pro-environment behavior, it takes the position of a leader as a role model where subordinates can learn from the leader's consistent pro-environment behavior and use it as a reference. It is set as the expected behavior in the workplace. It also encourages the long-term development of organizational behavior or culture.

External motivation in the form of reward and punishment modify subordinate pro-environment behavior in the workplace. Rewards can be given as financial or non-financial. Not only by giving rewards as a form of positive reinforcement to strengthen the pro-environment behavior, but negative reinforcement such as punishment is also needed to eradicate unexpected behavior, including non-pro-environment behavior in the workplace. Punishment as a form of negative reinforcement is useful to weaken or even stop unexpected behavior. Various forms of punishment are set in the form of verbal or written notices, or even more severe punishment to encourage pro-environment behavior. However, it is obvious that in applying the positive or negative reinforcement approaches, clear regulations with

consistent enforcement are needed. In this case the leader has a very crucial role to construct reinforcement to subordinates to behave pro-environment in the workplace.

## 5. Conclusion

Research results show that:

1. Leaders as role models in their organizations have a principal role in modifying subordinate pro-environment behavior by setting real examples of pro-environment behavior in the work environment.
2. Modifying subordinate pro-environment behavior at the office requires stimuli such as appreciation for the behavior of pro-environment subordinates in the workplace. The existence of these awards can promote the expected, appreciated and valued pro-environment behavior. This encourages subordinates to behave pro-environment.

### 5.1. Implications

The results of the study bring a number of both theoretical and practical implications in modifying the pro-environment behavior of employees at work. They include:

Theoretical Implications:

1. The position, status and power possessed by a leader not only functional in giving instructions to direct pro-environment behavior but also become a pattern, a role model that allows leaders to modify the pro-environment behavior of employees in the workplace more effectively.
2. External motivation through positive or negative reinforcement can modify employee's pro-environment behavior. Thus, a positive approach is needed such as giving rewards both financially and non-financially as it strengthens pro-environment behavior to continue to develop. Equally, a negative approach such as a punishment is given to subordinates when unexpected behavior appears. It is aimed at undermining unexpected behavior.

Practical Implications:

1. It takes the leader's real example to build employee's pro-environment behavior at work.
2. Interventions in the form of recommendations, regulations and similar approaches guide employees to behave pro-environment in the workplace as well as reinforce pro-environment behavior.

### 5.2. Research Limitation

This research is an initial exploration, to be explored deeper in the future. Considering that this study, explored the informants' perceptions through focus group discussion, it may limit the exploration or real and factual experiences. For this reason, future research needs to explore more on what drives subordinate pro-environment behavior through in-depth interviews to enhance the practical know how of the respondents.

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## Managing Economic Growth by the Improvement of Environmental Quality: The Case of European Union

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### Abstract

*One of the most debatable issues in behavioral studies is the relationship between economic growth and the environment. From the policy point of view, what is important is the formulation of the best-suited policies for both growth and the environment. But the implementation of regional and environmental policies requires the existence of methods for evaluating the economic and environmental situation in each country. This paper offers such a method and applies it in the case of EU member-states by positioning them in an Environmental Quality-Income map. Our findings suggest that the notion of sustainable development is best suited for countries characterized by below average Environmental Quality and Income. The old notion of "growth versus environment" has given way to a new view in which economic development and environmentally sustainable practices go hand in hand.*

**Keywords:** growth; environment; EU.

### 1. Introduction

One of the most debatable issues in Economics is the relationship between economic growth and the environment. According to conventional economic thinking, environmental problems exist because of the failure of the pricing system (Tietenberg, 1994). In a similar line of argument, it is supported that economic growth is necessary in order to provide resources to pay for environmental protection and reverse environmental deterioration (Grossman and Krueger, 1993). Market-determined prices fail to fully reflect the social cost of environmental damage caused by economic activity, and the solution to the environmental problem is to correct the price mechanism. This is to be done by internalizing the social costs of environmental damage. As a result, prices of products would fully reflect the social costs of using environmental resources and such use would be efficient (Booth, 1998).

A compelling idea, however, is that profit oriented economic agents will have a strong propensity to externalize instead of internalize environmental problems. According to a Schumpeterian view, the creation of new industries based on new technologies is fundamental to macroeconomic growth (World Bank, 1992). Growth is driven by qualitative change in the structure of the economy. Qualitative changes inevitably lead to changes in the natural environment. New industries invariably create new environmental problems by virtue of their inherent propensity to externalize environmental costs. Some researchers also build upon this view, invoking the entropy principle (Daly, 1991). According to him, production is inherently entropic, converting high-quality low entropy matter and energy into high-entropy environmentally disruptive waste. From an

environmental point of view, growth is seen as creating adverse ecological consequences that originate from expansions of industrial activity.

At the micro economic level, once the basic needs of the population have been met, further increases in GDP through the production of goods which consumers and governments have been made to want may not increase welfare in any meaningful sense: such production preempts public expenditure in amenities which would in fact be preferred by the population (Galbraith, 1958).

On the empirical basis, there were attempts made to provide measures of the reduction in economic welfare due to the negative effects of economic development on environment (Mishan, 1967; Nordhaus and Tobin, 1972; Easterlin, 1973 and King, 1974). Walters (1975) has supplied improved measures of these diseconomies and Griffin (1974) and Baumol and Oates (1971) have attempted to devise relevant methods of control and to estimate their costs. State environmental regulations adversely affect job growth in three of the four industries analyzed (List and Kuncze, 2000). The finite nature of world resources limits the growth of gross world product and suggest policies aimed at achieving zero growth rate (Forrester, 1971 and Meadows et al., 1972).

In a World Bank paper it is argued that environmental protection is easier to achieve with economic growth than without it. In more details, the paper showed that since 1970 OECD Europe's growth rate had risen by 80 per cent and lead emissions had fallen by 50 per cent. The World Bank has long maintained that economic growth is good for people and good for the environment. Yet skepticism persists about whether this "win-win-win" scenario applies in all places at all times. In some

case there are tradeoffs that clearly have to be considered: A new factory that brings higher incomes, for example, may also foul the air and water. In a similar line of argument there was no evidence found that environmental quality deteriorates steadily with economic growth (Grossman and Krueger, 1995). The series of studies revealed that environmental degradation and income have an inverted U-shaped relationship (sometimes called Kuznets curve), with pollution increasing with income at low levels of income and decreasing with income at high levels of income. Most societies choose to adopt policies and to make investments that reduce environmental damage associated with growth (Shafiq, 1994). Action tends to be taken where there are generalized local costs and substantial private and social benefits on the other hand supports that the evidence for a Kuznets curve is inconclusive, and cannot be generalized across environmental quality as a whole (Ekins, 1997).

Finally, Hart (2002) and Glover (1999) support neither the "optimist" (i.e. that increased scarcity of environmental goods will induce adequate conservation responses) nor the "pessimist" view (that these responses will be insufficient without measures to scale of the global economy). Hart (2002) uses a Schumpeterian growth model and cultural theory to interpret these competing positions within a single unifying framework. Glover (1999) looks at the causes of environmental degradation, examines the policy approaches implicit in both camps and suggests an approach that draws elements from both.

However, from the policy point of view, what is important is the formulation of the best-suited policies for both growth and the environment. Regional policy aims at the increase in GDP per capita, whereas environmental policy aims at the improvement of the quality of the environment. Environmental and regional policies are equally important for the sustainable development in a region or country. Sustainability is here defined as maintaining continuity of economic and social developments while respecting the environment and without jeopardizing future use of natural resources. But the implementation of regional and environmental policies requires the existence of methods for evaluation the economic and environmental situation in each country. The purpose of this paper is to offer such a method and therefore to assist environmental and regional policy makers in formulating the best suited policies for growth and the environment.

We have chosen the EU case because both regional and environmental policies are equally important policies in a European context. In addition, the ideas and theories of sustainable development in Europe have been examined and discussed by a number of important Commission policy documents (CEC, 1992, 1993, 1994). Sustainable development was made the center piece of the EU's Fifth Environmental Action Programme in alignment with the commitments made at the 1992 UNCED at Rio. In the last chapter of the GCE White paper (CEC, 1993) the basis for a new development model was explored which focused on the objectives of sustainability. Integrating environmental policy into regional policy field is essential if sustainable development is to succeed. In recognition of the more holistic approach that this intimates, Article 139r of the Maastricht Treaty stated the need for all areas of EU policy to make environmental objectives an integral part of any future strategies.

## 2. Methodology and data

### 2.1. Methodology for evaluating a region's economic growth and environmental quality

Our framework assumes that regions or countries are fully described by a bundle of environmental attributes. These specify the environmental quality index of a country or region, EQ, which includes all aspects of natural environment of a consumer's life. EQ affects the utility of consumers,  $U(\cdot)$ , and the

production cost of firms,  $C(\cdot)$ , where the production technologies are assumed to exhibit constant returns to scale.

Economic agents would be willing to pay or accept different level of incomes depending on the value they place on these characteristics. For example, a wood-processing company may find that its location in a region with many forests and woods reduces its production costs. This implies that this particular factory can offer relatively higher incomes to its employees and still remain competitive in relation to other wood-processing factories located in lower-income regions since the characteristics of the region is offering it a cost advantage. Since office space and other facilities in the area are limited, the wood-processing companies attracted by the rich in wood region will increase the demand for both labor and office space. These increases in the prices of labor and office space will continue until in equilibrium they have completely offset the cost advantage of the forestry region. Incomes and rents will vary across regions according to the value companies place on the region-specific attributes in each region and their ability to substitute between factors of production.

Similarly, for their own reasons consumers put their own value on a region. Consumers consider the overall environmental quality of a region when they make a decision concerning the place they will live in. They are assumed to consider the distribution of the characteristics of the natural environment. The region, for example, with many forests that offered a cost advantage to some firms producing furniture may be attractive to consumers because of high air-quality. Consequently, as more consumers move into the area, the supply of labor increases as well as the demand for housing. Thus, rents increase and wages fall until individuals are in equilibrium no longer willing to accept moving to a high air-quality region as compensation for lower wages and higher rents.

The final income differentials between a geographical area with many forests and one without depends upon the relative size of the demand and supply responses to site characteristics. If incomes are observed to be higher in the forestry area than in the other, then the firm's response dominates the rent determination process. If incomes are relatively lower in the forestry area, then the consumer's response dominates the process. In both cases, rents will be higher because both households and firms value positively the existence of forests. Rents would be lower than in otherwise comparable geographical areas if forests were not important to both parties. Consequently, by observing relative consumer incomes and rents, or by observing other variables having a monotonic relationship with them, it is possible to identify whether a region's bundle of environmental characteristics has a greater net effect on company location decisions or consumer location decisions.

Our framework is illustrated in Figure 1. The downward sloping curves in Figure 1, labeled  $V(R)$ , show combinations of income,  $I$ , and environmental quality, EQ, for which utility is equal to  $v$ , where  $v$  is the maximum utility that a consumer can enjoy at all sites within a country in equilibrium, so that there is no incentive for any relocation, and  $R$  is a vector of implicit prices of housing characteristics. The income of a consumer is assumed to be determined by a hedonic wage equation, which depends among others (e.g., personal characteristics, education, experience, etc.) on environmental quality. The slope of these curves is the trade-off that households are willing to make between wage income and environmental quality for any given level of implicit prices for housing characteristics ( $R$ ) and the given utility level  $v$ . Along each curve, the implicit prices of housing characteristics is fixed and the curves shift up (down) as the implicit prices of the housing characteristics increase (decrease).

Combinations of EQ and  $I$  for which the unit costs of firms are equal are also depicted in Figure 1 and given by the curves  $C(R)$ . The value of the environmental characteristics of a region to firms is fixed along each iso-cost curve,  $C(R)$ , and the curves

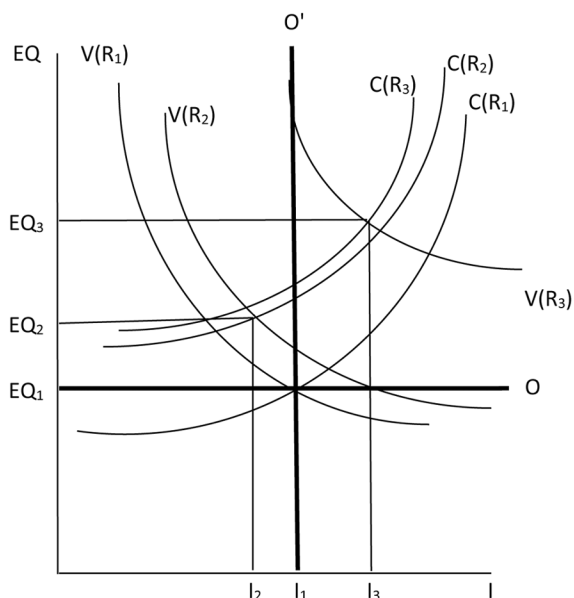


Figure 1. Combinations of income and environmental quality

shift up (down) as the environmental characteristics of a region increase (decrease) the productivity of firms and the implicit prices,  $R$ , of the real estate market.

Each region is characterized by an environmental quality index and a vector of implicit rental prices that are associated with a specific pair of iso-cost and iso-utility curves as in Figure 1. The intersection of any two curves for each region at the level of its environmental quality then determines the relative income and the implicit prices of the real estate market in equilibrium. In Figure 1, in region 1, where environmental quality equals  $EQ_1$ , the equilibrium income will be  $I_1$  and the equilibrium implicit rental prices  $R_1$ . Using region 1 as a reference point, which could be thought as the average region, we can see in the following how interregional differences in environmental quality will be reflected in differences in incomes and implicit rental prices.

From the above analysis, it can be seen that: (i) when environmental quality is valued more by consumers, *ceteris paribus*,  $C(R_2)$  and  $V(R_2)$  have both been moved up and  $C(R_2)$  has moved up relatively more, and (ii) when environmental quality is valued more by firms, *ceteris paribus*,  $C(R_3)$  and  $V(R_3)$  have both moved up and  $V(R_3)$  has moved up relatively more.

Within this framework in which regions differ only in their environmental quality, we can determine whether environmental quality and income differences reflect interregional differences in consumer-attractiveness or firm-productivity by examining the patterns of environmental quality and incomes across regions. If environmental quality and income differences primarily reflect consumer-attractiveness differences across regions, we would see a negative relationship between environmental quality and incomes. If they reflect firm-productivity differences, the relationship would be positive.

Within the same framework, we can also classify individual areas on the basis of whether their incomes and environmental quality differ from the average. These classifications are summarized in Figure 2. Environmental quality is higher than the average in areas A and B and lower than the average in areas C and D. On the other hand, incomes are relatively higher than the average in areas A and D and lower than the average in areas B and C.

Each region is characterized by an environmental quality index,  $EQ$ , whose effect on household utility and production costs differs from region to region. The problem of classifying regions by the relative magnitude of these two effects becomes one of identifying the environmental quality and income differences in equilibrium relative to the shifts in each curve. This can be done by identifying the combinations of  $EQ$  and  $I$  in

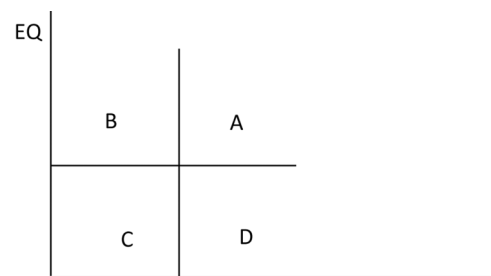


Figure 2. Quadrants for combinations of  $EQ$  and  $I$

equilibrium that are associated with equal shifts of both curves and determining how incomes and environmental quality change relative to these shifts. The  $(EQ, I)$  equilibrium combinations associated with equal shifts of both curves would coincide with the  $EQ_1O$  and  $I_1O'$  lines in Figure 1, where  $EQ_1$  is the mean environmental quality and  $I_1$  is the mean income.

For any region with above average incomes and environmental quality, the shift of the  $C(R)$  (firm-productivity) curve must be less than the shift of the  $V(R)$  (consumer-attractiveness) curve. The less the direct effect of environmental quality on utility, the greater the increase in consumer income needed to offset the increase in rents and, consequently, the greater the shift of the  $V(R)$  curve needed to keep the maximum utility level unchanged and equal to  $v$  in equilibrium. Therefore, in quadrant A in Figure 2, the primary reason that this region's incomes, environmental quality and rents differ from those of the average region is the above-average firm-productivity effects of environmental quality. This above-average productivity effect is reflected in the ability of producers in these regions to pay above average incomes and rents for having at their disposal a greater than the average environmental quality.

Similarly, regions in quadrant C firms are compensated for the below average environmental quality effect on productivity with below-average rental prices and income.

Above average environmental quality effects of a region are associated with increases in rents and decreases in incomes reflecting consumers' willingness to pay relatively more for the effects of the regional characteristics embodied in the region's environmental quality. Quadrant D then identifies regions where the environmental quality is greater than the average and the dominant factor determining relative incomes and rents is the consumer-attractiveness effect. For regions in quadrant B, the dominant factor is their below-average consumer-attractiveness value.

## 2.2. Data for the Environmental Quality-Income method in the EU case

The above theoretical framework can be applied in the case of EU member countries. To compute the environmental quality,  $EQ$ , for each EU member state, the following variables of the natural environment of a country were available and considered:

- $Y_{1,i}$ : Emissions of traditional air pollutants in kgs. per 1,000 people
- $Y_{2,i}$ : Fresh water recourses per capita
- $Y_{3,i}$ : Annual internal renewable water resources per capita,
- $Y_{4,i}$ : Wilderness area as a % of total land area,
- $Y_{5,i}$ : % of national land area protected for wildlife and habitat,
- $Y_{6,i}$ : Endemic flora as a % of total,
- $Y_{7,i}$ : Number of botanical gardens,
- $Y_{8,i}$ : Forest area as a % of land area,
- $Y_{9,i}$ : Average annual deforestation,
- $Y_{10,i}$ : Municipal waste generation per capita,
- $Y_{11,i}$ : Industrial waste per unit of GDP (tons per million US\$),
- $Y_{12,i}$ : Hazardous and special waste generation (metric tons per  $km^2$ ),
- $Y_{13,i}$ : Waste paper recycled as % of paper consumption,

$Y_{14,i}$ : Average annual fertilizer use (kgs per hectare of cropland),  
 $Y_{15,i}$ : Average annual pesticide use (metric tons of active ingredient),

$$QOL = \frac{\sum_{k=1}^N (w_k a_{ki})}{\sum_{k=1}^N (w_k)} \quad \text{for } i=1,2,3,\dots,m$$

The environmental quality can be defined as follows: where  $a_{ki}$  is the  $k$ th environmental characteristic of region  $i$ ,  $w_k$  is the weight for the characteristic  $k$ ,  $N$  is the number of environmental and other characteristics considered, and  $m$  is the number of regions being examined. The weights  $w_i$  can be all equal to  $1/N$  or be assigned a-theoretically using principal component or survey results. However, in all cases the weights should be the same across regions, that is, they should not be indexed by  $i$ .

An environmental quality index that takes into consideration all aspects of the natural environment of a consumer's life could be taken to be equal to the mean of these variables. However, a mean cannot be computed directly, because of differences in the units of measurement of the above variables. Therefore, these variables need to be scaled before a mean is computed. To be more specific, the above variables for each country are scaled from 0 to 100 using the following transformations:

$$1) \quad y_{ji}^* = 100 (Y_{ji} - Y_{jimin}) / (Y_{jimax} - Y_{jimin})$$

where,  $y_{ji}^*$  is the transformed variable,  $Y_{jimin}$  is the minimum value of  $Y_{ji}$ , and  $Y_{jimax}$  is the maximum value, for  $j = 2, 3, 4, 5, 7, 8, 13$  that is, for all variables having a positive relationship with EQ, and all  $i$ , and

$$2) \quad y_{ji}^* = 100 - [100 (Y_{ji} - Y_{jimin}) / (Y_{jimax} - Y_{jimin})]$$

where,  $y_{ji}^*$  is the transformed variable,  $Y_{jimin}$  is the minimum value of  $Y_{ji}$  in the sample of countries and  $Y_{jimax}$  is the maximum value,  $j = 1, 6, 9, 10, 11, 12, 14, 15$  that is, for all variables having a negative relationship with EQ, and all  $i$ .

Finally, to compute the environmental quality EQ for each country we have used data for the year 2000 from the World Development Indicators (2002) Human Development Report (2002).

The per capita income,  $I$ , of each country is also scaled from 0 to 100 using the following transformation:

$$I_i^* = 100 (I_i - I_{imin}) / (I_{imax} - I_{imin})$$

where,  $I_i^*$  is the transformed index,  $I_{imin}$  is the minimum index value in the sample of countries and  $I_{imax}$  is the maximum value, and  $i = 1, 2, 3, \dots, m$ .

The environmental quality and per capita income combinations,  $(EQ, I^*)$ , for Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom are given in Table 1. Table 1 and the results of our theoretical analysis imply the positioning mapping of Figure 3, where  $m(EQ)$  and  $m(I^*)$  are the means of EQ and  $I^*$ , respectively.

	$I^*$	EQ
Luxembourg	100	45.7
Denmark	68.18	58.2
Sweden	51.62	78.1
Austria	45.45	55.2
Finland	45.13	65.6
Germany	45.13	61.2
Netherlands	44.48	51.3
Belgium	43.18	48.5
United Kingdom	42.86	53
France	40.91	55.1
Ireland	37.01	50.1
Italy	29.09	53.1
Spain	12.34	48.4
Greece	2.27	43.2
Portugal	0	46.8

Table 1. Per capita income and Environmental quality index

This identifies three group of countries as illustrated at Figure 3. Countries with high income per capita and high value of Environmental Quality, such as Sweden, Finland, Germany, Denmark, France, Austria (quadrant A): In these countries the firm-productivity effect is strong. Quadrant B includes countries with low income per capita and low value of Environmental Quality, such as Greece, Portugal, Spain, Ireland and Italy: In these countries the firm-productivity effect is weak. Finally, Quadrant D includes countries with high income per capita and low value of Environmental Quality. In these countries the consumer-attractiveness effect is weak.

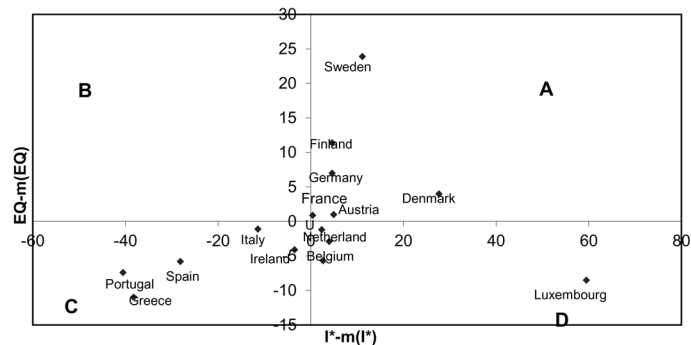


Figure 3. Per Capita Income and Environmental Quality

### 3. Results and Discussions

Our findings suggest that environmental and regional policies are equally important for the sustainable development in a region or country. This is because both slow -and fast-growing economies can suffer from severe environmental derogation. The notion of sustainable development is best suited in countries located at Quadrant C. As mentioned before, this group includes Greece, Portugal, Spain, Ireland and Italy. Sustainable development brings together amenity and productivity into the same conceptual framework from which mutually beneficial objectives may be achieved. In countries located in quadrant D, emphasis should be given to environmental measures, since its high income and low environmental quality characterize this group.

### 4. Conclusions

In this paper we offered a method for evaluating the economic and environmental situation in the European Union. A theoretical framework was used to position EU member states on an Environmental Quality-Income map. The method can assist environmental and regional policy makers in formulating the best suited policies for growth and the environment in the EU. The analysis showed that the Scandinavian countries plus some other Northern European countries are characterized by high values of income and Environmental Quality. Among the rest, the Benelux countries plus the U.K have attained high incomes and low values of environmental Quality. Finally, the European South plus Ireland are characterized by low values of income and environmental Quality. Our findings suggest that the notion of sustainable development is best suited for the countries of the European periphery low productivity group of countries. Sustainable development maintains continuity of economic and social developments while respecting the environment without jeopardizing future use of natural resources. The old notion of "growth versus environment" has given way to a new view in which economic development and environmentally sustainable practices go hand in hand. Better environmental stewardship is essential to sustain development. And only with faster economic growth in poor countries can environmental policies succeed.

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# Meat Consumption Trend in Sicily (Italy): An Analysis of Consumer Preferences

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## Abstract

FAO has estimated that in 2019 every Italian has consumed on average 79 kg of meat per capita, gross of non edible parts. Today, the countries in the world where most meat is consumed are Australia and the United. A high consumption of meat is also recorded in Argentina and in New Zeland. The aim of this study is to detect the propensity to consume meat in Sicily (Italy), by identifying some relevant characteristics which can influence the purchasing choices. An ad hoc questionnaire was prepared to collect the necessary data. Nearly half the population interviewed consumes meat twice a week, around but this consumption has decreased in the last years. Indeed, nearly half of the respondents claimed they have considerably reduced meat consumption.

**Keywords:** meat; consumption; behaviour; habits.

## 1. Introduction

According to the latest data provided by FAO, in Italy, around 5,1 million tons of meat have been consumed (Cheah *et al.*, 2020, Happer and Wellesley, 2019, Lacroix and Gifford, 2019, Merlino *et al.*, 2018). The main type of meat consumed is pork (about 48%). In terms of consumption chicken and beef meat come equally in second place (fig.1).

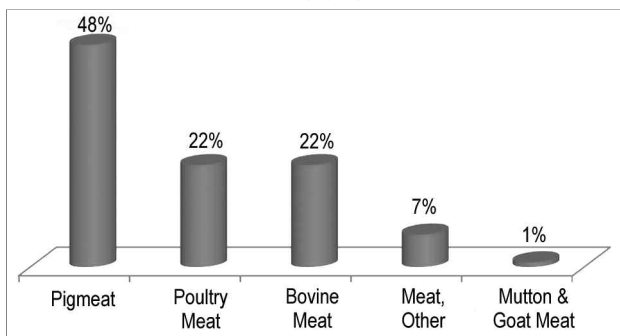


Figure 1. Kind of meat consumed in Italy in %  
Source: FAOSTAT

The total consumption of meat in Italy has more than tripled (3.3 times) in around half a century. However, by examining the latest data, precisely since 2010, the consumption trend has started to decrease by -5.3% in percentage terms (-289 thousand tons consumed). Probably the main reason for this drop is the economic crisis that has been affecting EU since 2008 (Milford *et al.*, 2019, Lewis *et al.*, 2017). Another reason is linked to the changes of eating habits and to the development of new eating patterns. Since 1961 pork meat has recorded an almost always increasing trend and in the 1980s it has overtaken the consumption of beef meat. Chicken meat has also

had an increasing trend, though at a slower pace, compared to pork meat (Hung *et al.*, 2016, de Bakker *et al.*, 2012). Finally, the development of mutton and goat consumption has registered even lower values in terms of consumed quantity. FAO has estimated that in 2019 every Italian has consumed on average 79 kg of meat per capita, gross of non edible parts. This amount includes also the meat wasted in the production chain, rotten or not used at home. Net of the edible parts, the real per capite consumption is equal to around 38 kg per year. This consumption includes all the meat, regardless of how and where it is consumed (Pecorino *et al.*, 2016). By only considering the consumption of red meat (beef and pork) and cold cuts (therefore excluding white meats), the real consumption amounts to 25,1 Kg per year. Today, the countries in the world where most meat is consumed are Australia (116 kg per capita per year) and the United States (115 kg per capita per year). A high consumption of meat is also recorded in Argentina and in New Zeland (Bai *et al.*, 2020, Yang and Renwick, 2019, Weinrich, 2018, Malek *et al.*, 2018, Charlebois *et al.*, 2016).

## 2. Research objectives

The aim of this study is to detect the propensity to consume meat in Sicily (Italy), by identifying some relevant characteristics which can influence the purchasing choices (Giannetto *et al.*, 2016). A deeper knowledge of the trends concerning meat consumption will provide some useful information to better define the meat market and to establish effective marketing strategies in relation to the current consumer preferences (Di Vita *et al.*, 2017, Lanfranchi *et al.*, 2015a, Migliore *et al.*, 2015). Therefore, the aim of our study is to identify those attributes which are important for consumers of meat and the different level of importance that consumers attach to the attributes identified at the time of purchase (Di Vita *et al.*, 2019, Galati *et al.*, 2020, Lanfranchi *et al.*, 2017, Lanfranchi *et al.*, 2014).



## 3. Sampling design and tools

In order to carry out the survey, 1500 questionnaires were distributed in Sicily. An ad hoc questionnaire was prepared to collect the necessary data. The questionnaire was divided in two parts. The first part identifies the characteristics of the sample under investigation, while the second part identifies the purchase preferences and habits concerning the consumers' choices when buying meat. The survey took place between October 2019 and February 2020. The questionnaire, in anonymous form, was directly distributed with the face to face method. In order to guarantee the sample's representativeness and reliability, the questionnaire was administered in an absolutely casual way, nearby places heavily frequented by consumers (supermarkets, butcheries and in shops specialised in meat) in different municipalities of Sicily.

### 3.1. The Data

The final sample is composed by 1500 subjects (48% males and 52% female). It was divided in three age groups, in five income groups, and in four groups according to the level of education. The majority of the sample interviewed is included in the 31-60 age group (44%), with a level of income ranging between 15.001 and 30.000€ (39%) and has a higher education diploma (48%). In table 1 we have shown the percentages of categorical variables, identified by the respondents.

## 4. Results

In the period under study, in Sicily, beef meat was the most consumed one (44%), followed by poultry meat (27%) and finally by sheep meat (9%), while for horse meat the percentage of purchase is very low. The results show that women consume little more beef meat than men. Instead, men seem to have a much stronger preference for pork meat. Sheep meat is generally equally divided between the two sexes. As regards age groups, beef meat is preferred by the 31-60 year old people. The over 60, instead, prefer to consume pork meat, rather than sheep or poultry meat. Young people prefer beef meat. The results obtained highlight a lower propensity to consume beef meat in the upper age groups compared to pork meat. The analysis of the relationship between meat consumption and income class shows that lower income people prefer to consume poultry and beef meat. The higher income is earned, the more beef meat is purchased and the less poultry and pork meat is consumed. Therefore, pork meat is purchased by upper-middle income people, while the poorest eat mainly poultry and pork meat. As regards the type preferred, most of the respondents consume red meats (56%). In particular, men prefer them, while white meats are more sought after by women. By crossing the data, we note that women are large consumers of poultry meats and this implies that they prefer lean meats. Instead, as regards the reasons for the choice of purchase, 42% of the respondents claim that they choose a certain type of meat mainly for its organoleptic characteristics. 27% of them are influenced by the nutritional quality. The organoleptic quality is the aspect men are more interested in, while women are mainly influenced by reasons related to health. The youngest and the over 60 choose according to the organoleptic quality. Intermediate age groups give more importance to health aspects. The lowest income group markedly evaluates the organoleptic aspect, then the nutritional one and finally the health one, while the richest class evaluates more carefully the health aspect. As the income increases, the attention towards health grows and that towards the organoleptic quality decreases. The respondents have also declared that their choice of meat is 70% influenced by quality rather than price and accounts for 29% on their purchasing decision. 45% of the respondents claim that they cumulatively spend between 50€ and 100€ on meat, while

28% spend between 100€ and 200€. 15% exceed 200€, while only 12% spend less than 50€. The over 60, to a greater extent, spend between 50€ and 100€, but 25% spend less than 50€ a month. The younger ones are mainly divided in the 50-100€ range, followed by the 100-200€ one. 64% of the subjects from the lowest income group spend between 50 and 100€, while the highest income group only spends over 200€. 58% of the respondents claimed they have not been influenced by advertising in their purchase choices. The general data is that as they get older, people are increasingly convinced that they are not influenced by advertising, while youngsters have no trouble admitting it. As regards the level of information acquired. 50% of interviewed people are well informed about the price. In particular, women (59%) are more convinced of the adequacy of the price than men (57%). As regards the level of information, respondents were also asked to give their opinion on in-vitro meat. 50% of the sample does not agree with its consumption, but rather they argue that it can be detrimental to health, while 40% of them are uninformed and, in fact, they claim they do not know this type of meat; finally, 10% of them are in favour of its consumption and believe it is environmentally sustainable. Women are those who disagree the most with the consumption of in-vitro meat, while men are undecided. By analysing the level of consumption frequency, it was found that 48% of the sample consume meat twice a week, followed by 43% who consume it three times a week. Only 6% of the population interviewed claim they consume it four times a week or more, while the remaining 3% do not particularly love meat, and they consume it only once a week. Men eat more meat than women, the over 60 mainly eat meat twice a week and, to a lesser extent, three times a week. Most of the younger ones consume it three times a week. The lower income group consume meat mainly twice a week, the second group consume it equally twice or three times a week. The richest classes mainly consume it three times a week, in confirmation of the good elasticity of demand compared to income, and also the frequency of consumption increases. Single parent families consume it on average twice a week. As the number of family members grows, we see an increase in the frequency of consumption. However, 47% of the respondents have declared that in the last years they have reduced meat consumption, 40% has maintained it unchanged, while 13% has increased it. Women have reduced meat consumption to a greater extent compared to men. It has decreased more for the over 60. The younger ones have declared they have not changed their habits. The highest income people have kept the consumption while the low income people have reduced it. By analysing instead the habitual place where meat is purchased, 34% of the respondents declared they buy it mainly at the supermarket, 30% in butcher's shops, while 13% choose the shopping centre. Women are more conservative than men and they prefer to buy it in butcher's shops, while men, even slightly, prefer the supermarket and the shopping centre. The very young prefer the supermarket and the shopping centre. The most elderly mainly go to their local butcher's shop. The lowest income group mainly purchases at the supermarket, the intermediate group prefers the butcher's shop, while those belonging to higher income groups prefer their local butcher's shop. It is possible to conclude that the wealthiest families, with reference to the purchase of meat, are directed to the traditional specialised local shops, even if they buy other agrofood products in the GDO. By administering the questionnaire we also wanted to understand the consumer's perception on the degree of safety attributed to the meat consumed. 57% of the respondents consider the meat coming from the butcher's shop to be safer; 30%, on the contrary, consider the supermarket as the safest place of purchase. Only 13% of people put more faith in the shopping centre. Women, compared to men, think that the butcher's shop is safer. Finally, by analysing the purchaser's perception on the relationship between meat consumption and health, 68% of the population interviewed is convinced that an excessive consumption of meat may favour the occurrence of diseases;

women are more aware of this, compared to men. Indeed, as many as 75% of them consider an excessive consumption of meat to be detrimental to health. In spite of this, 59% of the respondents still consider meat as a fundamental food in the diet. Only 41% think it is replaceable. 69% of men consider it more essential compared to what women think (51%). Youngsters consider it to be less essential. The higher the age group gets, the more essential meat consumption is considered (38% of the very young, up to 73% of the over 60). 71% of consumers under investigation have shown themselves to be interested in the ethical question, while 33% have declared they are not willing to limit its consumption for this reason. Women (78%) are more sensitive to the ethical question than men (64%). Also in this case the upper age groups show a lower sensitivity to the environmental impact linked to the increase of intensive livestock. This can be probably explained by a lower awareness of topics linked to environmental sustainability.

## 5. Conclusion

The study conducted on the sample of consumers allows us to draw the following conclusions: the main type of meat consumed is beef, followed by poultry, pork and finally sheep meat. Cut meat is mainly purchased. Most of the respondents claimed they are not influenced by advertisement in their purchase choice. Red meats are the most consumed ones. The organoleptic quality is the main reason for purchasing meat. Most of the respondents consider the information provided on the label to be sufficient. Quality is the variable that mostly influences the purchase choice. The price only has a limited influence. Most of the respondents spend between 50 and 100€ a month to purchase meat. To most of them the overall price of meat is adequate. Nearly half the population interviewed consumes meat twice a week, around 500-750 grams, but this consumption has decreased in the last years. Indeed, nearly half of the respondents claimed they have considerably reduced meat consumption. People prefer to purchase in butcher's shop because it is considered to be safer. Most of the population think that an excessive meat consumption may cause the emergence of several pathologies, but in spite of this most of them considers it to be essential and not replaceable in the diet (Lanfranchi *et al.*, 2020). It was possible to identify how, under this aspect, the population is divided in three categories: the first one does not pay attention to price, putting in first place the pleasure of eating well, the second one prioritises the health aspect preferring the consumption of lean, healthy and organic meat, claiming that an excessive consumption of meat is detrimental to health, and finally a third group of consumers is convinced that consuming a large amount of meat can only benefit health. Finally, most of the respondents claimed they are willing to reduce the consumption in order to reduce the environmental pollution deriving from meat production.

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## Company Competitiveness as a Variable Success Strategy for the Territory and the Environment

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### Abstract

*Supporting the fortunes of the Made in Italy agri-food brand are the best quality products which can be found throughout the Italian territory and which, in many cases, derive from Southern Italy, with a particularly interesting role assumed by Campania and Sicily.*

*The Sicily Region boasts a varied and peculiar food and wine heritage, especially from a qualitative point of view, the Born in Sicily brand, made with excellent raw materials which constitute and support the development of important production lines within the agro-industrial sector.*

*Among the most important food industries in Italy and on the island, there are some operating in the confectionery industry. Today the fast-growing confectionery industry contributes a great deal to the agri-food system.*

*This study analyzes the agri-food system both in Italy and Sicily, highlighting the main sectors which contribute to make the Made in Italy brand competitive around the world and how companies have succeeded in starting up some interesting internationalization processes.*

*This the reason why a specific case regarding a Sicilian confectionery industry is examined so as to understand how it was able to create such a successful innovative product, establishing itself on both the national and international market.*

*The results show that entrepreneurial skills contribute a great deal to creating business competitiveness and territorial development.*

**Keywords:** agri-food system; quality product; value chain

### 1. Introduction

The agri-food system is made up of all those businesses which deal with the cultivation, transformation and marketing of agricultural products.

This group is mainly characterized by four economic sectors: agriculture, the industry that provides technical means for agriculture, the industry that transforms the agricultural product into food products (agro-industry) and, finally, distribution.

There are also some other sectors, such as chemistry, biotechnology, breeding, transformation of raw materials, packaging and food safety which contribute to determine the agri-food system, initially made up of the agricultural component only, and now also constituted by logistics and distribution.

The agro-food system is made up of different types of supply chains and each of them is able to increase a development of its local products, depending on production specialization and thus determining three types of districts:

- Agriculture
- Food industry
- Beverage industry

Within the Italian agri-food system, a very important contribution is provided by the Sicilian economy which is characterized by certain factors such as land productivity, climate, quality of raw materials.

In the present study a confectionery company is analyzed, highlighting the economic aspects and, above all, the fundamental elements that have led to its success around the world.

The work stems from a deep interest in the knowledge of the agro-food system and, more specifically, for agro-industries, especially those belonging to the confectionery industry so as to understand to what extent the economic future of Sicily can be linked to the continuation of the success that the agro-industrial sector has shown it can achieve even during years of crisis, such as the ones we are currently experiencing.

### 2. Economic Literature

The creation process of the agri-food system is based on three fundamental aspects:

1. **The verticalization of the agri-food sector**, which is the most significant and primitive legal formalization of the food supply chain, achieved through the spread of the phenomenon of vertical integration in agriculture (Bivona, 1979), responding to the needs of industrialized agriculture and massively oriented to a globalized market in which a single company can manage to control the entire production cycle, from production to the transformation and sale of the finished goods;

2. **The horizontal integration** that supports agri-food production through other sectors which affect the manufacturing sector (production of agricultural machinery, fertilizers, pesticides);
3. **The concentration of financial resources**, or the use of the economic and financial capital used by a single company to enter a market.

The structure of the agri-food sector and the behaviour of the different companies operating in it, also depends on the social-cultural and institutional reference. The current features of the agri-food sector derive from the various changes that have taken place regarding some important stages of development in the western economies. Historically, the sector that has responded to the food needs was the agricultural one and the role of industry and food distribution has only recently developed.

In Italy, agriculture has undergone profound changes (Fanfani, 2009) since the day after the end of the Second World War. The ability to enhance typical local products represents a decisive element for the endogenous development of territorial systems, in consideration of the important economic, social and tourist effects it can produce. Through the enhancement of typical products, in fact, the merely productive function of agricultural activities is integrated by new and different functions, including the protection of the environment and the territory, the preservation of culture and rural traditions, creating spaces and places affected by new economic and social dynamics (Belletti and Berti 2011).

The simultaneous emergence of a non-mass production and consumption model has also strengthened and brought out the interest in traditional and typical agro-food products, also giving rise to the phenomenon defined by some rural restructuring scholars, responding to a new multifunctionality that characterizes agricultural activities in today's society.

Attention to typical products, in particular food and wine products, was also driven and supported by the growing attention of citizens to the quality of food products, as well as the desire to enhance and pass on local traditions and a more general adherence to a simpler and more natural lifestyle. It is indeed widely recognized that the typical products, as a form of expression of culture of a specific area, widely affect the social and economic development of the local rural territories (Rossi A. and Brunori G., 2013), in particular by achieving the following social and economic benefits:

- an increase in the incomes of farms, both single or associated;
- the affirmation of a qualified occupation;
- greater social liveliness;
- regeneration, through enhancement and preservation, of traditional activities;
- the development of a food and wine kind of tourism that can contribute to improve the economic sustainability of the reference territories.

What has been said is consistent with the principles of the theory on endogenous rural development (Slee, B., 1993; Ploeg van der J.B., 2006), a paradigm which is essentially aimed at less supported rural area and those excluded from modernization processes. The resulting development model is self-centered and at the same time conservative as it tries to preserve the local elements on which it is based (Sortino et al., 2008), and is characterized by the use and reproduction of experiences and knowledge developed locally to convert the local resources in fine quality agro-food products. It is a locally determined development that respects and protects local values. Within this paradigm, typical products become a resource which is capable of giving value to the development of smaller areas because they manage to integrate and enhance the different territorial resources (Brunori and Rossi, 2000, Marsden et al., 2000), also corresponding to the consumption style changes of postmodern tourists.

Starting from the 1950s, it was considered essential to focus on the reconstruction of the country from an industrial point of view. As a matter of fact, during the Golden Age, between 1950

and 1960, Italy received economic aid from the Marshall Plan, amounting to 13 billion dollars, which allowed the country to develop its industrial sector.

As far as the social aspect is concerned, there was a strong migration from the countryside to the cities which lead to industrial development in the northern cities.

In broad terms, it is possible to identify the following stages in the evolution of the food sector:

- an original phase where food production and consumption occurred exclusively on a local basis;
- a phase of commercial opening characterized by the progressive increase in the exchange of basic goods at a still limited territorial level (the medieval and subsequent markets) and, subsequently, by the opening of international trade with regard to special goods (spices and similar) starting from the development of a huge maritime traffic in the sixteenth century;
- a pre-industrialization phase of the agri-food sector, which sees the progressive territorial specialization of the food production and consumption phases, in connection with urban concentration and the greater production specialization connected to the first stages of the industrial revolution starting from the eighteenth century. This is the phase in which the food distribution sector, in its pre-modern form, was born, thanks to the contribution of the progressive development of transport;
- a phase of trade expansion on a mainly regional basis which responds to the establishment of the modern structure of the city-countryside relationship and to the needs of division of labor and social and economic organization required by the industrial development phase of western economies;
- a modernization phase (Italian Legislative Decree 12/05/2011) implies a particular organization of the activities within the farm, with the increasing introduction of capital-intensive type technological innovations and with the development of the industrial activities linked to the agricultural activities (sectors providing inputs and processing and marketing of agricultural products). The need to "modernize" agriculture stems from the requirement to incorporate the principles of industrialization within the agricultural production processes and the organizational methods of farms, which was primarily based on the adoption of technical and typical "industrial" organizational methods of mass production, and on the strengthening of the industrial sector, the only one capable of driving the growth of economic systems and, towards such direction, inducing well-being in the population;
- a phase of tertiarization and internationalization (Boccia F. 2009) in which the structure of the sector takes the shape of an oligopoly, with few large industrial companies and large distribution chains, and lot of small producers and distributors. The larger companies expand their sphere of activity well beyond national borders. The competitive environment is characterized by the leadership of large industrial companies which, with their own brand capital, hold a strong bargaining power towards final consumers. Brand policies are at the center of marketing strategies and the control of the supply chain is undoubtedly carried out by companies that own the big national brands. The demand begins to record some profound changes that lead towards a subsequent development phase. As a matter of fact, the demand for food consumption begins to be increasingly addressed to the "quality" aspects of food, while the demand for meals eaten outside the home is growing rapidly (therefore concerning the food-service sector) and the habit of making purchases at large shopping centers;
- the current transition phase characterized by the coexistence of contradictory phenomena: the globalization of

consumption and the defense of typical products; the search for low cost and differentiation; the concentration of large-scale distribution and e-commerce; the extreme industrialization of the agricultural sector (with chemistry supported by biotechnology) and the development of agriculture.

According to the data provided by the census that was carried out in Italy in 2011, in Sicily there are 6,523 agri-food industries and most of them are industries that produce bakery products and starchy foods (4,658). In addition to these, in order of numerousness, there are the companies that deal with the production of vegetable and animal oils and fats (469), industries dealing with fruit and vegetable processing and preservation (248), dairy industries (214) and those involved in the production of pasta, couscous and similar starchy foods (207).

The Sicilian agri-food system is currently underdeveloped from an industrial point of view, as Sicilian entrepreneurs do not make use of innovative systems, especially advanced industrial and technological systems, and companies are small in size, turnover and number of workers. However, most agro-industries are based on the island. If we compare the number of Sicilian agri-food industries with southern Italy and the regions of southern Italy (Table 1), we can see that the number of industries on the island is rather high, actually higher than in Campania (5,600), Calabria (2,583) and Puglia (4,590).

Most of the Sicilian agro-industries (4,658) deal with the production of bakery products and starch foods; this type of industry is likewise developed in the South (9,529), especially in Campania (3,317) and Puglia (2,832).

Compared to the regions taken into account, Sicily predominates with its agro-industries which with the processing and

preservation of fish, crustaceans and molluscs. As a matter of fact, 104 industries are located in Sicily, 40 in Campania, 35 in Calabria and 28 in Puglia and with those industries that process grain, they produce starches and starchies (142 industries in Sicily and 245 in all southern regions).

As for the agri-food industries, which are fewer in Sicily compared to other southern regions, the industries that process and preserve meat and produce meat-based products are the one which stand out.

Another type of agri-food industry, although little developed in Sicily, is the one which produces cocoa, chocolate, candies and *confetti*. As a matter of fact, on the island there are 57 industries compared to the 141 in Campania.

Furthermore, throughout the South of Italy, compared to the other regions of the country, there are very few companies which produce condiments, spices, homogenized prepared products and dietetic foods. This is a niche market which, if conveniently developed with innovative products, could offer a strong opportunity for the development of the Sicilian agri-food sector.

Another aspect which needs to be highlighted concerns the industrial districts.

Here are the districts in Sicily: the Ceramic District of Santo Stefano di Camastra, the Ceramics District of Caltagirone, the Textile District of Eastern Sicily, the Sicilian Mechanics District.

However, the most important Sicilian agri-food districts (Research carried out by Intesa San Paolo) are:

- Fruit and Vegetables of Catania with 67 companies;
- Pomodoro di Pachino with 97 companies;
- Wines and liqueurs of western Sicily (territories of Trapani, Agrigento and Palermo) with 62 companies.

Therefore, it is necessary to make an attempt to develop these districts and to create some other new ones, relying on technological progress, labor division models, the creation of new production facilities, labor productivity, IT innovations and, above all, on the revaluation of the territory (tradition, authenticity, local production), focusing on the exaltation and quality of the products and production processes (shelf life, packaging, ease of use), by performing more controls and certifications on the best products (PDP, PGI, TSG referring to agriculture and food industry and DOC, DOCG, ICGT for the beverage industry and in particular for wines).

In a perspective of economic analysis of the Sicilian agri-food sector, it is possible to highlight the strengths, weaknesses, opportunities and threats.

The main strengths are:

- High quality standards with particular reference to organic and integrated productions;
- Presence of traditional high quality products and productions with DOP, DOC, IGT classifications;
- Presence of autochthon species and crops subject to productive redevelopment;
- Potential orientation to the export of Sicilian products which are recognized by worldwide consumers as an expression of the "made in Italy" food.

As far as the numerous weaknesses are concerned, the following can be listed:

- High corporate fragmentation and pulverization with a high incidence of small companies;
- Poor differentiation of the finished product;
- Presence sometimes of obsolete plants;
- Poor organization of the product offer;
- High production costs;
- High transport costs due to the peripheral position of the island and to the lack of the regional railway system and road network;
- Insufficient relevance of transformation activity;
- Shortage of irrigation systems;
- Poor orientation to the market.

In the light of the above, the following Opportunities clearly emerge:

- Adequate Community and national regulations governing

Industries	South	Campania	Puglia	Calabria	Sicily
Food industries	16037	5600	4590	2583	6523
Processing and preservation of meat and production of meat-based products	629	252	61	106	ninety two
Processing and preservation of fish, crustaceans and molluscs	125	40	28	35	104
Other processing and preservation of fruit and vegetables	821	378	211	158	248
Production of oil and vegetable and animal fats	760	365	200	132	213
Dairy industry	1999	330	660	521	469
Ice cream production	1431	654	419	137	214
Processing of grains, production of starches and starchy products	64	20	20	12	29
Production of bakery and starchy products	245	70	64	41	142
Production of rusks and biscuits, production of preserved pastry	9259	3317	2832	14 22	4658
Production of pasta, couscous and similar starch products	481	137	179	65	194
Production of other food products	1305	442	335	144	207
Production of cocoa, chocolate, candy and confectionery	1206	544	303	155	537
Processing of tea and coffee	241	141	32	31	57
Production of condiments and spices	242	102	71	32	106
Production of meals e prepared dishes	46	17	8	12	13
Production of homogenized preparations and dietetic foods	16	3	10	0	4
Production of other nca food products	450	191	124	36	211

Table 1. Comparison of the number of Agri-Food Industries between Southern Italy and Sicily

Source: our ISTAT 2011 census data processing

- production activities;
- Availability of Community, national and regional financial resources;
- Consumer attention to quality;
- Increased demand in the emerging markets;
- Use of brands for fresh and processed products;
- Improvement of quality control procedures;
- Administrative decentralization.

However, the threats that emerge from such analysis are:

- Increased pressure from international competition from EU countries (Spain) and Third countries (Mediterranean basin);
- Imports of non-standard products;
- Loss of market share following the failure to adapt to technological innovations and new marketing logics;
- High presence, in the consumer market, of low quality and low cost products.

An agri-food product is strictly tied to its territory, culture and tradition. A very important aspect, which characterizes the success of the Made in Italy brand, is the quality of the product, attested through protection mechanisms, whose main objective is based on attention to consumers' health, thus constituting a kind of food safety with a strong identity which can only be offered by the Italian territory.

Companies, therefore, should safeguard the quality of the product by adapting themselves to the consumers' needs, and by revitalizing their business and consolidating their competitive position.

As for the element linked to tradition, a re-evaluation of the originality of the product should be carried out. Sicily, through its history and traditions, which are strongly linked to the territory, to the development of "know how", thanks to its excellent and sunny climate throughout the entire year, is able to produce genuine and natural agricultural raw materials, essential for characterizing a high quality agro-food system. This is where the Born in Sicily brand was created and where it stands out.

Protecting the autochthon genetic resources of agricultural, forestry and zootechnical interest of the regional territory for which there are interests from an economic, scientific, environmental and cultural point of view is the aim of the law approved on November 18th 2013, n. 19 "Protection and enhancement of 'Born in Sicily' genetic resources for agriculture and food".

Born in Sicily agricultural products are divided into Designation of Origin (DOP and PGI) products, slow food products (Table 2), organic farming, integrated farming. Sicily's agri-food products, increasingly in demand in Italian and foreign markets, develop a growth in food and wine tourism by spreading, at the same time, the production of local products, many of which have no difficulty becoming part of the selective Slow Food circuit.

Slow Food Products	Territory
<b>Ape nera sicula</b>	The entire region
<b>Aglio rosso di Nubia</b>	Paceco, Trapani, Erice, Marsala and Salemi
<b>Asino ragusano</b>	Ragusa and regional diffusion
<b>Capra girgetana</b>	The entire region
<b>Cappero di Salina</b>	Isola di Salina (ME)
<b>Cipolla Giarratana</b>	Giarratana (RG)
<b>Cuddiredda di Delia</b>	Delia (CL)
<b>Fagiolo Badda</b>	Polizzi Generosa (PA)
<b>Fava Larga di Leonforte</b>	Leonforte, Enna, Calascibetta (EN)
<b>Lenticchia di Ustica</b>	Isola di Ustica (PA)
<b>Limone interdonato</b>	Costa da Messina a Letojanni (ME)
<b>Maiorchino</b>	Messina area
<b>Mandarino tardivo di Ciaculli</b>	Palermo
<b>Mandorle di Noto</b>	Noto, Avola, Rosolini, Canicatti Bagni
<b>Manna delle Madonie</b>	Castelbuono and Pollina (PA)
<b>Masculina di magghia</b>	Gulf of Catania
<b>Melone Purceddu d'Alcamo</b>	Alcamo (TP), Camporeale, Roccamena, San Giuseppe Iato (PA)

<b>Oliva minuta</b>	Messina area
<b>Pane Nero di Castelvetrano</b>	Castelvetrano (TP)
<b>Pane tradizionale di Lentini</b>	Lentini and Carletini (SR)
<b>Pesche tardive di Leonforte</b>	Leonforte, Assoro, Nissoria, Enna, Calascibetta (EN)
<b>Pistacchio di Bronte</b>	Bronte (CT)
<b>Provola dei Nebrodi</b>	Nebrodi area
<b>Provola delle Madonie</b>	Massiccio delle Madonie
<b>Sale marino artigianale</b>	Marsala, Paceco and Trapani
<b>Suino nero dei Nebrodi</b>	Nebrodi area
<b>Susine bianche di Monreale</b>	Monreale (PA)
<b>Vastedda del Belice</b>	Valle del Belice

Table 2. Slow Food products per territory

Among the products recognized by Slow Food districts are the typical high quality products marked with the DOC (Controlled Designation of Origin), PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication) brands, which contribute to demonstrate and certify the excellence of the Born in Sicily brand.

Among the regions of the southern area, it is shown that Sicily has a recognition for 28 PDO and PGI products, higher than the Campania Region which confirms its 22, followed by Puglia (16) and Calabria (15).

If we compare the number of PDO and PGI agro-food products present in Sicily, in the South and in Italy (Figure 1), it can be seen that Sicily has a decisive role in marking the total excellence of Italian agri-food production.

The total number of PDO and PGI products of Sicily is 28 over the 81 which are present in the south, over the 259 certified products in Italy.

Specifically, the largest number is made up of the PDO products available on the island, that is 17, which are 52 in the south and 158 around Italy. Instead, there are 11 PGI products in Sicily, 29 in the South and 101 in Italy.

These data show that the certified products of the south represent about half of them at national level and that Sicily is the region of the south of Italy that contributes most to increase the quality of the Made in Italy brand.

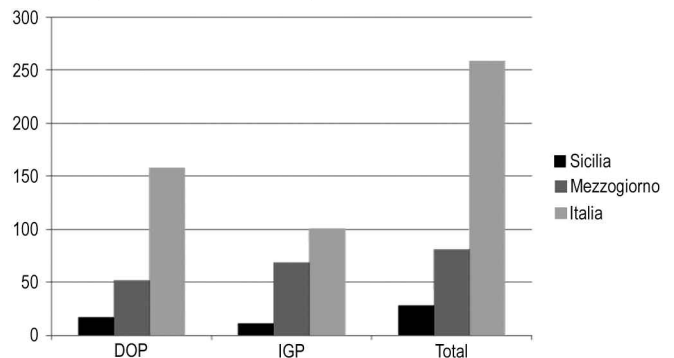


Figure 1. Comparisons of PDO and PGI products between Sicily, Southern Italy and Italy

Source: Our reworked version on company data

### 3. Materials and methods

After having highlighted the structural aspects of the company, the major factors which determine the success of a confectionery company that initially managed to conquer, through its *panettone*, a typical sweet of Milan, the palates of Italian and then those of consumers living in many other countries, practically in every continent and latitude. A careful analysis is addressed to the Company's business, to the major competitors and to foreign relations.

In order for a confectionery product to be better sold and appreciated within the agri-food chain, it must firstly be made of

high quality raw materials and, above all, be packaged so as to have a good impact on the market (Sodano 2010)

Following the wine industry, considered the "pearl" of the Italian agri-food industry on foreign markets, confectionery products constitute one of the spearheads of the Made in Italy brand, where thanks to the excellence of the best products of the confectionery industry, a greater enhancement of the territory in which they are produced could be created.

The south is the area of Italy where a greater agri-food production of sweets takes places, where Sicily has a decisive role both for the production of high quality raw materials and for processing activities.

At the same time, dessert should be considered, both in Italy and in Sicily, as one of the products which is able to attract the interest of a growing number of tourists, drawn by the scent of culinary and food and wine traditions, together with the remarkable artistic and cultural beauty that Italy offers.

As for the bakery industry, the first important step required when making an excellent product is seeking for new raw materials and ingredients that bring out its taste. For this reason, the best entrepreneurs make use of suppliers of certified raw materials to be transformed, as their goal is to create products which are qualitatively better within the local, national and foreign market (Fantini 2009).

Nowadays, the confectionery industry represents a production sector which consumers cannot do without, although it is situated in a very competitive market.

For this reason, in order to obtain a successful product, every single industry must focus on product innovation by adding particular and high quality raw materials, above all by creating a new product (Bocchia, 2009).

The creation of a new product derived from the introduction of new processing methods and, in this regard, it is necessary to take into account the importance of the relationships characterized by the exchange of knowledge that takes place among the different entrepreneurs operating within the confectionery industry for the creation of the like product. Each entrepreneur will improve his product, created from the combination of imagination and taste, through the use of different ingredients, mainly using local raw materials (Istat 2012).

The production system of the company is typical of a process industry. The product is made through the chemical and physical transformations of the raw material and, therefore, it can no longer be broken down into its primary components. The production flow is constant and obligatory during working months.

The crucial point for the company is the search for high quality products and in order to meet this need we start from the selection of raw materials. The use of typical Sicilian raw materials, such as Bronte pistachio, Polizzi Generosa hazelnuts, Avola almonds, Castelbuono *manna*.

In addition, an element which shall not be overlooked, at the basis of the new products is the strong push to experiment combinations which are often improbable. The most significant example is certainly *Oro Rosso*, a panettone made with late red PGI radicchio from Treviso which was officially presented in Verona in 2008, at the largest showcase of gastronomy of excellence, such as Vinatily and at the 14th International Food Exhibition in Parma.

Finally, a financial analysis is carried out, which can be defined as dynamic since financial statements of a historical series of the company have been compared. The aim of this analysis is to measure the level of affordability, solvency, efficiency and effectiveness of the company since these principles are at the basis of a general condition for the company's success.

*The principle of affordability* can be traced back to the attitude of management to remunerate all the costs of the production factors acquired through revenues, with the evidence of a positive difference; that is, it can still be seen as an expression of the positive change that the capital, taken into

consideration at the beginning of a period, undergoes as a result of the management carried out in the period.

*The principle of solvency* is based on the company's ability to meet short-term financial needs promptly and economically with liquid or liquidable assets at close deadlines, precisely in compliance with the aforementioned principle of solvency. The search for financial stability becomes a predominant aspect as the company must be in financial break-even at all times of its duration.

The analysis leads to the assertion that the company, in addition to enjoying a thriving structure from an economic point of view, has a strong solvency and financial stability.

## 4. Results and discussions

In the delicate Sicilian economic situation, manifested through a very difficult economic environment, stands a Sicilian company which has conquered several market shares. A competitive company and leader in its field whereas the confectionery market in Italy is very special because it is distinguished by a curious increase in supply as the demand decreases. The high seasonality, with 95% of the sales concentrated between October and January, together with the promotional intensity are the peculiar features of the market.

The link with tradition and the desire to use only the most genuine products of the Sicilian tradition have allowed the company not to succumb to the flattery of large-scale industrial production and to work as a company that always operates in the name of quality. Panettone and Colombe, but also the torrone, jams and the liqueurs produced later travel around the planet thanks to a reputation gained throughout the years.

The secret of quality lies at the basis of the company and it is that starter which for seventy-five years has been renewed every day by hand and jealously guarded.

The products of the Sicilian company can be purchased in addition to all European countries, including in North America, Japan and Austria.

The production of panettone, in the early years, was carried out at the original 40 sqm facility where 1600 kg of panettone were made each day; the growing demand called for an adequate production facility. In 2000, the production was transferred to a 4800sqm facility where the phases aimed at product realization, administrative activities, storage of raw materials and finished products were carried out. With the entry into operation of this new production facility, the foundations for the continuous success of the company were laid.

The functions in which the organizational structure is divided are: production, the commercial and administrative area and the management of local shops. There are no hierarchies, staff is an integral and active organization. Each staff member must carry out its own duty, but at the same time he/she must always be ready to help out with any colleagues' workload, in full respect of the team work logic.

The organization of the work is linked to the seasonality of the production, together with administrative staff and some workers and warehouse workers who are hired with permanent contracts. There are numerous employees, both men and women, who are hired with fixed-term contracts based on production needs (Figure 2).

The company's core business is the production of leavened bakery products and therefore, in conjunction with the holidays, staff is temporarily hired.

Within the company, raw materials arrive directly at the facility from various suppliers located throughout the country, although typical Sicilian raw materials are mostly used, (Bronte pistachio, Polizzi Generosa hazelnuts, Avola almonds, Castelbuono *manna*) that allow to differentiate the product from that of competitors.

The company has managed to establish stable relationships with the same suppliers, which have lasted for 10 years now. It has around 3,000 customers and a turnover of over one million

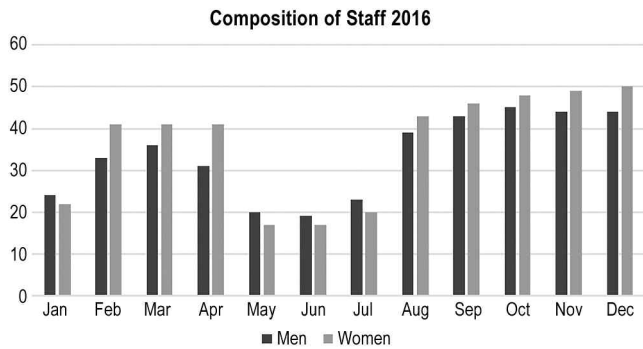


Figure 2. Company composition of staff  
Source: Our reworked version on company data

euros. The greatest weight in terms of sales, but also of negotiating power, is to be attributed to large commercial customers who act as intermediaries between the company and the export market.

In relation to intermediary customers, three categories can be distinguished: small customers located in Sicily; small customers in Italy; small customers abroad.

Supply requests are implemented through the use of 40 agents and 8 dealers located almost all over the territory. The agents only deal with proposing the products and issuing orders, generally in one or more provinces of their own area, in exchange for a percentage on sales; the shipment of the goods to the individual dealers is handled directly by the company through an external courier. In the case of small customers in Sicily, supply request takes place by receipt either by fax or e-mail. Distribution is done through small company-owned means.

The main competitors of the company are two businesses from Emilia-Romagna that produce panettone and colombe which are sold through a network of 100 agents.

The presence of competitors in the sector in which the company from Madonia is positioned and the establishment of other small companies that manufacture good quality products at a much higher price than that of the brands of the large-scale retail trade is symptomatic of a trend that has existed in recent years: despite the general economic crisis that discourages household consumption and sales prices, the market requires high quality products. This trend is shown by the drop in sales of large-scale PDO panettone although sales prices are equal to a tenth of the prices of "artisan" products.

The company from Madonia is an example of the Sicilian confectionery industry, belonging to the agri-food sector which has managed to conquer international markets thanks to its panettone.

35% of its annual turnover is represented by the marketing of its products abroad, and especially panettone, in foreign countries it is not seen as a recurring dessert, so it is consumed any day of the year.

Today it is possible to find the company's products in America, Australia, Brazil, Canada, New Zealand, Russia and the EU (Austria, Belgium, France, Germany, Great Britain, Malta, Holland, Spain, Switzerland, Vatican) with a growth in the annual turnover of around 10%.

From an international point of view, the company has created a specific training, making use of the presence of highly experienced consultants, with important investments in marketing. Thanks to their ambition and tenacity, company managers have a strong determination to invest in the future of the island and country, without expressing their intention to relocate production abroad.

It actually aims to increase commercial agreements in order to build a store inside a mall in Qatar and expand marketing channels to every part of the world, such as the extension to the entire Australian continent and new commercial relations with Russia and Japan.

Despite the ambition to expand their markets beyond the

Italian border, the company shows a strong attachment to Sicily and, in this regard, it is trying to plant some vineyards in the Trapani to produce the Australian grapes, ideal for panettone and therefore to avoid importing them.

The company exports to many European countries and to other areas around the world, in 2014 there were 18 states in which the company managed to export its product (Figure 3).

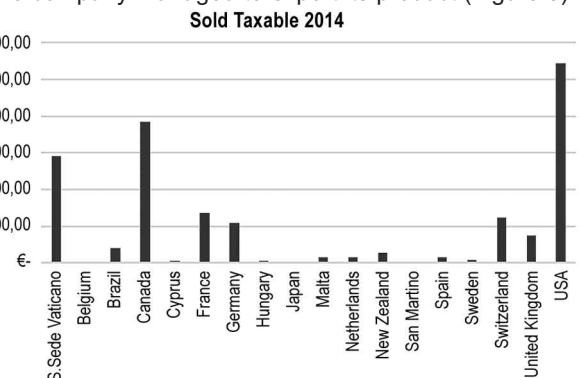


Figure 3. Sold – 2014 taxable  
Source: Our reworked version on company data

In 2015 there was an expansion of the company confirmed by a greater export and by the entry of some other destination countries. Specifically, in that year the product was exported to new countries such as: Hong Kong, Australia, Greece, Lithuania, Luxembourg, Poland and Romania for a total annual amount of € 8,276,552,05 (Figure 4).

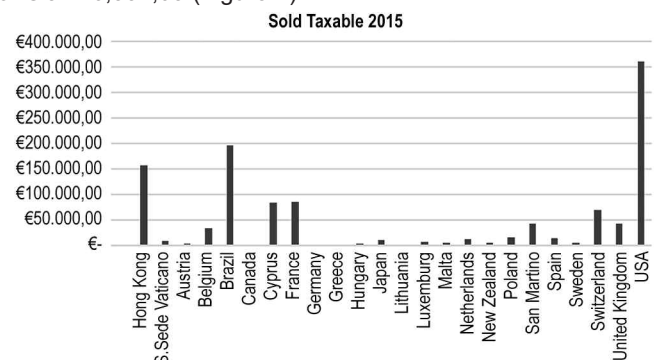


Figure 4. Sold – 2015 taxable  
Source: Our reworked version on company data

In 2016 there is a further increase in sales, the total of which amounts to € 9,876,706.09, approximately € 1,500,000.00 more than 2015. A Member already mentioned plus Australia, the Czech Republic and the Russian Federation (Figure 5).

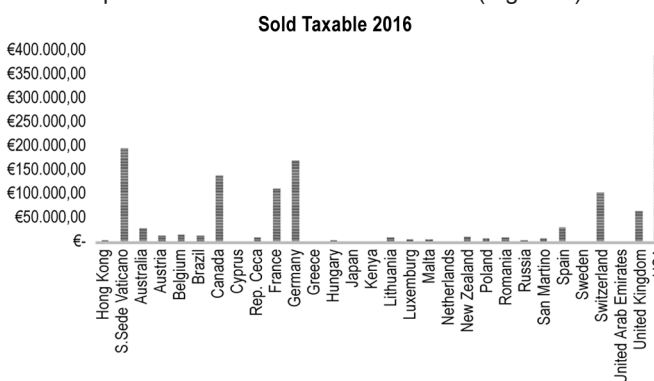


Figure 5. Sold – 2016 taxable  
Source: Our reworked version on company data

Finally in 2017 we experienced a further increase in exports



reaching a total of € 11.677,378,99.

This was due both to an increase in exports in the countries in which the company already had commercial relations and to the introduction of new countries such as Denmark, India, Peru and Slovenia.

Specifically, exports are relevant for Canada, Switzerland, England and Germany (Figure 6).

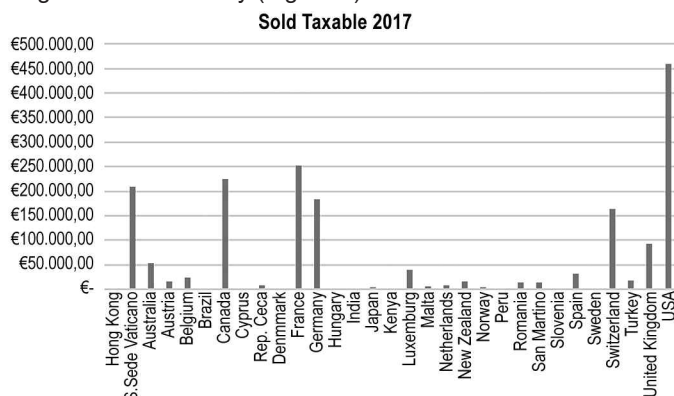


Figure 6. Sold – taxable 2017

Source: Our reworked version on company data

Following a careful analysis on foreign exportation, also the Italian situation was observed and from the extracted data it was possible to understand how Italy influences the success of this company.

Figure 7 shows how the sales in Italy from 2014 to 2017 underwent a periodic increase starting with a sale of € 5.639.827,74 in 2014, € 7.134.170,36 in 2015, € 8.513.317,64 in 2016 and finally 9.804.645, 42 in 2017.

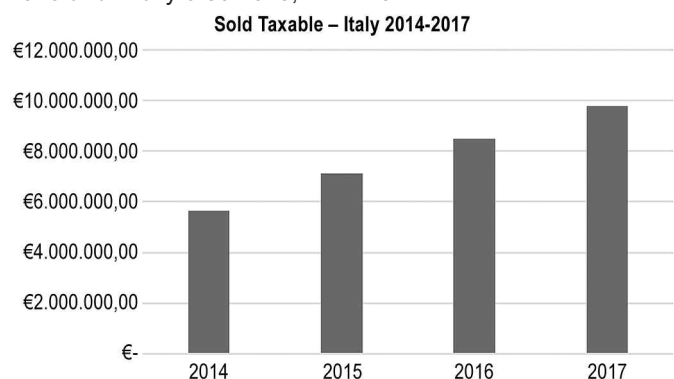


Figure 7. Sold taxable in Italy from 2014 to 2017

Source: Our reworked version on company data

By paying further attention to the Italian situation, we focus on a regional analysis. The goal is to verify which are the regions where the product is mostly sold.

Based on the data obtained and focusing on the year 2017, it can be deduced that the regions in which the company is most able to market are:

- Sicily (€ 4.360.628,09)
- Lazio (€ 1.079.035,65)
- Lombardy (€ 1.046.901,90)
- Veneto (€ 437.474,22)
- Campania (€ 161.878,36)

The corporate governance activity normally takes place with the aid of suitable cognitive tools. As a matter of fact, it is necessary to predict the results to which they can lead, to the coordination of the operations and to verify to what extent these results, for a given period of time, can be achieved; it is a matter of measuring, through specific indicators, the company's ability to achieve a certain affordability, solvency, efficiency and effectiveness.

Respect for such principles lays the foundations for a general success condition of the company system, considered in its unity, or the particular conditions of such success regarding specific management processes (Bubbio, 2000).

In its continuity and development policy, the company has managed to respect those cardinal principles of governance set out in the corporate doctrine.

In order to carry out the analysis of a balance sheet, there are a range of indices and methods. It is possible to perform a static analysis, which takes into consideration a specific financial statement, and a dynamic analysis, which compares the financial statements of several financial years. The analysis carried out here can be defined as dynamic since the financial statements of a historical series of the company have been compared (Caramiello et al., 1993)

Firstly, it is useful to compare the circulating capital and the short-term payables so as to express positive or negative judgments on the actual ability of the company to promptly meet the obligations undertaken. In order for the company to tend to consider itself solvent, it will have to have a working capital greater than or equal to short-term debt. The two values can be compared by providing a useful index in the comparisons among following financial statements of the same company, such index is called the availability index calculated the following way:

$$INDEX\ OF\ AVAILABILITY = \frac{WORKING\ CAPITAL}{SHORT - TERM\ DEBTS}$$

With reference to the Agribusiness company we obtained the following results (Table 3).

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Index of Availability	1.409	1.081	1.033	0.974	1.273	0.755	0.96	0.89	1.025

Table 3. Results of Index of Availability

This index allows us to say that a company is solvent when the result is equal to or greater than the unit. The data in the table show a prevalence of working capital over short-term debt is shown, this determines a positive judgment on the solvency of the management.

Continuing the analysis on the solvency of the company, the treasury or acid test index is used, this index purifies the working capital of the less liquid components, reducing immediate liquidity and collectable credits. This test is carried out as follows:

$$ACID\ TEST = \frac{IMMEDIATE\ CASH + SHORT - TERM\ CREDITS}{SHORT - TERM\ DEBTS}$$

The meaning of this index is to verify the company's aptitude for meeting short-term

financial investments with immediate liquidity only, without taking into account inventories. According to the data received by the company the following was obtained (table 4):

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Acid Test	1.362	1.02	0.928	0.888	1.165	0.82	0.834	0.907	1.80

Table 4. Results of Acid Test

Also from this analysis, the answer is positive, as the index over the years is greater than the unit. This shows the company's ability to meet its short-term financial commitments.

A further aspect of the company's financial situation, strictly connected to those of solvency and financial balance, is related to the so-called analysis of the capital structure (Cattaneo, 1979), and allows evaluating the degree of financial autonomy. Said index can be obtained as follows:

$$GRADE\ OF\ FINANCIAL\ AUTONOMY = \frac{NET\ CAPITAL}{TOTAL\ NET\ LIABILITIES}$$

The data lead to the following index values (table 5):

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Grade of financial autonomy	0.0003	0.221	0.073	0.077	0.065	0.087	0.048	0.047	0.045

Table 5. Results of Grade of Financial Autonomy

If the index is equal to zero there is an absence of indebtedness, while if the index is between 0 and 0.5 there is a positive and favorable financial structure for development; between 0 and 0.8 there is a favorable financial structure but at the limit; between 0.8 and 2 there is a financial structure with imbalances to contain; an index greater than 2 means an unbalanced financial structure.

The analysis of the historic series shows that the company has an index between 0 and 0.5, this highlights the balance between the different sources of financing and therefore the solidity of the company towards third parties.

The analysis of the profitability of business management through the indices such as the R.O.E and ROI can be performed (Table 6).

ROE (Return On Equity) measures the percentage of recovery of equity through net income or, the measure of the return on the equity invested:

$$R.O.E. = \frac{NET\ INCOME}{NET\ CAPITAL} \times 100$$

The ROI (Return On Investment) measures the speed with which net investments are recovered and takes into consideration the operating income, that is the result connected to management (Capaldo, 1998).

$$R.O.I. = \frac{OPERATING\ INCOME}{NET\ INVESTMENTS} \times 100$$

Indexes of profitability	2008	2009	2010	2011	2012	2013	2014	2015	2016
R.O.E. [%]	337.8	31	55	66	163	37.20	47.85	38.3	32.2
R.O.I. [%]	36	35	37	32	52	45	9.6	10.8	13.1

Table 6. Results of Indexes of profitability (R.O.E and R.O.I.)

According to the indexes of profitability, relating to company data, it appears that both the global and operating net profitability are clearly positive.

We may then go on and examine the random determinants of the rate of return on the capital invested, breaking this down into its two components: the profitability of sales and the rotation of the capital invested.

The ROS (Return On Sales) profitability index is given by the ratio:

$$R.O.S. = \frac{OPERATING\ INCOME}{SALES} \times 100$$

Such index expresses the remunerative capacity of the flow of the operating revenues of the company in question (Bubbio, 2000)

The turnover index of the RCI invested capital is expressed by the ratio:

$$R.C.I. = \frac{SALES}{NET\ INVESTMENTS} \times 100$$

This index expresses the speed of the turnaround of the capital employed. From the calculation of company data we obtained (table 7):

Indexes of profitability	2008	2009	2010	2011	2012	2013	2014	2015	2016
R.O.S. [%]	12	10	9	7	11	6	9.93	10.73	12.22
R.C.I. [%]	295	355	418	471	467	742	96.65	100.96	107.47

Table 7. Results of Indexes of profitability (R.O.S. and R.C.I.)

ROS greater than zero shows that a part of the revenues is still available after covering all the costs related to the typical management; the RCI expresses in a very satisfactory way the renewal of the capital invested during the financial years through revenues.

Of course, this type of analysis is for individual companies taking into account all the peculiarities, specific situations and future prospects; nevertheless, the analysis carried out leads to firmly affirm that the company, in addition to enjoying a very prosperous structure from an economic point of view, has a strong solidity and financial stability.

The company has managed to create a successful economic system by focusing on the use of local raw materials and re-searching and making use of the best Sicilian aromas.

In this way, thanks to the variety of IGP products which can be found on the island, it was possible to adapt to the market, get to know consumer preferences, add new products to traditional products and create new products while trying to satisfy all palates.

The company brought the Born in Sicily brand around the world, making Sicilian agri-food products become popular.

Its economic success was achieved through the strategic commercial decisions. As a matter of fact, it displayed at the Manhattan exhibition, bringing its panettone overseas. From that moment the entrepreneur has managed to strengthen both the national and foreign customer network, creating relations with new distributors and creating commercial networks which allow you to increase the sale of your product.

The products stand out for the attention to detail, for the customization of their boxes and packaging, the labeling, the main visual communication tool used to catch the eye of the consumer and increase sales, as the image is another element that must be overrated within a competitive market made up of many imitations. The company is part of the district of the typical Sicilian dessert, and has participated in the construction of the Academy of Culinary Arts in Sicily.

The goal is to create a place where you can meet art and tradition, culture and cooking, where Sicilian kids can learn about the academic world of culinary arts with all its IGP products.

Another barrier which does not allow Sicilian entrepreneurs to succeed and forces them to remain enclosed in a local context is the fact that they do not team up, they do not create synergies, they do not cooperate, they do not make a system and all this leads to higher costs both for raw materials and industries and above all for human capital.

Therefore, this is the reason why companies are nowadays able to secure the cooperation of the best Sicilian food industries such as those involved in the production of pasteurized eggs in Ragusa, and have created relationships between producing farmers and transformers of manna in the Madonie territory.

This way, besides keeping the import costs of products low, they enhanced the Born in Sicily brand, and at the same time they offered employment and production safety to the food industries on which they make use of.

## 5. Conclusions

The agri-food system is made up of "all agricultural production activities, industrial transformation, distribution and consumption of food products". Thanks to a turnover of around 132 billion euros on a national level and about 33.4 million euros in the export market, the agri-food sector is the second largest sector in the manufacturing sector.

It developed thanks to the growth of the domestic demand: such development led to a qualitative evolution, due to the increase in the population and to social changes, as well as to the new lifestyles adopted by the Italians.

With the advent of globalization, the Italian agri-food sector

has become increasingly integrated with foreign markets and open to the new needs of global consumers. Thanks to the presence of high quality products and to processing industries, it is able to constitute a Made in Italy brand made up of excellent products which are also renowned abroad.

The agri-food sector, in recent years, has led to a return to the land, to the re-evaluation of food resources and the "know-how" of numerous operators who have also seen the involvement of the younger generations. They understood the usefulness of local products and saw a future in the creation of innovative agro-industries which are capable competing on national and international markets, enhancing local quality resources also for improving collective well-being.

In the Italian agri-food sector there is a strong presence of the food industries located in Southern Italy and among them are the agro-industries present in the Campania Region, followed by the Sicily Region.

In order to understand that this sector has become increasingly important in Sicily it is necessary to date back to the years following the economic and financial crisis (2008-2009). As a matter of fact, these Sicilian industries have increased and stand out worldwide for the excellence and high quality of Born in Sicily products.

As Sicily ranks second for the presence of agro-industrial companies, many young people should be encouraged to re-evaluate local products, protecting the Born in Sicily brand, and invest in the agro-food sector, precisely to increase employment on the island.

An encouragement to start up food industries in Sicily is given by the fact that, first of all, there is the presence of several high quality raw materials to be transformed and then, because tastes and habits that enhance values and products are spreading in many countries of the Mediterranean diet. Despite the period of the crisis, there was a propensity to consume high quality products, of guaranteed origin and also organic ones such as fish, fruit and vegetables, bread and cereals, reducing the consumption of oils and fats.

And it is precisely for these reasons that, in recent years, the most prudent Sicilian companies have started some significant internationalization processes, as they have realized that from a production and turnover point of view they have obtained positive results which, consequently, have impacted on employment growth.

From an international point of view, the confectionery sector has managed to conquer European countries such as Germany, France, the United Kingdom, Holland, but trade in the USA and Japan is also very important.

The levels reached in terms of turnover are due to the fact that in recent years the confectionery industry has managed to acquire an important role within the agri-food sector thanks to the creation of a finished product, or rather dessert, created with a selection of excellent Italian raw materials such as flour and other fine quality ingredients and among the main products exported are cocoa-based desserts, the production of biscuits and pastries and bakery products.

The success of the company, which was born as a family business, is due to the presence of specialized and qualified human resources in carrying out their work in production, logistics, distribution, packaging but also in the implementation of marketing strategies.

The company not only focuses on human capital, but also on product and industrial innovations, by creating relationships with

international partners often met during trade fairs so as to increasingly intensify their exports.

It has a steadily growing turnover of 11 million euros or 35% of which is exported abroad.

The company's products can be found in America, Australia, Russia, Europe, and also at a mall in Dubai.

This company is considered a solid and interesting point of reference and for the Sicilian agro-industries that would like to implement internationalization processes, because it is only through the export of their products that success can be achieved.

In order to do so, you need to believe in your own skills, in the product you have created and you must participate by investing in human capital, in innovations and in cooperation with other companies.

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## Organizational Intelligence Assessment: The Experience of a Multinational Construction Company

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### Abstract

*Emotional Intelligence (EI) was defined in the 1990s as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990). Since then, the EI has become increasingly important and a debate has opened on the possible classifications, measurement methodologies and applications of the EI. The emotional skills of the EI are widely used in the workplace and constitute the "Organizational" EI. The skills of the Organizational EI can be assessed with the Emotional Intelligence Organizational Questionnaires (ORG-EIQ). In our study, we decided to evaluate the organizational EI in a multinational construction company. In particular, the difference between the employee's self-assessment scores (measured with the ORG-EIQ) and the hetero-assessment of the colleagues and the company's CEO (measured with the ORG-EIQ 360°) was analyzed. The results showed that more objective data on the worker EI emerged from the comparison of self and hetero evaluation. The study confirmed the importance of organizational EI in the workplace and the need for valid tools for its assessment.*

**Keywords:** emotional intelligence; organizational psychology; workplace; occupational health; construction.

### 1. Introduction

The concept of Emotional Intelligence (EI) was defined in 1990 by Salovey and Mayer as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990). Authors argued that people with high levels of EI could accurately perceive certain emotions in themselves and others (eg. anger, sadness), and regulate feelings in order to achieve a range of adaptive outcomes or emotional states (eg. motivation, creative thinking). Researchers have since opened a heated debate on the most comprehensive definition and the best way of classifying EI (Joseph and Newman, 2010). This debate led EI research to three main divergent paths:

- *Mental ability model* that focuses on mental and cognitive abilities and deal EI as a standard intelligence such as the Four Branch Model of EI of Mayer et al. (2000);
- *Mixed model* that mixes mental abilities with personality attributes and competencies for the EI's construction (Bar-On, 1997; Goleman, 1998);
- *Trait model* in which EI consists of four components (well-being, sociability, self-control, and emotionality) (Petrides, 2016).

#### 1.1. Mental ability model

In the first model, EI is included among the cognitive skills for the elaboration of the emotional interpretation and the adaptive

regulation of emotions. These abilities form the Four-Branch Model:

1. Perceive emotions in oneself and others accurately;
2. Use emotions to facilitate thinking;
3. Understand emotions, emotional language, and the signals conveyed by emotions;
4. Manage emotions to attain specific goals (Mayer and Salovey, 1997).

The Four-Branch Model is measured by Mayer-Salovey-Caruso EI test, or MSCEIT (Mayer, 2002). Ability-based measures are also valid predictors of a range of outcomes including work related attitudes such as job satisfaction and job performance (O'Boyle, 2011).

#### 1.2. Mixed model

The mixed model conceptualizes EI as a complex construct, including some aspects of personality, and the ability to perceive, assimilate, understand, and manage emotions, as well as emotional competencies (Boyatzis, 2008). These models refer to EI as emotional "competence", which embodies emotional, personal and social abilities fundamental for effectively facing environmental requests (Bar-On, 1997). Mixed models also regard motivational factors and affective dispositions with an increasing importance of components such as self-awareness, personal motivation, empathy and the capacity to manage relations (Goleman, 1998). Research on mixed measures have found them to be valid predictors of multiple emotion-related outcomes including job satisfaction, organizational commitment, and job performance (Miao, 2017). The

mixed model is based on two historical samples created by important personalities for the EI: Reuven Bar-On and Daniel Goleman.

### *The Bar-On model*

According to the multifactorial construct of Reuven Bar-On, EI is characterized by a set of skills and competences that influence the individual's response to environmental issues. Bar-on introduced the term "Emotional Quotient" (EQ) defining it: a set of personal, emotional and social skills and other skills that allow an individual to meet their needs. Bar-On's Emotional Quotient Inventory is one of the most important EI tests. It includes 5 macro dimensions composed of 15 essential components:

- ❑ Intrapersonal dimension (self-consideration, emotional self-awareness, independence, self-realization, and assertiveness);
- ❑ Interpersonal dimension (empathy, social responsibility, and social relations);
- ❑ Adaptability (reality check, problem solving and flexibility);
- ❑ Stress management strategies;
- ❑ Motivational factors and moods.

Bar-On states that the best way to assess an individual's "total" intelligence and possibilities of "success" is with Q.E. and the Q.I. which actively contribute to the explanation of the behavior (Bar-On, 2000).

### *The Goleman's model*

Goleman defines EI as "the ability to motivate ourselves and to insist on achieving a goal despite the frustrations; to control impulses and postpone gratification; to modulate personal moods and avoid suffering blocking reasoning; and, again, the ability to be empathetic and to hope". Goleman proposed that emotional ability is learned through experience and is based on the IE. Our EI is composed of 5 main dimensions: self-knowledge, motivation, self-control, empathy, and interpersonal skills. Having a high level of EI does not automatically guarantee us the domain of emotional skills but offers us the potential to develop them. Emotional skills are divided into two groups: social and personal. The skills required for success can vary to different degrees depending on the hierarchical position that the subject holds in a multinational company (Goleman, 2001).

## 1.3. Trait model

The trait EI model recently captured research attention (Davis, 2014; Andrei, 2016). Trait EI has emerged as a negative predictor of work-related distress. Probably, trait EI is negatively related to secondary traumatic stress and burnout via a reduction in unhealthy coping behaviors, rather than an increase in healthy coping ones. Training programs should be implemented with focus on trait EI (Espinosa, 2019).

## 2. Organizational Emotional Intelligence

### 2.1. A new theoretical model

EI has aroused increasing interest in the workplace; the ability to manage one's own and others' emotions, added to cognitive skills, can be an important predictor of work performance. McClelland (1973) and Boyatzis (1982) first hypothesized that individuals with superior "soft competencies" would be more successful. Several literature reviews with meta-analysis confirmed a positive association between EI and job performance (O'Boyle 2011, Joseph and Newman 2010). High levels of IE are linked to success in the workplace and achieving a balance between work and family (Sjoberg, 2008). EI helps employees successfully deal with professional stress and bullying in the workplace (Giorgi and Majer, 2008). Managers with high EI are healthier and cope better with workload and conflicting demands (Slaski, 2002; Martins, 2010). Schutte et al, in their meta-analysis, found that EI has the crucial function of

moderating health with a positive perception of the organizational climate in the workplace. Workers, through high levels of EI, can effectively communicate their ideas, objectives and intentions in an assertive way, involving and motivating their colleagues (Schutte, 2007). EI becomes a component of the employee's psychological profile and must be related to the organizational aspects of the work environment. EI can predict various types of work-related outcomes such as: academic performance, job performance, organizational citizenship behavior, workplace deviance, leadership, life satisfaction, stress, team process effectiveness, and work-family conflict (Ashkanasy, 2002; Gooty 2010; Humphrey, 2013; Kellert, 2006; Klumper, 2013; Winkel, 2011). However, the relationships between EI and work attitudes remain indeterminate and unclear. Moreover, a positive effect of EI on organizational issues should be considered especially for those organizational and personal variables known to influence job performance, such as sociodemographic factors, workload, job support, and leadership (Kowalczyk and Krajewska-Kulak, 2015; Kowalczyk, Krajewska-Kulak and Sobolewski 2019)

Job performance and job satisfaction are important work attitudes linked to EI that must be considered in the workplace. Several studies confirmed that EI is important in job performance (Boyatzis, 2011). Cherniss also reported that mixed models may have greater predictability on performance because they use self-report measures that may better capture the emotions that employees are feeling in the workplace (Cherniss, 2010). O'Boyle et al. examined how each type of EI measure correlated with Big Five personality measures and cognitive ability and found that all three models of EI are correlated with job performance. Self-report EI and mixed EI exhibited incremental validities over and above cognitive intelligence and the five factor model (FFM) of personality in predicting job performance (Wong, 2004). All the three models of EI showed meaningful relative importance for the prediction of job performance in the presence of the FFM and cognitive intelligence (O'Boyle, 2011). Job satisfaction is one of the most influential, important, and popular constructs in organizational psychology because it is a predictor of many critical health and occupational outcomes (Judge, 2012; Schleicher, 2011). The attitudinal definition of job satisfaction has both affective (emotional) and cognitive (belief) bases (Fisher, 2000; Weiss, 2002). The affective base of job satisfaction refers to one's feelings about an attitude object, whereas the cognitive base of job satisfaction refers to one's beliefs about an attitude object. This conceptualization of job satisfaction is related to the goal setting theory. This theory suggests that job satisfaction depends on achieving job goals (Schleicher, 2011). Among the various dimensions of EI proposed, Giorgi et al decided to create a new model of specific skills for organizational life in the workplace (Giorgi, 2012).

### 2.2. Organizational Emotional Intelligence Questionnaire (Org-EIq)

Authors used an empirically derived model of EI: Organizational Emotional Intelligence Questionnaire (ORG-EIQ) (Giorgi and Majer, 2009). The ORG-EIQ includes 4 EI competencies (self-awareness, self-management, social awareness, and relationship management) and 12 sub-competencies. Emotional competency includes the following aspects:

- ❑ Self-awareness: awareness of our limits, emotional states and potentiality at work;
- ❑ Self-management: capacity to dominate our inner state, impulses and to use our resources for the best job performance;
- ❑ Social competency: capacity to feel empathy, thus to understand the feelings, experiences and interests of other employees or customers;
- ❑ Relationship management: capacity to induce desirable responses in others.

All the items are related to emotional competencies specific for the workplace and are designed for the use in organizations. The questionnaire is multifactorial and can be administered individually or in groups. The test consists of 99 items evaluated with a Likert scale from 1 to 5, where 1 stands for "very rarely/ never true", and 5 stands for "very often / always true". The administration time varies from 10-30 min. Strong features of the test are: high reliability, face validity and speed of administration. The data obtained can be used for: the evaluation and selection of personnel, orientation and career guidance, skills assessment, staff training and development, organizational diagnosis activities. The test is also associated with the contextual performance and the positive perception of the organizational climate. The ORG-EIQ has the potential for organizational diagnosis and evaluation/assessment of relational skills in organizations.

### 2.3. The relations between the ORG-EIQ's competences

Giorgi and Majer define emotional competence as: "an individual characteristic linked to work excellence, on the side of effective performance in a task or situation and/or on the side of creating virtuous circles within the organizational context" (Giorgi e Majer, 2006). The first competency of OR-EIQ is self-awareness, which includes emotional self-awareness, intrapersonal and self-confidence. Self-management, the second competency, includes emotional self-control, adaptability and eagerness. The third ORG-EIQ competency is social awareness, which includes empathy, organizational awareness and service orientation. The last ORG-EIQ competency is relationship management, which involves leadership, the ability of catalyzing change and fostering collaboration and teamwork. The authors considered relationship management the most important ability among the other EQ competences. According to this view, individual can be aware of his/her emotions, but not able to manage relationships in specific contexts and therefore possibly not able to work fully with EI. Wheeler et al in their longitudinal study found that competency development is enhanced when people are able to work with multiple relationships and to build relationships (Wheeler, 2008). Personal experiences, exposure to positive and negative role models, and feedback contributed to greater awareness of interpersonal abilities (Dreyfus, 2008). However, practice was the most important factor for the correct use of emotional abilities. A good relationship management brings to learn better social skills and induce desirable responses from colleagues. This also might stimulate a deeper and realistic self-management and self-awareness. Influencing other's emotions is necessary for employees to develop high quality intrapersonal relationship with them and might contribute to the development of social awareness. In turn, people with high levels of social awareness could better deal with problems and avoid the rigidity of self-management. Individuals that want to increase their self-management skills can better use emotions by improving decision-making, self-confidence, and self-awareness. These skills, if well applied to the working environment, increase worker productivity and satisfaction. A correct assessment of the skills in the workplace makes it possible to optimize the division of tasks. The set of skills selected to evaluate individuals is applicable in most organizations.

### 2.4. Analysis of ORG-EIQ's competences

#### 1. Self-Awareness

Awareness of emotions, limits and abilities that allows the individual to make the right decisions in the organizational area. The skills are:

- ❑ **Self-awareness** (7 item): recognize emotions and their effects on behavior. A self-awareness worker can understand own emotions and their consequences on his job performance. Without this competence the subject

has difficulty in interpersonal relationships and organizational decisions.

- ❑ **Self-confidence** (4 item): have high self-esteem linked to work. This competence ensures a high level of work performance. Self-confident workers can overcome work-related problems because they believe in own abilities. Those who lack this competence have little motivation, low self-esteem, and consequently poor performance.
- ❑ **Intrapersonal** (6 item): knowing how to express feelings, communicating one's needs and making decisions in relationships at work. Workers with this competence express their ideas firmly and show leadership skills in decisions. Low scores indicate a lack of firmness in decisions, little conviction and / or difficulty in opening to colleagues.

#### 2. Self-management

Self-management allows the control of impulses without affecting work negatively. This competence makes the subject flexible and adaptable to the working context. The skills that are part of this aspect are:

- ❑ **Emotional self-control** (6 items): manage emotions effectively. Self-control allows you to be efficient in difficult situations, manage responsibilities, fulfill commitments with a good level of performance. Impulsiveness, on the other hand, is counterproductive in the workplace.
- ❑ **Tenacity** (6 items): ability to pursue one's goals despite the difficulties. Those who get a low score tend to be discouraged and therefore compromise their job performance.
- ❑ **Adaptability** (6 items): ability to cope with changes. Adaptable subjects overcome problems easily. A low score in this skill means having difficulty changing and adapting to new situations.

#### 3. Social competency

These skills relate to the individual's ability to have social relationships in the workplace. The skills that are part of this area are:

- ❑ **Empathy** (7 items): it is the ability to perceive the feelings of others. Perceiving how the interlocutor feels leads to more effective interaction. Low scores indicate difficulties in listening and being available to others.
- ❑ **Customer orientation (internal / external)** (8 items): welcome the customer appropriately. An individual with such competence has a good relationship with the client. Those with low scores see the client as someone they can manipulate.
- ❑ **Organizational awareness** (3 items): it is the ability to understand the company's social and political dynamics. Understanding the formal and informal structure of the organization, such as alliances and rivalries, helps the individual to better understand the problems and make decisions. The lack of organizational awareness leads to failure to achieve the objectives.

#### 4. Relationship Management

This dimension concerns knowing how to lead others to better performances. The major skills involved are leadership and cooperation. This competence is very important for managers, but also for lower hierarchical positions. The features included are:

- ❑ **Teamwork** (6 items): ability to collaborate and cooperate to achieve the goal. A low score leads to a lack of sense of collaboration and selfishness (Moriarty, 2003).
- ❑ **Leadership** (7 items): the ability to guide an individual or an entire group of people. Leaders manage the company and can inspire members with positive energy and authority (Antonakis, 2009). A low score indicates an inability to manage power in the group (Dulewicz, 2005).
- ❑ **Catalyst of Change** (3 items): knowing how to manage business changes with productivity. These individuals

face change with flexibility and serenity. A low score means having poor aptitude for handling difficulties.

## 5. Organizational / Emotional Intelligence Facilitators

These facilitators are very important for understanding EI in ORG-EIQ and are:

- ❑ **Results Orientation** (6 items): the desire to continuously improve personal work performance. Low scores indicate demotivation and cause disappointing results in the workplace.
- ❑ **Life Balance** (6 items): ability to maintain a balance between working life and private life. Individuals who don't have this balance don't have personal growth.
- ❑ **Stress Tolerance** (6 items): ability to manage stress related to responsibilities and work-related problems. A low score leads to greater susceptibility to work-related stress (Lam, 2002).
- ❑ **Mood** (6 items): have optimism and be satisfied with your job performance. The optimist has great self-esteem and manages to be energetic and motivated. On the contrary, pessimists feel powerless, and consequently suffer more from work-related stress.
- ❑ **Positive Impression** (6 items): the impression that the individual has of himself. It is important because it identifies those who overestimate themselves.

## 3. The 360° application of ORG-EIQ: evaluation, training and potential

### 3.1. The Training

Goleman's model explained that EI can be acquired through life experience and improved with adequate training. EI training will have a positive impact on the company because:

- ❑ increase employees' awareness;
- ❑ increase the concordance between the organization's variables;
- ❑ increase professional satisfaction;
- ❑ promote competent and intelligent behavior.

The promotion of an IE culture becomes important for the well-being of workers and the productivity of the company. The IE training must be valid, reliable, and scientifically verified so that the worker can develop their emotional skills and abilities. Giorgi and Majer propose a specific training model for the workplace (Training on Organizational Emotional Intelligence). The training model includes 4 steps:

1. **Building influence**: in this phase the goal is to increase the level of IE in interpersonal skills, which allow the maintenance of relationships. This aspect allows improvement in areas such as leadership, communication, negotiation and assertiveness.
2. **Building empathy**: training is based on seminars to increase awareness of strengths and weaknesses in the sphere of empathy and orientation towards the internal / external customer.
3. **Emotional navigation**: this step aims to vent hidden and repressed emotions (sadness, anger, excitement) through exercises. The trained individual must release emotions and manage them by stimulating thought and creativity. This regulation helps the individual to overcome moments of crisis in an intellectual and creative way.
4. **Emotional authentication**: it exercises to evaluate whether emotions and actions are productive and influence emotions and behaviors. This passage aims to clarify decisions made unconsciously and make them rational.

### 3.2. Performance evaluation

The assessment of a worker's productivity in the past concerned the "what" he achieved while now the "how to do" has become more important. This new aspect includes a range of variables that influence and determine performance. To make

the data more objective, in addition to the self-assessment questionnaire and the grids, Giorgi and Majer added the 360°Org-EIq: an hetero-evaluation test in which the worker's skills are assessed by colleagues. The average of the scores obtained through the hetero evaluation is compared with the employee's self-evaluation data. This analysis eliminates the methodological bias related to self-report. The researchers believe that the scores from the superiors on the subordinates are important. The use of 360° is used for: training, selection, development, etc. The rating discrepancy, due to a lower performance and motivation, is used to manage an intervention to improve the employee's attitude. Possible outcomes are:

- ❑ Overrating (self > observer);
- ❑ Underrating (self < observer);
- ❑ Agreement (self = observer).

### 3.3. Evaluation of the Potential

The "potential" is the set of skills that will be activated if the worker changes jobs in the future. "Potential assessment" are activities to understand latent or unexpressed abilities not required by the current position. (Majer and Farinella, 2010). This evaluation aims to: identify potential for managerial positions, formulate individual development hypotheses to address mobility needs and build a map with all the resources or characteristics to facilitate the medium / long-term strategies of the company.

## 4. ORG-EIq: The experience of a multinational construction company

### 4.1. Aim of the study

The aim of the study was to assess the EI among the employees of a multinational construction company. In particular, the results of the employee's self-evaluation were compared with the hetero evaluation by colleagues and the superior. Crossing the employee's subjective results with an external evaluation was essential to have an objective and realistic analysis of the skills of the organizational EI within a large company.

### 4.2. Sample

The study involved a total of 64 managers from a multinational construction company. The participants were divided into 5 groups based on the hierarchical scale. The first group (n = 16) included high-profile management figures. The second (n = 12) and the third (n = 13) represented the middle management of the industrial area. The third (n = 13) and the fourth (n = 10) concerned the commercial and technical figures with operational and managerial roles. The company's CEO also participated in the study by completing hetero-evaluation questionnaires on subordinate employees.

### 4.3. Measures and procedure

The Org-EIq questionnaire was used for the self-valuation of EI's competencies while the Org-Eiq 360° was used for employee's hetero-valuation by colleagues. The tests were administered to workers during training days organized by the company. General information on the test were given before the compilation started. The administration time of each test was 20-30 minutes. The hetero-evaluation test was administered to the company's CEO for the evaluation of the first company lines. In addition, each subject completed the hetero-assessment test for two colleagues.

### 4.4. Results

The scores of the self and hetero-evaluation texts have demonstrated the existence of different probabilities:

- ❑ self-evaluation and hetero-evaluation scores coincide;
- ❑ self-evaluation and hetero-evaluation scores do not match;
- ❑ self-evaluation and hetero-evaluation scores partially coincide.

The following are the real examples of comparison between self and hetero evaluation.

*Subject X: the scores between self-evaluation and hetero evaluation coincide*

Subject X scored well in relationship management skills, demonstrating that he knows how to work in a team to achieve objectives and that he can inspire colleagues' work positively. In particular, he obtained a good score in the change catalyst item which means having a flexible and adaptable personality. In self-awareness, Subject X scored lower, despite self-confidence and good leadership skills. In self-management he scored high by colleagues compared to self-evaluation. Colleagues called him empathetic and capable in organizational awareness. EI facilitator scores are similar between self and hetero evaluation. Subject X in general has a good opinion of himself and is confirmed by colleagues.

*Subject Y: the scores between self-evaluation and hetero evaluation do not coincide*

The self-assessment and hetero-evaluation scores of Subject Y do not coincide. In particular, on the basis of the questionnaires compiled by colleagues, it seems that Subject Y has overestimated his skills. The only item in which she scored well by colleagues was stress tolerance. This figure was confirmed by positive results also in the emotional self-control. In general, the scores between self and hetero-evaluation do not coincide and are against the competences of Subject Y.

*Subject Z: the scores between self-evaluation and hetero evaluation partially coincide*

The self and hetero-evaluation scores of Subject Z are similar. The Subject Z is lacking in almost all items except for leadership and organizational awareness. A good leadership ability in the absence of team working outlines an individualistic personality. Subject Z focuses heavily on achieving the goal without however considering the work and emotions of the other colleagues. The empathy item scored very low in the hetero evaluation. The organizational awareness score was good even if the customer consideration with customer orientation was very bad. Despite the poor results of the hetero-evaluation, Subject Z shows positive in life balance and mood.

*Subject A: conflicting between self-evaluation and CEO's hetero evaluation*

The CEO's scores except on the self-confidence factor greatly reduces the self-assessment score of subject A. Subject A was overestimated based on the average of 14 hetero-evaluation questionnaires made by colleagues. Subject A attributes good leadership but is not confirmed by the scores obtained from the hetero evaluation. Subject A has low leadership skills, little influence in other members and is unable to manage power. Team scores also don't match between AV and EV. The individual is unable to team up and does not share merit with others. Subject A tends to be impulsive and impatient. He has poor adaptability, empathy and service orientation. Even in the facilitators of EI in the Org-Elq it has low scores.

## 5. Discussion and Conclusions

EI has long been studied and is still object of debate (O'Connor, 2019). The Organizational EI model proposed by Giorgi and Majer represents a valid model for testing EI's skills in the workplace (Giorgi, 2013). The 4 macro areas include the skills necessary to achieve maximum job performance and job satisfaction. The experiment conducted in this study and the comparison between self and hetero evaluation, underlined the importance of objective methods for the evaluation of the

organizational EI (Podsakoff, 2003). In fact, if we consider only the subject's self-evaluation, the risk is to overestimate or underestimate his abilities. The hetero evaluation by colleagues, also with the intervention of the CEO, allows to have a more complete picture of what is the organizational EI of the subject. The emotional and organizational skills are increasingly strategic in companies. Subject A is the most particular case of all the research, because his difficulties have been highlighted by the entire group, including the CEO. These findings add to the growing number of studies and suggest that EI is a key component accounting for individual success (Fredrickson, 2005). The importance of EI within the organization not only aims to make the organization smarter, but also to preserve the health of the worker, who often endures stress, bullying and other phenomena that create emotional imbalance. This aspect could be of special importance to prevent both health and organization consequences especially in those workers known to be particularly exposed to work-related stress, such as healthcare workers (Kowalczuk et al. 2018; Kowalczuk, Krajewska-Kułak and Sobolewski, 2020). Moreover, giving the influence of organizational EI on the cognitive performances, the improvement of this ability could help to adequately manage performance decrease in those working populations more prone to develop a cognitive impairment due to organizational issue, such as an elderly population (Giorgi et al., 2020). A management strategy including OEI improvement, also coupled with other positive organizational attitudes such as a good job support (Lecca et al., 2020) and a good intrapreneurial self-capital (Alessio et al., 2020) could represent a successful approach to face the challenges offered by the deep changes of the workplace.

The innovative methods used in this research must be a stimulus for companies' training companies. This study also confirmed how important are the relationships between skills. Social awareness is very important for developing employees' relationship management. As a result, social awareness might be enhanced. Furthermore, when employees work with social awareness, they may consciously decide that it is worth applying these social skills because it helps them to perform and manage better in a job. This could facilitate a development in self-management. Finally, these effects might stimulate a deeper self-awareness because employees understand how self-management contributes to their job. Recently EI has assumed growing interest in healthcare companies. Several studies have studied emotional skills in nursing or medical staff (Al-Hamdan, 2019; Pérez-Fuentes, 2019). Coskun found that EI and leadership traits play crucial roles in increasing physicians' personal and professional development. This may also increase physicians' caregiving competencies and thus the quality of health services, as well as potentially decreasing physicians' burnout and health-related costs (Coskun, 2018). The correct assessment of Organizational EI therefore represents an important challenge since it has important repercussions on both the productivity of the company and the well-being of the worker.

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## Commercial and Budget Organizations' Staff Motivation Systems in the Russian Health Care Sector: Comparative Analysis

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### Abstract

*Modern organizations in the health care industry cannot develop without effective staff motivation systems, which must be constantly improved under the influence of economic and political conditions. Today you can buy a competitive product on the market, but you cannot buy competitiveness and incentives for it. Therefore, domestic organizations in the health care sector have to independently search for the most suitable and effective methods of encouraging employees. Monetary incentives are the most widely used today. But under the conditions of developing market relations and increasing competition, the use of material motivation methods only leads to a decrease in the competitiveness of products and services, as well as to dissatisfaction of the staff non-material needs. Failure to take into account non-material needs, can lead to a decrease in the interest of employees in this labor activity and, as a result, to deterioration in the quality of work, climate in the team, and workers leaving the organization.*

*Identification and satisfaction of non-material needs is a powerful mechanism for stimulating employees, providing a high level of their interest and satisfaction with labor activity, reducing costs and increasing efficiency. Competitive analysis of the existing large commercial and budgetary organizations' staff motivation systems in the health care sector allows identifying problems in working with personnel, assessing the possibility of borrowing certain staff simulation methods, and identifying ways of staff motivation system and working conditions improvements in these organizations.*

**Keywords:** work motivation; staff stimulation; working conditions; motivation system improvement; professional development; material and non-material motivation mechanisms; work satisfaction.

### 1. Introduction

Human resource management and employee motivation are key factors for the success of any organization. According to many researches (Adair, 2012; Bazarov and Eremina, 2014; Ilyin, 2013; Klechch, 2014; Ritchie and Martin, 2012; Hersberg, Mausner and Snyderman, 1963; Yakovleva, 2012; Vereshchagina and Karelina, 2012) an effective motivation system can reduce the rate of staff turnover. It can also increase staff efficiency and quality of work, as well as give a sense of significance to each team member for the whole organization, which enhances their loyalty and commitment.

The presence of non-material incentives system in organizations can be a factor no less effective than high wages. The range of non-material motivation programs is very wide. The unique set of such programs will be most effective for each company. A distinctive feature of non-material incentives programs is that the program can bring a significant motivational effect, often at a relatively low cost. It can also help to increase employee interest in working in the company, and the desire to put more efforts into activities. It is well known that compulsion is ineffective in solving management problems and achieving results. Therefore, it is necessary to develop a motivational mechanism (Armstrong, 2012; Bergir et al., 2013; Boselie et al.,

2003; Kuznetsov, 2013; Malenkov, 2013; Morgunova, 2012; Peccei, 2004; Speransky, 2014).

Analysis of research in the field of staff motivation systems for health care organizations (Volovets, 2012; Gaidarov et al, 2012; Zakharov, 2014; Knyazhev et al, 2014; Kibanov and Durakov, 2013; Kibanova, 2013; King, 1970; Kaznachevsky, 2012) showed, that often a lack of funding for motivation programs leads to dissatisfaction with work, affects the quality of employees, and reduces their commitment to the organization.

This work is devoted to the important topic of improving the staff motivation system, also in case of a limited budget.

The subject of the study is the process of staff non-material and material motivation, as well as specifics of working conditions and working with personnel.

This work studies the commercial affiliate of a foreign manufacturer of medical equipment and medical devices in Russia and the CIS based in Moscow, and a large federal budget research and clinical center based in Moscow. The research and clinical center includes institutes, administrations, laboratories, departments, clinics with treatment and diagnostic and auxiliary subdivisions, administrative economic and engineering services, and other structural units.

The purpose of the work is to study the existing motivation system in medical organizations with various sources of

financing. Improvement of staff motivation system of the organizations under study and their working conditions will be proposed on the basis of the results obtained.

In accordance with the goal, it is necessary to solve the following tasks:

1. Analyze the theoretical approaches to the study of the staff motivation system;
2. Study the internal and external environment of the selected budget organization and commercial company, taking into consideration their organizational structure;
3. Investigate existing systems of staff motivation and identify the shortcomings of these systems in the organizations under study;
4. Suggest directions for improving the system of staff non-material and material motivation, taking into account the identified shortcomings.

The results of the study can be used by the management of the organizations under study in order to improve the existing staff motivation system and working conditions, as well as by the leaders of other medical organizations that have different sources of financing activities. It is expected that it will lead to a reduction of conflicts within the team, an increase in the speed of information transfer through communication channels, strict observance of moral and ethical standards, significant decrease of labor discipline violations, reduction in complaints from clients / patients, timely completion of the assignment and a decrease in staff turnover.

## 2. Methodology

The motivation system in the organization can be divided into two large groups – material and non-material. Non-material motivation is developed for each company individually and is a necessary addition to the system of material incentives to labor. Moreover, the motivation system in a company cannot be universal for all employees.

It is necessary to take into account the principles of building a motivation system in order to maximize the effects of incentives:

1. Availability. The conditions for obtaining the incentive should be well known and understood by the employee.
2. Perceptibility. There is a threshold for the incentive effectiveness. The reference to the concept of "ultimate usefulness" will be appropriate here. For some workers, an incentive of one thousand rubles may be sufficient. For others, this will not be enough.
3. Gradualness. Material incentives are subject to constant upward correction. It is not allowed to reduce the level of material incentive, no matter how high it may be. Unfortunately, this is one of the weakest motivation points in Russia (Negashev, 2012).

The experience of Russian companies shows that a number of difficulties may arise when developing a motivation system, namely:

1. Definition of methods influencing the performance of employees. Due to the individuality of the motivation system for each person, the set of needs can be the same, but the relevance and strength of different motives is different for everyone.
2. Development of a motivation system in a company. It is very difficult to build a motivation system that takes into account the needs of all team members.
3. Instability of the motivation system. Any motivation system works for some time – part of the needs is met and then the system loses its initial effectiveness and attractiveness (Ashirov, 2012).
4. Monitoring the motivation system. The motives and expectations of employees change, thus previously working motivation tools may stop working over time.

Each group of non-material motivation includes a considerable number of tools. Let us review the tools of the motivation

system used in Russian and Western companies. The most popular and frequently used tools of the motivation system are presented in Table 1.

Tools	Components
Working conditions	Place of work Equipment Overalls Security Transport provisioning Mobile connectivity Internet access Food Sports facilities Schedule
Social support	Medical insurance Retirement insurance Crediting Material help Vacation packages Product discounts
Corporate culture	Organization of work, clear distribution of responsibilities Decision making mechanism Work standards Performance evaluation Leadership style Clarity of internal and external communications Ease of conflict resolution Attitude Attitude towards the organization as a whole Corporate identity (unified style) Contests and competitions Corporate traditions and holidays
The possibility of self-realization	Professional and career development Decision making capability Participation in management Training Internships Fostering innovation

Table 1. Non-material and material motivation tools

In the course of this work, it was revealed which tools of material and non-material motivation are used in the organizations under study with the help of employee questionnaire surveys.

Data was obtained on what elements of material and non-material incentives are available in the organization and degree of employee satisfaction with a particular component. Therefore, we were able to identify the effectiveness of this motivating component, which is implemented in the organizations under study.

In the questionnaire, it was proposed to evaluate a number of motivation tools used in organizations. The survey involved 80% of the employees of the representative office of a foreign company. These were specialists from structural units aged 23 to 40, of which 68% were women, and 32% were men. The average age of the respondents was 31 years. In the budgetary health organization, 82% of employees were interviewed. Of these, 60% were women and 40% were men aged 23 to 49 years. The average age of the respondents was 34 years.

Efficiency of different motivation tools was compiled depending on the percentage of respondents who indicated one or another component of the motivation system as being effective. If 80 to 100% of employees believe that a specific tool of the motivation system deployed in the organization allows to work more efficiently and motivates them, then it was believed that this is an effective use of the motivating tool. If 50 to 80% of employees indicated that a specific tool, action or organizational feature motivates them in their daily activities, such a tool was assessed as used with medium efficiency. From 20 to 50% of positive responses were regarded as low efficiently used motivating tool. And from 0 to 20% was considered as an ineffective use of a motivation tool. Thus, by interviewing most of the employees of the organizations under study, it was

possible to obtain important data on the deployed tools of motivation systems and how much, in the opinion of employees, these tools affect their work.

### 3. Results and Discussion

We came to the conclusion what problems exist in the motivation system of the organizations under study assessing different ineffective and not very effective factors. Summary data on the degree of effectiveness of the introduced factors of the motivation system in the organizations under study is presented in Table 2.

We obtained significant differences in the health care organizations under study based on the 26 factors of material and non-material motivation that we identified as affecting the efficiency and productivity of employees.

Differences in the number of highly effectively used, medium

effectively used, low effectively used, ineffectively used and not used motivation factors in the organizations under study are shown in Figure 1.

The figure shows that highly unsatisfactory situation with staff motivation was revealed in the representative office of a foreign company in Russia and the CIS. Employees motivation to work effectively is pretty low. Also they are not satisfied with their work. This conclusion is also confirmed by the fact that over the past 5 years the team has been renewed by more than 80%. It is well known that high staff turnover is a consequence of low motivation and low employee satisfaction. In this case, we proposed a number of measures that, in our opinion, will be able to stabilize the situation in the company.

We believe that it is necessary to introduce an additional staffing unit, which would report directly to the head of the representative office. The new unit will focus on working with staff, better understand their needs, and will have necessary capabilities to achieve the goals.

Grouping of factors according to the degree of effectiveness of use in the organization	The name of the motivation system factor	
	Representation of a foreign company in Russia and the CIS in Moscow	Federal Budget Scientific and Clinical Center in Moscow
Highly effectively used factors of the motivation system	Health insurance / medical coverage Transport provisioning, convenient location of the office / scientific and clinical center, availability of parking for employees, free bus from the metro	Workplace equipment, availability of places for rest Meals (availability of a dining room / compensation for meals) / Sports facilities Decision-making mechanism, work standards / Satisfaction with their work and the result of their activities in general Training, useful internships
Medium effectively used factors of the motivation system	Meals (availability of a dining room / compensation for meals) Sports facilities	Fair wages and fair premiums Material assistance / Partially or fully paid vacation packages for employees / employees' children Organization of work, clear distribution of responsibilities, understanding of one's role / Evaluation of the effectiveness of leadership activities, leadership style Internal and external communications Ways to resolve conflicts, microclimate in the team / Attitude towards the organization as a whole, loyalty to the company / Corporate traditions and holidays Professional and career development / Promotion of innovation, the possibility of self-realization Health insurance / medical coverage
Low effectively used factors of the motivation system	How well the workplace is equipped, availability of places for rest Fair wages and fair premiums Mobile Compensation Office Internet for personal use Ways to resolve conflicts, the microclimate in the team / attitude to the organization as a whole, loyalty to the company	Transport provisioning, convenient location of the office / scientific and clinical center, availability of parking for employees, free bus from the metro station Office Internet for personal use Convenient work schedule / flexible schedule options The ability to make independent decisions, participate in management
Ineffectively used factors of the motivation system	Convenient work schedule / flexible schedule options Organization of work, clear distribution of responsibilities, understanding of their role Decision-making mechanism, work standards / Evaluation of management performance, leadership style Internal and external communications Satisfaction with their work and the result of their activities in general Professional and career development The ability to make independent decisions, participate in management Training, useful internships / Stimulating innovation, the possibility of self-realization	
Motivation system factors not used in the organization	Employee loans / special conditions from the organization Material assistance / Partially or fully paid vacation packages for employees / employees' children Discounts on any products of a partner company / Contests and competitions Corporate traditions and holidays	Mobile Compensation Employee loans / special conditions from the organization Discounts on any products of a partner company / Contests and competitions

Table 2. Comparison of used and unused factors of the motivation system in a commercial and budgetary health care organizations

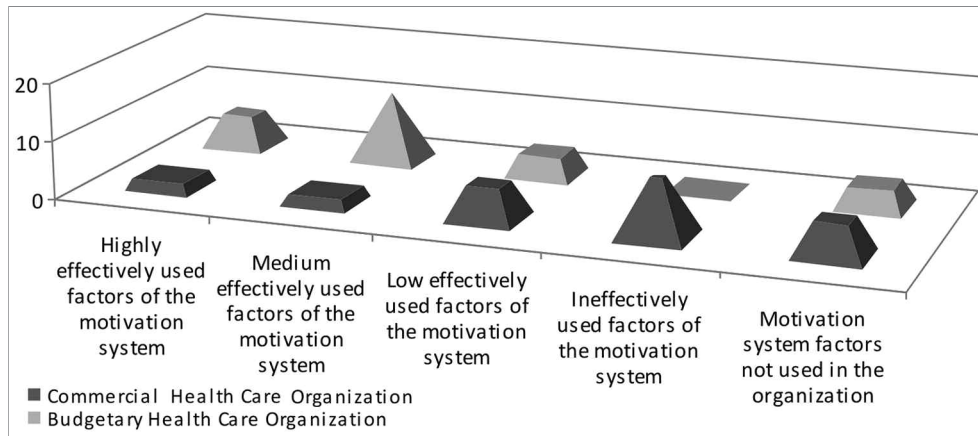


Figure 1. Differences in the number of introduced factors of motivation systems in terms of their effectiveness in commercial and budgetary health care organizations

The distribution of motivation factors by the degree of efficiency in the representative office of a foreign company in Russia and the CIS is shown in Figure 2.

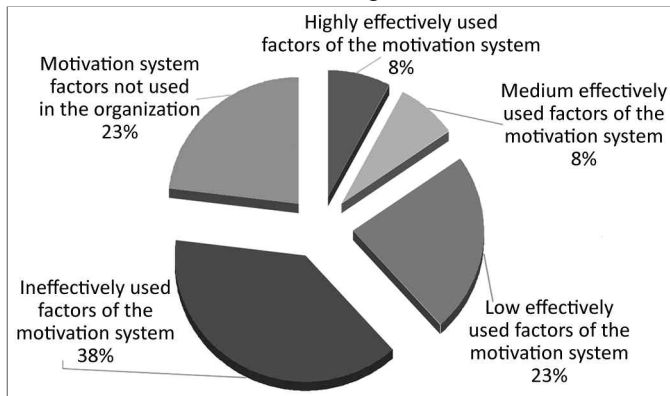


Figure 2. Distribution of motivation factors by degree of effectiveness in the commercial organization

During the implementation of the project targeted to improve the system of material and non-material motivation, it is important to preserve and not lose mechanisms, initiatives and ideas, which are already used highly efficiently or moderately efficiently. Thus, it is important not to remove or reduce additional health insurance programs; maintain and expand the parking area; increase the amount of compensation for meals; organize a dining area; re-equip working places; reconsider the procedure for the formation of wages; accrual of bonuses; and use the flexible work schedule more effectively as a strong factor of non-material motivation.

Most employees are confident that a work process in the company is organized inefficiently. They believe that there are no clearly defined responsibilities, they don't understand their role in the working process, and that often they have to do work beyond the scope of immediate responsibilities. In this case, employees feel exhausted, confused, and unable to work effectively. Employees of the company rate the effectiveness of the management pretty low. Inefficient management is a very weak motivating factor. In general, very low effectiveness and satisfaction values were obtained for several factors related to corporate communications and corporate issues. The lack of clear decision-making mechanisms and work standards greatly reduce the interest of employees in fulfilling their duties. The employee simply does not know how to perform it and why. We recommend to describe all possible procedural moments in great detail, so that employees do not feel uncomfortable when performing their duties. In the other case they simply do not know whether they will receive approval or not. It is very important to improve internal and external communications. It is

important that employees are informed, and not feel that they are in the "information vacuum", thereby feeling their uselessness and insignificance.

In order to improve the motivation system in the foreign company's representative office in Russia and CIS it was proposed to pay close attention to such factors of the motivation system as professional and career development, possibility of independent decisions, participation in management, availability of various educational programs and useful internships.

These factors of the motivation system, which are used ineffectively in the company under consideration, can increase employee's loyalty to the company, make their activities more efficient, and most importantly, make the employees more interested to perform their work more efficiently.

Based on the obtained results, it is worth noting that employees of the company's representative office in Russia and the CIS mainly have low motivation and interest in the effective execution of their work. The main reason, in our opinion, lies in the corporate management plane.

The distribution of motivation factors by the degree of effectiveness in the studied budgetary organization is presented in Figure 3.

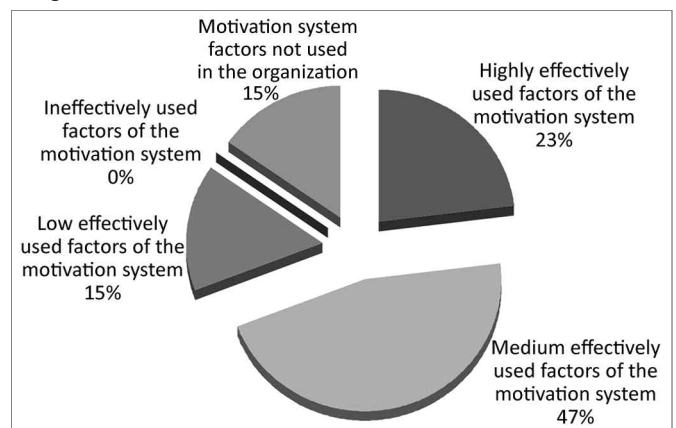


Figure 3. Distribution of motivation factors by degree of effectiveness in the budget organization

Thus, based on the results obtained during the survey, we can say that, the scientific and clinical center has developed a favorable situation in terms of staff motivation and working conditions for effective work in contrast to the foreign commercial representative office. The motivation factors under consideration have a positive effect on the employees motivation. They can stimulate employees to work even more efficiently with the right correction. These factors can be called growth points in the system of material and non-material incentives in this budget organization. We would like to offer a number of recommen-

dations in this study on improving the personnel motivation system and improving working conditions in the federal scientific and clinical center. Firstly, it is important to create an internal document that clearly regulates the conditions for calculating bonuses, as some employees currently do not agree with the logic of distribution of bonus payments. Fairly paid bonuses are an important factor motivating employees to work more efficiently coupled with a low average salary in the labor market as a whole. It is also important to have a clearer separation between the functional responsibilities of different employees and not to allow employees to perform work, which is not specified in their employment contract, even under pressure from superiors. Although the management style is generally evaluated positively, albeit with minor comments. Such factors as microclimate in the team, attitude to the organization, corporate traditions, loyalty to the employer are at a high level in the budgetary organization under study. It is worth emphasizing that it is important not to stop paying attention to these factors and not to miss the moment when possible deteriorations might happen in order to eliminate the cause in time (Herzberg, 1968).

At the same time, we were able to study the specifics of working conditions. Such factors as the equipment of the workplace, premises, availability of places for rest and additional services in the scientific and clinical center work very efficiently as the motivation factors in the budget organization. The center is equipped with coffee machines for employees, kitchens for eating, shower rooms, wireless Internet that can be used for personal goals, parking for a personal car, lounges, tennis tables, modern library, and free Chinese, German and English courses for employees. Thus, the federal scientific and clinical center has implemented many additional services that increase the level of employee satisfaction. This is lacking in the commercial organization also studied here. Thus, the conditions created in this center can be considered as a de facto standard. According to the workers themselves, they allow working more efficiently.

Implementation of a flexible schedule in the scientific and clinical center seems to be a very difficult problem to solve because of the precise hours of work and the reception of patients. Although in some cases it would be possible to establish a flexible schedule for some employees, for example, for employees of scientific departments.

It is important to note that in the center under study there are no inefficiently or non-working motivation factors for which the employer spends resources. This suggests competent leadership and a highly developed motivation system in the budget organization under consideration.

## 4. Conclusions

This work examined existing staff motivation system and specifics of working conditions in a budgetary medical organization in Moscow and in a commercial organization, manufacturer of medical equipment and medical supplies. Diagnostics of existing problems in organizations from the employee motivation point of view was carried out, existing working conditions were evaluated, and a comparative analysis was made between the two organizations according to the degree of satisfaction with working conditions and staff motivation.

The recommendations given during the work will help to reduce the number of conflict situations, increase the speed of information transfer through communication channels, improve the attitude towards patients and clients of the company, reduce the number of labor discipline violation cases and reduce the staff turnover rate.

The main problem, namely the underdevelopment of this system, was identified by analyzing the current situation in the system of staff material and non-material motivation, as in-

dicated by the employees of the organizations under study. In this regard, the project we developed to improve the personnel motivation system in the company and a number of practical recommendations are justified and recommended for implementation.

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## Work Life Balance – Recent Trends and Approaches in India

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### Abstract

*This research paper aims to review the various studies and researches conducted on the various aspects of Work Life Balance (WLB).*

*The purpose of this study is to know the various elements of work life balance, management of these elements and the recent trends and approaches undertaken by Indian Firms. WLB plays a significant role in employee performance, relationship employee enjoys in the organization influencing team performance and in their personal life. The challenges of Work Life Balance are increasing to the height where it affects maximum to the consciousness of both employees and employers. Today the human resource professionals are looking out for work life initiatives that have an impact on primary concerns of organization and may help in improving the employee self-confidence, hold employees with valued company acquaintance, and keep pace with workplace environment as imbalance between work life and personal life may result in increased attrition rate, decreased quantity and quality of productivity, Health issues, lower quality of work life, decrease in company turnover and profits.*

*This research paper is based on the secondary data through metanalysis sourced from web-based research, review of print literature, journals, and articles which were enumerated and recorded.*

**Keywords:** *employee performance; employee morale; work life balance; work life initiatives/programmes; quality of work life.*

## 1. Introduction

### 1.1. Work/Life Balance

It indicates the balance/integration/symmetry between the personal life and professional life and not just to split the time in equal proportion for each type of commitments of their personal and professional tasks. It's unrealistic to think that an individual shall be able to divide the time all the time equally for his personal and professional work as life is very much unpredictable, many times what may be right today can be wrong tomorrow, the daily tasks and priorities changes with time. But it is to integrate and managing the professional and personal responsibilities together and accomplish the task with higher note of satisfaction which is also known as work life integration.

### 1.2. Work Life Balance – In India

The term 'Work-Life Balance' was originally used for the first time was in UK in 1970s and then in US in 1980s. Later the term came to be used in India when the modernization and globalization started to effect work life balance of the individuals living in India. The increased use of technology like computers, smartphones, video chat/conference and other technological innovations makes an individual work for 24\*7 cycles, which creates stress, and work life imbalance and this imbalance caused various studies on work life balance in India. The study made was initially on working women as at that period women empowerment took place and brought many changes in the lifestyle of individual and society as well.

Today the need of Work Life Balance has shifted to Work Life Integration thanks to the upcoming and developing technology which has made it difficult to deal the work life issues differently

and managing them like two separate things/ issues/ work/ responsibility. According to the study made by Forbes in April 2019 it was found that Generation Z (aged 18 to 25 years) which is just entering the workforce have a knack to manage their work and life as they do not believe in work and life as two different aspects of life rather they believe in balancing and integrating both so as to get their job done anywhere, anytime; without sacrificing either one. They believe in coexistence of human and digital world together. Whereas elder millennials or Gen X (aged 31 and 35 years), young millennials or Gen Y (aged 26 and 30) has nostalgia for a time when leaving the office meant the end of the workday.

Today's generation especially Generation X & Y desire more work life balance and better work-life relationship which endorses flexibility, company expectation, and the skill to work from anyplace therefore has started to integrate the work and life issues instead of managing and balancing them separately. Instead of balancing the different elements like time in equal proportion they tend to integrate their work, family, friend, hobbies and personal goals to manage their lives well and achieve the balance and integration of their personal and professional life.

## 2. Literature Review

Work life balance is more dependent on the social environment prevailing. WLB is gender specific as Indian society is a male dominating society. We talk about women empowerment but never tried changing the thought process where women are seen as a dependent on a male and not as an independent sole. Work/Life, Work/family balance, work/family connotation, work/family conflict are the terms which are



used more in present time seeing its importance in today's scenario than in the past. Not only the private organizations but also the governmental organizations have started giving WLB importance seeing the present environment around the society making WLB as their topmost agenda for talent management.

The major reason for introducing government interventions, policies and provisions like maternity benefits, working hour regulations, crèches, and leave policies is employer's pragmatic concern for the employees' health, safety and welfare and to protect employees from exploitation at workplace. (Baral & Bhargava, 2011)

Due to modernization and increased competition and emergence of 24\*7\*365 working style the gratification of daily life has lowered down. The cut throat competition in the market has led socialization to a lesser extent as everyone is busy in accomplishing their tasks rather enjoying them especially the working strata of metro cities. Organizations are also working towards reducing these problems of the employees by giving them aids like: a) Child care amenities, b) video conferencing to moderate the travel, c) does not schedule's work events for the duration of school holidays of children etc. to make employees feel the control they have on their life and to increase the productivity and quality of their work produced. The researcher says that many times the employees have the rights for flexible working due to the ageing population, smaller family structures. Having these policies may promote a positive image of organization in the cognition of the employees. (Ms. Kaur, 2014)

Today the human resource professionals who are thoughtful and intelligent are coming up with the possible solutions or work life programs for both company and worker to deal with the balance of work and life to improve worker morale, retain valuable employees, retain speed with workplace trends, and gain a competitive advantage in the market and a productive business and also bring a win-win state for both. Today's Generation X and Y workers give more importance to their personal time and dual carrier marriage resulting in work life balance as a biggest concern. In the study author suggests three important issues to be considered to maintain the work life balance and they are: (i) Global Competition, (ii) renewed interest in personal lives and family values, and (iii) an ageing workforce. (Mr. Dhas & Dr. Karthikeyan, 2015)

Work Life Balance leads to increased productivity of employee, where it helps the organization to effectively respond to the needs of its internal and external customers. Company needs to pay attention towards work life balance of their employee as they need to have trained, taught, well groomed and emotionally intelligent employees to face challenges due to the rising competition in the market.

Now a days, the working hours have been increased from 7 Hrs. to 8 Hrs. a day to 12 Hrs. to 16 Hrs. a day work related pressure and pressure in fulfilling the responsibilities of family resulting in increased tension and stress making it difficult to Work Life Balance. Specially professionals /individuals working in service industry like BPO, Doctors, Nurses, Banks, IT and Education are constantly facing the difficulty of Work Life Imbalance. In present, employees have to compete internally and as well as externally i.e., with various other organization which has increased the stress level and seeing this the organizations have come up with different initiatives Like; flexible working, work from home, job sharing, maternity/paternity leaves, counseling programs, medical assistance, Sabbaticals etc. (Prof. Desai, 2015)

Government has made medical assistance as compulsory to be given to all the employees by the employer like ESIC- where dependents of the family of an employee is also insured to medical benefits, EPFO- every employee should be given pension and provident fund for their future needs, some other assistance are leave regulations and equal remuneration. But the employees need to fulfill the criteria to use these benefits.

Work Life Balance initially deals prioritizing between the works of his/her professional and personal life as the importance

and necessity of the area linking or connecting or resulting to productivity, performance and job satisfaction. Work life conflict decreases, and the surrounding become enjoyable automatically when the employee works with happy and fresh mind at home and at work place as well. The study shows that the attrition rate – employees switching for better job environment has forced the organizations to work and run different initiatives and programs so as to help the employees earn their work life balance as also the employees thinks that work life balance can make the organization more efficient and effective. And organizations have started including them in their compensation packages. Companies have come up with the following initiatives and work life programs for Work life balance: a) Job Clarity, b) Allocation of Job within the team, c) Counseling programs for employees, d) Employee assistance program, e) Leave policies, f) family care benefits, g) Flexible working hours etc. (Dr. Londhe, 2016)

In this article it is said that the methods of green HRM is used for work life balance by different organizations to be defensible for the employees who are working in the environment of 24\*7. Use of green HRM initiatives for work life balance is known as Green Work Life Balance. India is heading towards a green economy with Eco-consciousness thought in the organization as well as in the minds of employees. Green Work Life Balance can create a comfortable workplace and feel good factor at work making the employees more productive and efficient enough to improve the health of the organization and sustain the intellectual capital of the organization. Use of green work life balance practice not only reduces operational cost, absenteeism but also works as value added employee retention tool. Some of the Green practices are: a) Women friendly policies, b) Safety and comfort at work, c) Leaves: Paternity and Maternity Leave, d) Health at Work: noise reduction system, team outings, wellness programs like yoga, free health checkups, cultural and sports events, grievance handling desk, counseling of employees, e) Flexi Timings, f) Empathy, g) Pleasurable work atmosphere, h) Supporting the learning curve.

If the measures are taken cared, followed and implemented in a right manner then an individual can achieve work life integration. The methods which deserved to be implemented are: a) Reduce workplace rigidity, b) Tendency to promote work alcoholics should go down, c) Take into account family circumstances, d) Timely and proper evaluation of job contents, e) Lack of transparency of reward and recognition system, f) Consistency of Work Life Balance Policies, g) Spirituality at work, h) Encourage to have more and more family get together, i) Time Management, j) Time – Out Zone.

Work life balance practices can be categorized into 1. Policies: cover the formal & informal ways by which employees' work & leave schedules are handled, including part time work, flexi time & parental or family leave. 2. Benefits: Benefits cover different forms of compensation that protect against loss of earnings, payment of medical expenses & sponsored vacation. 3. Services: Service includes onsite or near site childcare centers, medical facilities & counseling. (Ms. Parida, 2016)

Work-life flexibility is a work life balance initiative whose outcome is based upon occupation. The control of working condition should match and reconcile with work life needs so as to enrich the productivity and well-being of workers and society taking in consideration the limited options they have to maintain their personal lives which can be accomplished by designing work to provide individuals within and across job groups. (Kossek & Lautsch, 2017)

Perrigino et al. (2018) says that work life balance policies have some negative sides as well. WLB policies seem to be prevalent in all kind of cultures. And it is relevant to only some forms of WLB Policies. Four causes intellectualized (inequity, stigma, spillover, and strategic) because of which work-family backlash occurs. And to avoid such things organizations should; a) train managers about why WLB policies are not only beneficial to the employee but also to the organization's effectiveness

to avoid any statement made by the manager against the organization, b) managers and executives should use work-family benefits themselves to avoid misalignment, c) Managers should hire temporary workers as resources to reduce the intensity of work created due employees on leave consuming the work family benefit, it also helps to decrease the workload of other workers. Therefore by taking these initiatives organization can reduce the causes of work-family backlash.

Tannady et.al. (2019) says that service industry faces big expectations from the customers and tight competition in the market and job performance of an employee acts as a vital role in fulfilling these expectations. In his study he found that organizational culture and employee engagement programs have significant influence on job performance. Organizational justice and leadership acts as drivers to employee engagement programs used as work life balance initiative to increase the level of job performance. (Djani, 2015)

Sriram et.al. (2019) found in his study that organizational culture; granting leaves to the employees, work atmosphere are most critical factors that affect employee attrition. Organization Human Resource practices should be improved to reduce the attrition. It can be achieved by application of work life initiatives.

In India organizational support for women employees is low in number whereas, there are certain government policies which help them in certain level in maintaining work life balance which are made mandatory to be practiced and implemented by the organizations. The policies include:

a) **Factories Act 1948**, mainly for women employees working in factories or manufacturing units although some of them are followed in all kind of sectors. It regulates firstly, the **working hours** of employees including leave, holidays, overtime, and employment of children, women and young persons, the basic minimum requirements for the safety, health and welfare of factory workers. The total working hour for an adult should not exceed 48 hours in a week and 9 hours a day. This Act also confines the working time of women employees and adolescents during evening that is 7 pm to 6 am. Secondly, **crèches** in factories hiring more than 30 women workers to take care of their children (Sec. 40) which can also be considered as a kind of Work Life Balance Practices since it helps women employees to integrate their work and family requirements.

**Some measures can be taken at the workplace with the involvement of human resources department:** *Firstly*, Special arrangements like transportation can be made for female employees working before 6:00 AM morning and till 8:30 PM night. In ITes and IT industry provision of women employees working after 8:00 PM is allowed only when transportation till door step and other security measures for women employees are adhered. *Secondly*, Special passes, security guard, GPS based monitoring of cabs with panic buttons should be provided to vehicle transporting women employees. *Thirdly*, Employers should have all the identification documents like Driving License, PAN CARD, and ADHAR CARD from drivers, security guards and casual staff at the time they join the organization should be thoroughly verified. *Fourthly*, separate and secure toilets should be provided for women. *Fifthly*, Sexual harassment committee should be formed headed by a woman. *Sixthly*, Emergency contact numbers should be clearly displayed.

b) **Maternity Benefit Act, 1961** (amended in 2017), a working woman is allowed for a paid leave of 12 weeks, 6 weeks before & after delivery. Similar kind of leave is followed in occurrence of miscarriage. This Act enables the working women to be financially stable during pregnancy/miscarriage. This Act also provides 2 nursing breaks in a day. The medical bonus provided as maternity benefit will be Rs. 1,000 as per amendment done in 2008. Further, this benefit will be enhanced to a maximum of Rs.20, 000 every three years. As per Sixth Pay Commission, the Maternity leave period is 180 days/6 months.

As mentioned in [www.lawskills.in](http://www.lawskills.in), Perceiving and categorizing 'incorrect' or 'terrible' working environment conduct might be troublesome as this understanding relies upon various components, from working environment culture to the social settings to which the Colleagues come from. In any case, an intense absence of mindfulness and knowledge among females and masses on inappropriate behavior perseveres. Females regularly fall prey to badgering leaving a despondent impact on their psychological, enthusiastic and physical wellbeing, and work execution. A few occurrences go unreported by casualties, as they are ignorant of their rights, redressal systems and boards of trustees that assistance settles issues.

Our legal and lawmaking body has acknowledged the way females are standing out as the most vital component of society and if they are abused that would not be acknowledged at any expense. Females assume distinctive jobs in their life which isn't a simple assignment. Therefore they should be given due thought and respect and understand their accomplishments for prosperity of the community. (Divya, 2017)

c) **Indian Penal Code, 1869, section 509** (amended) manages inappropriate behavior in the work place: this Act gives assurance to the working ladies in the work place. In **Sec 509** of the penal code it is said that anyone intended to insult a woman through word, gesture or act is liable to be punished. The person shall be punished with simple imprisonment for a term, which may extend to three years and also with fine. Further, in **Section 354** it is said that a person outraging a woman's modesty shall be punished with imprisonment of either description for a term which shall not be less than one year, but which may extend to five years, shall also be liable to fine. Adding to this there was an insertion of **section 354A** which says that a man committing the following acts: (i) physical contact and advances involving unwelcome and explicit sexual overtures; or (ii) a demand or request for sexual favors; or (iii) showing pornography against the will of a woman; or (iv) making sexually coloured remarks, shall be guilty of the offence of sexual harassment shall be punished with rigorous imprisonment for a term which may extend to three years, or the fine, or with both for the offence mentioned in clauses (i), (ii), and (iii) and for the offence mentioned in (iv) the person shall be punished with imprisonment of either description for a term which may extend to one year, or with fine, or with both. (Mr. Jain)

d) **The Sixth Pay Commission (2008)**: has explained the child care leave in regard of central government workers. It encourages female workers to deal with their youngsters/child at the period of time when they want their mother. Child care leave is additionally conceded to female government representatives having kids underneath the age of 18 years. This leave can be taken for a period greatest of two years. Transport stipend/allowance was likewise changed, and the rates consequently expanded by 25% to empower workers to decide on quicker travel in this manner permitting additional time with family.

According to U. Rajadhyaksha, Organizations in India are required to consider Work Life Initiatives (WLI) strategically to address or fulfill the needs of organizations and employees together constructed on the Indian ethos and governmental, fiscal and social factors. The Work Life Initiative might include:

- Flexibility** as far as transparency of when and where the work should be directed.
- Commuting** which might take care of the investments in transportation resources so that the employees do not face the work conflicts.
- Stress Reduction** by creating a friendly atmosphere where individuals can have informal interaction with each other at work may be by creating a space for chatting, listening to music etc.
- Increase the **health** consciousness among the employees and provide them with the facilities and environment to work upon their health.

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- e. Provide **medical benefits** not only for the spouse and children but also for the parents by having hospitals which provides nursing care for elders on contract.
- f. **Training** programs for employees on regular basis to enhance their skills which may help them to break the glass ceiling.
- g. **Gender Equality** by introducing the women's advancement programs.

Work Life Balance has an important role to play in the growth of industries and survival in the market in this strong competition prevailing. The big multinational companies and Maharatna companies in India are also implementing the Work Life Balance

Initiatives to help employees to maintain their Work Life Balance. Big organizations came with the righteous implementation of work life balance initiatives especially for women employees as the number of women employees have increased in the last decade and the kind of pressure and stress they tend to face while fulfilling their responsibilities they have towards their personal and professional life. And the organizations have taken the implementation of work life balance initiatives seriously so that they and employees both get benefited.

In the Table below work life initiatives/policies for work life balance taken into care by different Multinational Companies are as follows:

S. No.	Organization's Name	Work Life Balance Initiatives
1.	Merck Sharp and Dohme India	<ol style="list-style-type: none"> <li>a. <b>Robust benefits:</b> includes health insurance, family-leave assistance (provides six weeks of job-protected paid time off to spend with a new child), flexible work arrangements and back-up child care, on-site or near-site child care centers and employee discount programs.</li> <li>b. <b>Merck's Adoption/Surrogacy Assistance Program</b> provides reimbursement of up to \$25,000 for eligible adoption/surrogacy.</li> <li>c. Our <b>Women's Leadership Program</b> including Manufacturing Leadership Development Program and Global Management Acceleration Program are designed to support the advancement of women into senior leadership and to develop employees at all levels and stages of their careers.</li> </ol>
2.	Procter & Gamble India	Organization offers work from home for its representatives, and concentrated work plans, the two of which have been an extraordinary empowering agent in expanding efficiency and overseeing work-life balance.
3.	Pricewaterhouse Coopers Private Limited	<ol style="list-style-type: none"> <li>a. <b>PwC Lounge</b> is a convenient facility for working and relaxing.</li> <li>b. <b>In house clinic and dental clinic</b> are provided for taking care of health needs of staff.</li> <li>c. Nursing Room is there to accommodate a private space for breastfeeding to the babies.</li> </ol>
4.	Intel India	<ol style="list-style-type: none"> <li>a. Flexible Work Options: If your own duties require proficient adaptability, Intel might be the ideal fit for you. We offer imaginative ways to deal with enable you to meet your responsibilities throughout everyday life. From packed work filled weeks, strategic scheduling, and exchange begin times to working from home, and low maintenance and occupation share positions, every specialty unit has a scope of choices for you to investigate.</li> <li>b. Health Care</li> <li>c. Employees have advantage from an abundance of self-improvement courses and openings, for example, discovering better approaches to adjust life and work, monetary arranging and data for more beneficial ways of life. Numerous areas approach wellness focuses and diversion offices, empowering representatives to have the accommodation and assets they requirement for their physical and mental prosperity.</li> <li>d. Childcare and Eldercare solutions and resources, online homework helps for your children, adoption assistance, and other family-related benefits.</li> <li>e. Employee discounts and referral services, nursing mothers' rooms, adoption assistance, and online homework help for students in grades 4 to 12.</li> </ol>
5.	TATA (manufacturing)	<p>Initiatives/policies towards employees cover angles identified with lodging, medicinal consideration, instruction, culture and advising.</p> <p>Initiatives for female representatives include:</p> <ol style="list-style-type: none"> <li>a. Extra 15 days leave for those with youngsters beneath five years.</li> <li>b. Extra house indicates that permit them make a sustaining condition for their youngsters.</li> <li>c. Relaxation in eligibility clauses for sabbatical on maternity grounds.</li> </ol> <p>Advancement of the ladies strengthening cell of Goodbye Steel.</p>
6.	Citi India	<ol style="list-style-type: none"> <li>a. Work from home for 2 days a month if their role permits it.</li> <li>b. Flexible work option e.g. flexi time, remote working.</li> <li>c. Provide concierge service within the office premises, helping free up valuable time for employees.</li> </ol>
7.	Hindustan Computers Limited (HCL Technology)	<ol style="list-style-type: none"> <li>a. Employee assistance services: 24/7 telephone services for live telephonic access/emergency support, and online support.</li> <li>b. Focused programs: • Project Aligned Life Counseling (PAL) – Dedicated counselor to map to key projects • Stepping Stone for women proceeding on Maternity leave: Life counseling service for women on maternity leave. Online Health &amp; Wellbeing Portal.</li> <li>c. Resources: • Work Life Balance (WLB) Chat @ 2:02 – Webinars • Lemon Grass; WLB Contests; Life counselor advocacy; stress and WLB indices survey.</li> </ol>
8.	PepsiCo India	<ol style="list-style-type: none"> <li>a. Flexible working</li> <li>b. Helping families and inexperienced parents</li> <li>c. Wellbeing and security</li> </ol>
9.	Hindustan Unilever Ltd	<ol style="list-style-type: none"> <li>a. <b>Career Break Policy:</b> This kind of break can be taken for a period up-to 5 years in total for any reason for the employee's concern such as for higher study, sabbatical, for pursuing any personal dreams.</li> <li>b. <b>Work place Facilities:</b> The head office at Mumbai is furnished with day care facilities, bank, shopping center, café, gymnasium, florist etc. Even provision for drop facility with escort/guards for lady employees working late in the evening exist.</li> <li>c. <b>MAPS (Maternity and Paternity Support Platform):</b> Maternity leave of 26 Weeks and Paternity leave of 3 weeks provided are fully paid. Maternity and Paternity leave benefit is also given to employees who adopts child legally.</li> <li>d. <b>Agile Working:</b> Employees can avail policies like Work from home, flexi-hours and part time/reduced hours (including a job share policy).</li> </ol>
10.	Industrial Credit and Investment Corporation of India (ICICI Bank)	<p>It launched two novel women centric initiatives on international women's day i.e., on 7th March 2016.</p> <ol style="list-style-type: none"> <li>a. <b>iWork@home</b>, allows women employees across hierarchies to work from home for up to one year. The period can be extended in case of special needs and can be clubbed with maternity leave.</li> <li>b. The other initiative aids women managers who travel on business, it will provide for the travel and stay of the child and a care taker/family member.</li> </ol>

S. No.	Organization's Name	Work Life Balance Initiatives
11.	Cappgemini India	The organisation gives importance to the right balance of work and private life of an employee through focusing on Synergy cooperation and light hearted pleasure. The organisation always encourages their employees to also excel in the extracurricular activity of their interest area. Like, Sagar Kamuni and Manish Kumar employees of the organization have also excelled in their extracurricular activities as well, where on is The Ace Marathon Runner and has completed the Standard Chartered Mumbai Marathon (SCMM) 2015 and the other has two entries in one of the renowned world record books, Limca Book of Records by biking across the country in two categories: (i) Fastest East to West India Two Wheeler Expedition (115 Hours), (ii) Fastest North to South India Two Wheeler Expedition (97.5 Hours) which no other Indian has made.
12.	Infosys	Work Life Balance Initiative taken by Infosys in the year 2018 allows an employee "work from home" for 9 days in a month which was 4 days earlier to remain attractive to its employees, arrest attrition and drive productivity so as to maintain better Work Life Balance. It also provides parenting counseling to parents amongst Infoscians. It also provides data about schools, day care amenities and doctors – to those who relocate.
13.	Tech-Mahindra	a. <b>Flexibility</b> includes Paid Time off & Public Holiday – Bereavement Leave, Parental/Dependent Care Leave, Advance Leave, Flexi Work Arrangement, Work From Home b. <b>Financial Support</b> includes Lease Breakage & Repatriation Allowance, Salary Advance, Retirement Plan c. <b>On the Job Support</b> includes Financial help in Relocation, Communication Expense Reimbursements, (c) Extended Family Support c. <b>Insurance</b> includes Life Insurance, Health Care & Insurance, Accident Insurance Coverage, Travel Insurance
14.	State Bank of India	SBI runs employee engagement programmes and trains employee to help them maintain their work life balance named as 'Nayi Disha' or 'New Path' and make sure that the employees are motivated, rejuvenated instead of working as a routine work so that they are ready to face new challenges coming up in future. The immediate family members were also involved in the program so that they can inform the organization about the employee if they are not leaving work on time or if they are facing any problem in their work. A slew of pro-employee measures such as letting them choose the location before transferring a couple of both of them are with the bank, extending sick leave to attend to in-laws health needs, long leaves to help their children during the exams among others were initiated. The <b>training module</b> starts with the pledge signed by employee in which employee vows to keep herself/himself healthy, not damage the environment, speak positively of the bank and leave for home at least once a week. Interestingly, the pledge card has a special bar code which, if scanned by the employees spouse using a mobile phone, will send out an alert to the employees' superiors about the employee spending long time at work and result in corrective action.
15.	Adobe Systems India Pvt. Ltd.	Women Executive Shadow Programme, Equal pay for both men and women, Grassroots Innovation Challenge, Employee Stock purchase plan, Health services, Education reimbursement, Fun indoor and outdoor games, Long-term insurance plan, Vehicle maintenance, Wellness Reimbursement Program
16.	Maharatna Companies (BHEL, Coal India Ltd., GAIL, IOCL, NTPC, ONGC, SAIL, BPCL)	Some of the common Work Life Balance Initiatives taken by Maharatna Companies are as follows: (i) Training; (ii) Employee Welfare Scheme: Educational Assistance for Children, Housing and Township facility (consisting Gym, Library, Club, Swimming pool etc.), Medical Facility, Sports & Cultural facility, Loans & Advances, Conveyance Mortgage Redemption Scheme [ONGC], Crèches facility, Provident Fund, Gratuity, Pension Scheme; (iii) Health & Safety; (iv) Performance Oriented Culture: Performance Linked Incentives, Performance Incentive Scheme; (v) Leaves: Paternity and Maternity Leaves, Parental Leave, Child care Leave, Adoption Leave, Leave without pay leaves; (vi) Flexible work timings, Telecommuting Facility & Annual hour system; (vii) Job Sharing & Job Splitting; (viii) Onsite Day care; (ix) Job Security; (x) Grievances Management System and Mahila Samitis for women employees.

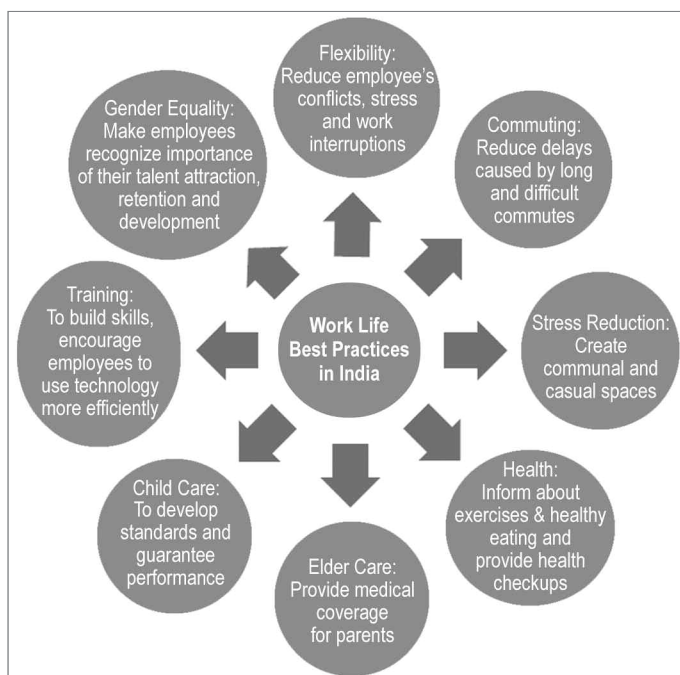


Figure 1. Diagrammatic representation of Work Life Balance practices in India is appended above

### 3. Findings and Recommendations

Based on the study conducted through various following findings and recommendations may be summarized:

- It was found that global competition, Renewed Interest in personal lives and Family Values, Increased workload and family related responsibilities pressure, increased working hours, Ageing Work force, smaller family structure were the main causes or issues for creating work life imbalance.
- It was also found that work life imbalance resulted in increased stress level, low productivity, low quality of output or product, lower level of efficiency, increase in attrition and decrease in employee morale.
- IT sector companies are taking more initiatives as compared to other sectors whereas education sector organizations are the one who are not taking much interest in Work Life Balance of their employees.
- Most of the institutions in Education sector follows policies made mandatory by government at minimum requirement level they do not take any extra initiative to help their employees.
- I would recommend that institutions in education sector should also take some more initiatives so that employees working there can balance their work and personal life. Initiatives like Flexible working hours, equal remuneration, family care benefits, and paternity leave for male employees,

wellness programs, counseling programs can be taken up by the institutions.

- f) There are very small numbers of organizations who provide paternity leave to the fathers. I recommend the other organizations as well to provide this leave like Hindustan Lever Ltd. And Adobe Systems India Pvt. Ltd.
- g) It was found that there are government policies like Factory Act, Maternity Benefit Act, and Indian Penal Code, child care leave under Sixth Pay Commission(2008) to help the women employees but are not implemented properly at ground level so I would recommend that all the private organizations who just try to fulfill the minimum possible criteria as these policies are made mandatory by the government should follow and implement them at fullest to earn some fruitful result benefiting organization in the long run.
- h) It was found that some of the companies have come up with a new initiative named as Green HRM Initiative which includes Women friendly policies, Safety & Comfort at work, Health at Work: Noise reduction, wellness programs, Employee counseling programs, Empathy, Supporting the learning curve, Leave Regulation/Policies: Paternity/Maternity Leave, Sabbaticals.
- i) It was also found that it is not only the female employees who faces work life imbalance, but the male employees also face it only the degree of this imbalance is more in a female employee's life than that of its counterpart it being an Indian male dominating society.
- j) I recommend all the employees not to depend on their organizations only, but they should themselves take initiatives to bring balance in their life.
- k) The employees need to prioritize their work and responsibilities wisely. They should decide when to integrate work life balance and when to treat them differently. As in all the cases and situations same type of behavior and initiatives cannot work. Initiatives and decisions taken should depend on live situations.
- l) It was found that there are many organizational and employee benefits of having work life balance, where organizational benefits include Increased Quality of Work produced, Increase in Effectiveness and Efficiency of Organization, Positive image of Organization in cognition of employees and Market and employee benefits includes Increased Productivity and Quality, Increased Performance, Job Satisfaction, Decreased Work Life Conflict, Pleasurable work atmosphere.
- m) Managers should be trained on why Work Life Balance policies are important and how they should be implemented so that employees get benefited at higher degree. Managers should themselves use these policies to set positive example among other employees depicting its benefits.
- n) It was found that organizational justice and leadership acts as driver to employee engagement programs which has significant influence on job performance.

## 4. Conclusion

The study was conducted through the review of literature collected as secondary data from various journals, articles, and web based research and other print media. After undergoing various research articles, it can be summarized that work life balance has three components:

1. Work: It mainly refers to the task and responsibilities an individual has in their paid jobs.
2. Life: It refers to the responsibilities one has towards his/her family and closest ones and also towards themselves. Therefore, it may further be divided in two sub-components:
  - a) Family: It cites the necessary responsibilities of an individual who has it with the different roles he/she plays in the family.
  - b) Own-self: It cites the responsibility an individual has towards himself/herself.

3. Work-Life Balance: Finally, it states the balancing of all duties an individual has with the different roles and integrating the work and life.

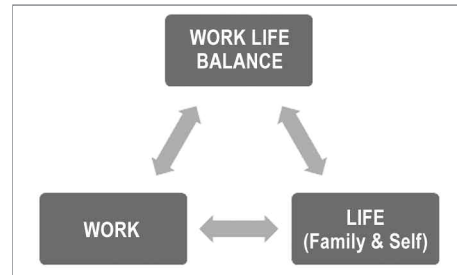


Figure 2. Diagrammatic representation of the three components of Work Life Balance is appended above

It could be seen that organizations and individual employees have come up with various work life initiatives for work life balance. It was concluded that there are many direct and essential factors which tends to have an impact and influence on success of women employees like demographic, cultural factors, personality traits etc. At this present time both employees and organizations seems to be aware of work life balance, its importance and initiatives to have work and life balance in their lives. It was concluded that having full work life balance results in Organizational Benefits and Employee Benefits.

The more controlled delegates feel they have over their lives, the more competent they are to modify work and family. A general completion of a huge piece of the investigation is that work-life equalization sharpen are best when they redesign agents' autonomy and addition their capacity to perform well in work and in family condition. In framework, a viable gathering among work and non-work perspectives can be a success win situation for laborers and supervisors the same. The ability to achieve satisfying experiences in all life zones improves the idea of individual associations and an extent of various leveled results.

From the study done by reviewing the literature review already done Privileges of ladies are exceptionally essential and Indian law is solid enough to shield her from any sort of badgering and torment, to guarantee adherence to sacred arrangements for ladies' welfare, there was a need to institute particular laws by the state and Local Government. The government policies like Factory Act, Maternity Benefit Act, and Indian Penal Code help the women employees but fail to find a permanent solution for the work life issues faced by them.

From the study done it was found that there are various issues and causes which affect work life balance in services industry resulting in work life imbalance causing increased stress level, low productivity, low efficiency and low quality of output. There are work life balance initiatives taken by organizations in services industry to help the employees balance their work and life for example Green HRM, women friendly policies, Employee Assistance Programs, Flexible working hours, work from home, equal remuneration, family care and child care benefits, provide pleasurable job environment, employee provident and pension fund, Leave policies, Medical Assistance like Employees State Insurance Corporation and Park Mediclaim, Job clarity, Job Sharing, Fair allocation of job, Employee counseling programs, Health and Safety initiatives at work etc. which benefits both employee and employer together. The benefits that organization have are increased quality of work produced, increased effectiveness and efficiency of organization, positive image of organization in the cognition of employees and market. The benefits that employees have are Increased performance, productivity and its quality, Job Satisfaction, Decreased work life conflict, pleasurable work atmosphere. The same is further represented below in diagrammatic form:

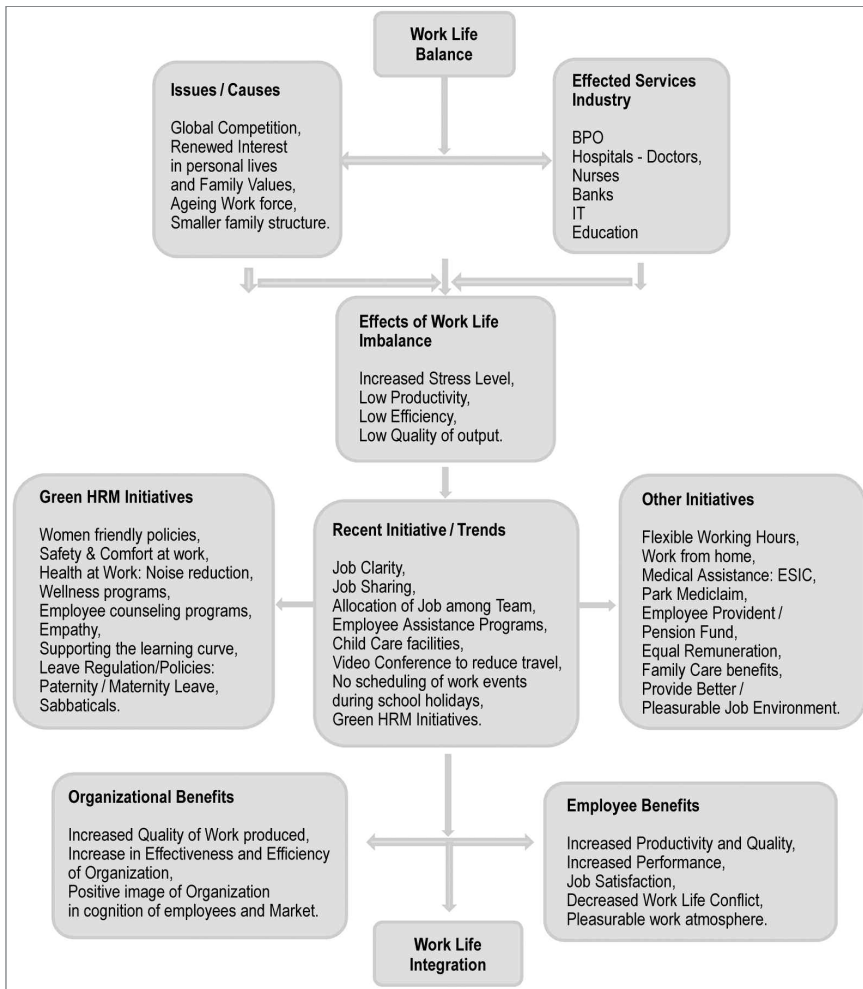


Figure 3. Diagrammatic representation of summary of Literature Review

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