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# **OBSTACLES TOWARDS TRANSLATING A KUWAITI PUBLIC SECTOR STRATEGY INTO ACTION: EVIDENCE FROM KUWAIT**

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### **Abstract**

*Purpose*–The aim of this study is to empirically investigate barriers towards successful strategy formulation and implementation in the public sector strategy of Kuwait. *Design/methodology/approach* – The article used a questionnaire survey to identify the barriers toward successful strategy formulation and implementation experienced by the public sector organizations. The questionnaires were distributed to 300 public sector employees, from which 200 were valid for analysis. Participants were requested to state the degree of agreement with the items listed in the questionnaire. Regression analysis employed to identify factors impact strategy formulation and implementation. *Findings* – The study showed that unsuccessful strategies formulation and implementation result from various aspects of government institutions (organization, policies and regulations, human resources and communications). The participants revealed that lack of consensus among decision makers, lack of effective role formulators and lack of choice of real strategy formulators represent major obstacle toward strategies formulation. Incompatible structure with the strategy and insufficient linkage between strategy and goals were the main variables that prevent successful strategies implementation. The regression analysis pointed to policies and regulations, communication and external factors as the most significant determinants of strategy formulation; whereas organizational and communication factors appeared to be the most significant determinant of strategy implementations. *Research limitations* – Specific governmental departments were targeted by the questionnaire survey employed in this study. This reflect the staff employed in these departments. To obtain a wide picture about strategy implementation, the Ministry of Planning and the Ministry of Finance should be surveyed since they are responsible of a significant part of the country's strategic planning. *Practical implications*– This research offers valuable practical insights of decision maker. it might provide the route map for the firm and develop a good information system that help managers for obtaining the highest quality of knowledge through developing processes, systems and managerial mechanisms.

**Keywords:** Strategic management, strategy formulation, strategy implementation, obstacles, public sector, Kuwait.

## 1. INTRODUCTION

Strategic management decisions have been a subject of growing theoretical and empirical investigations in business literature. The central issue in the literature is to explore the barriers to successful strategy adoption by looking at the relationship between strategic management and organizational performance.

Empirical studies pointed to several factors that may present obstacles towards successful formulation and implementation strategy such as lack of communication, information and training systems, senior managers' instability, poor teamwork and unclear regulation and executive policies. The main feature of previous research on obstacles towards formulating and implementing public sector strategy was that most of them were undertaken in Western countries. The outcomes of these studies are not necessarily applicable to the Gulf Cooperation Council (GCC) countries in general, and to Kuwait in particular. GCC countries possess unique economic, political and cultural characteristics. They are rich oil producing countries with relatively high per capita income. The governments play significant role in the economic and social activities. Recruiting personnel in the public sector is not necessarily based on efficiency considerations, but rather involves some personal considerations that reflect the culture of the GCC countries. This puts more pressure on the public sector's functions and subject it to more responsibilities than other countries. The Islamic Arab culture together with the tribal structure of the GCC countries play a different role in the preparation and implementation of the public sector strategy. Hence, obstacles towards successfully formulating and implementing strategies in the public sector of the GCC countries are often different from other countries. Investigating obstacles towards formulating and implementing strategies in the Kuwaiti public sector assists in recruiting the right committed personnel and ensure their job satisfaction in order to minimize future resignations from the public sector institutions. Bearing in mind that the public sector is a desirable employer for many of the Kuwaitis. Finally, the current study is expected to add a new dimension to the existing body of the literature.

The remainder of this study is organized as follows. Related literature and previous studies are reviewed in the next section. Data collection and research methodology are presented in the third section explains. While the findings and analysis are offered in the fourth section four, the conclusion is offered in the last section.

## 2. RELATED LITERATURE AND PREVIOUS STUDIES

Strategic planning aims to maintain a favorable balance between an organization and its environment over the long run (Eadie, 1983). It is a plan of action designed to reach a specific objectives (Mohammed *et al.*, 2013). Strategic planning goes through main processes: formulation and implementation. Strategy formulation is the decision to establish the firm's goal while strategy implementation is the decision to use firm's resources to achieve this goal. In the formulation process, a strategy is designed to ensure effective use of scarce resources and capabilities (Taslak, 2004). Alexander (1985) emphasized the importance of the formulation process in incorporating new good idea to promote successful implementation. Strategy implementation process is undertaken by an organization to reach where it perceives itself to be in the future (Lihalo, 2013). Mbaka and Mugambi (2014) believe that the strategy implementation process is more important for the organization than the strategy formulation. Al-Kandi *et al.* (2013) stressed that all the efforts invested during the formulation process becomes worthless if the strategy does not achieve the needed target due to poor implementation.

Several studies have been undertaken to examine reasons behind successful or otherwise of strategy adoption in various countries (see for example, USA: Kargar and Blumenthal, 1994; UK: Al-Ghamdi, 1998; O'Regan and Ghobadian, 2002; Turkey: Taslak, 2004, Koseoglu *et al.*; 2009; Iran:

Rad, 2005, Ali and Hadi, 2012, Seifi and Sazvar, 2012, Mohammad *et al.* 2013; Kenya: Gichoya, 2005, Messah and Mucai, 2011, Lihalo, 2013, Ng'ang'a and Ombui, 2013, Kenyatta, 2013, Njeru *et al.*, 2013, Ndegwah, 2014, Chemwei *et al.*, 2014, Mbaka and Mugambi, 2014; Malaysia: Ahmad and Rajuddin, 2006, Samad *et al.*, 2014, Robani *et al.*, 2014; Jordan: Aldehayyat and Anchor, 2010. Brazil: Canhada and Natália, 2011; Bangladesh: Islam and Ali, 2011; China: Zhang *et al.*, 2011, South Africa: Smith, 2011, Libya: Mohammed *et al.*, 2013; Pakistan: Latif *et al.*, 2012; Sial *et al.*, 2013; Croatia: Ivančić, 2013). The following section reviews in brief these studies.

Kargar and Blumenthal (1994) used a questionnaire survey to examine the major problems in adopting strategies of small commercial North Carolina banks. They found inadequate training to be a major problem and it leads to more time consuming in strategy implantation.

Al-Ghamdi (1998) used a survey questionnaire to identify recurring problems in strategy adoption in UK. He found that communication, management support, and good information systems are the key tools for smooth implementation process. Al-Ghamdi concluded that strategy formation cannot be separated from strategy implementation. O'Regan and Ghobadian (2002) noticed that small and medium-sized firms (SMEs) that involve in formal strategic planning experience fewer barriers to implementation than those that do not; and subsidiary firms are likely to locate a greater emphasis on formal planning than independent firms.

Taslak (2004) examined problems restricting success of strategic decisions formulation and implementation in Turkey. The researcher pointed to "uncertainties arising from national economic conditions" as the most important formulation problem, and the "implementation activities taking more time than originally planned", and "uncontrollable factors in the external environment" as the most important implementation problems. The researcher concluded that the educational level of the employees and their skills are important factors to the formulation and implementation processes. Koseoglu *et al.* (2009) attempted to explore the reasons behind the failure of implementing strategies. They found the lack of consensus among decision makers, lack of identification of major problems, lack of effective role formulators, unsuitable training system and unclear regulation and executive policies to be that the most important problems in the formulation process. They further found incompatible organizational culture, competing activities among people, lack of adequate communication, lack of effective co-ordination and lack of adequate information system to be the most important problems in the implementation.

Rad (2005) examined barriers to successful implementation in health care organizations in Iran. He found that the lack of senior management commitment and involvement, instability of senior managers and poor teamwork and participation to be major barriers to successful implementation in health care organizations. Ali and Hadi (2012) attempted to identify obstacles towards successful implementation of business strategies of food companies in Fars Province. They detected several obstacles including planning consequences, organizational obstacles, managerial obstacles, individual and staffs obstacles and environmental obstacles. They noticed that individual obstacles have significant effect on preventing the strategy implementation. They also found that lack of proper information systems in the sampled companies to be a major obstacle in implementing strategies. To eliminate these obstacles, they advised top managers to develop adequate commitment in middle managers and operational levels. In another study, Seifi and Sazvar (2012) examined the barriers facing strategy implementation in the Iranian high-tech organizations. They observed that lack of sufficient communications, long time implementation period and employees with low abilities the main barriers of strategy implementation. Mohammad *et al.* (2013) explored the barriers that have prevented Iranian cities from achieving the urban planning goals. They identified several major barriers including the urban plans context, structure of urban planning, related law and regulations, public participation, and financial resources.

Gichoya (2005) examined factors affecting successful strategies' adoption in Information and Communication Technologies (ICT) projects in government. He found that government support, external pressure and rising consumer expectations are the factors that affect successful adoption of ICT

strategies. The researcher considered poor data systems and lack of compatibility, skilled personnel and leadership styles among the main barriers that hinder implementation. Messah and Mucai (2011) examined the factors influencing the adoption of strategic management plans and pointed to managerial behavior as a result of lack of strategic thinking. They concluded that faculty members should be motivated to learn new knowledge on the role and place of strategic management in steering organizations in times of volatile market conditions. Lihalo (2013) examined barriers to successful strategy adoption by mid-sized companies in Kenya. He pointed to internal barriers including management, communication, human factors such as resistance to change, leadership, organizational structure, information systems and technology. He further pointed to external barriers including changes to the operating environment, un-anticipated competition or entrants by new players in the industry and changes in government policies. Ng'ang'a and Ombui (2013) examined factors influencing the implementation of strategic plans in public secondary schools in Kenya. They detected organizational leadership as the most important factor that contributes to the implementation of strategic plans; followed by resource allocation, and communication and organizational structure as the least factor. Kenyatta (2013) examined barriers to strategy implementation by mid-sized companies in Kenya and identified internal factors such as management, communication, human factors such as resistance to change, leadership, organizational structure, information systems and technology. He also found external factors represented by changes to the operating environment, un-anticipated competition or entrants by new players in the industry and changes in government policies. Njeru *et al.*; (2013) examined factors that influence the formulation of strategic plans in Kenya. They provided evidence that employees motivation, availability of funds, support by top school leadership, government policy and employee skills had a statistical relationship with the formulation of strategic plans in public secondary schools in Embu North district. They urged the Ministry of Education to organize awareness programs to school stakeholders on the importance of preparing and implementing school strategic plans effectively.

Moreover, Ndegwah (2014) examined the factors influencing the implementation of Strategic Plans in Public Secondary Schools in Kenya. He found the implementations are affected by managerial skills, institutional policies, resources allocation and rewards/incentives. The researcher recommended that management should provide employees with academic and technical skills to help them successfully implement strategic plans in their respective schools. Chemwei *et al.* (2014) examined factors that impede the implementation of strategic plans in selected secondary schools in Kenya. The researchers found human resources to be inadequate to implement the strategy. Mbaka and Mugambi (2014) attempted to explore factors that affect the strategy implementation in water sector in Kenya and found that the most important reason for the failure of the strategy implementation is the operational plan of the implementation. Operational plan includes resources limitation, incompetent management and staff, poor planning for execution and lack of integration among the departments.

Ahmad and Rajuddin (2006) used the Balanced Scorecard to clarify organization vision and strategy and to translate them into action. It provides feedback from both internal business processes and external outcomes to undergo continuous improvement on the strategic performance and results. Samad *et al.* (2014) examined the relationship and influence of strategic planning on organizational performance in the Malaysian healthcare system. They established that strategic planning components are related to organizational performance. They provided evidence that strategic planning barrier is the most triggering aspect that influenced organizational performance. Robani *et al* (2014) attempted to explore the barriers to effective academic leadership among Malaysian community college lecturers of rural settlement background. They identified personal and family issues as the main barriers.

Aldehayyat and Anchor (2010) examined strategic planning implementation problems and their relationship with various organizational variables in Jordan. They found that the most important obstacles were unanticipated major problems and implementation requires more time than was planned. The researchers indicated that firms are likely to enhance strategic planning by allowing suitable time for its implementation, improve the quality of training and improve communications.

Canhada and Natália (2011) tested the main barriers to and facilitators of the implementation of different strategies by Brazilian organizations. They noticed that lack of relation between strategic content and strategic process and lack of coherence between strategic planning and resource allocation are the main barriers. They concluded that certain factors that facilitate the effective implementation of strategies may actually constitute barriers, depending on how the strategy is conducted by the individuals and the groups that interact constantly within organizations.

Islam and Ali (2011) used a questionnaire to determine obstacles of strategic operations management in Bangladesh and provide some policy implications for organizations and government. They found that there is a need to remove problems of proper operations management to improve efficiency in business operations. Public and private partnership would be developed to resolve the problems of the business organizations of the country. They argued that it is important to identify effective and efficient techniques in strategic operations management of organizations to ensure Bangladeshi organizations success in global business environment.

Zhang *et al.* (2011) used a questionnaire survey to examine 10 typical barriers encountered in the process of real estate development and facilities management. The researchers identified high cost for green appliance and lack of motivation from customers' demand as the two major barriers. They ascertain that there is a need for policy and regulations on green issues, which may be achieved by initiatives promoted by government.

Smith (2011) examined perceptions about strategy implementation tasks within six selected industries in South Africa. He found the task of strategy implementation is a primarily operations-driven activity, revolving around the management of people and business processes. He also found a significant relationship between the perceptions regarding building a capable organization and the ethnic classification of respondents. He further found the marshalling of resources necessary for strategy implementation is significantly related to the ethnic classification of respondents and type of industry in which they are employed.

Mohammed *et al.* (2013) examined strategic management and strategic process adopted in Libyan business organizations and found that they lack of proper strategic. They suggested that the organizations should identify their current mission, analyze the environment and formulate and implementing strategies. The researchers concluded that strategy managers should stay close to the situation to respond early to any significant changes.

Latif *et al.* (2012) explored how and where strategic planning goes awry and what executives can do about it. They found that the most common barriers is effective strategic planning like, strict time limits, identical procedures, lack of accountability, power and influence which organizations frequently face in strategy formulation and implementation. They concluded that it is mandatory for the leadership to involve employees in the decision-making process, along with explicit description of their roles within the organization, and on the other hand, full mechanism of employees' accountability and regular checks are required to remove these barriers. Sial *et al.* (2013) explored effective factors of failure of the strategic plan implementation in public sector organizations in Pakistan. They found that the most important reason for the failure of the strategic plan implementation in public sectors organization in Pakistan is operational plan of the implementation. They also found that paying more attentions to plan implementation of the public sector can achieve the desired result in the stated goals, benefit and surplus budget. The researchers concluded that the manager should take the action in right time, with adequate resources and competent labor forces.

Ivančić (2013) attempted to explore failure in managing strategy implementation in Croatia. He provided evidence that strategic management process is a very complex and long-term process, which requires defining, conducting and evaluating the applied strategy. The researcher



found that most strategic planning efforts fail during this crucial phase and firms waste significant resources.

As far as the Gulf Co-operation Council (GCC)<sup>1</sup> region is concerned, few studies were undertaken to examine the barriers of successful implementation strategy (see for example, Saudi Arabia: Al-Kharashi and Skitmore, 2009; Al-Kandi *et al.*, 2013; Alsughayir, 2014; Al-Ghamdi, 2006). A brief review of each of these studies is the subject of the succeeding section.

Al-Kharashi and Skitmore (2009) examined the causes of delays in public building projects in the Saudi Arabian construction industry. They found that the failure to develop strategic plans for scheduling future construction projects has led to a crisis in the construction sector. They also found that the most influencing current cause of delay is the lack of qualified and experienced personnel. Al-Kandi *et al.* (2013) examined the factors that influence the implementation of the strategic decision process and its outcomes for Saudi Arabian banks. They found that the process and personnel factors, combined with the project factors, have greatly influenced the outcomes of strategy implementation of the banks. They also found that the involvement process for all managers and implementers on all organizational levels is perceived to be a crucial factor in the implementation process and of paramount importance for successful implementation. Alsughayir (2014) examined the barriers faced by private medical services organizations while trying to implement TQM. He found that the most significant barriers to implementation are frequent employee turnover, resistance to change among employees and lack of understanding TQM and shortage in motivation among management. Alsughayir stressed the need for quality managers and professionals capable of developing plans that addresses the challenges they face when implementing TQM. Al-Ghamdi (2006) used a questionnaire survey to determine the extent to which strategy implementation problems recurred in the Saudi Arabian Petrochemical Industry. He found two of the implementation problems are linked to human elements in the process of implementation. He believes that there is a need for effective management support systems for staff employees, strategy-structure alignment, effective compensation systems, and top management involvement in order to facilitate the process of implementation. Al-Ghamdi suggested managerial actions for improving strategy implementation.

### 3. DATA COLLECTION AND STUDY METHODOLOGY

#### 3.1. Data collection

The current study used a structured questionnaire to collect data about obstacles towards successful strategy formulation and implementation in Kuwait. The questionnaire consists of two parts, while the first part related to general background information about the participants, the second part focused on factors leading to the failure of successful strategy. The second part of the questionnaire consists of the main obstacles frequently appeared in previous research. To reach the high level of validity, the questionnaire was reviewed by five university professors at the Arab Open University (AOU)-Kuwait branch and Kuwait University specialized in the same area of research. The questionnaire was then modified to reflect their suggestions and recommendations. The questionnaire was further piloted among a group of public sector employees to ensure the participants' understandability. Consequently, new questions were added and others were deleted. The modified questionnaire contained 5- point Likert scale items. It is worth mentioning that previous studies have used this scale (Al-Ghamdi, 1998; O'Regan and Ghobadian, 2002; Taslak, 2004, Koseoglu *et al.*, 2009; Ali and Hadi, 2012). The questionnaire asked the participants to rate each item on a five-point scale ranging from strongly disagree (1) to strongly agree (5) where (3) stood for a neutral response. To identify barriers towards successful implementation of a public sector strategy in Kuwait, the questionnaire was divided into seven sections. The first section contained formulation factors. The second section contained factors expected to affect strategy

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<sup>1</sup>GCC established in May 25 1981 and consists of six countries namely Bahrain, Kuwait, Saudi Arabia, Qatar, Oman, and United Arab of Emirates.

implementation. The third sections contained organizational factors that may affect effective strategy formulation and implementation. The fourth section comprised policies and procedures factors that would affect successful strategic formulation and implementation. The fifth section handled human resources factors that may affect effective strategic formulation and implementation. The sixth section contained communication factors expected to influence successful strategic formulation and implementation. The last section contained some external factors. A summary of the questionnaire main sections and the set of factors contained in each section are summarized in Table (1).

Table 1 Key factors that may present barriers towards successful implementation of a public sector strategy in Kuwait

Formulation	<ul style="list-style-type: none"> <li>Unsuitable leadership</li> <li>Lack of exact strategic planning</li> <li>Lack of consensus among decision makers</li> <li>Lack of identification of major problems</li> <li>Lack of effective role</li> <li>Lack of choice of real strategy formulators</li> <li>Lack of strategy understanding</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>Lack of adequate manager commitment</li> <li>Unsuitable training system</li> <li>Lack of enough capabilities of employees</li> <li>Unsuitable personnel management</li> <li>Incompatible structure with the strategy</li> <li>Time limitation</li> <li>Inadequate connection to the vision</li> <li>Unsuitable resources allocation</li> <li>Insufficient linkage between strategy &amp; goals</li> <li>Lack of adequate manager commitment</li> </ul>
Organization	<ul style="list-style-type: none"> <li>Inadequate physical facilities</li> <li>Lack of adequate organizational support</li> <li>Incompatible organizational culture</li> <li>Resistance to change among units</li> <li>Inadequate physical facilities</li> <li>Lack of adequate organizational support</li> </ul>
Policies and regulations	<ul style="list-style-type: none"> <li>Unclear regulation and executive policies</li> <li>Unsuitable evaluation and control systems</li> <li>Unsuitable compensation system</li> </ul>
Human Resources	<ul style="list-style-type: none"> <li>Fear of job insecurity in the new territory</li> <li>Resistance to change among people</li> <li>Lack of enough motivation among employees</li> <li>Lack of employees commitment</li> <li>Fear of job insecurity among managers</li> <li>Lack of enough motivation among managers</li> </ul>
Communication	<ul style="list-style-type: none"> <li>Inadequate communication</li> <li>Competing activities among people</li> <li>Lack of effective co-ordination</li> </ul>
External	<ul style="list-style-type: none"> <li>Lack of adequate information system</li> <li>Competing activities among units</li> <li>Lack of a national attitude towards strategy</li> <li>Political factors in regard to power</li> </ul>



The questionnaire was then distributed to 200 managers who work for the public sector; 130 returned completed resulting in 65 percent useable response rate. To measure the reliability of the collected data, a reliability test was performed. The Cronbach's Alpha for the collected data was 0.895<sup>2</sup>. According to Messah and Mucai (2011) and Taslak (2004) 0.60 Cronbach's Alpha value or more are sufficient to ensure data reliability. Descriptive statistics are performed to examine the obstacles of successful implementation strategy in Kuwait.

To identify the main factors expected to impact strategy formulation and strategy implementation, two regression models were estimated. In the first model, factors comprise strategy formulation were combined together to proxy strategy formulation and used as a dependent variable. In the second regression model, factors formed strategy implementation were combined together to represent strategy implementation and used as a dependent variable. The two models can be presented as follows:

$$STRFOR = \beta_0 + \beta_1 STRIML + \beta_2 ORGA + \beta_3 POLREG + \beta_4 HR + \beta_5 COMM + \beta_6 EXTR + \varepsilon \quad (1)$$

$$STRIML = \beta_0 + \beta_1 STRFOR + \beta_2 ORGA + \beta_3 POLREG + \beta_4 HR + \beta_5 COMM + \beta_6 EXTR + \varepsilon \quad (2)$$

Where:

$\beta_0, \beta_6$	: The parameters of the model
<i>STRFOR</i>	: Strategy formulation
<i>STRIML</i>	: Strategy implementation
<i>ORGA</i>	: Organizational factors
<i>POLREG</i>	: Policies and regulations
<i>HR</i>	: Human resources
<i>COMM</i>	: Communications
<i>EXTR</i>	: External factors
$\varepsilon$	: Standard error

### 3.2. Findings and Analysis

Descriptive statistics about the participants in the questionnaire are summarized in table (2). The table revealed that individuals from 12 different public sector organizations took part in the survey. The table also revealed that the vast majority of the participants (97.7%) are Kuwaiti nationals, 59.2% are male and 89.2% of them are either occupying middle or top management levels in their organizations. The table further showed that almost all participants age is more than 25 years and more than 65% of them hold university academic degree with more than 10 years of work experience.

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<sup>2</sup>The main reason for determining the Cronbach's alpha is to test the reliability of the participants' answers to all sections of the questionnaire, rather than specific sections of the questionnaire.

Table 2 Participants Background Information

Place of Work	Freq.	Percent	Nationality	Freq.	Percent
Education	20	15.4	Kuwaiti	127	97.7
Commerce and Industry	11	8.5	Non-Kuwaiti	3	2.3
Kuwait State Audit Bureau	11	8.5	Total	130	100.0
Interior	10	7.7	<b>Gender</b>		
Kuwait General Administration of Customs	10	7.7	Male	77	59.2
Communication	11	8.5	Female	53	40.8
Electricity & Water	10	7.7	Total	130	100.0
Kuwait National Oil Company	7	5.4	<b>Level of Occupation</b>		
Public works	10	7.7	supervision	14	10.8
Social affairs and Labor	10	7.7	Middle Management	51	39.2
Kuwait Fire Service Directorate	10	7.7	Top Management	65	50.0
Justice	10	7.7	Total	130	100.0
Total	130	100.0	<b>Age</b>		
<b>level of educational</b>			less than 25 years old	1	.8
high school	7	5.4	from 25-35	35	26.9
Diploma	33	25.4	35-45	63	48.5
Bachelor	84	64.6	more than 45 years old	31	23.8
Master level	6	4.6	Total	130	100.0
Total	130	100.0	<b>Years of Experience</b>		
<b>Years of Experience</b>			less than 3 years	12	9.3
less than 3 years	12	9.3	from 3-10	30	23.1
from 3-10	30	23.1	from 10-15	44	33.8
from 10-15	44	33.8	more than 15 years	44	33.8
more than 15 years	44	33.8	Total	130	100.0
Total	130	100.0			

Table (3) presents the main factors that form barriers to strategies formulation and implementation in the public sector of Kuwait. It is evident from the table that strategic formulation represents a major obstacle. This reality has been reflected by the resulted mean and the median. The smallest standard deviation associated with this factor gives clear indication that the participants were consistent about the effect of the strategy formulation factor on the strategic success in the Kuwaiti public sector. The table also showed that the participants either agreed or strongly agreed with the factors used to explain ineffective public sectors' strategic implementation as mirrored by the reported mean and median. Similarly, the relatively low standard deviation points to a high level of agreement among the participants. What attracts attention in the table is that the participants agreed that all other main factors listed in the questionnaire represent obstacles towards successful strategic formulation and implementation in the Kuwaiti public sectors. However, the participants showed that public sectors policies, regulations, and the communication system employed in the public sector institutions are the main obstacles towards effective strategic formulation and implantation. External and human resources factors appeared to present less significant obstacle.

Table 3 Results of the description statistics

Factor	Mean	Median	Std. Dev.	Minimum	Maximum	Rank
Strategic Formulation	3.80	4.00	0.61	1	5	
Strategic implementation	3.52	4.00	0.63	1	5	
Organization	3.53	4.00	0.76	1	5	3
Policies and procedures	3.70	4.00	0.73	1	5	1
Human resources	3.44	3.00	0.77	1	5	4
Communication	3.69	4.00	0.75	1	5	2
External	3.32	3.00	0.96	1	5	5

Table 4 The extent of the participants agreement with all factors affecting successful strategy formulation and implementation

Formulation	Strongly Disagree/ Disagree		No View		Strongly Agree/ Agree		Rank
	Freq.	(%)	Freq.	(%)	Freq.	(%)	
Unsuitable leadership	13	10.0	28	21.5	89	68.5	12
Lack of exact strategic planning	9	6.9	23	17.7	98	75.4	4
Lack of consensus among decision makers	19	14.6	31	23.8	80	61.5	18
Lack of identification of major problems	21	16.2	32	24.6	77	59.2	19
Lack of effective role formulators	11	8.5	25	19.2	94	72.3	6
Lack of choice of real strategy formulators	18	13.8	21	16.2	91	70.0	7
Lack of strategy understanding	19	14.6	23	17.7	88	67.7	13
<b>Implementation</b>							
Lack of adequate manager commitment	20	15.4	38	29.2	72	55.4	23
Unsuitable training system	24	18.5	34	26.2	72	55.4	23
Lack of enough capabilities of employees	41	31.5	32	24.6	57	43.8	34
Unsuitable personnel management	28	21.5	39	30.0	63	48.5	29
Incompatible structure with the strategy	7	5.4	19	14.6	104	80.0	2
Time limitation	62	47.7	24	18.5	44	33.8	35
Inadequate connection to the vision	16	12.3	27	20.8	87	66.9	14
Unsuitable resources allocation	24	18.5	32	24.6	74	56.9	22
Insufficient linkage between strategy & goals	8	6.2	20	15.4	102	78.5	3
<b>Organization</b>							
Inadequate physical facilities	27	20.8	41	31.5	62	47.7	30
Lack of adequate organizational support	13	10.0	20	15.4	97	74.6	5
Incompatible organizational culture	11	8.5	33	25.4	86	66.2	15
Resistance to change among units	37	28.5	49	37.7	44	33.8	35
<b>Policies and regulations</b>							
Unclear regulation and executive policies	27	20.8	19	14.6	84	64.6	16
Unsuitable evaluation and control systems	12	9.2	27	20.8	91	70.0	7
Unsuitable compensation system	13	10.0	36	27.7	81	62.3	17
<b>Human Resources</b>							
Fear of job insecurity in the new territory	21	16.2	34	26.2	75	57.7	21
Resistance to change among people	36	27.7	36	27.7	58	44.6	31
Lack of enough motivation among employees	20	15.4	19	14.6	91	70.0	7
Lack of employees commitment	31	23.8	23	17.7	76	58.5	20
Fear of job insecurity among managers	40	30.8	32	24.6	58	44.6	31
Lack of enough motivation among managers	31	23.8	32	24.6	67	51.5	28
<b>Communication</b>							
Inadequate communication	12	9.2	27	20.8	91	70.0	7
Competing activities among people	26	20.0	33	25.4	71	54.6	26
Lack of effective co-ordination	8	6.2	16	12.3	106	81.5	1
Lack of adequate information system	17	13.1	19	14.6	94	72.3	6
Competing activities among units	33	25.4	39	30.0	58	44.6	31
<b>External</b>							
Lack of a national attitude towards strategy	40	30.8	18	13.8	72	55.4	23
Political factors in regard to power	38	29.2	24	18.5	68	52.3	27

Table (4) reports the extent of the participants agreement with all factors affecting successful strategy formulation and implementation in the Kuwaiti public sector listed in the questionnaire. The table disclosed that the lack of effective coordination within the public sector institutions as the most significant factor affecting successful strategic formulation and implementation. This factor was followed by factors such as incompatible structure with the strategy, insufficient linkage between strategy and goals, lack of exact strategic planning and lack of adequate organizational support. 75% or more of the participants either agreed or strongly agreed that these factors are responsible for unsuccessful strategies formulation and implementation in the Kuwaiti public sector. In addition, between 70-75% of the participants either strongly agreed or agreed that each of the following factors are responsible for unsuccessful strategies formulation and implementation: lack of effective role formulators, lack of choice of real strategy formulators, unsuitable evaluation and control systems and lack of enough motivation among employees. This implies that almost all aspects of the public sector's institutions (organization, policies and regulations, human resources and communications) contributing to unsuccessful strategies formulation and implementation.

To assess the strength of association between the main factors expected to form major obstacles towards effective strategic formulation and implementation in the Kuwaiti public sector, Person correlation is performed and disclosed in table (5). The table pointed to positive and statistically significant correlations among all listed factors in the questionnaire. This implies that the success of strategic implementation cannot be isolated from its formulation. In addition, the government institution's policies and regulations, organization, human resources, communication and external factors affect successful strategic formulation and strategic implementation. In other words, it is difficult to attain effective strategic implementation without proper strategic formulation; and it is unlikely to achieve a successful strategic formulation and implementation without adequate physical organizational facilities, organization support, compatible organization culture and the willingness to change. Also, successful strategic formulation and implantation in Kuwaiti public sector requires clear regulations and executive policies, suitable evaluation and control and compensation systems. In addition, successful strategic formulation cannot be achieved without satisfied human resources about their job security, motivation and willingness to change. Moreover, successful strategic formulation and implementation require adequate communication system within the public sector institution, avoidance of competing activities among individuals and units, effective coordination and adequate information systems.

Table 5 Correlations among the variables employed in the study

	Strategic implementation	formulation	Organization	Policies and procedures	Human resources	Communication
Strategic implementation	1.000					
formulation	.679**	1.000				
Organization	.657**	.421**	1.000			
Policies and procedures	.513**	.578**	.408**	1.000		
Human resources	.450**	.306**	.600**	.332**	1.000	
Communication	.572**	.426**	.432**	.685**	.297**	1.000
External	.339**	.362**	.102	.288**	.200*	.303**

Correlation is significant at the 0.01 level (2-tailed).\*\*

Correlation is significant at the 0.05 level (2-tailed).\*

To identify the main factors responsible for the success or otherwise of strategic formulation in the Kuwaiti public sector, a regression analysis is undertaken and the outcome of the analysis is reported in Table (6). The table showed positive and statistically significant

association between strategic formulation together with strategic implementation and policies and regulations. Positive but marginally statistically significant association also detected between strategic formulation and external factors such as the national attitude towards strategies and political factors regarding power. However, negative and a statistically significant association appeared between strategic formulation and the communication system. This might imply that even though public sectors institutions in Kuwait may have an advanced communication system but it is not employed properly in strategic formulation.

Table 6 Result of the regression analysis: factors affect strategic formulation

Model	Beta	t	Sig.	VIF
(Constant)		3.727	.000	
Implementation	.578	6.320	.000	2.350
Organization	-.029	-.322	.748	2.357
Policies and regulation	.403	4.776	.000	2.005
Human resources	-.037	-.482	.631	1.627
Communication	-.193	-2.195	.030	2.174
External	.119	1.798	.075	1.230
F = 26.362		Sig. F = 0.000		Adj. R <sup>2</sup> = 0.541

To identify which of the main factors listed in the questionnaire impact strategic implementation in the Kuwaiti public sectors, a second regression model was estimated where the implementation factor was used and a dependent variable and the results are summarized in Table (7). The table pointed to positive and statistically significant association between strategic implementation and factors such as strategy formulation, organizational and communication factors. The table also pointed to positive but statistically insignificant association between strategy implementation and human resources and external factors. A negative but statistically insignificant association spotted, in the table, between strategy implementation and policies and regulation.

Table 7 Result of the regression analysis: factors affect strategic implementation

Model	Beta	t	Sig.	VIF
(Constant)		.611	.542	
Formulation	.424	6.320	.000	1.726
Organization	.380	5.379	.000	1.910
Policies and regulations	-.101	-1.284	.201	2.346
Human resources	.031	.469	.640	1.627
Communication	.259	3.539	.001	2.051
External	.091	1.599	.112	1.236
F = 43.321		Sig. F = 0.000		Adj. R <sup>2</sup> = 0.663

## 4. CONCLUSION

The current study is set out to investigate factors preventing successful strategies formulation and implantation in the Kuwaiti public sector. Five key factors expected to affect the strategy successful formulation and implementation were identified. The choice of these factors was mainly based on previous studies in this area of research. The main factors were then divided into sub-factors and put together in a survey questionnaire. 200 copies of the questionnaire were distributed to employees at different levels in twelve organizations belong to the public sector of Kuwait. 130 of the distributed questionnaires returned, resulting in 65% usable rate. The participants in the

questionnaire survey were mainly Kuwaiti nationals and 59% of them are males. A significant number of them are more than 25 years old and most of them completed university academic degrees. They occupy different managerial levels within their organizations and most of them have more than 10 years of work experience. The fact that the participants work for twelve different governmental organization at different organizational levels with long timework experience gives credibility to the questionnaire survey.

The participants emphasized the importance of strategy formulation to achieve successful public sector strategies. The level of agreement expressed by the participants to strategy formulation was higher than that given to strategy implementation. Yet, the participants either strongly agreed or agreed that all listed factors in the questionnaire affect successful strategy formulation and implementation. The high association reported by the strategy formulation and strategy implementation indicates that it is unlikely to implement a strategy in the public sector successfully without properly formulating the strategy. In addition, a properly formulated strategy cannot be implemented without securing the right factors.

The participants indicated that clear policies and regulations together with external factors positively influence strategy formulation. They stressed that the communication system negatively affect strategy formulation. It seems to be the current communication system is not properly employed when formulating strategies. The communication system should be effectively used when setting strategies in the Kuwaiti public sector. This insures personnel strategy understanding and assist in smooth implementation of the strategy.

Analysis of the participants' response emphasized that the lack of effective coordination within the public sector institution is the most significant variable that impact successful strategic formulation and implementation. A substantial proportion of the participants also ascertain that incompatible structure with the strategy, insufficient linkage between strategy and goals, lack of exact strategic planning and lack of adequate organizational support are the main obstacles towards successful strategies formulation and implementation.

On the other hand, policies and regulations together communication and external factors are important factors towards effective strategy formulation. The participants further believe that organizational as well as communication factors are important to successful strategy implementation in the Kuwaiti public sector.

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# CHALLENGES OF THE FOURTH INDUSTRIAL REVOLUTION: A CASE STUDY OF BOSNIA AND HERZEGOVINA

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## **Abstract**

*This study focuses on Industry 4.0 in developing countries and, in particular, that of Bosnia and Herzegovina, which is one of the least competitive economies in the Region. A review of the literature on Industry 4.0 and the current prospect of it in the developing countries will be presented and then collecting the required data from the secondary data. This study aims to explore the main challenges along with some opportunities to apply Industry 4.0 in Bosnia and Herzegovina. The challenges that will be tested include poor infrastructure, harmonization of the education system and labour market, expensive installation of technologies, lack of government supports and growing trend of depopulation. Through insight into the structure of world trade and technology achievement, we will also look at the fact that the new industrial revolution will bring an even greater gap between developed and developing countries and try to answer the question of why such a disproportion in development occurs. As this is one of the first research projects regarding Industry 4.0 in Bosnia and Herzegovina, the findings of the study will generate some recommendations and propose some alternatives to be considered that could be useful for the decision-makers both in government and the private sector.*

**Keywords:** Industry 4.0, developing countries, challenges, disproportion

## **1. INTRODUCTION AND BACKGROUND**

The industrial sector is important to every country's economy and remains the driver of growth and employment. More attention is devoted to the implications of the integration of new technological products and services and the creation of industrial values. New technologies evolve at an exponential rate and there is no historical precedent that marked the beginning of evolution. These moves are followed by the emergence of artificial intelligence, robotics, the Internet of things, autonomous vehicles, both nanotechnology, 3-D printing, material science, quantum computing and storage energy (Hussin, 2018). This new paradigm of digitized and related products is called "Industry 4.0". The term "Industry 4.0" became publicly known in 2011, when an initiative called "Industry 4.0" where an association of representatives from business, politics, and academia promote the idea as an approach to strengthen the competitiveness of German manufacturing industry (Hermann, Pentek i Otto, 2015). The idea of Industry 4.0 includes a wide variety of devices,

from smartphones, gadgets, televisions and watches to household appliances, which are becoming ever more flexible and intelligent (KUKA, 2016). Industry 4.0 or fourth industrial revolution also refers to the next phase in a digitization of the manufacturing sector where the Internet of Things (IoT) looks to play a huge role that have the potential to feed information into it and add value to manufacturing industry to realize a low-volume, highmix production in a cost-efficient way (William, 2014). Industry 4.0 is also called the fourth industrial revolution, based on the "Internet of products and service" after mechanization (Industry 1.0), mass production (Industry 2.0) and automation (Industry 3.0). Internet of products and services is already an inevitable part of production in developed countries, particularly in sophisticated manufacturing and service industries, such as car manufacturing, aircraft manufacturing, insurance, logistics and communications industries (Witkowski, 2017)

Today's employees will work in a more globalized, automated, virtualized, networked, and more flexible world. They will compete for business on the global market. In this way, new competencies and skills become more important. The adoption of industry 4.0 will enable producers to create new jobs to meet the needs that have led to the growth of existing markets and the introduction of new products and services (Motyl et al., 2017). Experts predict that companies will be able to increase their productivity by about 30% using industry 4.0 (BDI, 2016). However, there is also a question of how to measure the country's readiness for the 4.0 industrial revolution. For this paper, some of the company or state-level indicators will be presented which can be used to assess readiness or achieve industrial and competitive development. Also, some of the above indicators have been used in this work to assess the impact of ICT sector development. So, according to Roland Berger (2014) Industry 4.0 Readiness index includes the following sets of indicators when creates country rankings:

1. Industrial excellence: a. production process sophistication b. degree of automation c. workforce readiness d. innovation intensity
2. Value network: e. high value-added f. industry openness g. innovation network h. internet sophistication.

Also, The Doing Business index is focusing on the environment Small and Medium Size Enterprises are operating in. The data collected are relating to the largest business city of each economy and covering 10 areas: starting a business; dealing with construction permits; getting electricity; registering property; getting credit; protecting investors; paying taxes; trading across borders; enforcing contracts; resolving insolvency. One of the most popular analysis frameworks for global competitiveness is Michael Porter's (2008) Diamond Model. Porter identifies four factors with the high impact of national and regional competitiveness.

These are:

1. Factor conditions that can be found in a given territory and strengthening competitiveness like skilled workforce or linguistic abilities
2. Demand conditions: competitive large home market can create competitive advantage
3. Related and supporting industries
4. Firm Strategy, Structure, and Rivalry.

World Economic Forum Global Competitiveness Index assesses the competitiveness landscape of 140 economies, and it aims to identify and measure the drivers of their productivity and prosperity. The index groups its indicators into 12 categories, the so-called pillars. These are Institutions; Infrastructure; Macroeconomic environment; Health and primary education; Higher Education and training; Goods market efficiency; Labour market efficiency; Financial market development; Technological readiness; Market size; Business sophistication; Innovation. Economic systems of the countries with developed economy are based on high technologies and innovational goods and services that allow them to be leaders and show high quality of economic growth, while the countries with developing economy are oriented at the existing technologies,

goods, and services, due to which they reach high growth rates with its low quality, establishing their “underdeveloped” position in the global economic system (Alekseev et al., 2018).

However, these products are often not competitive in the foreign market, given their technological achievements. These countries are often criticized for lack of women's leadership skills, factory infrastructure, technological applications, and low levels of modification in line with industry evolution and availability, all of which are identified as the main challenges for this growing country. As the key restraining factor on the path of implementing the strategies of increase of the quality of economic growth in the countries with developing economy is deficit of financial resources, the financial aspect of development of industry 4.0 should be paid special attention (Alekseev et al., 2018). Although this paper presents a regression analysis of the example of Bosnia and Herzegovina, the authors will look at some of the macroeconomic indicators of Bosnia and Herzegovina and the surrounding countries, and compare these indicators with European Union countries. Transition economies provide a particularly fascinating background for entrepreneurship development. Bosnia and Herzegovina, Macedonia, Serbia, and Montenegro are rarely in the sample of transnational analyses of transitional economies. Slovenia was the only former Yugoslav state that was very often involved in the research. Western Balkan economies (Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia and Montenegro) are relatively small open economies, with an advanced level of trade integration with the EU and CEFTA, with per capita income from medium to low-income levels. Their traditional specialization is in highly-labor intensive industries (clothing, textiles, and leather) and the transformation sectors (melting, metalwork and agribusiness). Tourism represents a significant share of GDP in Montenegro, while money transfers play an important role in stimulating domestic demand and smaller investments in Albania and Bosnia and Herzegovina (Dana and Ramadani, 2014).

Table 1 shows the structural and macroeconomic indicators of the Western Balkans countries compared to the European Union, according to Key Figures on Enlargement Countries (2017), which presents an updated series of key statistics for five candidate countries and two potential candidates, as well as EU-28 data for a period of 10 years (2007 - 2017). Table 1 shows selected indicators that can be read from column one to compare them between the five selected accession countries as well as the EU-28. Table 1 does not include ten years, but only the last observed year, i.e. 2017, but will be mentioned below for some indicators and changes occurring over ten years, according to data available at Eurostat. <sup>1</sup>Population and population structure statistics are increasingly used to support policymaking and provide opportunities for tracking demographic behaviour within the economic, social and cultural context. The population of the observed countries (Bosnia and Herzegovina, Albania, Serbia, Montenegro, and Macedonia) is estimated at 18 million people in 2017 (see Table 1), which is slightly less than 4% of the EU-28 total (508 million people). Serbia has the largest population of 7.114 million, out of 5 observed countries (outside the EU), and Montenegro is the smallest country with 622 thousand inhabitants. The number of inhabitants in Montenegro and the former Yugoslav Republic of Macedonia grew at a modest pace, increasing by 1.4% and 1.7% respectively; which was slower than the corresponding rate of change in the EU-28, where the population grew by 2.8%. Albania has the lowest GDP per capita (BiH has EUR 3,800 in GDP, and Albania EUR 3,600 in GDP).

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<sup>1</sup> [http://ec.europa.eu/eurostat/statisticsexplained/index.php/Enlargement\\_policy\\_and\\_statistical\\_cooperation](http://ec.europa.eu/eurostat/statisticsexplained/index.php/Enlargement_policy_and_statistical_cooperation)



Table 1 Structural and macroeconomic indicators of Balkan countries compared to EU countries, 2017

	EU	Bosnia and Herzegovina	Serbia	Montenegro	Albania	Macedonia	
Population in millions	508 451	3 819	7 114	622	2 892	2 069	
GDP p.c (euro)	28 800	3 800	4 700	5 800	3 600	4 400	
Employment rate (people from 20 to 64)	70,1	43,2	56,0	56,7	59,3	51,9	
Balance sheet % of GDP	Products	0,9	-26,0	-19,9	-40,4	-22,4	-20,1
	Services	1,0	7,3	2,2	21,8	5,1	3,8
FDI	Inflows	118 944	264	2 114	630	890	157
	Outflows	96 071	43	310	11	72	-14
Trade balance with EU-28	Export in EU	-	3 291	7 672	113	1 303	3 126
	Import from EU	-	4 930	8 266	760	2 398	3 586

Source: author, according to Key figures on enlargement countries, edition 2018, Eurostat

The European Union has a 3.7 times bigger GDP than Bosnia and Herzegovina. The EU-28 employment rate for people between the ages of 20 and 64 was 70.1% in 2017, in other words slightly over three-quarters of people aged between 20 and 64 were employed. Employment rates in the enlargement countries were generally much lower than in the EU-28. In 2017, the overall employment rate among the enlargement countries ranged from 59.3% in Albania to 43.2% in Bosnia and Herzegovina for people aged 20 to 64 years. Balance of Payments is a record of some international business transactions with the rest of the world. The current account balance is made up of several components, and in Table 1 there are two of them, including trade in goods and services. In 2017, EU-28 recorded a positive balance for goods and services, while all expansion countries reported a negative balance of goods and a positive balance for services. The current account deficit is relatively large in most enlargement countries, reaching -40.4% of GDP in Montenegro. On the other hand, Montenegro accounts for the largest surplus of the current account for services (21.8% of GDP), mainly as a result of tourist sector arrivals. In terms of FDI, outflows from EU-28 (non-member countries) amounted to EUR 96 billion in 2017, while non-member inflows amounted to EUR 119 billion. Each of the enlargement countries also recorded a higher level of foreign direct investment inflow than outflow.

Doing Business provides an aggregate ranking of "ease of business" for small and medium businesses. Economies are ranked from 1 to 190 according to "ease of operation" and indicators of metrics. Under conditions of business start-up ("business ease"), Bosnia and Herzegovina ranked 131 among the world's 189 world economies, in 2015 it was 107th, while in 2012 it occupied the 110th place.<sup>2</sup> Falling on the ladder is not necessarily the result of failure to comply with regulations and the lack of progress; this is large since other countries covered by the analysis are moving faster in adopting and implementing regulations and economic reforms. According to the Doing Business report for 2017<sup>3</sup>, BiH ranked 81st out of 190 countries in terms of ease of business, where there was a deterioration compared to the previous year when BiH ranked 79th out of 189 countries. BiH is best placed within the framework of cross-border co-operation indicators and is ranked 36th in the global list, where the time and cost of exporting and importing goods as well as documentation itself is reduced. This improvement in rank has mostly contributed to improvements in the cross-border trade system, whereby the time and costs of exporting and importing goods as well as the documentation themselves are greatly reduced.

The business environment is still burdened with numerous administrative barriers at various levels of government. Certain progress has been made in asset registration, but companies

<sup>2</sup> Business, D. (2009). *Doing Business, 2015. The World Bank: Washington, DC.*

<sup>3</sup> World Bank. (2016). *Doing Business 2017: Equal opportunity for all.* World Bank Publications.

still have to register in both entities if they want to operate throughout the country, registration procedures are still different and there is no registration system for the entire Bosnia and Herzegovina. Procedures for opening new companies, the process of obtaining licenses, time and costs are still long and are one of the worst points of our country's competitive ability, which is also rejected by foreign investors. Particular difficulties in the field of competitiveness are related to the beginning of a business, i.e. the start of business where, according to the World Report "Doing Business for 2016", it is stated that starting a business in Bosnia and Herzegovina should go through 11 procedures that need 37 days. After that, for the granting of permits, 15 procedures in 179 days and the time needed for access to electricity for 125 days (Bosnia and Herzegovina, Bosnia and Herzegovina Development Report - Directorate for Economic Planning, 2016) must be passed. Table 2 shows how Bosnia and Herzegovina was ranked in the period from 2014 to 2016 according to the "ease of operation" and the indicator of measurement regulations. Thus, it can be seen that in 2014 it occupied the 174th place of 189 world economies for the "start of business" indicator, in 2015 it was in 147th place and 2016 in 175th place. Regarding, for example, "solving insolvency", it can be noticed that Bosnia and Herzegovina were significantly better ranked in 2016 than in 2014, as well as in "cross-border trade". However, when it comes to "paying taxes", in 2015, from 97th place in the list of 189 world economies, Bosnia and Herzegovina climbed to 15th place in 2016.

Table 2 Indicators of conditions for start-up and business operation according to "Ease of Business" in Bosnia and Herzegovina (in days)

Country Bosnia and Herzegovina	2014	2015	2016
Start of business	174	147	175
Attaining construction permit	175	106	171
Access to electricity	164	156	119
Registration of ownership	96	106	97
Getting a loan	73	44	42
Investors protection	115	19	66
Taxes payments	135	97	154
Cross-border trade	107	24	28
Conducting the contracts	115	116	----
Solving insolvency	77	43	36

Source: author, according to <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB16-Full-Report.pdf>

Table 3 Indicators of conditions for start-up and business operations according to "Ease of Business" in the Balkans, 2017 (in days)

Country	Albania	BiH	Crna Gora	Hrvatska	Makedonija	Srbija
Start of business	46	174	58	95	4	47
Attaining construction permit	106	170	93	128	11	36
Access to electricity	156	123	167	68	29	92
Registration of ownership	106	99	78	62	48	56
Getting a loan	44	44	7	75	16	44
Investors protection	19	81	42	27	13	70
Taxes payments	97	133	57	49	9	78
Cross-border trade	24	36	43	1	27	23
Conducting the contracts	116	64	41	27	36	61
Solving insolvency	43	41	40	54	32	47

Source: author, according to <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB17-Report.pdf>

Compared with neighbouring countries, Bosnia and Herzegovina is ranked the worst and in terms of ease of doing business in the 81st place (1-190). Companies face a range of internal weaknesses and constraints in terms of low knowledge of new technologies, access to funding sources, low negotiation power, low productivity, lack of entrepreneurial skills and lack of knowledge related to adequate staff management. Factors that improve the company's performance are related to the stable business conditions that do not hobble but encourage entrepreneurial initiative.

## 2. USED METHOD AND DATABASE

The paper aims to analyse the interdependence between the development of ICT companies and infrastructure, the education system, the installation of technologies, the lack of government supports and the growing trend of depopulation. Starting from the previous considerations about the Industry 4.0 framework and the changes that digital transformation will induce in the economy of the developing country, we propose the following model:

$$ICTCOMP_t = \alpha + \beta_1 STARTUP_t + \beta_2 TIMEBUSS_t + \beta_3 INFRASTR_t + \beta_4 MIGRPERC_t + \beta_5 HIGHEDU_t + \varepsilon_t$$

where ICTCOMP is the ICT companies, t time period; STARTUP (Start-up procedures to register a business - number), TIMEBUSS (Time required to start a business - days), INFRASTR (Infrastructure - Rank out of 139), HIGHEDU (Higher education and training - Rank/137), MIGRPERC (Stock of emigrants as percentage of population)  $\varepsilon_t$  standard error;  $\alpha$  constant;  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  and  $\beta_5$  parameters to be evaluated. Statistical data underlying come from the World Bank, Migration and Remittances Factbook, and the used reports of the Statistic Agency of Bosnia and Herzegovina. For establishing how the independent variables influence the number of ICT companies, the used research method implied ten years period from 2007 to 2017, processed with SPSS. The sample includes key indicators of Bosnia and Herzegovina and the period between 2007 – 2017.

Table 4 View of the observed variables in Bosnia and Herzegovina model for the period 2007-2017

Variables	Indicators	Source
ICTCOMP	ICT companies (2007-2017)	Statistical Agency of BiH
STARTUP	Start-up procedures to register a business (number)	World Bank
TIMEBUSS	The time required to start a business (days)	World Bank
INFRASTR	Infrastructure - Rank out of 139	World Bank
MIGRPERC	Rate of emigrants as a percentage of the population	Migration and Remittances Factbook
HIGHEDU	Higher education and training - Rank/137	World Bank

Table 5 Descriptive statistics

	Mean	Std. Deviation	N
ICT companies (2007-2017)	827,0909	309,88916	11
Start-up procedures to register a business (number)	13,1818	,40452	11
Time required to start a business (days)	89,0000	9,50789	11
Infrastructure (Rank out of 139)	121,6364	16,30505	11
Higher education and training (Rank/137)	87,2727	11,95902	11
Rate of emigrants as percentage of population	41,1182	3,27103	11

## 2.1. Using the Multiple regression model for analyzing interdependence between ICT companies and independent variables

In order to achieve the multifactorial linear model, the analysis aimed the tendency line of the ICT companies, expressed in numbers of company per year depending on Stock of emigrants as percentage of population, Higher education and training (Rank/137), Start-up procedures to register a business (number), Time required to start a business (days), Infrastructure (Rank out of 139), Urban population (% of total) (2007-2017) separately taken, building, for this purpose, unifactorial linear econometric models (Figure 1). Variables which have the most influence on ICT companies will be presented. From the analysis of the tendency line it can be noticed that the value of the multiple determination coefficient ( $R^2$ ) shows that, in the proportion of 66,6 %, ICT companies are influenced by the time required to start a business (in days).

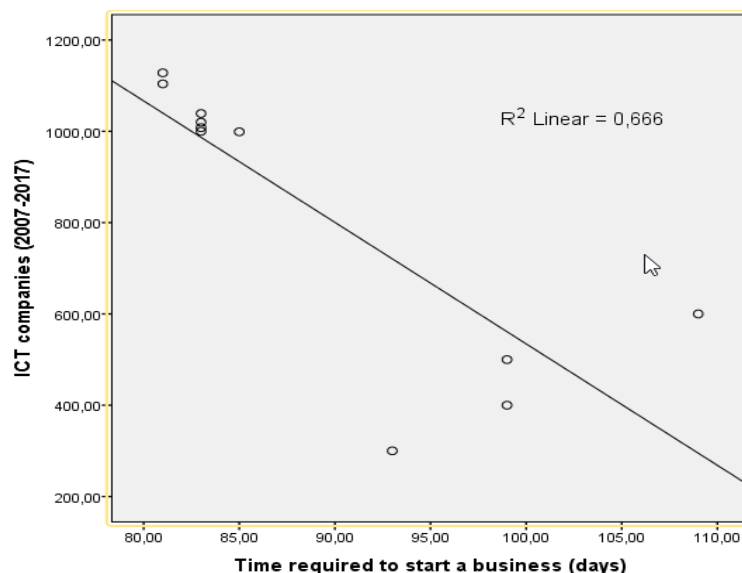


Figure 1 ICT companies depending on time to start a business

Figure 2 present the value of the multiple determination coefficient ( $R^2$ ) which shows that in the proportion of 63,1 % ICT companies are influenced by the rate of emigration.

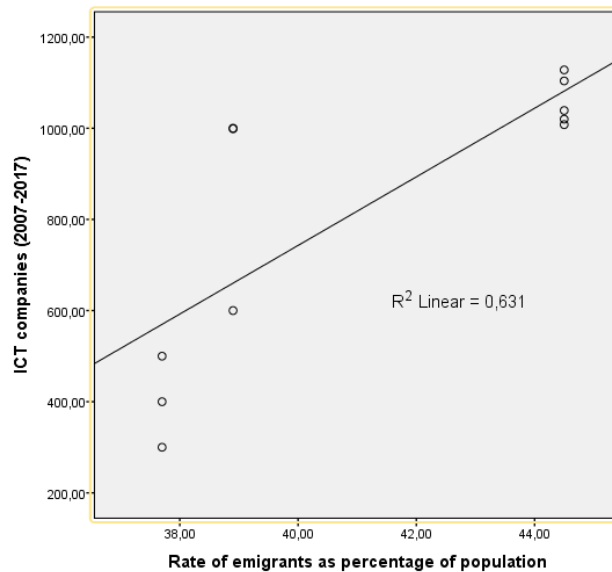


Figure 2 ICT companies depending Emigration rate

## 2.2. Testing the interdependence and intensity between variables

To measure the interdependence and also the intensity between the resultative variable and the factorial variables, we shall calculate the coefficients of multiple correlations (R), and for determining the percentage with which five independent variables influences the ICT companies some coefficients of determination shall be established (Table 6.)

Table 6 Statistics of the regression, 2007 – 2017

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,992 <sup>a</sup>	,984	,968	55,43772	,984	61,493	5	5	,000

a. Predictors: (Constant), Start-up procedures to register a business (number), Higher education and training (Rank/137), Migration, Time required to start a business (days), Infrastructure (Rank out of 139)

b. Dependent Variable: ICT companies (2007-2017)

From the analysis of data displayed by the SPSS (Table 6.) it results that the value of R is rather high, respectively 0,992, a value showing that there is an intense connection between ICT companies and independent variables. The analysis of the connection between variables using the  $R^2$  highlights that 98,0 % of ICT companies were influenced by the proposed independent variables, and 2,0 % of ICT companies are influenced by other random factors, while the standard error (Se) of the model is 55,437.

Thus,  $\beta_0$  takes values from the range [- 3654,585; - 333,094],  $\beta_1$  from the range [-14,467; - 6,540], [-48,126; -87,401],  $\beta_3$  from the range [-3,206; 4,257],  $\beta_4$  from the range [-18,002; -5,132],  $\beta_5$  from the range [- 30,692; - 260,138]. We may notice that the threshold of significance (Sig.), for each coefficient is lower than 0,05, except for variable that represent Infrastructure, which is  $p = 0,732$ , and showing that there is statistically significance between the dependent variable and independent variables (Table 7.).

Table 7 Value of the model coefficients, 2007 – 2017

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-1993,839	646,058		-3,086	,027	-3654,585	-333,094		
	Higher education and training (Rank/137)	-10,504	1,542	-,405	-6,813	,001	-14,467	-6,540	,563	1,776
	Rate of emigrants as percentage of population	-67,764	7,639	-,715	-8,870	,000	-48,126	-87,401	,306	3,263
	Infrastructure (Rank out of 139)	,526	1,452	,028	,362	,732	-3,206	4,257	,342	2,927
	Time required to start a business (days)	-11,567	2,503	-,355	-4,621	,006	-18,002	-5,132	,338	2,960
	Start-up procedures to register a business (number)	-145,415	44,629	-,190	-3,258	,022	-30,692	-260,138	,587	1,703

a. Dependent Variable: ICT companies (2007-2017)

The estimated equation is:

$$\hat{Y} = -1993,839 - 10,504x_1 - 67,764x_2 - 11,567x_3 - 145,415x_4$$

After the verification of the multicollinearity between the independent variables (Table 7.), we found that the value of the variance inflation factor (VIF) is of 2,960, lower than 5, Tolerance is higher than 0,2, leading to the conclusion that between independent variables there is no direct connection, these variables do not influence each other, and we may build a model. In table 8. can be seen in the residues (Rs) showing the minimum (Min.) value and the maximum (Max.) value of standard deviations (Sd).

Table 8 Statistics of the residues for the model, 2007 – 2017

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	292,6270	1102,2905	827,0909	308,34132	11
Residual	-69,53670	48,84180	,00000	30,93418	11
Std. Predicted Value	-1,733	,893	,000	1,000	11
Std. Residual	-1,589	1,116	,000	,707	11

a. Dependent Variable: ICT companies (2007-2017)

The analysis highlights the predicted value of ICT companies, knowing independent variables, is of 827,0909 with a minimum of 292,6270 and a maximum of 1102,2905. It results that the deviation from the model is in minus with 69,53670 Be plus with 48,8418 Be. The average and the Sd of these variables is rather high  $\pm 30,934$  respectively  $\pm 308,341$ .

Table 9 Analysis based on the ANOVA table, 2007 – 2017

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	950743,673	5	190148,735	99,354	,000 <sup>b</sup>
	Residual	9569,236	5	1913,847		
	Total	960312,909	10			



To test the model validity, we are using F - test, based on the theoretical repartition Fisher – Snedecor (F). The empirical value of the F-test based on the ANOVA table is  $F = 99,354$ . At the level of significance  $\alpha = 5\%$   $F_{\text{tabel}} = 5,12$ . Since the  $F_{\text{tabel}} < F_{\text{calculated}} = 99,354$ , the null hypothesis is rejected in favour of the alternative one, and the chosen model is considered as significant from the statistical point of view. The model validity and the strong connection between the variables are also supported by the threshold of significance (Sig. F) Significance  $F < 0,000$ .

### 3. DISCUSSION

The coefficient value has shown that there is a strong and direct link between the dependent variables and the four independent observed variables. The proposed model can be used to determine the additional values of ICT companies in Bosnia and Herzegovina, pointing to the importance of reduced administrative obstacles that negatively reflect the growth of ICT companies. When it comes to starting a business and the length of its establishment, Bosnia and Herzegovina is ranked 175th out of 190 countries in 2018.<sup>4</sup> In addition to the length of enterprise creation and complex procedures, there is also the education system as one of the key competitiveness indicators. According to research results, it had a significant impact on the establishment of ICT companies in Bosnia and Herzegovina. According to the Global Competitiveness Report,<sup>5</sup> education implies a general level of skills in workforce, quantity, and quality of education. Although the concept of quality of education is constantly evolving, important quality factors today include the development of digital literacy, interpersonal skills and the ability of critical and creative thinking. Research findings indicate that there is a negative link between the number of ICT companies and the variables of education. Namely, Bosnia and Herzegovina, according to the new Global Competitiveness Report (2018), is ranked 87th among the 140 countries in terms of skills and the quality of education. What is worrisome is the fact that Bosnia and Herzegovina deteriorated its position compared to 2017 when it was the 83rd position. Also, the Competitiveness Indicator in which Bosnia and Herzegovina has the worst result (position 133) refers to the skills appraisal of the graduates who are required by the companies. This all suggests that the education system in Bosnia and Herzegovina does not allow labour competitiveness and that there is no compatibility between the supply of education structure and labour demand in terms of knowledge, expertise, and abilities. When it comes to population emigration, it is expected that it will harm the development of the ICT sector. Apart from being educated in Bosnia and Herzegovina, it is not tailor-made to the needs of the IT sector, i.e. it does not "produce" a sufficient number of high-skilled IT staff, IT companies are also losing experienced professionals. According to research and data obtained from a member of the IT company "BIT Alliance", in the past 12 months, 4.5% of the total number of IT employees (about 150 experts) left the country.<sup>6</sup>

### 4. CONCLUSIONS AND FUTURE RECOMMENDATIONS

Industry 4.0 will affect all sectors and disciplines, bring structural transformation into a global economy and lead to a new divide that will have a tremendous impact on developing countries. Although ICT is emerging in Bosnia and Herzegovina, however, the initiatives of individuals launching the ICT industry need to be supported by strategic initiatives in the context of future IT legislation development in Bosnia and Herzegovina to have long-term potential. There is a question of the readiness of Bosnia and Herzegovina and other developing countries for the new industrial revolution. Although most developing countries pay attention to the development of science and technology, initiatives have not been implemented appropriately. Low university research results, as well as insufficient intellectual property production, means that these countries are still poor in innovation. If we take for an example export of IT services in the context of

<sup>4</sup> <http://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2018-Full-Report.pdf>

<sup>5</sup> <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>

<sup>6</sup> BIT Alijansa

participation in total exports, all countries in the region are better positioned than Bosnia and Herzegovina which occupies 77th place on the world rank. Other countries occupy these places: Romania 18, Albania 21, Serbia 26, Macedonia 37, Bulgaria 41, Montenegro 45, Croatia 50.

The basic condition for a better position of Bosnia and Herzegovina when it comes to the quality of the workforce is to change the quality of education that will contribute to the creation of a critical mass of adequately trained experts. Due to the long and complicated process of opening a business, the World Bank's last Doing Business list has reached Bosnia and Herzegovina's 183rd place in 190 countries. Low ranked because opening an enterprise on average requires as many as 81 days and 13 procedures, so the start-up process should be more efficient and faster. Also, business transformation on the basis of digital models will make possible to reach an absolutely different level of product and services creation and promotion, to provide the optimal quality of services to clients and the efficiency to companies and enterprises (Kupriyanovsky et al., 2017). However, such transformation necessitates substitution of traditional managerial approaches, principles and values to the models with priority goals and economic system's success criteria being not the profit or short-term efficiency, but client focus, innovation, new project realization rate, cooperation with suppliers and partners.

For future recommendation, authors suggest testing these variables in other developing countries, also including other indicators such as capacity innovation, research and development expenditure, unemployment rate and cooperation in labour-employer relations.

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# EFFECTS OF INTEGRATION PROCESS ON COMPETITIVENESS OF BOSNIA AND HERZEGOVINA

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Original scientific paper

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## **Abstract**

*World Economic Forum (WEF), in The Global Competitiveness Report 2018, identifies competitiveness with productivity level concluding that all countries benefit from being more competitive. The competitive economy is also productive economy; productivity growth leads to economic growth and higher standard of living. Theoretical and practical experience suggests that establishing a free trade zone leads to positive effects but also has negative consequences, especially in the short term. Bosnia and Herzegovina takes part in the Stabilization and Association Process, and the relative bilateral Stabilization and Association Agreement (SAA) has been signed in 2008, ratified in 2010, and entered into force in 2015. Meanwhile, the trade bilateral relations were regulated by an Interim Agreement. Adapted SAA entered into the force on February 1, 2017. The aim of this paper is to analyze the effects of trade liberalization on the level of competitiveness ten years after establishing free trade zone with EU, the most important trade partner, i.e. to estimate relationship between GDP pc, GCI and trade balance in the long run.*

**Keywords:** GCI, productivity, EU integration process

## **1. INTRODUCTION**

The main occupation of any government is to determine the optimal instruments of economic policy that will boost economic growth and development. In nowadays: products, companies, industries, regions, countries and integrations, all compete on the global market. Thus competitiveness is in the focus of any policy: locally, regionally and globally. The World Economic Forum (WEF) defines the competitiveness of countries as a set of institutions, policies and factors that determinate the level of productivity. Many theorists believe that the level of market competition is the best indicator of development of the observed country. High level of competition brings new ideas, innovations, makes companies stronger and makes economy grow faster. That is why competitiveness has to be in focus of economic policy in every country. Bosnia and Herzegovina (B&H) is a small and open country specific by its complex administrative structure and many transitional problems. B&H suffers from chronically large trade deficits, mostly due to rebuilding efforts after the war. Citizens suffer the most due to the lack of political will and consensus on issues of crucial importance to the development of the country. Motivation of young people to remain in this plagued country is on the lowest level. EU integration is one of the very few issues where consensus exists among all political sides; EU requirements are taken into

account and are given priority in procedures for solving. The export orientation of B&H economy stands out as the key to the solution of main economic problems in many analyzes. Bosnia and Herzegovina takes part in Stabilization and Association Process (SAP). The aim of this paper is to analyze the effects of trade liberalization on the level of competitiveness ten years after establishing free trade zone with EU, the most important trade partner, i.e. to estimate relationship between GDP p.c., GCI and trade balance in the long run.

The paper is divided in six parts. First, literature review related to competitiveness of B&H and methodology and data are given. Second part presents EU accession as a main goal of foreign policy for B&H. Later in the paper analysis of the main macroeconomic indicators is presented. Also, separately are presented some facts about competitiveness. After that regression model is presented. And at the end conclusions and recommendations can be found.

## 1.1. Literature review

In turbulent and modern business world, characterized by a high level of openness and integration, international competitiveness can be freely considered as a crucial importance; both in developed and developing countries (Prlić, Marić, 2008, p.117). Competitiveness has been in the focus of economics since Adam Smith, David Ricardo, J.Stuart Mill, G.von Haberler, Heckscher and Olin ,Samuelson etc. where traditionally has been evaluated through international trade theories. Kravis, Linder and Vernon gave more contemporary view on international trade. Michael Porter introduced innovative micro approach in his theory "The Competitive Advantage of Nations" saying that in nowadays the most important determinants of competitiveness are created ones and not inherited ones. Competitiveness is reflected in the foreign trade structure. Characteristic of the developed countries is that they have mostly intra-industry trade.

The most famous and most comprehensive magazine that publishes a list of the most competitive economies in the world is the Global Competitiveness Report, which the World Economic Forum (WEF) has been publishing since 1979. Report helps to understand the main determinants of the economy growth and why some countries are much more successful in achieving macroeconomic goals than others through twelve pillars of competitiveness. From 2002. WEF used Growth Competitiveness Index (introduced by Jeffrey Sachs and John McArthur) for measuring competitiveness but it lacked many important indicators. „The missing indicators „were incorporated in new index introduced by professor Xavier Sala-I-Martin called Global Competitiveness Index, GCI). Economic Forum (WEF) in its' The Global Competitiveness Report 2018 identifies competitiveness with productivity level concluding that all countries benefit from being more competitive. According to the Global Competitiveness Index (GCI), it is assumed that the states are passing through three stages of development: 1. "Factor-driven stage", 2." Efficiency-driven stage" ,3. "Innovation-driven stage". In the first phase of productivity growth, the main factors of competitiveness are important: good functioning of public and private institutions (I pillar), well-developed infrastructure (II pillar), stable macroeconomic framework (III pillar) and good healthy and educated work force (Pillar IV). By developing countries enter the second phase where they realize more efficient production processes and a product quality growth. At this stage, growth in competitiveness is influenced by high education and professional training (V pillar), efficient commodity market (VI pillar), good functioning labor market (pillar VII), sophisticated financial market (pillar VIII), large domestic and foreign market and the possibility of exploiting existing technologies (pillar IX). Finally, the countries move to the third stage where productivity and competitiveness growth is conditioned by factors of high business sophistication (XI pillar) and innovation (XII pillar).

Some theorists think that liberalization is great choice for B&H, but others think opposite. Neoclassical concept of economic development (known as "Washington Consensus") has been applied in B&H because of political instability and complex structure. According to Marić (Marić, 2007, p.217) with existing structural differences and real economic convergence, the full

liberalization couldn't bring good results for B&H economy. In his paper Liberalization of foreign policy in Bosnia and Herzegovina and effects of liberalization on economy development (originally: Liberalizacija ekonomskih odnosa s inozemstvom i njen utjecaj na gospodarski razvoj Bosne i Hercegovine) he indicates liberalization and highlights possibilities which could be used by adequate protective policy, especially protective tariffs. Because of insufficient competitiveness, Marić wrote that B&H was not ready for a fast entrance in the economic integration (CEFTA, EU), which in its circumstances might have more constraining effects than effects of stimulating the economic development. Economic theory and even more historical experiences of today developed countries suggest that in a situation of deep recession the macroeconomic framework should be a classic Keynesian policy in which the protection of the domestic infant industry has a significant place.

Giving an importance to a greater role of competitiveness in international trade creates a prerequisite for better results in international trade, reduction of trade deficit, faster growth of GDP and higher levels of other competitiveness indicators (Nalić, 2016, pp-113-114). Nalić argues that the low level of B&H economy's competitiveness is mostly affected by the difficult access to financial resources, political instability, high tax rates and government instability as the biggest barriers to bring competitiveness to the highest possible level.

Foreign trade imbalance is a clear indicator that Bosnia and Herzegovina has extremely low level of economic competitiveness in comparison to EU member countries, but also in comparison to the most enlargement countries (Gadžić, Mrkonjić, 2017, pp.103-123).

Neoliberalists argue that liberal trade policy is prerequisite for economic growth, but the fact is that it is not enough to ensure growth of trade by itself. When trade reform is carried out in an unstable macroeconomic environment or is pursued without carefully designed economic policy, economic growth is not achieved.

If B&H wants to make more progress on the competitiveness scale, it has to work harder. It is crucial for the competitiveness of companies as well as for countries to develop a better education system and to improve employee knowledge through internal and external training. Social infrastructure and political institutions increasingly come in the focus of many analyzes and policies. (Piljić, 2018, pp. 42-56)

Obhodas and Jaganjac estimated the impact of macroeconomic indicators on competitiveness of B&H by application of regression analysis. Analysis was based on the impact of GDP, external debt, direct foreign investment participation in GDP, annual unemployment rate and average net wage at competitiveness of B&H. Model estimated the greatest correlation between competitiveness and annual unemployment rate, competitiveness and public debt, and competitiveness and average net wage, while the lowest correlation was between competitiveness and FDI and GDP. It is also important to emphasize the extremely high degree of correlation between GDP and public debt (Obhodas, Jaganjac, 2018, pp. 1-9).

Long-term and short-term effects should also be evaluated in the wider context of foreign trade liberalization, to which Bosnia and Herzegovina, like other transition countries, has approached immediately after getting independence. Reasons to accept liberalization of trade as a concept for B&H should certainly be sought in several factors, starting with the lack of funds for the reconstruction after war to the advantages related with faster economy growth and development that brings European integration. Difficult social situation of the country since the end of the war made it necessary to ensure supplying the market but at lower prices. The trade liberalization process in B&H started with the adoption of the Trade Acts in 1998; The Law on Foreign Trade Policy of B&H, The Law on Customs Policy and the Customs Tariff in B&H, The Law on Foreign Direct Investment of B&H and the Law on the Central Bank of B&H. By these laws very liberal treatment is given and customs protection reduced to a very low level to the goods imported into B&H.

In addition, the process of liberalization in B&H took place simultaneously on a global scale – WTO (World Trade Organization) accession negotiations and at regional level – CEFTA, SAA... Thus the effects of all these processes are summed up ([http://www.mvteo.gov.ba/attachments/bs\\_trgovinski-aspekti-ps-ssp-bih-eu.pdf](http://www.mvteo.gov.ba/attachments/bs_trgovinski-aspekti-ps-ssp-bih-eu.pdf) pp.9-10) .



## 1.2. Methodology and data

For the purpose of this paper, secondary data were used from the Thematic Bulletins of B&H Agency for the statistics on gross domestic product (GDP), GDP *per capita* (GDP p.c.), exports and imports of goods, data about flow of FDI taken from Bosnia and Herzegovina Central Bank, all for the period 2004 - 2017. Hypothesis in this paper is that 10 years after assigning SAA living standard of B&H citizens is higher, *i.e.* GDP p.c. is higher, foreign trade deficit is less (and export-import ratio is higher), FDI (Foreign Direct Investments) are higher, and competitiveness of the country is higher; evaluated through Global Competitiveness Index (as GCI ranking is lower that more competitive country is; *i.e.* 103 is better than 107 ranking position). The aim of this paper is to analyze the effects of trade liberalization on the level of competitiveness ten years after establishing free trade zone with EU, the most important trade partner, *i.e.* to estimate relationship between GDP pc, export-import ratio, FDI and GCI in the long run. Dependent variable in the model is GCI, and independent variables are GDP p.c., foreign trade (in)balance and FDI. Also, *dummy* variable is used to estimate impact of trade agreement. The method to be applied is the regression and the EVIEWS data processing program. Regression model is presented later in the paper. In 2014 B&H was not ranked. Thus to avoid missing data, linear interpolation is used for getting that year ranking in analysis.

Research aim is to show if there is a statistically significant difference in the competitiveness ranking after trade liberalization.

## 2. EU ASSOCIATION AS THE MAIN GOAL

Membership in the European Union is one of the main foreign policy priorities of Bosnia and Herzegovina, as defined in the document "Strategic Guidelines and Priorities for the Implementation of the Foreign Policy of B&H", adopted by the Presidency of Bosnia and Herzegovina on March 26, 2003.

Bosnia and Herzegovina takes part in the Stabilization and Association Process (SAP), and the relative bilateral Stabilization and Association Agreement (SAA) has been signed in 2008, ratified in 2010, and entered into force in 2015. Meanwhile, the trade bilateral relations were regulated by an Interim Agreement (on trade and trade related issues-IA). Adapted SAA entered into the force on February 1, 2017 (taking in a count that Croatia left CEFTA- Central European Free Trade Agreement-and became EU member). Some facts on the Stabilization and Association Agreement (SAA) and the Interim Agreement (IA) between the European Union and Bosnia and Herzegovina have to be given. Trade policy plays an extremely important role in the overall strategy of the European Union for the Western Balkans. Bosnia and Herzegovina foreign trade policy and overall diplomacy policy has European integration as the main goal. EU strategy is based on four steps:

1. Autonomous Trade Measures (ATMs), which allow a quota without customs duties and free access to the EU market for almost all products originating from the country and territory of beneficiaries;
2. Creation of bilateral free trade zones as part of the Stabilization and Association Agreement (SAA);
3. Support for trade integration of the region;
4. Support membership in the World Trade Organization.

The SAA is signed for an indefinite period of time, with joining elements of security, political and economic stabilization as well as an element of regional co-operation. The primary objective of the agreement is to formally join to the European Union in a certain transition period of six to ten years. Countries are required to gradually adapt their legislation to the *Acquis communautaire* and establish a free trade zone with the European Union.



The Stabilization and Association Agreement between the European Communities and their Member States, of the one part, and Bosnia and Herzegovina, of the other part, was signed in Luxembourg on June,16 2008 and entered into force on July,1 in 2015. It replaced the Interim Trade and Trade Agreement, which came into force on July 1, 2008. It was expected that entering the SAA into force would have direct and indirect economic and political benefits, since its activation proved commitment to the EU integration and was evidence of gradually fulfilment of membership criteria. In the theory, some of the benefits of long-term foreign trade liberalization are mentioned:

1. Strengthening export competitiveness through increased market access;
2. More intense competition in the domestic market;
3. Restructuring production according to comparative advantages;
4. Lower prices of inputs for the manufacturing sector;
5. Possible additional investment growth;
6. Accelerated technology and knowledge transfer;
7. Decrease in prices of goods and services;
8. Increase in volume of exchange;
9. Growth of national consumption and development of the economy;
10. The growth of welfare. ([http://www.mvteo.gov.ba/attachments/bs\\_trgovinski-aspekti-ssp-bih-eu.pdf](http://www.mvteo.gov.ba/attachments/bs_trgovinski-aspekti-ssp-bih-eu.pdf) , accessed 28.03.2019)

Thus, the Agreement should have strengthened the position of B&H in the region and the world, should have given positive signals to investors and should have ensure better compliance with the principles of justice, freedom, security, etc. Indirectly, this should have led to an increase in investment, employment and the growth of gross domestic product. The aim of this paper is to analyze the effects of trade liberalization on the level of competitiveness ten years after establishing free trade zone with EU, the most important trade partner, i.e. to estimate relationship between GDP pc, GCI and trade balance in the long run.

### 3. ANALYSIS OF SELECTED INDICATORS IN THE PERIOD 2004-2017 (2000-2017)

Table 1 GDP, GDP p.c., deficit, and coverage of imports by exports in B&H in 2004-2017 period

Year	GDP in BAM (current price)	GDP p.c.in BAM	Foreign trade balance (in million BAM)	Foreign trade balance (% GDP)	Coverage of imports by exports ( %)
2004	16.680.225	4.108	-6.410,2	-38,4	32,0
2005	17.650	4.404	-7.748,7	-43,9	33,8
2006	20.057	5.663	-6.661,0	-33,2	45,3
2007	22.548	6.366	-7.748,7	-37,6	42,7
2008	25.519,0	7.205	-10.197,0	-40,0	41,2
2009	24.799,0	7.003	-7.436,3	-30,0	44,8
2010	25.365,0	7.165	-7.186,4	-28,3	52,1
2011	26.231,0	7.414	-7.826,9	-29,8	53,0
2012	26.222,7	7.418	-7.778,5	-29,7	51,5
2013	26.778,8	7.584	-7.098,8	-26,5	55,2
2014	27.358,7	7.759	-7.873,7	-28,8	53,6
2015	28.589,1	8.126	-7.191,4	-25,2	56,7
2016	29.904,5	8.516	-7.060,7	-23,6	58,3
2017	31.376,2	8.941	-7.384,3	-23,5	60,8

Source: [http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin\\_cr\\_html.aspx](http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_cr_html.aspx), [http://www.bhas.ba/tematskibiltenti/TB%20BDP%202016\\_BS\\_www.pdf](http://www.bhas.ba/tematskibiltenti/TB%20BDP%202016_BS_www.pdf), <http://www.bhas.ba/tematskibiltenti/2004-nacionalni-racuni.pdf>, *Gross Domestic Product by Production, Income and Expenditure Approach 2016, Agency for Statistics of Bosnia and Herzegovina, Thematic Bulletin ISSN 1840-104X, accessed: 15.02.2019. CB B&H, customized by author*

From the Table 1 it can be seen that in observed period after assigning SAA total foreign trade deficit had decreased around 27 % in 2009 comparing to 2008. Eurosceptic would say that observed period is after global recession that left consequences on international trade, main B&H trading partners and B&H itself. Thus volume of international trade decreased globally; not only for observed country. From the table above it can also be seen that foreign trade deficit expressed as a percentage of GDP decreased from 40 % in 2008 to 23,5 % 2017, which is a good sign for trade Agreements. What happened with living standard? If we take 2008 as a base year, it can be seen that GDP p.c. is 24,1 % higher in 2017 than in 2008. It can be seen that GDP p.c. declined in 2009 comparing to 2008, but after that has been continuously growing. It has to be told, on the other hand, that recently many people have been leaving B&H (and moving mostly to EU countries). We can also see that export-import ratio is higher: in 2017 it amounts 60,8% and in 2008 it amounted only 41,2 %. (Table 1)

Table 2 Real GDP growth rate and CPI growth rate in Bosnia and Herzegovina, 2005-2017 (%)

YEAR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Real GDP GROWTH rate (%)		5,4	5,9	5,4	-3,0	0,9	1,0	-0,8	2,4	1,1	3,1	3,1	3,2
Consumer Price Growth Rate in B&H*	3,8	6,1	1,5	7,4	-0,4	2,1	3,7	2,1	-0,1	-0,9	-1,0	-1,1	1,2
FDI (in millions BAM)	552,30	864,80	2599,80	1337,50	351,90	599,70	698,60	601,10	407,10	811,10	636,90	564,00	777,70

Source: [http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin\\_cr\\_html.aspx](http://statistics.cbbh.ba/Panorama/novaview/SimpleLogin_cr_html.aspx), 15.02.2019. CB B&H

Notes: \* Average annual CPI growth rate (%)

Table 2 gives us information about real growth rate in observed period, and it can be seen that in 2017. real GDP growth rate is on a much lower level than it used to be in period before assigning SAA, which also is not an optimistic indicator. But again, we have to remember recession in 2008-2009 and slow-down effects. Globally the problem is in a slower growth rates, not only for B&H.

In 2008-2009 the global financial crisis broke off the period of sustainable economic growth since the 1960s. Since then, despite unusual monetary policy and fiscal packages and stimulants, even the most developed economies have experienced relatively prolonged slow growth.

FDI after global crisis (and IA) are also on lower level and mostly are concentrated in production, banking sector, telecommunication and trade. And the most important investors to B&H according to FIPA (Foreign Investment Promotion Agency of Bosnia and Herzegovina) are Austria, Croatia, Serbia, Slovenia, Netherlands, Russia, Germany, Italy, Switzerland and UK.

Table 3 Trade with EU and total trade balance, changes in GDP p.c. and total foreign trade after Interim Agreement on trade and trade related issues

Year	Amount of trade with EU ('000BAM)	Deficit in trade with EU ('000BAM)	Coverage of imports by exports in trade with EU (%)	Trade balance (total) ('000BAM)	Amount of total trade ('000BAM)	GDP p.c. (percentage change) % 2008=100	Volume of total trade % (percentage change 2008=100)
2004.	6.597,8	-3.311,2	33,2	-6.410,208	12.435,732	-42,98	-45,94
2005.	7.807,3	-3.761,5	35,0	-7.397,599	14.963,997	-38,87	-34,95
2006.	8.495,7	-2.505,1	54,5	-6.224,489	16.553,081	-21,40	-28,04
2007.	10.2015,2	-3.383,3	50,2	-7.961,658	19.834,826	-11,64	-13,77
2008.	11.783,1	-4.338,4	47,3	-9.580,826	23.004,206	/	/
2009.	8.956,4	-2.928,3	50,7	-6.823,980	17.886,378	-2,8	-22,24
2010.	10.649,6	-2.691,2	59,7	-6.520,735	20.711,741	-0,55	-9,96
2011.	12.158,5	-2.833,1	62,2	-7.303,970	23.748,296	2,9	3,23
2012.	12.089,4	-2.688,2	63,6	-7.394,703	23.111,383	2,96	0,46
2013.	16.343,1	-3.783,7	62,2	-6.789,676	23.550,668	5,26	2,37
2014.	16.866,9	-4.019,1	61,5	-7.517,536	24.881,020	7,69	8,16
2015.	17.111,3	-3.993,6	62,2	-6.864,548	24.839,178	12,78	7,98
2016.	18.399,0	-4.525,4	60,5	-6.742.905	25.579.123	18,20	11,19
2017.	20.457,5	-4.420,5	64,5	-7.130.259	29.241.025	24,10	27,11

Source: Foreign Trade Chamber of Bosnia and Herzegovina, Agency for statistics [http://www.bhas.ba/tematskibilteni/ETR\\_00\\_2017\\_TB\\_0\\_BS.pdf](http://www.bhas.ba/tematskibilteni/ETR_00_2017_TB_0_BS.pdf), [http://komorabih.ba/wp-content/uploads/2018/02/cefta\\_eu\\_efta\\_2017.pdf](http://komorabih.ba/wp-content/uploads/2018/02/cefta_eu_efta_2017.pdf), [http://komorabih.ba/wp-content/uploads/2013/05/cefta\\_eu\\_2010.pdf](http://komorabih.ba/wp-content/uploads/2013/05/cefta_eu_2010.pdf) referable editions, author's calculation [http://www.mvteo.gov.ba/attachments/bs\\_trgovinski-aspekti-ps-ssp-bih-eu.pdf](http://www.mvteo.gov.ba/attachments/bs_trgovinski-aspekti-ps-ssp-bih-eu.pdf), Pg. 12, accessed 26.02.2019., author's calculations and customized by author

In 2017 amount of total foreign trade of B&H increased 27% comparing to 2008. GDP p.c. increased 24,10% comparing to 2008. According to this data the question is: Could we conclude that SAA really helped to improve living standard in B&H? Let's see trading balance with EU before SAA in the table below.

But before that, it must be emphasized that the application of the Interim Agreement had great impact on imports of EU originating goods to Bosnia and Herzegovina as the date of entry into the power of this Agreement at the same time is the date of the beginning of gradual liberalization of the B&H market for the largest number of EU originating products.

It is important to underline that conditions under which foreign trade (and imports and exports) is taking place in B&H since July 2008, significantly differ from the previous period, since next agreements with the most important foreign trade partners apply simultaneously:

1. Free Trade Agreement with Turkey,
2. CEFTA 2006 Agreement with Albania, Croatia, Serbia, Macedonia, Moldova (Croatia left CEFTA and joined EU in 2013), Montenegro and UNMIK / Kosovo,
3. Interim Agreement with EU Member States (27). ([http://www.mvteo.gov.ba/attachments/bs\\_trgovinski-aspekti-ps-ssp-bih-eu.pdf](http://www.mvteo.gov.ba/attachments/bs_trgovinski-aspekti-ps-ssp-bih-eu.pdf), p.15)

Table 4 Trade with EU in 2000-2007 period

Year	Export to EU	Import from EU	Total trade with EU	Balance in trade with EU	Coverage of import by export in trade with EU
2000.	930,2	4.449,2	5.379,4	-3.519,0	20,9
2001.	746,4	3.685,7	4.432,1	-2.939,3	20,3
2002.	875,4	3.942,4	4.817,8	-3.067,1	22,2
2003.	1.157,7	4.775,7	5.933,4	-3.617,1	24,2
2004.	1.643,3	4.954,5	6.597,8	-3.311,2	33,2
2005.	2.022,9	5.784,4	7.807,3	-3.761,5	35,0
2006.	2.995,3	5.500,4	8.495,7	-2.505,1	54,5
2007.	3.416,0	6.799,3	10.2015,2	-3.383,3	50,2

Source: [http://www.mvteo.gov.ba/attachments/bs\\_trgovinski-aspekti-ps-ssp-bih-eu.pdf](http://www.mvteo.gov.ba/attachments/bs_trgovinski-aspekti-ps-ssp-bih-eu.pdf), p 12, [accessed 26.02.2019.], customized by author

In period 2000-2007 (before assigning Agreement) trade with EU grew; export grew faster than import, but import was constantly higher although it grew more slowly; thus deficit also grew. The most important trading partner for B&H is EU; most of the trade deficit is in trade with EU, before and after SAA (Table 3 and 4).

#### 4. COMPETITIVENESS OF BOSNIA AND HERZEGOVINA

Trade and investment flows have been important drivers of economic growth in the past, but the relationship between globalization and growth remains imperfectly understood (The Global Competitiveness Report 2017–2018, p.5).

Comparing the competitiveness of national economies globally it can be concluded that the B&H economy is uncompetitive. The same can be concluded observing data of macroeconomic indicators represented in this paper. According to WEF B&H is in stage 2 of the economic development: Efficiency-driven economy as well as 30 more economies.

It is economy with relatively small internal market and it must improve its competitiveness for what the main prerequisite is making networking of companies, inclusion in logistics supply chains, strategic alliances, clustering and technology development, *i.e.* adapting the institutional system to an entrepreneurial environment is the basic prerequisite for the economy development.

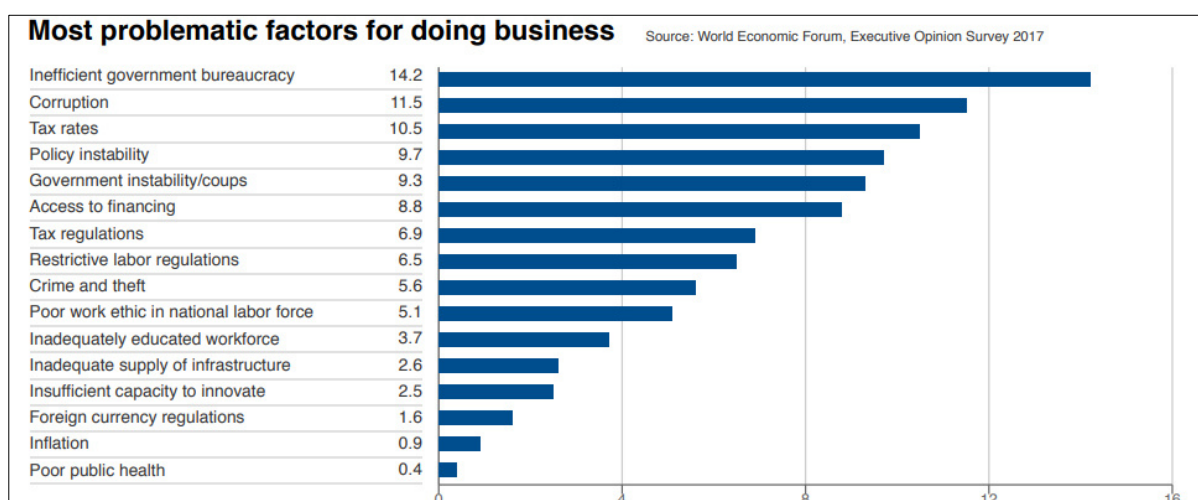
YEAR	NUMBER OF COUNTRIES	ALBANIA	B&H	MONTE NEGRO	CROATIA	MACEDONIA	SLOVENIA	SERBIA
2001	75	-	-	-	-	-	31	-
2002	80	-	-	-	58	-	28	-
2003	102	-	-	77	53	81	31	77
2004	104	-	81	89	61	84	33	89
2005	117	100	95	80	62	85	32	80
2006	125	98	89	87	51	80	33	87
2007	131	109	106	-	57	94	39	-
2008	134	108	107	65	61	89	42	85
2009	133	96	109	62	72	84	37	93
2010	139	88	102	49	77	79	45	96
2011	142	78	100	60	76	79	57	95
2012	144	89	88	72	81	80	56	95
2013	148	95	87	67	75	73	62	101
2014	144	97	-	67	77	63	70	94
2015	140	93	111	70	77	60	59	94
2016	138	80	107	82	74	68	56	90
2017	137	75	103	77	74	-	48	78

Konkurentnost 2016. – 2017., Federalni zavod za programiranje razvoja, Sarajevo, 2016, p. 25., file:///C:/Users/Korisnik/Downloads/Konkurentnost%20Bosni%20i%20Hercegovini%20u%202017-%202018%20godini%20(11).pdf, <https://tradingeconomics.com/bosnia-and-herzegovina/competitiveness-rank> [accessed :24.02.2019.]

Picture 1 Comparative Review of the Global Competitiveness Index of B&H and countries from the region in the period 2001-2017, adjusted by the author

According to Global Competitiveness Report 2017-2018 B&H is the least competitive country in Europe. This year's report shows weaknesses that decision-makers have to pay attention to and work fast to resolve them in order to create the conditions in which it would be worth investing in the country, and thereby increase the opportunities for growth of living standard in this country. Report emphasized that B&H, and some other countries have to make rapid structural reforms to reach a higher level of competitiveness as a prerequisite for economic growth and so much desired employment growth.

The biggest difficulties (negative impact on competitiveness) in Bosnia and Herzegovina are still present inefficient administration, high tax rates and inadequate regulation as well as political instability and corruption (picture 2).



Source: <http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>, [accessed 29.03.2019.]

Picture 2 Most problematic factors or doing business in Bosnia and Herzegovina

## 5. REGRESSION MODEL; THE EFFECTS OF MACROECONOMIC INDICATORS ON THE COMPETITIVENESS OF BOSNIA AND HERZEGOVINA

Equation: UNTITLED    Workfile: KONK EX::Untitled

View Proc Object Print Name Freeze Estimate Forecast Stats Resids

Dependent Variable: GCI  
Method: Least Squares  
Date: 04/09/19 Time: 09:59  
Sample: 2004 2017  
Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	79.96463	16.33283	4.895943	0.0009
FDI	0.003990	0.004920	0.811085	0.4382
GDPPC	10.83686	3.905406	2.774836	0.0216
POKRIVENOST	-1.282927	0.672307	-1.908245	0.0887
DUMMY	3.366891	9.523385	0.353539	0.7318

R-squared	0.605152	Mean dependent var	98.85714
Adjusted R-squared	0.429664	S.D. dependent var	9.412407
S.E. of regression	7.108308	Akaike info criterion	7.032859
Sum squared resid	454.7524	Schwarz criterion	7.261093
Log likelihood	-44.23001	Hannan-Quinn criter.	7.011731
F-statistic	3.448391	Durbin-Watson stat	1.360791
Prob(F-statistic)	0.056866		

Source: Author

Picture 3- E-Views regression output

The model is linear and estimated using OLS. The factors that are used to explain the variability in the GCI ranking are macroeconomic variables. According to announced advantages of Agreement four variables are included in the model: one dependent and three independent variables. Dependent variable is GCI ranking( $Y$ ), independent variables are FDI in million BAM ( $X_1$ ), GDP p.c.in thousands of BAM ( $X_2$ ), COVERAGE OF IMPORTS BY EXPORTS in % (POKRIVENOST  $X_3$ ) and DUMMY variable which marks the entry into force of the Interim Stabilization and Association Agreement (effective from July 1, 2008). Thus it is taken in model (due to prior contracts) to apply from 2009, *i.e.* dummy variable has value of 0 in the period 2004-2008, and in the period 2009-2017 it has the value of 1. We expect to have better GCI ranking (lower number of GCI rank) with higher FDI, higher GDP p.c., higher coverage of imports by exports and better (lower) ranking after IA, *i.e.* we expect all  $\beta$  coefficients to be negative.

Model in general:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 D \quad (1)$$

Where;

$$D = \begin{pmatrix} 0, \text{before signing SAA} \\ 1, \text{after signing SAA} \end{pmatrix} \quad (2)$$

After inputting data regression model is made:

$$Y = 79,96463 + 0,003990X_1 + 10,83686X_2 - 1.282927X_3 + 3.366891D \quad (3)$$

(16,33283)    (0,004920)    (3,905406)    (0,672307)    (9,523385)



According to the obtained model and selected data, FDI growth in 1 million BAM resulted in an average increase in GCI rank of only 0.003 position, *ceteris paribus*.

Growth of GDP p.c. in 1000 BAM resulted in average increase in GCI rank of 10.8 positions, *ceteris paribus*.

Growth of imports coverage by exports by 1% resulted in a fall in GCI rank averaging 1.28 positions *ceteris paribus*, which is good indicator, because the aim is to have lower not higher rank. This is in accordance with the announced advantages of the Agreement.

The coefficient by Dummy variable shows that in the observed period since the Interim Agreement entered into force, the average GCI position was higher for 3,366891 positions globally compared to the time before the entry into force of the Interim Agreement (*i.e.* B&H ranking got worse for about 3 positions in time after Agreement had been signed). This is not to good indicator, because Agreement should have resulted in more competitive economy and not in less competitive economy. But it is a good lesson for government: decision makers mustn't rely on trade and expect rapid growth and development, especially not with export structure that B&H has. Many changes have to be done on internal market game so producers and exporters could perform better on the EU market. Also, this is a poor analysis because GCI has a complex structure on which many factors influence. Above in the paper are presented obstacles for better ranking (picture 2) and most of them could be improved by government.

We can see from E-views output that average ranking is 98.85 which is much better position than real ranking in 2017 (103- Picture 2).

It is desirable to have some measure of how well the regression model actually fits the data. In other words, it is desirable to have an answer to the question, „how well does the model containing the explanatory variables that was proposed actually explain variations in the dependent variable? “The most common goodness of fit statistic is known as  $R^2$ . One way to define  $R^2$  is to say that it is the square of the correlation coefficient between  $y$  and  $\hat{y}$  - that is, the square of the correlation between the values of the dependent variable and the corresponding fitted values from the model. A correlation coefficient must lie between  $-1$  and  $+1$  by definition. Since  $R^2$  defined in this way is the square of a correlation coefficient, it must lie between 0 and 1. If this correlation is high, the model fits the data well, while if the correlation is low (close to zero), the model is not providing a good fit to the data. Here we have  $R^2 = 0,605152$  that means 60,5152 % of the total variability of GCI about mean value is explained by the model. A correlation coefficient ( $\sqrt{R^2}=0,7779\dots$ ) shows a high correlation of dependent variable and independent variables.

Durbin-Watson (*DW*) is a test for first order autocorrelation - *i.e.* it tests only for a relationship between an error and its immediately previous value. Thus, under the null hypothesis, the errors at time  $t - 1$  and  $t$  are independent of one another, and if this null were rejected, it would be concluded that there was evidence of a relationship between successive residuals. The test statistic (1,36) is among critical values and null hypothesis for this test is accepted.

On the picture 3 we can see p-value and make conclusions about significance of the variables, how well are the variables selected in model. At 5% significance level ( $\alpha = 0,05$ ) variable GDP p.c. is a significant variable ( $p\text{-value} < \alpha = 0,0216/2 < 0,05$ ), coverage of imports by exports (POKRIVENOST) ( $0,0887/2 < 0,05$ ) is a significant variable but DUMMY and FDI are not significant variables for explaining variability of the GCI. Thus, IA cannot be driver of the competitiveness growth of B&H.

If the sample was bigger Granger causality test could be done, but with only 14 observations results wouldn't be significant. Only 14 observations are a big obstacle in this model. It would be interesting to see which variable causes another one in Granger sense. Is a GCI actually dependent variable and others independent? This model is very simple and has many restrictions and disadvantages, but is a base for other research about this topic and has its value as a stimulus for further, more serious and bigger researches and for using more complicated models.



Considering all of above given facts, there is a need to initiate appropriate policy reform in B&H, especially in the field of foreign trade in order to create the conditions for B&H to realize the greatest possible benefit of the economic integration processes and to expand its export activities to EU market. Reducing the trade deficit and growth of B&H exports is one of the main goals of B&H's economic and foreign trade policy and this issue represents one of the priorities to governments in all levels. However, concrete measures on the implementation of policies and activities are not aligned with this strategic goal, nor total public funds are allocated for this purpose. Even limited analysis of general state of the B&H economy, as undertaken here, suggests that authorities should be dedicated to solving numerous legal, institutional, political and economic issues in order to achieve the desired rate of economic growth and, in time, economic development and economic convergence with EU countries. There is a need for inevitable painful structural reforms, which should increase the competitiveness of the B&H economy. There seems to be a scope for enhanced export promotion and information services for companies interested in expanding their activities at foreign markets. The key issue here is ensuring that these services are of high quality and carried at reasonable cost.

Economic diplomacy is an important for attracting FDI in B&H and opening up new markets for B&H's businessmen. Building a strong concept of economic diplomacy is imposed as the highest-ranking priority of B&H Foreign Policy. B&H has the concept of economic diplomacy that has not given enough good results, which is mostly shown in the foreign trade deficit. To make the concept of economic diplomacy more efficient, activities in that field have to be carried out continuously. The biggest problem is the lack of economic integration in B&H itself. The precondition for achieving all the advantages of accessing the EU market, i.e., for optimal economic development, is both legal and institutional unity in the country, not only by harmonizing the entity's legal framework and coordination of all levels of government, but through the creation of a comprehensive, unified legal system within the country ( Jerinić, M., Čavar, D. and Jurić, J. ,2018, pp.139–172).

## 6. CONCLUSIONS

Membership in the European Union is one of the main foreign policy priorities of Bosnia and Herzegovina, as defined in the document "Strategic Guidelines and Priorities for the Implementation of the Foreign Policy of B&H", adopted by the Presidency of Bosnia and Herzegovina on March 26, 2003.

The Stabilization and Association Agreement between the European Communities and their Member States, of the one part, and Bosnia and Herzegovina, on the other part, was signed in Luxembourg on 16 June 2008 and entered into force on 1 July 2015. It replaced the Interim Trade and Trade Agreement, which came into force on 1 July 2008. The SAA should have strengthened the position of B&H in the region and the world, should have given positive signals to investors and should have ensure better compliance with the principles of justice, freedom, security, etc. Indirectly, this should have led to an increase in investment, employment and the growth of gross domestic product.

Neoliberalists argue that liberal trade policy is prerequisite for economic growth, but the fact is that it is not enough to ensure growth of trade by itself. When trade reform is carried out in an unstable macroeconomic environment or is pursued without carefully designed economic policy, economic growth is not achieved. The model presented in the paper showed that Agreements that had been signed could not be considered as the saviors of the economy. For sure they could be growth accelerators but only if the policy creators make better political and economic framework for its action.

Simple regression model showed that assigning Agreement had no good influence on competitiveness of B&H in observed period. It influenced obviously on a higher coverage of

imports by exports, which could be a good indicator. It would be interesting to see structure of trade with EU: it should become *intra-industry* trade not *inter-industry* to make some progress in competitiveness (ideas for further research's).

The fact is that data available on the sites of Agency for Statistic of B&H do not show that. FDI have not been on a high level as in the periods before IA and a GDP p.c. is growing but probably due to the higher public debt. Many factors effects GCI scores and ranking (not only this few indicators used in paper), and it is obvious that policy creators have to do something to improve situation in production sector, employment, trade balance, and living standard in this country.

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# **HEALTH ECONOMY: A STUDY ON THE RELATIONSHIP OF WATER AND SANITARY WATER SERVICES IN THE COSTS OF PUBLIC HEALTH IN THE NORTHEAST REGION OF BRAZIL**

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Original scientific paper

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### **Abstract**

*Health services are characterized as meritorious goods, a type of semipublic good that, given its social character, the allocation of resources in these activities becomes socially desirable by the government so that they are allocated efficiently. One of the ways to control and reduce unnecessary health expenditures is the population's access to basic sanitation services that, when inefficient, cause negative externalities to the exposed population. In this sense, the objective of this study is to analyze the relationship between coverage of basic sanitation services and the costs of hospital admissions for waterborne diseases in the Northeast Region of Brazil, from 2005 to 2015. In order to do so, we used secondary data from the Department of Informatics of the Brazilian Unified Health System (DATASUS), the National Household Sample Survey (PNAD) and Finance of Brazil (FINBRA) for the construction of panel regression models with fixed effects. The main results indicate that access to sanitation services, mainly from the sewage collection network, reduces the costs of hospitalizations for Diseases Related to Inadequate Environmental Sanitation (DRSAI) of the Unified Health System (SUS).*

**Keywords:** *Health costs, waterborne diseases, externalities*

## **1. INTRODUCTION**

Basic sanitation services include, among all public health activities, one of the most important mechanisms for disease prevention and health promotion. This includes several definitions that should be considered.

Among the most important is that of the World Health Organization (WHO), which defines basic sanitation as the control of all the physical means of man, which causes or can cause harmful effects on physical, mental and physical well-being. Social. Its main objective is the promotion of human health, which WHO defines as being not only the absence of diseases, but also the state of complete physical, mental and social well-being (Heller, 1998).

According to Rosen (1994) and Fernandes (1997), these studies emerged in the 19th century, with emphasis on English Snow with proof of the origin of cholera through contact with contaminated water and Edwin Chadwick, who in his study emphasized the use of basic sanitation as an instrument of preventive health. In addition to this, it has been approached by several authors (Souza, Freitas and Moraes 2007, Mendonça and Motta, 2008, Saiane and Júnior, 2010, Saucha, Silva and Amorim, 2015, among others) that demonstrate the effect of sanitation on the health of the Brazilian population.

According to PNAD data, in 2015, the proportion of Brazilian households that had a network of water supply by general network was 88.42% and only 60.01% had a sewage collection network. In the Northeast Region data are even more worrying: only 87.53% of the households had a water supply network and 39.96% had a sewage collection network. Thus, the needs of the sanitation services suggest a significant investment in the sector in order to achieve the reasonable goals of gradually increasing the access of all occupied households, according to Law No 11,445 / 2007.

In addition, although the Northeast is a region with five hydrographic basins, it has the lowest water availability, only 3.3% of the national total, being the second most populous region, concentrating around 28% of Brazilians. Moreover, the public health sector in this region with regard to size, location and management is not enough to meet the demands. It has the lowest numbers of doctors and other health professionals when compared to the most developed economic centers of the country. This makes it necessary to better manage the resources that are allocated to these sectors in this region.

The main discussion in the economic view is that the best use of resources in prevention can achieve more comprehensive results precisely because they are public goods (meritorious, in the case of health) that imply non-exclusion and universalization, besides presenting itself as less costly alternative when compared to expenses with the treatment of diseases (Ramalho, 2003). From the assumption that basic sanitation is a preventive health measure, this corresponds to an investment for health, and a return of that investment in various socioeconomic aspects. Costs that are reduced with the universalization of sanitation can be reallocated to other priority needs by making the management of health services efficient. It is precisely the introduction of economic instruments in the strategic and operational issues in the health sector that originates the health economy. The government has responsibilities when it comes to the rational use of resources that are invested, so that positive results can be obtained in health indicators (Del Nero, 2002).

In this sense, the general objective of this work is to analyze the relationship between access to water supply and sanitary sewage services and the costs of the public health system in the Northeast Region, between 2005 and 2015. In order to achieve the proposed objective, used secondary sources of quantitative character and approach based on descriptive and exploratory research, based on a bibliographic survey aiming at the theoretical basis and base the results obtained. Data were collected from DATASUS, PNAD and FINBRA for the construction of panel regression models with fixed effects. This model is a classic procedure for the study of this type of problem, since it allows a relationship between access to sanitation services and health costs through a "dose-response" function.

Besides this introduction, corresponding to section 1, this work is composed of four more parts. Section 2 identifies the methodology and the econometric model; the following section presents the relationship between sanitation and health, as well as the evolution of sanitation

indicators and DRSAl; Section 4 presents the econometric results; and section 5 presents the conclusions of the study.

## 2. METHODOLOGY

In the present study, secondary data were selected based on the literature that covers this theme. Of particular note are the studies by Uhr, Schmechel, and Uhr (2016) that evaluated how basic sanitation services in Brazil affect the health of the population, with dependent hospital admissions due to waterborne endemics; and Scriptori (2016) who investigates the effects of basic sanitation on the education of children who are in a state of health because they have contracted some DRSAl.

Thus, were collected the variables that are most representative in the literature on the impacts of basic sanitation on public health and its costs in the period between 2005 and 2015. Regarding the sources of the data, these were collected on official sites that information. DATASUS was used for data on hospitalization costs by DRSAl; for the indicators of households with a general water supply network, sewage collection network and the economic variable of average household income, the IBGE PNAD database was used; and the indicators of expenditures with basic sanitation and health were taken from FINBRA.

The table below presents in detail the characteristics of the variables that this study deals with.

Table 1 Description of the variables<sup>1</sup>

Dependent Variable	Initials	Description	Source / Statistics	Expected Signals
Total cost of hospitalizations	TCH	Value referring to the total hospitalizations for DRSAl approved, deflated by the IPCA of 2015.	DATASUS (2005 a 2015)	-
Dependent Variable	Initials	Description	Source / Statistics	Expected Signals
General water network	WATER	Proportion of households connected to the general water supply network	PNAD /IBGE (2005 a 2015)	Negative
Sewer collection network	SEWER	Proportion of households connected to sewage collection by general network	PNAD /IBGE (2005 a 2015)	Negative
Average household income per capita	INCOME	Average household income per capita. Deflated by the IPCA of 2015	PNAD /IBGE (2005 a 2015)	Negative
Health expenditure	HEALTH	Public expenditure on health per capita, deflated by the IPCA of 2015	FINBRA/STN (2005 a 2015)	Negative
Expenditure on sanitation	SAN	Public expenditure on sanitation per capita, deflated by the IPCA of 2015	FINBRA/STN (2005 a 2015)	Negative

Source: Own elaboration

<sup>1</sup> It is worth noting that the PNAD database does not provide data for the year 2010, since it refers to the year of the Demographic Census. However, a simple arithmetic mean of the years 2009 and 2011 of the variables drawn from this base was made in order to complete the year 2010. It can also be said that the expected signs of the explanatory variables are in agreement with the literature that addresses this thematic.

The research is characterized as a quantitative study. The causal relationship of interest between water distribution, sewage collection, household income, and expenditures for sanitation and health on the costs of hospitalizations for DRSAI can be described by the following general equation<sup>2</sup>:

$$\text{LogTCH}_{it} = \alpha_i + \beta_1 \text{WATER}_{it} + \beta_2 \text{SEWER}_{it} + \beta_3 \text{LogINCOME}_{it} + \beta_4 \text{LogHEALTH}_{it} + \beta_5 \text{LogSAN}_{it} + u_{it} \quad (1)$$

Where: LogTCH<sub>it</sub> represents the variable dependent on state *i* in period<sup>3</sup> *t*; α<sub>*i*</sub> represents the parameter that captures the specific effects for each state; β<sub>1</sub> to β<sub>5</sub> are the parameters to be estimated; WATER<sub>it</sub>, SEWER<sub>it</sub>, LogINCOME<sub>it</sub>, LogHEALTH<sub>it</sub>, LogSAN<sub>it</sub> are the explanatory variables, and *u*<sub>it</sub> is the error term.

Given the time (years) and spatial dimension (Northeastern states) of the sample, the analysis with panel techniques is indicated. Among the advantages of this method in relation to cross-sectional or time-series Gujarati (2011), it is highlighted that: the panel data model controls the heterogeneity present in individuals; combines series of time and cut so that it offers more informative data, with greater variability, less colinearity among the variables, more degree of freedom and efficiency; examines the dynamics of change; detects and measures better the effects that cannot be observed in a pure transverse section or a pure time series; and allows to study more complicated models of behavior.

According to Wooldridge (2002), there are some estimation techniques for panels in the literature. Among them: fixed effects model within a group and random effects model. The main difference between the two models is that the unobservable effects are related to the explanatory variables. Thus, the main determinant for choosing the best method is the effect not observed. If it is not correlated with all the explanatory variables, the random effects estimator is consistent and efficient and the fixed effects estimator is consistent but not efficient, so the random effects model is the most appropriate one. Otherwise, if it is correlated with some explanatory variables, the fixed effects model must be used because the estimator of this model becomes consistent and efficient, but now the random effects estimator is not consistent.

From this, the fixed-effects model was chosen because the regression result showed a relevant correlation "[corr (u<sub>*i*</sub>, Xb)]" between the observed unobserved effects and the explanatory variables. In the next section, the relationship between sanitation and health, as well as the evolution of health care, will be presented in the next section. indicators of sanitation and DRSAI.

### 3. GENERAL ASPECTS OF HEALTH AND HEALTH

As mentioned previously, the absence of basic sanitation services results in social cost, for example, there is no sewage collection in a given locality and it is released directly into the environment, contaminating water resources and causing impacts both in the environment the health of the exposed population. Such conditions increase the demand for hospital medical care and perhaps hospitalizations, medications, etc., which will lead to increased financial health costs.

Many diseases can be associated with water either as a result of contamination by human or other excreta or by the presence of chemicals present that can be harmful to human health. As a

<sup>2</sup> It is important to note that the TCH, INCOME, HEALTH and SAN variables were logarithmized for a better understanding of the results obtained, since these are presented in rates or monetary units and WATER and ESGOT are in percentage terms. The application of logarithm allows these variables to be interpreted in percentages, which improves both the interpretation and the visualization of the variable, besides causing a decrease of the outliers and the variance.

<sup>3</sup> The period is comprised between 2005 and 2015, marked by the legal advance in the basic sanitation sector through Law No. 11,445 / 2007, which established strategies for the universalization of the sector and allows to analyze if there is a relation with possible decreases of hospitalizations by DRSAI and consequently their costs in those years.



result of the use of water, there is the generation of sewage that, if not properly disposed, ends up polluting the soil, contaminating the water, and frequently flowing out into the open, forming dangerous foci for the propagation of diseases (Bovolato, 2010).

This analysis is important because it deals with pathologies that can be avoided and consequently able to reduce health expenditures when prevented and thus improve the allocation of resources in this area, as it treats the public sector and health economics.

In Brazil, hospital admissions have a high unit cost, however, they are concentrated in hospitals (private and university hospitals), in which the control of expenses is indirect, by means of only the limitation of the number of hospitalizations and the definition of costs for each type of procedure. In this context, the situation of the country is similar to that of many others, who are worried about the growing demand for health resources, and need to establish priorities and mechanisms for controlling expenditures (Espigares, 1999, Medici, 1994 apud Calvo, 2002).

Thus, the analysis of social interventions represents an important activity for taking actions and measures. For providing information that can guide managers and funders, to prioritize and to present to society the results of the investments made, in addition to pointing out modifications and adaptations necessary to the interventions that already exist. These interventions lead to a longer and healthier life and strengthen the basis for economic growth and development (Brasil, 2004).

The following will present some indicators of basic sanitation and health, which will be used in this study, to address the reality of these sectors in the Northeast Region.

### **3.1. Indicators of basic sanitation in the Northeast**

The increase in access to basic sanitation services reached its peak in the 1970s, when the National Sanitation Plan (PLANASA) was created. This plan was used to finance the investments provided by the National Housing Bank (BNH) with funds from the FGTS for water supply and sanitary sewage. These services were carried out by the State Basic Sanitation Companies (CESBs), mainly in urban areas, in order to meet the urbanization of the country due to the extensive industrialization that had been taking place in the period. In the 1980s, these investments became smaller than in the previous decade, as a consequence of the country's economic problems, such as the increase in state indebtedness, the scarcity of public resources that were formerly destined for investments and extinction of BNH, which consequently led to the extinction of PLANASA in the 1990s, leaving the country once again without a well-defined plan for the sanitation sector (Brasil, 2004, Saiani & Júnior, 2010).

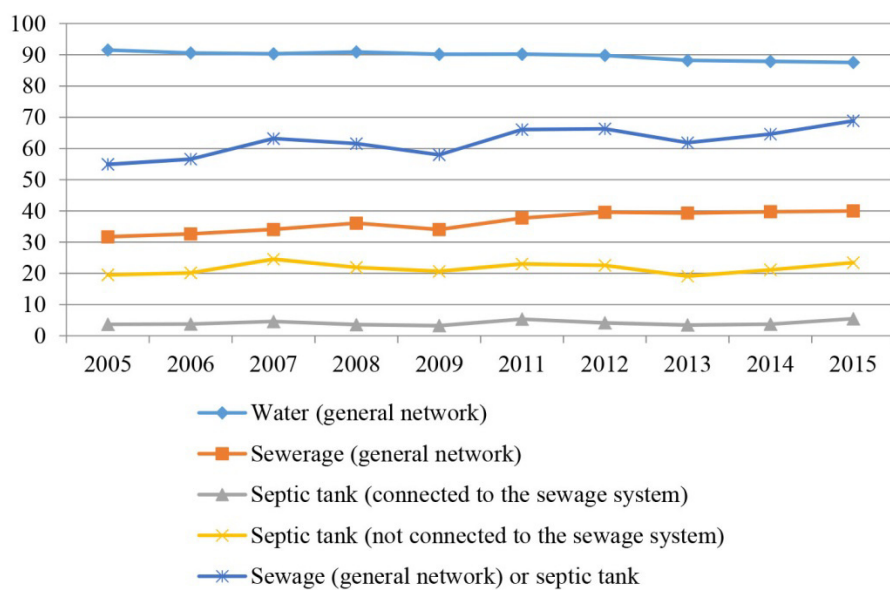
Subsequent to the extinction of PLANASA, other changes continued to occur in an effort to reduce the precariousness and negative externalities caused by deficits in sanitation. According to Brasil (2004), in 1990, an administrative reform was carried out in the Ministry of Health, which included the creation of the National Health Foundation (FUNASA) through the joining of several Ministry bodies. FUNASA now has a National Department of Sanitation that has the responsibility of formulating policies and management of the resources allocated in the budget of the Ministry of Health for the area of basic sanitation that works until today.

Moreover, since the 1990s and especially in the 2000s, there has been an evolution in the legal aspect with regard to basic sanitation in Brazil. In 1997, Water Law No. 9,433 / 1997 was promulgated, which created the National Water Agency (ANA), responsible for water resources management policies. Concession laws (No. 8,987 / 1995) and public-private partnerships (No. 11,079 / 2004) have made the public and private sector more involved in providing a more efficient service. And Law No. 11,107 / 2005 of public consortia that created relationships between public companies that started to contract this type of consortium to achieve objectives of common interest (Turolla, 2012).

Despite all this progress, only in 2007, with the creation of Law No. 11,445 / 2007 of the National Sanitation Policy, is that the sector has gained a regulatory framework, reinforced by Decree No. 7,217 / 2010. This law has played a central role for the regulatory agencies of mechanisms that lead the government in making decisions aimed at the efficiency and universalization of the sector.

However, the advances made (whether economic or legal) have not been enough to universalize access to basic sanitation services. In the Northeast the deficiencies of this sector are worrisome.

The graph below shows the evolution of these services in the Northeast Region between 2005 and 2015.

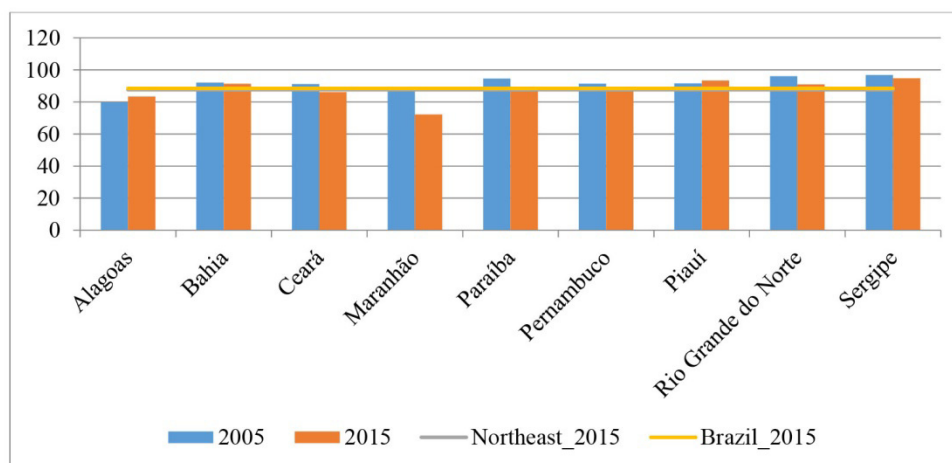


Source: own elaboration based on PNAD data

Graph 1 Northeast: evolution of the proportion of households with access to basic sanitation services (2005-2015)

It is observed that the proportion of northeastern households with water supply through the general network did not change significantly, having a slight decrease in recent years. On the other hand, the proportion of households with sanitary sewage by general collection network showed a significant increase in the period, of around 10 percentage points, however, a service still very deficient. It is also possible to highlight the superiority, in all years, of access to water in relation to access to the sewage network, including when considering the sewage network and the septic tank jointly.

Looking for a more in-depth analysis for the states of the Northeast Region, it is noticed that the deficits in the sanitation sector are a reality. Graph 2 shows the proportion of households with access to water in the Northeastern states.

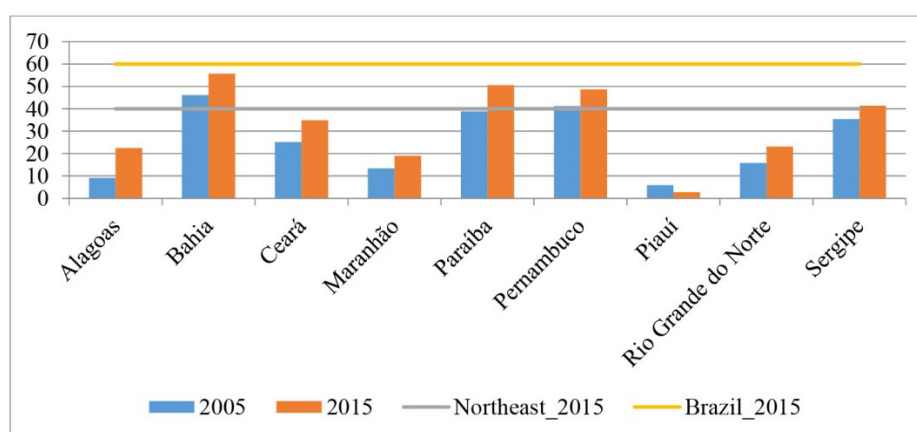


Source: own elaboration based on PNAD data

Graph 2 Northeast: proportion of households with access to water supply by general network, according to the states (2005 and 2015)

From the analysis of the graph above it is possible to verify that, except for Piauí and Alagoas, when comparing the years 2005 and 2015, the proportion of households with access to water supply by general network decreased in all the states. In addition, it is possible to analyze that, in general, there is a convergence in proportion when comparing state data with that of the Northeast Region and Brazil as a whole in 2015, with the exception of Alagoas and Maranhão.

In the case of sewage collection through the general network, Chart 3 shows that, with the exception of Piauí, when compared to 2005 and 2015, the proportion of households with access evolved. Despite the growth during the studied period, it can be seen that the states of Alagoas, Ceará, Maranhão, Piauí and Rio Grande do Norte have not even reached the level of the total proportion of the Northeast Region in 2015. In addition, all states are far below the national proportion that same year.



Source: own elaboration based on PNAD data

Graph 3 Northeast: proportion of households with access to sewage collection by general network, according to the states (2005 and 2015)

### 3.2. Health indicators in the Northeast

The analysis of the impact of access to basic sanitation services on health can be observed by the number of hospitalizations of individuals who contracted some disease related to the precariousness in the

provision of these services. The synthesis presented by categories of diseases has broadened the analysis of the impacts of sanitation, while the indicators may point out a better orientation of public policies to solve these problems.

Table 1 compares the hospitalization rate with the proportion of households with access to water and sewage in the Brazilian regions in 2015.

Table 1 Rate of incidence of DRSAL and the proportion of households with access to water and sewage collection by large Brazilian regions (2015)

Region	DRSAL hospitalization rate per 10,000 inhabitants	Proportion of households with access to water supply (General Network)	Proportion of households with access to sewage collection (General Network)
1 North Region	32.52	65.75	14.16
2 Northeast Region	28.78	87.54	39.97
3 Midwest region	20.89	86.61	46.79
4 South region	12.49	88.72	49.23
5 Southeast region	8.53	92.73	85.77

Source: own elaboration based on PNAD and DATASUS data

From the analysis, we can see a relationship between sanitation indicators and the disease incidence rate. The hospitalization rates are higher the lower the sanitation indicators, especially the indicator of the proportion of households with access to sewage collection by general network. In addition, it can be seen that the Northeast Region has the second highest hospitalization rate, behind only the Northern Region. Table 2 shows the total cases of hospitalizations and deaths for each category of DRSAL in the Northeast Region in 2015.

Table 2 Number of hospitalization cases by category of DRSAL for the Northeast Region in 2015

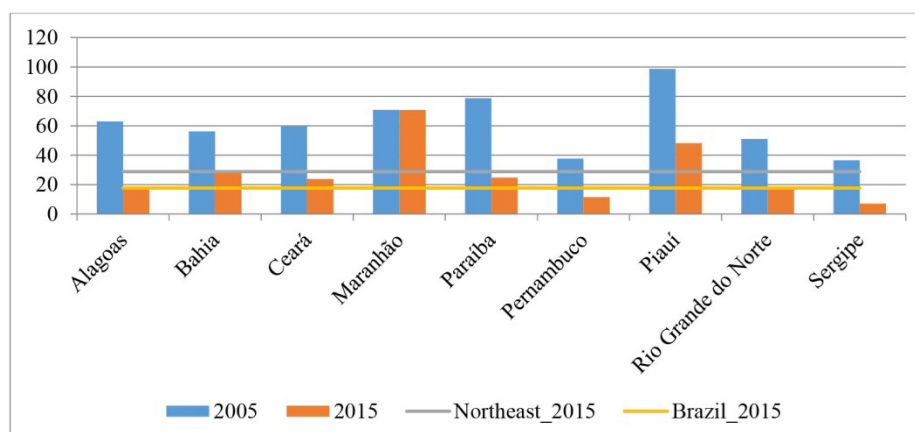
Category DRSAL	Num casos	%	Deaths	%
1. Fecal-oral transmission diseases	132,825	81.6	905	67.74
2. Diseases transmitted by insect vector	26,391	16.2	204	15.27
3. Diseases transmitted through contact with water	457	0.3	39	2.92
4. Diseases related to hygiene	2,775	1.7	179	13.4
5. Geohelminths and streaks	322	0.2	9	0.67
Total Northeast	162,770	100	1,336	100

Source: Own elaboration based on DATASUS data

It is noticeable that the greatest number of hospitalizations and deaths is in the category of oral-fecal transmission diseases. Within this group, the greatest number of occurrences is that of diarrheal diseases, which presented 130,999 cases. Another category that draws attention is that of diseases transmitted by insect vector. In this classification, dengue is highlighted, with a total of 23,644 hospitalizations.

With a more detailed analysis for the states of the Northeast Region, figure 4 presents the incidence rate of DRSRI per 10,000 inhabitants in the respective states of this Region. It is noticeable that when comparing the year 2005 and 2015, the rate of hospitalizations decreased in all Northeastern states. In spite of this, it can be observed that the Northeastern Region presented a hospitalization rate higher than that of Brazil in 2015. The states of Bahia, Ceará, Maranhão, Paraíba and Piauí reported rates of hospitalizations higher than those in the Northeast. It is still possible to

analyze that the states of Maranhão and Piauí indicated the highest rates of hospitalization and when compared to figure 3, these are precisely the states that presented the lowest rates of sewage collection by general network.



Source: Own elaboration based on data from DATASUS

Graph 4 DRSAl incidence rate per 10,000 inhabitants in the states of the Northeast Region (2005 and 2015)

#### 4. RESULTS AND ANALYSIS

Table 3 presents the results of the estimates for equation (1), with the dependent variable being the costs of hospitalizations for DRSAl called LogTCH.

As can be seen in the table, the proportion of households with sanitary sewerage by general network (SEWER) and average real household income per capita (LogINCOME) are significant and have the expected signal. Where the coefficients presented by these variables reflect that as the SEWER increases by 1% the LogTCH decreases by 3.52% in the Northeast Region and to the extent that the income increases by 1% LogTCH decreases by 1.11% in the Region Northeast.

Table 3 Regression for the dependent variable LogCIN

Fixed-effects (within) regression						
R-sq: within = 0.4768						
corr(u <sub>i</sub> , Xb) = -0.5621						
LogTCH	coef.	Robust Std. Err.	t	P> t	[95% conf. Interval]	
WATER	1.391259	1.173841	1.19	0.270	-1.315624	4.098142
SEWER	-352977	.7320089	-4.82	0.001	-5.217785	-1.841754
LogINCOME	-1.112005	.3728438	-2.98	0.018	-1.971784	-.2522257
LogCHERRS	.1615016	.0942687	1.71	0.125	-.0558824	.3788857
LogSAN	-.0087812	.0684438	-0.13	0.901	-.1666129	.1490505
_const	22.24179	2.498688	8.90	0.000	16.4798	28.00377
sigma_u	1.1252525					
sigma_e	.31156113					
Rho	.92879562 (fraction of variance due to u <sub>i</sub> )					

Note: significant at the level of 5%

Source: Own elaboration from STATA software 14

The results obtained by the research corroborate with those found in the literature. With regard to the sewage collection system and its relation with Uhr water-borne diseases, Schmechel

and Uhr (2016) found that the addition of 1% of the households connected to the sewerage network causes a reduction of about 1.74 % in the hospitalization rate per 100,000 inhabitants in Brazil.

In the case of the income and health relation Mendonça and Motta (2008) say that there is a clear correlation between the social condition and health. The families that are most susceptible to these problems of sanitation and health are those that live in situations of economic vulnerability, which contributes to the regionalization of diseases. For these authors, disease rates are lower in the South and Southeast regions of the country when compared to the North and Northeast regions.

However, contrary to many studies, it can be pointed out that the proportion of households linked to the general water supply network and public expenditure per capita with sanitation and health were not relevant in the model, so that the following hypotheses can be drawn:

1. The proportion of households with water supply did not change significantly and presented relatively high indicators in all states, almost universalized, so that this service may not be influencing the occurrence of DRSAL.

2. With regard to public expenditures on basic sanitation, these may be being allocated inefficiently and in different ways among the different states of the Northeast Region.

3. Regarding public health expenditures, it is questioned how much of these resources are earmarked for effective combat and prevention against DRSAL.

Therefore, access to sanitary sewage is essential to reduce hospitalizations. Although it is difficult to make an accurate measurement of the incidence of a particular disease with respect to its specific contamination factor, its removal is certainly a prerequisite for the success of disease control interventions and consequently the reduction of public health costs.

## 5. FINAL CONSIDERATIONS

This study aimed to study the relationship between basic sanitation and health services in Brazil. In order to verify the relationship between access to water supply and sanitary sewage services with the costs of hospitalizations of Diseases Related to Inadequate Environmental Sanitation (DRSAL) in the Northeast Region, an econometric model was estimated with the panel data methodology, for the period 2005 to 2015.

The results obtained by the Fixed Effects Panel methodology reveal that the reduction in hospitalization costs is associated, firstly, to the proportion of households served by the sewage collection network and, secondly, to the average household income per capita.

In that, as the SEWER increases by 1% the TCH decreases by 3.52%. That is, the greater the access to these services, the lower the health costs. This result refers to how the association of these services is treated in Brazil and how society is apparently accommodated in the sense of claiming a right guaranteed in the Constitution, which is access to health in all its aspects.

Similarly, to the extent that income increases by 1% the TCH decreases by 1.11%. That is, as the population has higher income, it seeks to acquire elements that can generate a better quality of life and social well-being. The concern about the consequences of sanitation on health is not only financial, but also, the consequences related to economic development, environment, tourism, well-being of the individual, among others.

It is of fundamental importance to reverse the negative impact of basic sanitation on public spending. Thus, this research assists in the conduct of public policies through the establishment of



priorities, since when these services are financed by taxes, the population assumes responsibilities in the management of resources and believes that these are reverted in the best possible way.

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# MANAGING EMPLOYEE MOTIVATION WITH THE JOB CHARACTERISTICS MODEL

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Original scientific paper

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## **Abstract**

*In modern business circumstances it is imperative to have motivated employees and to use their full potential for the benefit of the organization, which largely depends on the way in which a job is organized. Previous research suggests that the way in which a job is organized significantly affects the key variables of organizational behavior. The aim of this paper is to explain the role and importance of the Job Characteristics Model (JCM) in contemporary business environments and to show the impact of its basic dimensions on employee motivation, with particular emphasis on the level of job satisfaction. The paper also presents research findings that show how employees perceive the JCM dimensions and to what extent the dimensions actually affect their motivation and job satisfaction. The research results confirm the importance of this connection; by increasing the presence of positive job characteristics, such as feedback, autonomy and the performance of varied and important tasks, organizations can increase employee motivation and job satisfaction.*

**Keywords:** *job characteristics model, job design, motivating employees*

## **1. INTRODUCTION**

Job satisfaction, either with the job itself or with the workplace, is one of the most investigated topics in business practice. For job satisfaction, as well as for motivating employees, increasing efficiency, and promoting career development, the salary level, i.e., material compensation, is not the only important factor. Employee motivation is also influenced by many other factors, such as human relationships in the organization, work autonomy, feedback level, various benefits such as flexible working hours and, to a large extent, the way in which the workplace is designed.

For modern and successful organizations, the tangible assets that they possess are less important; much more important is their intellectual capital, i.e., the ability of employees to create a certain value, learn and increase their knowledge, and their innovativeness and creativity (Kiss 2007). This is especially important given the key trends that have been causing changes in organizations—globalization, information technology, and managerial innovation (Cumplings and Worley 2009). Therefore, the interest has increasingly shifted from the static elements of the

organization to the dynamic elements, from the structure to the people. There is an increasing number of studies on different organizational behavioral variables that seek to understand the ways and causes of employees' behavior and to support and encourage them to successfully achieve organizational goals.

For employees to be motivated and satisfied in their workplace, it is important that the jobs are well designed. It is also important to find those employees whose individual preferences match the needs of the particular workplace so that the employees can achieve their maximum potential. The subject of this research is analysis of main job dimensions, according to the *Job Characteristics Model (JCM)*. In particular, the paper presents research findings that show how employees perceive the JCM dimensions and to what extent the dimensions actually affect their motivation and job satisfaction. Given the timeliness of the topic and issues that are covered by working conditions, the aim of this paper is to explore the opinions of employees in Croatia about their workplaces—the question is whether they are satisfied with them and whether they have enough motivating factors to perform their tasks thoroughly, ultimately leading them to achieve goals at the level of the entire organization.

## **2. THEORETICAL BACKGROUND**

### **2.1. Working motivation and performance management**

Work has an important place in each individual's life; therefore, how it is organized is of utmost importance. Most adults spend half their waking hours at work, and for many people, the job is their central and most important daily activity. Work is a source of not only existential resources but also satisfaction or dissatisfaction. If employees are dissatisfied, they are less productive, and organizations that fail to motivate their employees may not be desirable employers. Such organizations are not able to attract quality people and ultimately fail to achieve success, growth and development. Consequently, attitudes toward work, especially job satisfaction, have a significant impact not only on job motivation but also on the lives of the employees and the entire organization (Buntak *et al.* 2013).

There is no unambiguous answer as to what motivates employees. What motivates someone may have almost no effect on another person and may even have a negative effect. In general, many different intrinsic and extrinsic motivational factors need to be adjusted to meet the needs of employees, and organizations that succeed at this are most often successful in achieving their own goals (Brnad *et al.* 2016).

One of the most important factors affecting employee motivation is the characteristics of the workplace. It is therefore necessary to plan working places well and match them with the individual characteristics of employees. If employees are motivated and satisfied with their workplace and job in general, this will certainly affect their performance. Such employees are not prone to delay, false illness, or all other forms of absenteeism that are not justified by objective reasons. They do not avoid work or conflicts with colleagues and superiors, but they do the job accurately, precisely and on time, and they make the maximum contribution to accomplishing their tasks. Ways of motivating employees based on the JCM will be shown below; as intangible ways of motivating, they are linked mainly to the design of the workplace and their adaptation to employees.

### **2.2. Job characteristics model**

Research on job design shows that the way in which a job or workplace is organized can increase or decrease the motivation of employees, namely, their commitment and productivity, and thus their ability to achieve organizational goals (Robbins and Judge 2017). Hackam and Oldham (1975)

developed the JCM, which best describes the workplace with key determinants affecting the motivation, satisfaction and efficiency of employees. Based on the JCM, it is possible to obtain a description or an insight into job characteristics and see how they are related to psychological and other aspects of employees. The JCM is based on the fact that all workplaces can be described along five basic dimensions, i.e., job characteristics (Hackman and Oldham 1976):

- Skill Variety refers to the degree to which a job requires different activities, skills and talents in carrying out the work. In modern business conditions, it is important to ensure challenging jobs in which employees have the opportunity to learn new things and to use the knowledge and experience that they already have.
- Task Identity refers to the degree to which the job is required to be performed as a 'whole' and identifiable piece of work, from the beginning to the end, with a visible result. Even if it is not possible to ensure that employees perform their job as a 'whole', it is important to enable them to at least have an insight into the business that they are involved in from the beginning to the end.
- Task Significance refers to the impact that the job has on the lives or work of other people, either within the organization or in the external environment. Even when employees do not see the purpose of what they are doing and when they think their job is irrelevant, they need to be well informed as to why every job is important and how it fits in with the organization as a whole.
- Autonomy refers to the degree to which the job provides a level of freedom and the independence that an individual has in making decisions about scheduling the work and determining the procedures used in performing the job. Although (complete) autonomy is not possible in all types of work, it is important for it to be present where possible, as autonomy gives employees a sense of greater personal responsibility for the results at work.
- Feedback refers to the degree to which individuals obtain clear and direct information about their performance or how they have done a particular job. Based on feedback, the employee can see whether a task has been performed in accordance with, or better or worse than, the expected results; thus, feedback is related to his/her further work and engagement.

According to the JCM, the first three dimensions, i.e., *Skill Variety*, *Task Identity*, and *Task Significance*, are combined to create a meaningful job. If the workplace has these three characteristics, the job holder considers his/her workplace important, useful, and worthwhile. A workplace with autonomy and feedback provides employees with a sense of personal responsibility for the results and knowledge of how efficient their work is. Furthermore, the basic job dimensions can be combined into a unique indicator, called the *Motivating Potential Score* (MPS), which is computed by combining the scores of all five job dimensions as follows (Hackman and Oldham 1976):

$$\text{Motivating Potential Score (MPS)} = \left[ \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \right] \times \text{Autonomy} \times \text{Feedback}$$

Jobs that have a high motivational potential must have a high score for at least one of the three factors that lead to the experience of work relevance, as well as a high degree of autonomy and feedback in the workplace. Ultimately, the JCM predicts that employees in workplaces with a high motivational potential have a higher degree of motivation and satisfaction, which is positively reflected in their productivity and facilitates the reduction of absenteeism and employee turnover (Robbins and Judge 2017).

Employee motivation is closely related to employee satisfaction. Likewise, motivation and employee satisfaction directly affect employee job performance, which in turn affects the overall

organization's performance. Therefore, employee satisfaction and motivation, along with their impact on the organization's performance, create a 'vicious circle', and so it is very important to manage them. According to Bakotić and Vojković (2013), the relationship between work satisfaction and individual performance is very complex and bidirectional, as satisfied employees direct their efforts to achieve their best possible individual performance. Likewise, successful employees will achieve greater work satisfaction, which will motivate them to work better or to achieve even better individual performance.

There are several ways that the JCM can be applied to make jobs more motivating. Since Hackman and Oldham (1975) introduced the JCM, the application of this model in different business conditions and its impact on motivation and job satisfaction have been continually researched (i.e., Fogarty and Uliss 2000; Thakor and Joshi 2005; Debnath *et al.* 2007; Hadi and Adil 2010; Ali *et al.* 2014). Motivated employees identify and are involved with the organization; they are interested in solving organizational problems and in the organization's development and success as well as the quality of its products and services; and they contribute to productivity and performance (Varga 2011).

Modern business conditions offer a variety of ways by which it is possible to create jobs and improve the nature of work. For example, employees can be rotated through different jobs, and the scope of their work can also be expanded so that it makes a meaningful 'whole'. Improving job characteristics based on the JCM leads to a job becoming a recognizable and meaningful whole, giving employees a certain level of accountability and control and providing feedback that provides insight into their performance. Apart from redesigning the very nature of work, alternative work arrangements also have a positive impact on motivation and include flexible working hours, job sharing, and working from home (Robbins and Judge 2017). Finally, employee involvement in decision making is also important because it will make them more committed to the organization and more motivated to achieve goals.

### **3. RESEARCH ON THE RELATIONSHIP BETWEEN JOB CHARACTERISTICS AND EMPLOYEE MOTIVATION AND SATISFACTION**

#### **3.1. A sample profile and the research instrument**

To determine the role of the JCM in employee motivation and satisfaction, a survey was conducted. The questionnaire, along with general data on the respondents, asked questions about three key variables: job characteristics, employee motivation, and job satisfaction. A total of 75 respondents answered the survey questionnaire, which was conducted in May and June 2018 in several Croatian companies. Table 1 shows the descriptive indicators of the general characteristics of the respondents.

Table 1 General characteristics of the respondents

Variables	Categories	N	%
Sex	Male	31	41.3
	Female	44	58.7
	$\Sigma$	75	100.0
Age	29 years or less	34	45.4
	30 to 39 years	16	21.3
	40 to 49 years	18	24.0
	50 years and above	7	9.3
	$\Sigma$	75	100.0
Level of education	Primary school or lower	2	2.7
	Secondary school	18	24.0
	Professional undergraduate study	11	14.7
	University undergraduate or graduate study	35	46.6
	Scientific master's and/or doctoral degree	9	12.0
	$\Sigma$	75	100.0
Time spent in the current workplace	Under 2 years	27	36.0
	Between 2 and 5 years	14	18.7
	Between 6 and 9 years	11	14.6
	Between 10 and 20 years	17	22.7
	21 years and over	6	8.0
$\Sigma$	75	100.0	

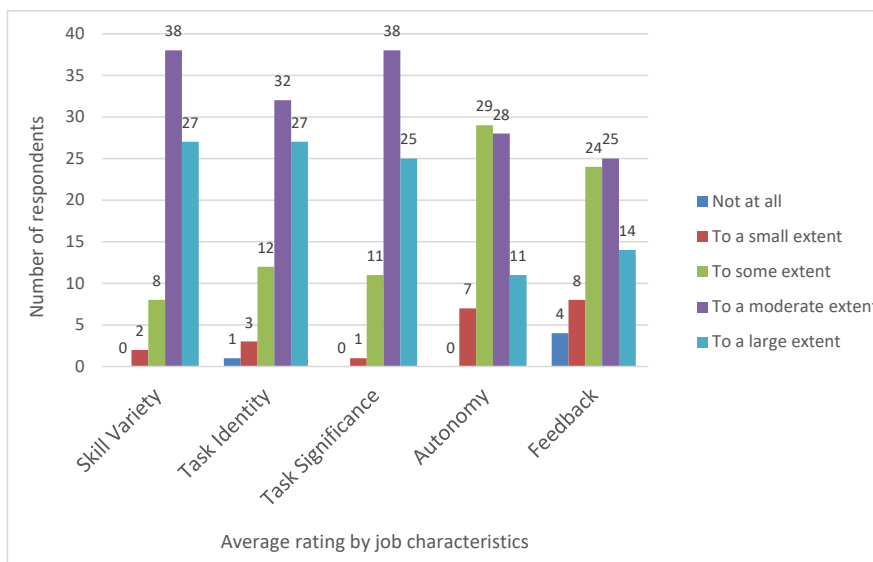
Source: author's own research

Questions for assessing job characteristics were taken from the *Job Diagnostic Survey (JDS)*, an instrument for measuring three variables: objective job characteristics, personal psychological responses to work and the work environment, and the willingness of individuals to respond positively to job enrichment (Hackman and Oldham 1974). The next group of questions referred to the motivation of employees, with the goal of determining how much employees are working to achieve the best possible results, how much they are willing to learn, to what extent their job does not seem hard to them, and so on. Questions from the last group tried to assess how much the respondents are satisfied with the nature of their job, the way that supervisors treat them, the employees' working time, the degree to which supervisors accept employee suggestions and opinions, and whether their job is a source of frustration and dissatisfaction at their point in life. The respondents answered all the questions using a 5-point Likert scale. Finally, a question was asked about what characteristics of jobs from the JCM most impact their employee motivation and job satisfaction. This question was a closed-type question, and the respondents responded to it by choosing one of the offered job characteristics.

### 3.2. Research results

Within each of the job characteristics, respondents were asked several questions; to obtain the grades for each of the five characteristics, an average score of the questions related to a particular characteristic was used. Figure 1 shows the distribution of average ratings for all five job characteristics.





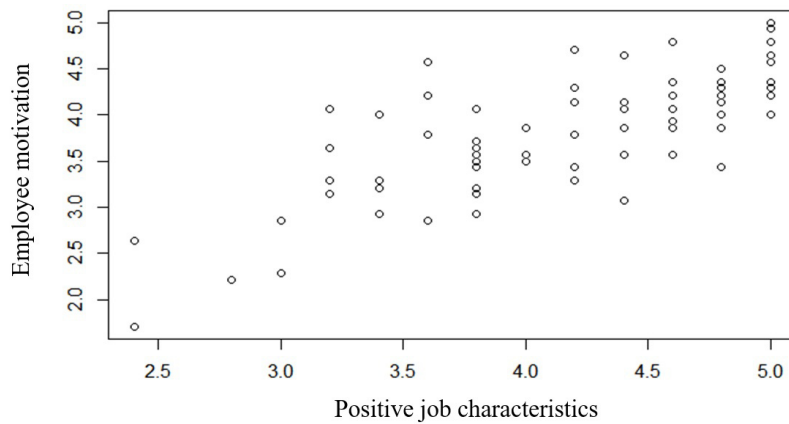
Source: author's own research

Figure 1 Average rating of each job characteristic by respondents according to their representation of their workplaces

Figure 1 shows that the first three characteristics, i.e., *Skills Variety*, *Task Identity*, and *Task Significance*, were mainly evaluated with high ratings by the respondents, meaning that they are largely present in their workplaces. In the case of *Autonomy*, there were some negative deviations in relation to the previous three job characteristics. The last category of questions referred to the *Feedback* that respondents were receiving in their workplace, and this characteristic of the JCM was rated as less present in the workplaces of the respondents.

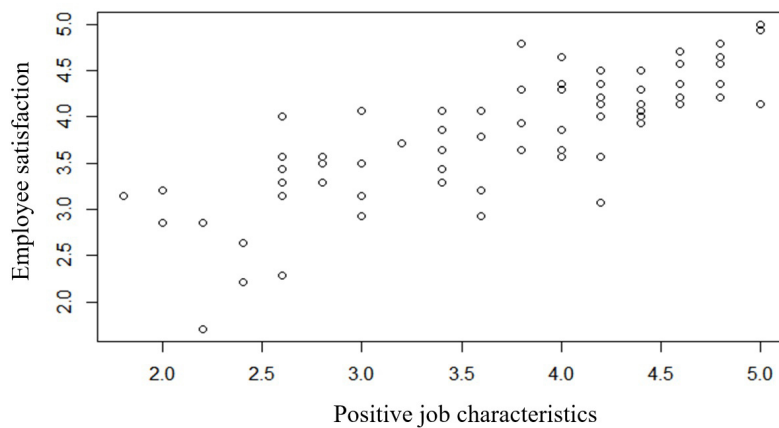
In the second group of questions, respondents needed to answer five questions related to motivation. The results showed that a significant number of respondents rated their workplace motivation with very good or excellent grades, up to 81% (when taking the average of the answers to all five questions). The third group of questions asked about satisfaction with the job or workplace, and 62% of the respondents stated that they were very satisfied or completely satisfied with their jobs and workplaces.

The relationship between the positive characteristics of the workplace, according to the JCM, and motivation and employee job satisfaction was determined by the degree of correlation. The following calculations and graphs were made with the programming language R. For the purpose of calculating the correlation between the presence of the positive job characteristics based on the JCM and employee motivation and job satisfaction, the average scores of employees for these three variables were used. Figures 2 and 3 show scatter diagrams indicating that the condition of linear linkage between the investigated variables was met.



Source: author's own research

Figure 2 Relationship between job characteristics and employee motivation



Source: author's own research

Figure 3 Relationship between job characteristics and employee satisfaction

Both scatter diagrams (Figures 2 and 3) show that the distribution of the points, i.e., the values of the variables, has an increasing direction and that the linear-shape points gather around the straight line. It is also apparent that the strength of the connection is medium and that there are no outliers or unusual values.

The correlation between the variables of workplace and motivational characteristics was investigated using Spearman's correlation coefficient, which is  $0.72, p=0.000$ . It can be concluded that the correlation between the characteristics of the workplace and motivation is positive and moderate, almost good, which means that along with the increasing representation of positive characteristics predicted by the JCM, the motivation of employees is also increasing.

The finding of Spearman's coefficient of correlation between the variables of workplace characteristics and employee satisfaction is similar and is  $0.81, p=0.000$ . It can be concluded that the correlation between workplace characteristics and job satisfaction is positive and very good, which means that with the increasing representation of positive characteristics predicted by the JCM, employee satisfaction is also increasing.

We can mention several additional research findings based on the demographic characteristics of the sample. The research did not reveal significant difference between ratings of main research variables with regard to their sex. Furthermore, although younger respondents rated their workplaces, motivation and job satisfaction with slightly higher ratings, these grades do not

differ significantly from other age groups, and similar finding is also related to the level of education of the respondents.

#### 4. CONCLUSIONS

In modern business conditions, it is of utmost importance that an organization properly cares for its employees, as this is one of the important preconditions for achieving its goals. Therefore, an increasing emphasis is being placed on human factors, i.e., on human knowledge and abilities that can bring something new, progressive, recognizable and unique to the organization. This applies especially to younger employees and is of great importance in Croatia, given that Croatia is increasingly facing the trend of young people emigrating abroad.

For the purposes of this paper, a survey was conducted, with approximately 45% of the respondents being young people aged 20 to 29 years. A significant number of the respondents rated their motivation at work with high marks, similar to the level of their job satisfaction. We can conclude that employees in Croatia, especially young ones, are not as unsatisfied and unmotivated as might be inferred on the basis of daily media statements and writing. However, it must also be taken into consideration that these are mostly young and highly educated people who just started working. Therefore, their motivation could be related to the fact that they just started working or that they found a good job related to their education. Since job characteristics were generally assessed by very good or excellent grades, the conclusion is that the design of the workplaces and their characteristics affect motivation and job satisfaction.

It is also very important to mention that in relation to superiors, the surveyed employees rated the characteristics of autonomy and feedback at the workplace with the lowest ratings. The superiors can most easily influence these two characteristics, adapting them to the needs and wishes of the employees. For this reason, supervisors who take part in job design should pay particular attention to these characteristics since feedback, as well as the possibility of autonomy and decision making, is becoming increasingly more important to employees in their work experience. Involving employees in decision making and other important processes is positive for boosting employees and increasing their motivation, as well as for the quality of decision making and changes at the level of the entire organization. Regarding feedback, attention should certainly be paid to employees when they do a good job, which their superiors often "forget" or fail to do, although it would mean a lot to the employees. It is often easy to point to errors and omissions, and there is too little recognition of a job well done, when the opposite outcome should happen.

Although this research has confirmed that there is a very strong link among major research variables, it is still necessary to point to some limitations in this research. Thus, this sample failed to achieve a normal distribution of data for the selected variables, so there could be some possible deviations from the actual values due to the said measurement and interpretation of the results. Similarly, the small number of respondents with regard to the whole population, as well as their subjectivity in answering questionnaires, must be taken into account. Finally, surveyed employees come from very different types of organizations—from education, healthcare, and manufacturing to banking sector. However, it would be interesting to see if there is any difference in researched variables, regarding the type of companies the respondents come from, but for this purpose it is necessary to ensure larger sample than in this research.

In conclusion, the job represents an important aspect of our lives because we spend most of our time on the job, and the job provides us with resources to meet our living needs and achieve different relationships and goals. All of this is done in our workplace, so job characteristics are of great importance to employees. Motivational approaches are increasingly becoming associated with the way in which workplaces are designed and structured. Research on job design shows that the way in which a job or workplace is organized can increase or decrease the motivation of employees, namely, their commitment and productivity, and thus the ability to achieve the goals of

the organization. The aim of this paper was to determine the role of the JCM in employee motivation and satisfaction and to show that managing the most important job characteristics in the right way can lead to better employee motivation and greater job satisfaction.

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# CORPORATE BRANDING THROUGH CORPORATE SOCIAL RESPONSIBILITY

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### **Abstract**

*The role of corporate social responsibility (CSR) in the corporate branding process involves managing corporate image and reputation in the minds of others. Contemporary organizations are aware that CSR actions are being carefully monitored not only by consumers, but also by all stakeholders. Enhanced interest in social and environmental issues highlights the need for corporate branding strategies to reflect cultural trends in a wider environment to which organizations belong.*

**Keywords:** *corporate social responsibility, brand, corporate branding, corporate image, corporate reputation.*

## **1. INTRODUCTION**

The role of corporate social responsibility (CSR) in the corporate branding process is essential, since it involves managing corporate image and reputation in the minds of others. Contemporary organizations are aware that CSR actions are being carefully monitored not only by consumers, but also by all interested parties.

With the change in the social minds in regards to the environmental and the social matters in the 21st century, organizations recognize the necessity of developing corporate brands that reflect the social tendencies in a broader scope. The corporate social responsibility confirms the belief that modern brands should represent socially important matters that reach beyond the national, the cultural, and the linguistic boundaries. The role of CSR in developing the brand and its reputation becomes increasingly important for the organization's development and success. In relation to that the aim of this article to present the corporate social responsibility as a business philosophy of a significant role for the organization's communications and branding. The resulting tasks are related to the theoretical highlighting of the evolution in the development of corporate social responsibility concepts and the experience to outline the prospects CSR opens for brand development as well as to analyze leading methodologies for assessing the impact of corporate social responsibility on the corporate brand by presenting a ranking of the leading brands in Bulgaria according to Superbrand for 2019.



## 2. DEVELOPMENT OF THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY

The concept of corporate social responsibility is not new but it has been actively developing during the last decades. In the process of reviewing its development one can form several general stages that have influenced the ideas on corporate social responsibility.

In the 50s and the 60s the corporate social responsibility became a part of the corporate management in the USA and Canada. Exactly then emerged the idea for a new organizational model and its role in the world. During those years the idea for corporate social responsibility referred generally to the issues of the corporate philanthropy, the social insurances of the personnel, as well as the support to the local governments and sponsorships. CSR entirely referred to the functions of the corporate public relations or PR (public relations) of the organizations. Before that period, different standards and regulations have appeared in the area of the corporate management defining the approaches for protection of the environment, the corporate ethics, the relations with the competition, the duties before the society and the state.

However, since the end of the 70s, the big organizations in USA and Europe began to recognize the necessity of combining heterogeneous elements into the corporate politics related to the company relations with the environment, as well as to develop new approaches for interaction with the society. These politics should, on one hand, be committed to the philosophy of the organization and its marketing strategy, and on the other hand, to correspond with the expectations of the society. The reasons that force the big organizations to begin to pay better attention to their public relations are the increased pressure by the governments and the syndicates in reference to the higher standards in the area of the labor legislation, environmental protection, and the significantly increasing connection between the public opinion and the competitiveness of the organization. Of critical importance for the purchase decision is not only the quality of the product or the advertisement efficiency, but also the image of the organization and its responsible conduct in regards to the environment and the interested parties.

In the beginning of the 90s the corporate social responsibility is not only a matter of relations between the organizations and the public, but it is also based on the principles and the approaches for social responsibility. The social responsibility politics have turned into an integral part of the evaluation on the business and the success of the organizations. The modern organizations realize their social responsibility towards the interested parties and pay increasing attention to the development of the various social programs and the constructive cooperation in the public area among the government authorities, the employers, and the employees.

In the beginning of the 21st century the majority of the organizations in the USA and in Western Europe have formed their own social responsibility politics, and the influence of CSR on the overall management has become much more interesting topic for researches.

In all the stages of the development of the concept of corporate social responsibility, were raised different definitions for the essence of the concept. It is necessary to make the remark, that CSR is a constantly developing concept, thanks to which there is no unified definition. In all the stages of development of the conception, were created different definitions connected to other terms and ideas of corporate social responsibility, including the corporate sustainability, the corporate citizenship, and the corporate ethics. Table 1 contains a review of the most popular definitions of CSR during the years, as the authors of this article do not claim conciseness and fullness.

Table 1 Definitions for corporate social responsibility

Year	Author	Definition
1953	Bowen	CSR refers to the obligations the managers have on following those politics, to take those decisions, or to follows those lines of actions which are necessary regarding the purposes and values of the society.
1963	McGuire	The idea for social responsibility suggests that the corporation has not only economical and legal duties, but also certain responsibilities before the public that reach beyond these duties.
1980	Jones	Corporate social responsibility is the idea that the corporations have their duties toward certain social groups different from the shareholders, who are described in the law or in the syndical contract.
1987	Epstein	Corporate social responsibility generally refers to gaining results out of organizational decisions on certain matters that have a beneficial effect on the interested parties. The legal correctness of the products from the corporate actions is the sole focus of the corporate social responsibility.
1979	Carroll	The social responsibility of business covers the economical, the legal, the ethical, and the discretionary expectations of the society for the organization at a given moment.
2000	World Business Council for Sustainable Development	The corporate social responsibility is the constant engagement of the organizations to behave ethically and to contribute to the economic development as meanwhile improve the quality of life of the workforce and their families, as well as the local communities and society as a whole.
2006	Commission of European Communities	The corporate social responsibility as a conception where the companies integrate the social and environmental care into their business operations and their interrelations with the interested parties in their free will.
2007	ISO 26000	The social responsibility is a responsibility of the organization about the influence of its decisions and operations on the society and the environment through a transparent and ethical behavior compliant to the sustainable development and the social wellbeing; takes into account the expectations of the interested parties; is compliant to the applicable law and observes the international norms of behavior.
2011	European Commission	The Commission puts forward a new definition of CSR as “the responsibility of enterprises for their impacts on society”
2019	Investopedia	Corporate social responsibility (CSR) is a self-regulating business model that helps a company be socially accountable — to itself, its stakeholders, and the public.

### 3. ESSENCE OF THE CORPORATE BRAND AND THE CORPORATE BRANDING

In order to better understand the essence of the corporate branding is wise to separate the terms corporate brand and corporate branding. Table 2 presents the most popular definitions for corporate brand and corporate branding.

Table 2 Definitions of corporate brand and corporate branding

Corporate brand	Corporate branding
... The visual, verbal and behavioral expression of the unique business model of the organization. (Knox and Bickerton, 2003)	... A systematically planned and incorporated process of creating and maintaining a favorable reputation of the company with its components through sending signals to the interested parties who use the corporate brand. (Van Riel, 2001)
The corporate brand is the communications interface between the organization and its interested parties. (Leitch and Richardson, 2003)	... a conscious decision of the higher management to distill and announce attributes of organizational identity in the form of a clearly defined trade mark. (Balmer, 2001)
Distinctive image (or imaginary picture) of the corporation that influences on the behavior of the interested parties. (Meffert and Bieverd, 2005)	Corporate branding is the total sum of organizational signs being transferred to different publics through the general values the organization stands for. (Christensen and Askegaard, 2001)

Out of these definitions one can draw the conclusions that the corporate branding refers to a constant process of managing the corporate brand as a unified whole. The corporate brand has a certain level of stability connected with its image in the mind of the interested parties, while corporate branding is a constant set of actions for rendering, communicating, transforming and improving the corporate brand.

Corporate branding is being developed generally by marketing specialist and researches beyond the marketing area or the non-marketing perspectives are still very limited. However, the success of the corporate branding depends not only on the marketing instruments, but also on many other management methods through which it is possible to influence the interested parties, for example the corporate social responsibility.

#### 4. CORPORATE BRANDING THROUGH CORPORATE SOCIAL RESPONSIBILITY

Numerous researches were made in order to explain how the brand value appears in the consumers' minds (Aaker, 1991, 1996; Keller, 1993, 2001, 2013; de Chernatony, McDonald & Wallace, 2011, Yoo & Donthu, 2001). Despite the many developments, there is no consensus on the choice of specific brand value dimensions, the existing links between them or an appropriate way to measure them. The number of brand value dimensions varies in the scientific developments - from one dimension (Ailawadi, Lehmann & Neslin, 2003) to five (Lassar, Mittal & Sharma, 1995). A detailed review of existing brand value models shows that most of the research uses the main views reflected in Aaker's (1991, 1996) and Keller's (1993, 2013) works. The brand value dimensions identified by the two authors indicated above generally serve as the basis for different brand value models and are present either directly or indirectly among the dimensions proposed by other scientists. It should be emphasized that Aaker's model (1991, 1996) integrates the learning process that occurs in the user's mind and affects his subsequent behavior and loyalty to the brand. Aaker's conceptualization of brand value and its dimensions were used in the models proposed by Gordon et al. (1993), Michael, King and Reest (2001), Van Riel et al. (2005), Kim & Hyun (2011). However, only two works (Gordon, Calantone, & di Benedetto, 1993; Kim & Hyun, 2011) include the four dimensions presented by Aaker (1991, 1996) in a conceptual model.

For the contemporary consumers it is not enough for the product to satisfy some basic needs, but it also has to offer an additional value. From the organizations viewpoint this means that the basic need of the consumers has been satisfied by the generic product, but in order to provide additional value the product has to be differentiated. Organizations thrive to develop a differentiated brand that provides a sustainable additional value which should satisfy the

consumers' needs and desires. Using a good CSR strategy can differentiate the brand and provide value for the customer.

The corporate social responsibility is an attribute used to develop a strong *corporate identity* that creates a *positive image* of the organization, which in its turn brings to *positive attitudes* and influences the behavior of the consumers.

*Corporate identity* refers to the way in which the organization represents and positions itself in the minds of consumers. CSR may be an important instrument for creating positive corporate identity connected to the solutions on social issues. The positive corporate identity is the basis for creating a strong brand, since it protects and differentiates the organization from its competitors who render identical products on the market. In the process of creating its corporate identity the organization evaluates its resources in abilities in order to establish its corporate values. The brand's basic values should be important and attractive for the target consumers this is why organizations choose social issues that concern the consumers, when developing their corporate identity. When the brand identity is being successfully developed, it should be carefully positioned in the consumer's mind to be able to build loyalty.

*The corporate image* is a reflection of the corporate identity, and can be described as the image the consumers actually have about an organization. The more homogeneous are the corporate identity and the corporate image, the more integrated is the corporate brand. Often organizations are able to develop a strong corporate identity through techniques and methods of influence on the corporate image, among which is CSR. When they buy products with a positive image the consumers use the brand as a means to express themselves and for social acceptance, in order to improve their own image and the suggestion they want to give to the others. This positions the positive corporate image in the basis for developing successful commercial relations with the target consumers. Corporate image is being developed on the basis of powerful associations that serve as a basis for making the purchase decisions and for brand loyalty. Associations are that part of marketing which creates a set of assets connected to the brand and adding value to the product. Positive associations to the brands lead to positive attitudes which develops brand loyalty and competitive advantages for the organization. Associations can either be based on non-material assets (e.g. corporate social responsibility), or on product specifications (e.g. leader in technology). Market success is not based on product superiority, because technologies develop at a great speed and organizations become vulnerable against innovations. For this reason non-material factors like CSR are usually perceived as more efficient associations because they are more sustainable and harder to copy by the competitors.

*Consumers' adjustments* to a given brand serve as a basis in taking a purchase decision. The process of taking a decision for a purchase passes through several stages which are being influenced by a number of factors, among which the actions of the organization in respect to the corporate social responsibility.

- Recognizing the need

The purchase is something that the consumer makes in respond of one's need. When the consumer recognizes that there is a substantial difference between his/her current condition and the desired one, a need emerges.

- Search for information

In order to satisfy an emerged need, the consumer starts looking for information. When the consumers are highly occupied, they are searching for a more active information due to which it is crucial that the organization has succeeded in developing a positive and differentiated corporate identity.

- Evaluating competitive brands

After gathering the information, the consumer evaluates the brands according to the criteria that he/she considers to be most important for making the decision for a purchase and

satisfying the need. The evaluation is being made by taking into account the attributes of the various brands and it is being studied how each attribute of the brand adapts to the needed characteristics. At these evaluation procedures, the negative CSR associations may have a detrimental influence, while the positive CSR associations can improve the evaluation for the brand. The brand evaluation is being made by categorization. Consumers use what they already know about a given brand, and those things which make possible placing the brand in a certain category. The good brand positioning is critical for this step of the process of making the decision for a purchase because marketing may influence on which other brands will be compared. Therefore, if a brand is positioned in respect of CSR, it will most probably be compared to other socially responsible brands.

- A decision for a purchase

After a category of attractive brands has been created, the consumers make a choice based on certain evaluation criteria when they are deciding between the certain options. They also observe how the products differ from each other, and the attributes used for differentiating the choice are defining attributes.

- Evaluation of the purchase after the sale

If the consumer is satisfied after the purchase, the positive attitude increases and that influences the consumer to look positively on the brand in future purchases. Thus brand loyalty is created. In industries where the consumers are strongly engaged with certain brands the use of CSR as a defining tool can develop brand loyalty.

In order to survive in the intense competitive global market it is critical that every organization made an effort for differentiation in the mind of their customers and the rest of the interested parties. Investing in a strong corporate brand is a good opportunity to gain competitive advantage, and more and more organizations adopt various strategies to develop it on the basis of corporate social responsibility. The corporate social responsibility influences the corporate brand and the structure of the organization, because it serves as tool for building trust and helps the consumers and the investors to identify themselves with the values of the organization.

## **5. METHODOLOGIES FOR EVALUATING THE INFLUENCE OF CSR ON THE CORPORATE BRAND**

There are many methodologies for measuring the value of the brand and we will introduce the core of the more famous ones.

### **5.1. The Model „Brand Value“ by David Aaker<sup>1</sup>**

His model consists of 10 elements. These are:

- Differentiation
- Satisfaction of loyalty
- Perceived quality
- Leadership or popularity
- Perceived quality
- Brand individuality
- User-supported associations to the organization
- Brand awareness

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<sup>1</sup> Aaker, David A., Managing Brand Equity, Free Press, 1991

- Market share
- Product price or distribution range

## 5.2. Brand Equity Index

This index was introduced by Bill Moran and it analyses three factors:<sup>12</sup>

- **Average effective marketing share.** It represents the sum of the market share of the brand in all segments in which it competes, expressed by the sales shares of the brand in each segment.
- **Relative price.** It represents the price of the products sold with the given brand divided by the average price of competing products on the market.
- **Sustainability** measures customer retention levels or their loyalty. It represents the percentage of customers who will continue to buy products with the same brand in the next year.

## 5.3. BrandAsset Valuator by Young & Rubicam

The large international marketing communications agency Young & Rubicam has developed a brand diagnostic tool called BrandAsset Valuator (BAV). It measures and tracks the strength and value of the brand. It includes four main dimensions:

- **Differentiation:** The differentiating characteristics of the brand and its distinctiveness over the main competitors.
- **Parity:** Relevance and association of the brand with a user. There is usually a correlation with the market share.
- **Respect:** Attractiveness of and respect for the brand. The extent to which consumers like and appreciate the brand.
- **Recognition:** Level of consumer awareness of the brand and understanding of what it represents.<sup>13</sup>

## 5.4. BrandZ by Millward Brown

BrandZ is a data base on the brands value by the Company Millward Brown The BrandZ methodology for evaluating the brands value consists of three basic columns:<sup>14</sup>

- **Significant Brands:** In each category, these brands create more emotional engagement in users and meet individual expectations and needs.
- **Different brands:** These brands are unique in the positive meaning and create trends. They are at the forefront of providing benefits to consumers.
- **Prominent (remarkable):** They emerge spontaneously into the minds of consumers as a choice of brand that meets key needs.

## 5.5. Interbrand<sup>2</sup>

Interbrand is perhaps the most popular methodology for defining brand value since every year Business Week publishes Interbrand's Best Global Brands report.<sup>15</sup> The report presents the world's one hundred most valuable brands. The Interbrand methodology is the first to receive an ISO

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<sup>2</sup> <https://www.interbrand.com/best-brands/best-global-brands/2018/>



quality certificate. In order to create the annual report, Interbrand examines three key aspects that add value to the brand:

- The financial results of branded goods and services.
- The role the brand plays in influencing consumer choice.
- The power the brand has to set a premium price or the company's secure revenue.<sup>16</sup>

### 5.6. Methodology of Reputation institute<sup>3</sup>.

Here the brand is being evaluated under seven basic criteria:

1. Quality of products and services,
2. Innovations
3. Labor conditions,
4. The ability to manage,
5. Level of social responsibility,
6. Leadership qualities,
7. Effectiveness and efficiency.

### 5.7. Superbrands methodology

The methodology for selecting and evaluating brands is universal for all 80+ countries participating in the Superbrands program. It includes the following indexes:

- **Quality:** Does the brand symbolize the quality of the products or services offered?
- **Reliability:** Is the brand trusted, does it maintain a high standard of products or services?
- **Difference:** Is the brand well known in its sector? Is it successfully differentiated from its competitors? Does it possess individuality and values that make it unique in the market?

As Superbrand explores the brands in Bulgaria, we will look at this methodology in more detail by presenting good CSR practices ranking the companies for 2019. In the users' vote of Superbrands Bulgarian edition for 2019, a total of 2,195 men and women, urban residents using the Internet, participated. The highest share among participants is 36-45 years (34%), followed by 26-35 years (31%) and over 45 years (24%). The brands nominated in the survey are rated by sectors in 27 categories, including cars, the internet, restaurants and cafes, soft drinks, wines, coffee, leisure and entertainment, telecommunications and more.

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<sup>3</sup> <https://www.reputationinstitute.com/>

Table 3 Brands recognized for 2019 by Superbrand Bulgaria

DEVIN	Beverages – soft drinks / mineral water
bTV	Media – TV and radio
DOMAINE BOYAR	Drinks – wines
KEMPINSKI GRAND ARENA BANSKO	Travel – hotels, resort complexes\
HAPPY BAR & GRILL	Restaurants and cafes
PEOPLE’S THEATER ‘IVAN VAZOV’	Leisure and entertainment
IDEAL STANDARD	Household / Sanitary ware
ADDRESS REAL ESTATES	Construction and Real Estate
A1	Telecommunications
TECHNOPOLIS	Retail chains and centers / hypermarket chain for electronics
DSK BANK	Financial services / banks
DZI	Financial services / insurance
DANON ACTIVIA	Food / dairy products
MADJAROV	Food / dairy products
DERONI	Food / Canned Food

Address real estate promotes donation and volunteering in the workplace

DSK Bank has many initiatives in the area of CSR, but the most important is the one connected to their partnership with SOS Children's Villages.

BTV - contribution to the development of education through various training programs, eco- and social campaigns, support for fund raising actions aiming to help Bulgarian children, etc.

Danon AD has carried out numerous projects, including the Danon Green School: All About Nature", with which the company aims to build a sustainable, environmentally friendly way of thinking applied to people's everyday deeds and behavior.

Devin - Priority for the company is the protection of the environment and the promotion of the active lifestyle.

Ideal Standard - Invests in Waste Management Facilities and Systems and Elimination of Harmful Emissions. They enter many eco initiatives. They have donor campaigns and sponsorships for various events in Sevlievo and the region.

Happy Bar & Grill restaurants support UNICEF Bulgaria through a long-term partnership "Together for the Children".

The Corporate Social Initiatives form and support public opinion about companies as responsible citizens. The contribution of cause-related marketing and the promotion of a corporate cause to the successful corporate brand positioning of is based on common priorities in the company's communication policy - cooperation with other organizations and contacts with external target audiences. A significant role for companies' image is the volunteering initiative, which is expressed by companies supporting their employees and / or partners who have decided to voluntarily sacrifice their time to support local public organizations and causes.

## 6. CONCLUSION

The growing role of the corporate social responsibility for the success and the development of the organizations raises the question of integrating the social activities into the marketing strategy planning. Consumers become more and more informed and begin making decision for purchases based not only on the product or service quality, but also on the additional value they bring to the

interested parties as a whole. The increased attention of the society towards the social and the ecological impact forces the modern organizations to use the CSR activities as a tool for improving the image and developing a strong and positive corporate brand. Corporate Social Responsibility moderates the idea of a successful business in line with the rules of loyal partnership, fair competition and the public role of the business unit as a responsible citizen. Identified as a system in the system, as a pre-determined by the branding processes, corporate social responsibility is among the leading factors that outline new opportunities for effective brand positioning.

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# NEUROMARKETING OF FINANCIAL REPORTING: RUSSIAN VIEW OF METHODOLOGY FOR IMPROVING REPORTING

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Preliminary communication

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## **Abstract**

*Neuromarketing of financial reporting is a topic of interest to all representatives of the professional accounting and auditing environment. This paper will present the main problems of modern financial accounting, and possible solutions to them using neuromarketing methods. Thus, in order for financial statements to allow companies to attract new investments, as well as to avoid penalties from the tax authorities, organizations need to regard reporting as a commodity whose main consumers are users of these financial statements. In order to make this product interesting for consumers, companies need to attract their attention using neuromarketing methods, which will allow investors, tax authorities and lending organizations to quickly and efficiently use of data on the company's business operations, as well as make the necessary economic decisions faster. Thus, an easy, understandable and accessible presentation of the results of an enterprise's economic activity at the reporting date may allow both firms and users of financial statements to interact more effectively.*

**Keywords:** *neuromarketing, financial reporting, accounting*

## **1. INTRODUCTION**

More than 500 years have passed since the Italian mathematician Luca Pacioli published a monumental book, one of the parts of which was called A Treatise on Accounts and Records. It gives the first description of a double entry in accounting. It was this Franciscan monk, whose name is still known to every accountant, who invented the well-known system of reflecting business transactions on debit and credit of various accounts, and also introduced and defined the concept of balance that is still relevant. The method of double entry, so beloved by the bookkeepers of the whole world for its brevity and simplicity, is still popular today and is studied in all economic institutions of higher education.

However, for more than half a millennium, accounting has not changed in essence. So, according to American scientists E.S. Hendriksen, M.F. Van Breda [1] textbook authors still explain

how to show a debit balance on the left side, and a credit one - on the right side, teach students the technique of subtracting the smaller opposite, which was recognized arithmetically obsolete three centuries ago. This statement does not indicate that accounting is a subject of study that has long outlived its usefulness. Rather, it focuses attention on the fact that the theory and methodology of accounting, in large part and essentially, is a set of ready-made behavior algorithms, called principles and standards, which are designed to form a common culture, as well as ethical guidelines in the field of accounting and reporting. The very course of reasoning and reasoning, due to which the basic methodological provisions are logically reproducible and verifiable, is usually not explained or, at best, illustrated by "life examples", as is customary in the documents of instructional and legal nature. However, today many standards in the economy, as well as in other industries, have been revised.

In turn, accounting, which, as indicated earlier, has not actually changed since the 15th century, acts as a very obsolete tool for representing the financial position of a firm. Many authors engaged in research in the field of auditing and accounting, argue that for more than 30 years, financial reporting, in its classical sense, has been losing popularity among its main users, and especially among investors [2, 3]. The reason for this observation is the fact that the financial statements are in a form inaccessible to non-professional users, and often provide unreliable information about the financial position of an economic entity, the financial result of its activities and cash flow during the reporting period, which investors, tax services, and loan organizations can use when making economic decisions. Therefore, the specialists of the financial sector of the economy have been asked to make reporting more presentable to attract new investments [4]. So, the main purpose of writing this work is to recommend companies to improve their financial statements and turn it into a more attractive product for investors, as well as tax and loan organizations. In this paper, a number of possible mechanisms will be proposed that can improve financial reporting, thereby increasing the firm's demand among investors. These mechanisms will be offered taking into account the methods of neuromarketing, which is becoming increasingly popular among companies around the world. Neuromarketing is an applied section of neuroeconomics, which is a new methodological approach to marketing, which includes the study of consumer behavior using neuroscience tools. Neuromarketing studies consumer behavior (thinking, cognition, memory, emotional reactions, etc.), setting as its key task the forecast of consumer choice of individuals.

## 1.1. Methods

The question of what constitutes neuromarketing remains relevant to this day. Many authors claim that neuromarketing methods were first used in 2002 by the advertising company Brighthouse in the city of Atlanta, USA [6, 7]. Neuromarketing has been described in many papers as a field of research [8, 9], part of marketing [10], a subdistrict of neuroeconomics [11], and a separate discipline [12]. However, in this study, neuromarketing will be considered as a new area of economics, in which the science of the human brain and marketing meet. Thus, marketers are trying to improve the already studied methods of presenting data about goods and services, taking into account the desire and inclinations of people, formed by their brain [5].

Neuromarketing involves a number of methods that seek to identify areas of the brain that are activated as a result of various marketing incentives, as well as various cognitive processes in these areas, and biological markers that allow a person to acquire a particular product or service. Consequently, neuromarketing has a great potential for identifying the causes of consumer reluctance to acquire the necessary product from the company at the time of selection. Other possible uses of neuromarketing include developing more effective social programs, such as encouraging the use of seat belts in cars, quitting smoking or creating discounts for regular customers [7]. All this is mostly the stimulation of consumer activity, which is necessary for organizations in the market for the successful sale of their products.

Today, information of any kind is submitted using computer technology. There are new opportunities for the presentation and advertising of goods and services, which allow literally riveting the attention of buyers to the products of a company. The time has come to process large amounts of data and present the results under the slogan "simplicity, accessibility, visibility and efficiency." Neuromarketing, being in essence a sufficiently young discipline that emerged in an age of active technological development in most countries of the world with a strong economy, allows companies to implement this slogan by combining the psychology of customers and the desire of firms to maximize their profits. Many people assume that this slogan does not apply to financial accounting, thereby showing its incompetence in this matter. Despite this fact, it is still possible to apply some neuromarketing methods, starting to consider reporting not as documents necessary for an organization, but as a product that can be advertised and sold to users.

### **1.1.1. Financial statements, understandable for everyone**

As mentioned earlier, there are a large number of problems in the perception of accounting and in particular financial reporting. It is worth saying that the problem of accounting lies not only in outdated methods and standards, but also in the unavailability of reporting to people who are not engaged in accounting professionally. Thus, it is important for representatives of the accounting professional community to be understood not only by their accounting colleagues, but also by ordinary people for whom accounting is highly scientific nonsense. Many people can argue with this statement, saying that the primary users of financial reporting data are people who have at least a basic understanding of what accounting for the business operations of an enterprise is. Among such people are, for example, potential investors, companies needed to raise new money and form assets.

The opposition of this point of view will be right in its arguments, but it should be understood that when it comes to people, you can forget about the theory of perfect rationality and objectivity, so beloved in the professional economic environment. All people, regardless of their social status, are subject to subjectivism, which basically refers to emotions and the subconscious. In addition, the banal laziness and unwillingness to understand the complex reporting structure can motivate a person, in our case a potential investor, to invest their money and funds in a company whose financial position is more transparent. Under the specified data transparency lies mainly their clear and concise representation. For example, the accounting of fixed assets of an enterprise associated with the receipt or transfer of fixed assets under a donation agreement is a mystery to many people who do not have in-depth knowledge of this area of accounting, not to mention the reflection of temporary and permanent differences between tax and accounting. The fact that for many people who are not familiar with accounting, deferred tax assets and liabilities are a mystery, as well as the conditions for their formation in the financial statements, makes us think that when providing investors with accounting results, it is worth thinking about a "friendly interface" with links to the necessary legal documents and regulations.

It is necessary to realize and accept the fact that the financial statements have long been a commodity for investors who decide on a profitable investment of their funds. At the same time, a concise and accessible to everyone presentation of these statements is a kind of advertisement for this product. Many accountants who have dedicated their lives to accounting refer to the proposal to visualize and modernize various forms of reporting as a temporary trend of fashion in the economy. However, if you look at the data of the Global Reporting Initiative, you can see that if in the early 2000s the number of corporate social reporting firms was only a few dozen, then at present the number of such firms is in the thousands. Such reporting in a clear, accessible and attractive form for a user is a way for accounting to retrain from an obsolete tool to an advanced object of economic use.



### 1.1.2. Flexibility and transparency of financial statements

Another problem of accounting is the variety of forms of accounting and the accuracy of data provided by the company. According to Article 13.1 of this Federal Law of the Russian Federation No. 402 "On Accounting", the accounting (financial) statements should give a fair idea of the financial position of an economic entity at the reporting date, the financial result of its activities and cash flow for the reporting period required by the users of these statements for making economic decisions. However, any company tries to present its financial situation as beneficial as possible for investors, thereby misleading them about the real state of the company. This does not mean that firms thus violate the law. The fact is that different companies use different accounting models, which means that the same business events are considered unequally. This is partly due to the fact that Generally Accepted Accounting Principles (GAAP), established by the Financial Accounting Standards Board (FASB), allow for freedom in accounting [13]. An example of this freedom is the method of asset depreciation (uniform or accelerated) or the method of inventory accounting (at the average cost, at the cost of each unit, or at the cost of the first purchases).

However, some firms, giving their reports to users, still cross the line of the law. Such a phenomenon in professional accounting environment is called falsification of financial statements [14, 15]. This phenomenon should be considered, taking into account legal, accounting and tax aspects. For example, the legal concept of falsification of financial statements is defined as a kind of motivation. Fraud is the theft of another's property or the acquisition of the right to another's property by fraud or breach of trust. Fraud, in the sense in which it is defined by criminal law, occurs when the principle of the economic separation of the property of a company from the property of its owner is violated. In this case, a situation arises in which some assets of the company are transferred or taken by the owner for personal use. Thus, the balance sheet data in the financial statements may not coincide with reality. Such a case may have disastrous consequences for the formation of the company's "good name". So, in the article "Detecting falsified financial statements: a comparative study using multicriteria analysis and multivariate statistical techniques", Spathis, Doumpos and Zopounidis using the example of 76 Greek companies state that in most cases, falsifying reporting companies underestimate profitability to avoid a large number of tax contributions [16]. For example, in 2002 while honest companies indicate that their sales are 9.195 million Greek drachmas, counterfeiters indicate that their sales are about 70% lower (Table 1).

Table 1 Financial indicators and properties reported by honest companies and falsifiers (the amounts are reported in million GRD)

Characteristics	Falsifiers	Non-falsifiers	5% significance
Total assets	7,315	10,551	0.291
Inventories	1,036	1,859	0.160
Working capital	369	2,281	0.016
Equity	2,674	6,203	0.096
Sales	3,966	9,195	0.043
Net profit	-368	895	0.013

In Russia, the topic of falsification of financial statements is particularly relevant at the moment. According to PricewaterhouseCoopers, over the past 2 years, 48% of Russian enterprises are faced with the problem of falsification of financial statements. We can give an example of the aviation industry, where quite recently "VIM-Avia" was forced to suspend the carriage of passengers due to a lack of working capital. The company concealed high levels of payables, and a



positive profit was achieved due to the proceeds from the sale of tickets for flights that have not yet been made. Another example is the larger airline "Transaero", which also ceased operations due to accumulated debt. The company supported the positive capital by evaluating its brand at 59.1 billion rubles, which is an incorrect assessment of intangible assets. As a result, such falsification of statements led to the bankruptcy of these companies.

Thus, in order to assess the real state of affairs of the company of interest, investors have to resort to the services of financial analysts. In turn, the financial analyst has to search for facts in footnotes and accompanying documents to financial reports in order to describe to the investor the real position of the company in comparison with other firms in the industry [16]. Those investors who take for granted the final reporting data, such as the amount of earnings per share, are surprised by the subsequent development of the company, unlike those who try to look behind the scenes of accounting. However, this "curiosity" is costly for people who are ready to invest their money in the development of a company.

The solution to this problem is very simple. It is enough for companies to provide investors with the opportunity to set up reports themselves as they wish, using various accounting models. Thus, investors will be able to simulate the company's indicators of interest in various ways, while avoiding unnecessary costs for the services of financial analysts. In addition, it will increase the level of confidence in companies providing similar services, and as a result will contribute to attracting new funds. You should not forget about the traditions and principles of accounting. The basic financial statements provided by the company must be framed taking into account the principle of conservatism (prudence).

### **1.1.3. Personal reporting for each user**

One of the reasons for the success of marketing in the modern world is the principle of personification of goods. According to this principle, each user is offered a certain product based on his preferences and status. Such discrimination of consumers leads to the maximization of the profits of the company. The personification strategy is well applicable to financial statements.

As mentioned earlier, the accounting (financial) statements are a kind of product. In addition, it is necessary to understand that when assessing the financial condition of a user's reporting company, a specific article of business activity is of interest. At the same time, reporting users are understood not only as investors, but also as credit and tax institutions who are interested in the firm's ability to pay its debts and obligations.

To get rid of regular tax audits, as well as constant credit reminders, a company can provide customizable reporting capability. Thus, the user from the entire data set will be able to select the necessary financial indicators for him. Such a step will help the company set up the most efficient remote interaction with tax organizations, as well as speed up the process of obtaining a loan from loan organizations and funds from investors. The positive side of this change is that investors, as well as tax and credit institutions will have fewer questions and misunderstandings about the company's financial position, which will bring new investments in the long run. The negative aspect is that this change will entail significant costs in the short period, as the structuring and personalization will incur either new costs for hiring a person to do this, or new costs for creating your own website with customizable reporting.

### **1.1.4. Availability of financial statements**

Another success factor for any marketing strategy is the availability of goods for the consumer. On the one hand, it was difficult to imagine how this factor could be applied to accounting, for example, during the time of Pacioli in the 15th century or during the industrial revolution and the development of capitalism in the 19th century, where bookkeeping contributed to the

development of entrepreneurship and, consequently, the revolution itself. However, on the other hand, today in the 21st century, where everything is bought and sold using global network technologies, it is easy to apply this factor to financial statements.

One of the features of accounting is a large document flow. It includes various forms of invoices, vacation, accounting and other documents accompanying each operation. Moreover, these documents are often not available to potential users of financial statements. This problem of unavailability of the majority of accompanying documents and the reporting itself is relevant to this day. However, such inconvenience can be eliminated.

The company can upload all accompanying documents, as well as its financial statements on its own server, where any user can register and specify the purpose of using the data. First, it will help reduce the time to obtain permission to use the data. Secondly, it will help the company to monitor and track the number of users of their documentation. Thirdly, it will help get rid of a large amount of paper workflow and facilitate the work of accounting. The positive aspect is that this change does not require physical contact with investors so that they can familiarize themselves with the accounts, since all documents are available online. The negative aspect is that it will take more time for accountants to constantly update information on the company's financial position on the company's website. In addition, these are long-term costs associated with an increase in the salary of accountants for additional hours of work.

## 2. RESULTS

Contrary to the popular belief in the modern world that accounting is outdated and needs to be replaced by another method of accounting for a firm's financial position, neuromarketing provides an opportunity for financial accounting to move into the innovation age and increase its effectiveness. Due to the fact that reporting is aimed at attracting new users, as in the case of any other product or service provided by the company, the result of the accounting can be considered as a specific benefit necessary for investors, as well as credit and tax organizations.

Taking into account the biological tendency of people to consume the benefit that is easiest to get, firms need to digitize and simplify the accounting results so that users do not have inconveniences associated with understanding these results and determining the economic condition of the company. So, reporting submitted by different registers will be replaced by various databases, access to which will be open to all potential users of reporting. In addition, improved financial statements can provide investors, tax and credit organizations with visual, understandable and customizable information to help users speed up and simplify accounting work, as well as provide the company with the benefit and advantage in obtaining investments and loans necessary for development.

However, in order for neuromarketing to improve financial reporting, firms should not be afraid to use technology and consider reporting not as necessary for each enterprise documents, but as a commodity aimed at familiarizing users with the financial position of the enterprise. This product must be issued in accordance with applicable law, with respect to accounting, as well as in accordance with the rules and principles of accounting. In addition, honesty and transparency in the provision of financial information, contrary to popular belief, will not lead to huge losses, but will help honest firms to attract additional funds and clear the market of unscrupulous players who are deceiving and misleading reporting users.

## 3. DISCUSSION

In this work, neuromarketing methods were developed, which make financial reporting more visual and attractive to its potential users. The main problem of modern companies is the lack of

innovation and a strong attachment to the classical accounting methodology, which complicates the process of digitalization of accounting. In addition, a large number of authors find it difficult to give a precise definition of neuromarketing, as well as to relate it to a certain area of life, since this discipline is relatively young and not yet well studied. Therefore, this neuromarketing still does not have great confidence from researchers, as well as from firms.

In order for the methods specified in this work to be empirically tested, it is worth resorting to collecting data on companies that already use neuromarketing methods in their business activities. However, it should be understood that the collected sample will be very unbalanced due to the small number of companies reporting in the public domain compared to the number of firms that do not provide this service to users of reporting. This empirical verification methodology is the subject of further research in the field of neuromarketing of financial statements.

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# IMPORTANCE AND OPPORTUNITIES OF SENTIMENT ANALYSIS IN DEVELOPING E-LEARNING SYSTEMS THROUGH SOCIAL MEDIA

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### **Abstract**

*The means of communication and interaction have benefited from incredible changes over the past decade, Social Media increasingly replacing traditional environments. Considering the collaborative nature of the learning sector and consequently the importance of communication and interaction within it, we intuitively realize that Social Media represents the future of educational systems, the research in this field pointing towards the integration of e-Learning with Social Media. However, in order to deliver efficient educational systems, it is not enough to identify the technological means that are conducive to their development, but is also important to shape these means depending on the needs of the target group. When we discuss about Social Media and learning, it is noticed that individuals are the direct beneficiaries and the main force of these environments. Therefore, it is important to understand their behavior, their needs and wants. Analyzing students' attitudes, identifying their positive or negative reactions, or even the refined emotions they have towards learning, can be an extremely difficult task due to their diversity in countless ways. In this regard, an increasingly used tool whose accuracy cannot be challenged is the Sentiment Analysis. The inherent nature of Social Media tools offers multiple areas of application of Sentiment Analysis. Therefore, this paper will discuss the importance of Sentiment Analysis towards e-Learning development through Social Media, considering current evidence. Secondly, the paper aims to identify the opportunities offered by Social Media with regards to Sentiment Analysis implementation and how feedback on educational data can be collected via such online environments to help improve educational processes in an e-Learning context.*

**Keywords:** *Sentiment Analysis, e-Learning, Social Media*

## **1. INTRODUCTION**

Driving forces in developing and streamlining teaching and learning processes, computers, the Internet and new information technologies have become a crucial part of education. Collectively known as the e-Learning Systems for more than 20 years, these ICT tools have redefined teaching

and learning strategies, methods and concepts, meeting the need of today's society to support and enhance lifelong learning.

The e-Learning phenomenon represents the bridge ensuring the transition from the traditional means of teaching and learning to modern means that satisfy the needs of contemporary learners. Those learners are, in fact, individuals whose developmental environment was from the beginning guided by technology and social environments. In this context, their requirement to benefit from familiar educational backgrounds supported by social technology tools is obvious.

The need to integrate Social Media instruments into educational processes is also underlined by the latest modern learning paradigm, well-known as the theory of connectivity or connectivism, whose creators are considered George Siemens and Stephen Downes. This theory has been developed based on the idea that people process information by forming connections (Siemens, *Connectivism: A Learning Theory for the Digital Age*, 2005; Downes, 2007).

The new learning trend suggests that the learning process is uninterrupted, individuals continuing to learn beyond formal education by obtaining information from multiple and predominantly external ways, such as social networks, websites, blogs and other tools provided by technology. At the same time, learning (defined as actionable knowledge) may exist outside of us (within an organization or database), being focused on connecting specialized information sets and connections that allow us to gather additional information that are more important than the current state of knowledge. (Siemens, *Connectivism: A learning theory for the digital age*, 2005)

In view of the above mentioned aspects and considering the fact that we are witnessing a continuous expansion of the Social Media tools, whose accessibility is almost unlimited, the need to integrate e-Learning systems with Social Media becomes compulsory. However, creating such an educational environment, which is considered familiar to modern learners, is not enough when it comes to making education more efficient.

Subjectivity represents one of the main characteristics of individuals. The subjective nature of people, closely linked to their feelings, emotions and opinions, affects any action, including their learning experience. The ability to interact with individuals knowing this substrate of their character, namely subjectivity, can have many advantages in terms of efficient use of e-Learning systems.

In this respect, one of the new areas of interest for researchers is the *Sentiment Analysis*, also called *Opinion Mining*. The underlying purpose of such analysis is to identify the emotional, positive, negative or, in rare cases, neutral, which a text/reaction of the user can have.

It is clear that the direct beneficiaries of any teaching and learning process are the learners and the satisfaction of their needs is crucial to improving educational processes. They, like any other individual, express their views in complex ways, directly or less obviously. Understanding the aspects of the subjectivity of their actions thus becomes a difficult task.

Social Media tools can, however, shape learning environments that facilitate the analysis of learners' feelings in a context of learning and teaching through e-Learning systems. Therefore, the preliminary goal of this article is to identify the importance of analyzing feelings when developing e-Learning instruments through Social Media, taking into account current evidence. Moreover, the paper aims to identify the opportunities offered by Social Media for the implementation of Sentiment Analysis and how collecting feedback on educational data through such online environments can help the improvements of educational processes in a context of e-Learning.

## 2. DATA AND METHODS

In order to meet the stated objectives of this paper, the research is primarily based on external sources, analyzing existing research in the field. Therefore, the literature review process is considered as the main data collection tool with respect to the present paper. However, the literature review, as a means of collecting pertinent and significant information to the topic of interest, implies a mixed approach, collecting and analyzing both qualitative and quantitative studies provided by authors in this field. Moreover, the observations, findings and proposals of the authors, aim to bring value to solving the research scope.

Although studies that involve linguistics and natural language processing (NLP) have been previously developed, little research on people's opinions and feelings has been done before 2000. Since then, the field of research has become very active, firstly due to the wide scope of Sentiment Analysis application in almost any field, and on the other hand due to the proliferation of applications and technological tools that facilitate this type of process. Thereby, the concept of Sentiment Analysis has benefited from several approaches, the perspectives being different, especially in terms of how this type of study is carried out.

In general terms, the Sentiment Analysis represents a field of study whose main purpose is to analyze the opinions, feelings, assessments, attitudes and emotions of individuals in relation to various entities such as products, services, organizations, persons, issues, events, their subjects and attributes. (Liu, 2012)

On the other hand, highlighting the dependence of this type of information technology analysis, Kechaou et al. (Kechaou, Ben Ammar, & Alimi, 2011) have defined Sentiment Analysis, also known as the classification of sentiment or opinion mining, as a computational technique that attempts to understand and explain opinion and sentiment by analyzing large amounts of data in order to help decisions making.

According to Vohra and Teraiya (Vohra & Teraiya, 2013), there are two main approaches to Sentiment Analysis: the analysis based on machine-learning and the lexicon-based analysis. The lexicon approach, also called the symbolic approach (Boiy & Moens, 2009), uses artisanal rules and lexicons, while the automated learning or machine-learning approach uses supervised or poorly supervised learning to build a model from a corpus of large scale, with supervised models here being the most popular.

Practically, in the case of a machine-learning analysis, the classification technique is used in order to categorize text-based content. In contrast, the lexicon-based method is founded on a sentiment dictionary that contains words expressing opinions, which are then compared to the collected data in order to determine their polarity. In this case, words describing opinions are attributed to sentiment scores that describe how positive, negative, and objective they are.

Extending the previous view on how the Sentiment Analysis could be conducted, Rahmath and Ahmad (Rahmath & Ahmad, 2014) considered three main approaches: Sentiment Analysis based on supervised machine-learning technology; Sentiment Analysis based on the lexicon technique; Sentiment Analysis developed by combining the two approaches above. Hence, they stated the existence of a hybrid method of analysis, resulting from the combination of two clearly distinct methods. Actually, the third method could be used to improve performance in the classification of sentiment.

In 2016, Devika et al. (Devika, Sunitha, & Amal, 2016) conducted a comparative analysis of three main approaches to Sentiment Analysis: the machine-based approach, rule-based analysis, and lexicon-based analysis. In the authors' view, based on the analysis of the existing literature, the strategy based on machine-learning works by creating a "training" algorithm with a set of data before applying it to the real data set. The rule-based approach has been described as the method that works by defining different rules for obtaining opinions created by tokenizing each sentence in each document and then testing each token or word for its presence. At the same time, lexicon-



based techniques have been described as starting from the hypothesis that the collective polarity of a sheet or document represents the sum of polarities of individual expressions or words.

With a broad approach based on existing evidence, Wang and Zhai (Wang & Zhai, 2017) identified, in turn, two main ways of achieving this type of analysis: rule-based analysis and statistical model-based analysis. In case of rule-based analysis, human expertise is used to create rules (referring to the lexicon of feelings) to determine the feelings behind a text. When a Sentiment Analysis based on statistical models is involved, these models are estimated on the basis of labeled data or on the basis of previously generated human data to learn "soft" sentiment prediction (learning-based methods).

As it can be easily observed, regardless of the exposed vision and the considerations of the researchers in the field, the starting point in any Sentiment Analysis is represented by the automated approach or the lexicon-based approach. Of course, these main approaches can also be divided into different sub-methods depending on the specificity of the field in which the Sentiment Analysis is undertaken. At the same time, the technological tools used for the purpose of developing a Sentiment Analysis are increasingly more complex, the evolution in this field being a steady development process.

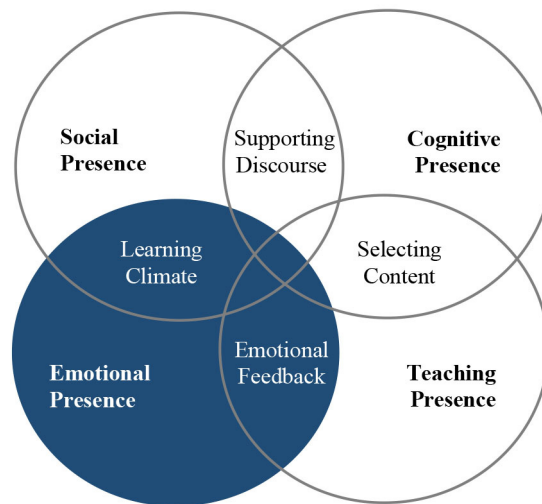
### **3. RESULTS AND DISCUSSION**

Although it is expected that the next generation of e-Learning systems will provide learners with a familiar environment, conducive to the efficiency of teaching and learning processes, other aspects that can influence this evolution should be considered. Carrying educational and formative activities in a predominantly online environment through Social Media tools offers many advantages, demonstrated and understood over time, but also limits face-to-face interaction, which affects the process of understanding students' learning characteristics and needs.

Moreover, the rapid evolution of Sentiment Analysis and the synchronization of this progress with the explosive popularity of Social Media tools and technologies have led to new research spheres involving both areas simultaneously. The importance of using social online environments as a starting point of the Sentiment Analysis has been increasingly understood by researchers in the field, the analysis of opinions currently representing the central focus of Social Media research.

#### **3.1. The Importance of the Emotional Presence on Social E-Learning Systems**

Among other issues that may influence the effectiveness of educational processes, affective and emotional factors seem to have effects on students' motivation and, in general, on the outcome of the learning process (Shen, Wang, & Shen, 2012). If initially a distinction was made between cognitive presence, social presence and teaching presence (Garrison, 2011), these being considered the key elements that determine the proper functioning of online learning systems, further research has increasingly highlighted the importance of emotional presence (Figure 1) in streamlining online learning processes (Stenbom, Cleveland-Innes, & Hrastinski, 2014).



Notes: The figure was reproduced by the authors

Source: From Rienties & Rivers (Rienties & Rivers, 2014) – Adapted from Stenbom et al. (Stenbom, Cleveland-Innes, & Hrastinski, 2014)

Figure 1 Community of Inquiry Framework for Online Learning

Thus, it can be asserted that, in learning contexts, the ability to detect and manage information about student emotions can, at one point, help us to understand their potential needs at that time (Clarizia, et al., 2018) which consequently determine the improvement of educational processes by providing personalized learning environments.

As mentioned above, online learning environments set clear barriers in understanding user sentiments, in this case those involved in the educational processes, as a result of the inability of users to physically interact. Thus, in an e-Learning context, the difficulty can be encountered when precisely considering the involvement of the emotional part of the subjects. This emotional side, which is hard to identify in an online environment, is expected to be found and exposed through the content distributed predominantly in the form of text, but also in other forms chosen by users as a means of online expression.

Aiming to overcome the limits of knowing and understanding the emotional side of the users, Sentiment Analysis becomes extremely important when developing and using e-Learning systems through Social Media. Communication represents the dominant factor behind the connection or isolation of the involved parties in the educational processes held in such distributed environments. The huge mass of information displayed by users through online Social Media offers almost endless opportunities when they are participating in educational processes and also requiring special attention.

Emphasizing the importance of choosing the Sentiment Analysis as a User Generated Content research (UGC), Yu et al. (Yu, Duan, & Cao, 2013) mentioned the following benefits of this type of study:

- Converts large, unstructured content into a form that allows specific predictions of certain results without institutional market mechanisms.
- Develops models to aggregate the views of the collective population and leads to obtaining information about group behavior that is useful in predicting future trends.
- Applies the collected information on how people react to specific objects, designing then various marketing and advertising campaigns.

While the previously identified advantages were linked to the impact of social and conventional media on firm equity value, they can be easily adapted and applied in the context of e-Learning through Social Media. In this case, the Sentiment Analysis exerts the primary importance on the efficiency of educational processes and, as strong points of its use, the above benefits take the following form:

- Converts large, unstructured content into a form that allows analysing students' learning characteristics, which facilitates the learner-centered learning.
- Develops models to aggregate the views of the collective population and lead to obtaining information about group behavior that is useful in predicting future trends.
- Applies the obtained information on how learners react in specific circumstances or stimuli, helping to further design the educational content and contexts.

Thus, Sentiment Analysis can play a dual role when e-Learning systems integrate Social Media tools. First of all, it can serve as means of identifying views, opinions and sentiments on educational content and contexts at a given point in time. At the same time, this type of analysis can be used to detect changes that may occur with respect to the emotional side of users.

Therefore, we can state that Sentiment Analysis represents useful mean of identifying the less obvious side of the users behavior, i.e. of learners. This can be considered a valuable resource when finding hidden insights about emotions and feelings that influence students' learning, attitudes and skills, and consequently educational processes.

### **3.2. Sentiment Analysis Opportunities on Social Media**

With the emergence and explosive advancement of Social Media tools, considered part of Web development since its second generation, the possibilities to analyze masses of publicly exposed information in the form of text and beyond, have greatly multiplied. Online forums, blogs, social networks such as Facebook and Twitter, can all be considered Social Media tools. These social online environments have the ability to capture views of individuals around the world.

The main feature of Social Media tools is providing users with common interests the possibility to generate and post public content on the Internet, embracing various forms, predominantly text or media content. This content represents valuable data and information as it can be used to provide real-time perspectives on people's feelings or opinions.

Freedom of expression offered to users within Social Media platforms is one of the main advantages provided by such technologies for performing Sentiment Analysis. Generally, online social interactions provide a level of anonymity and confidentiality, quite unusual in real interactions. Thus, individuals feel less constrained in expressing opinion in social online environments, which results in more realistic views. As Kang (Kang 2000) mentioned, the cyberspace intensifies and facilitates interaction with strangers.

The communication and availability of real-time user feedback through Social Media technologies has revolutionized computational linguistics and Sentiment Analysis. Research areas have diversified over time, the Sentiment Analysis conducted through Social Media being a growing area that includes a variety of modeling and analysis techniques that can be applied to different areas. Therefore, in the following we will focus on the ways in which the Sentiment Analysis can be used within Social Media, highlighting the opportunities offered by these online environments, especially in the context of e-Learning.

Mainly, Sentiment Analysis within Social Media platforms is based on user feedback that can take the form of text, including comments, recommendations and reviews, or graphically based on emoticons made available by these Social Media applications or on media content:

- **The Text-Based Sentiment Analysis on Social Media**

In terms of text-based Sentiment Analysis starting from text posts from social environments, including simple comments, discussions, hashtags, and other character posts, we identify between both simple methods of retrieving and classifying the text and semantic methods.

Classification of text is the most common method of analyzing sentiment within Social Media, consisting in collecting text data and placing it in three main categories, depending on the expressed emotional load: positive, negative or neutral. Expressional texts are the most common form of stating opinions on Social Media platforms. Their existence varies from simple comments to conversations and reviews on specific entities. Basically, lists of positive, negative and neutral terms are made in such a way that they can be counted when used, for example, in a text comment that mentions a service or product name.

With regard to semantic Sentiment Analysis methods, it is considered that they can calculate lexical "distances" between the name of a product and each of the two opposite terms, such as "poor" and "excellent", to determine feelings about these (Thomas & Cook, 2006).

Considering the above-mentioned issues, our belief is that text-based analysis is not only the most commonly used method of identifying Social Media sentiment, but it is also the easiest to undertake. This ease of use is due to the annotation of text-based environments, in which the underlying tokens are often explicit character groups.

- **The Emoticon-Based Sentiment Analysis on Social Media**

Within Social Media environments, emoticons represent tools very often used by users, which are extremely diverse and capable of expressing a multitude of opinions and feelings. The popularity of these methods of expression cannot be denied, some of which being even included in the Oxford English Dictionary. In addition, with the new features offered by different social platforms like Facebook, reactions to specific posts can be directly expressed through emoticons.

Emoticons are firstly expressed in the form of faces that represent happy or sad feelings, although there is a wide range of non-facial variations. Therefore, they can be used as visual analytical systems in Sentiment Analysis, having the ability to reveal the hidden structure of individuals perception.

The polarity of these emoticons can be classified, similar to the text-based method, as positive, negative, and neutral. In this regard, Gonçalves et al. (Gonçalves, Araújo, Benevenuto, & Cha, 2013) classified the main emoticons used within social online environments as follows (Table 1):

Table 1 Emoticons and their variations

Emoticon	Polarity	Symbols
☺	Positive	:) :] :} :o] :o} :o} :-] :-} :-} => =] =} =^} =^} =^} :B :-D :-B :^D :^B =B =^B =^D :) :] :} =') ='] ='} <3 ^.^ ^-^ ^_ ^ ^^ :* =* :-* ;) ;] ;} :-p :-P :-b :^p :^P :^b =P =p \o\ /o/ :P :p :b =b =^p =^P =^b \o/
☹	Negative	D: D= D-: D^: D^= :( :[ :{ :o( :o[ :^ ( :^ [ :^ { =^ ( =^ { >= ( >= [ >= { >= ( >:- { >:- ( >=^ [ >:- ( :- [ :- ( = [ = [ = [ = [ >:- ( >= [ >=^ ( : ( : [ : { : { = ' ( = ' [ = \ : \ = / : / = \$ o.O O_o Oo :\$ :- { >:- { >=^ { :o{
☺	Neutral	:  =  :-  >.< >< >_< :o :0 =O :@ =@ :^o :^@ -.-.' -_- -_-' :x =X :# =# :-x :-@ :# :^x :^#

Source: Classification made by Gonçalves et al. (Gonçalves, Araújo, Benevenuto, & Cha, 2013)

Surely, the classification of these emoticons differs depending on the Social Media tool or platform being used. Relying on the instrument in which the data is collected, users may receive a different form of emoticon characters, researchers facing the difficulty of not having a generally valid grading of emoticons from the collected data.

However, emoticons are an easy way of appreciating content or expressing opinion with respect to certain content, being extremely used by Social Media users. Therefore, in an e-Learning context through Social Media, it is helpful to approach these forms of expressing in order to analyze learners or other participants' sentiments.

- **The Media-Based Sentiment Analysis on Social Media**

Identifying the sentiments behind the user-generated media content can be considered a real challenge while conducting a Sentiment Analysis. When we talk about media content, we refer to images, music, video, and more recently live streaming, but also to many other similar means.

In contrast to text-based analysis or emoticon-based analysis, where the tokens underlying them are easier to classify, in non-textual environments these base tokens are considerably less explicit. In terms of media content, for example images and video content, base tokens are actually pixel groups (compared to the character groups, which can form words in the text). In addition to the multiple dimensions that tokens can have, their variation is much higher even when they express exactly the same concept. Thus, the use of dictionaries and other traditional text-based tools becomes impossible. At the same time, the existence of the semantic gap between what computer vision can achieve and the level of understanding required for Sentiment Analysis determines the immense difficulty in extracting and understanding sentiments behind media content. (Maynard, Dupplaw, & Hare, 2013)

Surely, progress in this type of analysis can not be challenged, with visual content being among the most valuable assets on Social Media. Thus, this field of research has gradually evolved, being initially focused on visual Sentiment Analysis using pixel-level features (Siersdorfer, Minack, Deng, & and Hare, 2010) and later on deep visual features (You, Luo, Jin, & and Yang, Robust image Sentiment Analysis using progressively trained and domain transferred deep networks, 2015) and analyzing sentiment using multi-modalities, such as text and image content (You, Luo, Jin, & and Yang, Cross-modality consistent regression for joint visual-textual Sentiment Analysis of social multimedia, 2016; You, Jin, & Luo, 2017).

Although considered perhaps the most difficult method to carry out the Sentiment Analysis on Social Media environments and not only, media content analysis represents a real opportunity to understand the emotional side of the participants in educational processes. This is mainly due to the preference of new generations of learners to gain knowledge through music, photos and video files instead of text (Oblinger, Oblinger, & Lippincott, 2005).

#### **4. BRINGING EFFICIENCY TO SOCIAL E-LEARNING SYSTEMS**

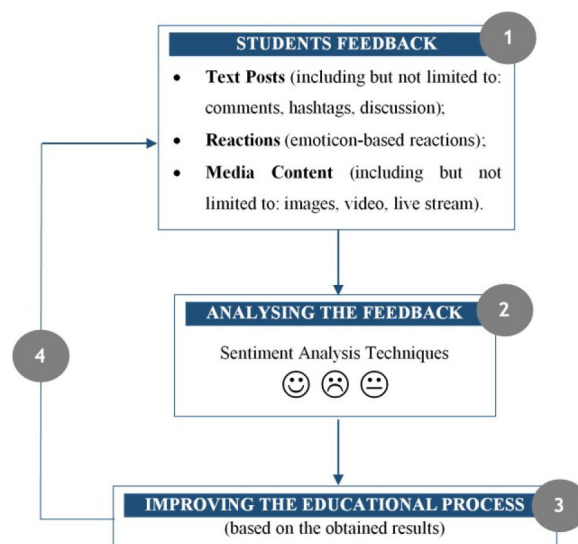
Following the previous analysis of what the Sentiment Analysis is, the importance and opportunities that it can have on the development and efficiency of e-Learning systems through Social Media, it becomes clear the need to implement this kind of study in the educational sphere. User feedback is particularly important, serving as a tool to provide personalized educational content and contexts that meet learners needs and requirements.

Social Media tools, facilitating collaborative communication and learning, provide quick feedback at a given time and during a teaching/learning situation. Understanding the feelings behind the user-exposed content determines the adoption of measures that will make the performance of educational processes more efficient.

Altrabsheh et al. (Altrabsheh, Gaber, & Cocea, 2013) proposed a pattern of application of Sentiment Analysis in education, aimed at text-based analysis in the form of tweets. Starting from the idea of the authors, our proposed framework attempts to expose an architecture that fully benefits from all the opportunities offered by Social Media in an e-Learning context. It tends to offer a broad vision in the form of a general scenery that can be adapted and used indifferently by the chosen Social Media platform.

Hence, the proposed architecture (Figure 2) assumes that the feedback is obtained from learners in the form of text posts (including but not limited to comments, hashtags, discussion), reactions (emoticon-based reactions) and media content (including but not limited to: images, video, live stream). Subsequently, the data obtained can be studied using the techniques offered by the Sentiment Analysis, Naive Bayes and Vector Support being mentioned by Altrabsheh et al. (Altrabsheh, Gaber, & Cocea, 2013) as extremely useful, individually or combined with respect to the educational reviews and data.

As a result of the Sentiment Analysis, using the common classification offered by it, the aspects that negatively affects the learning process results, the aspect that favour the educational processes or the neutral aspects can be highlighted. These aspects, in fact, mark the emotional side that guides the learning behavior of the subjects, namely the learners. Therefore, specific measures can be taken in order to hereditate or mitigate the deficiencies of the educational content, situations and processes, the learners finally benefiting from what they really need.



Source: Authors proposed architecture

Figure 2 Applying Sentiment Analysis on Social E-Learning Systems

Of course, combining the three types of Sentiment Analysis can be a tough task even in the context of e-Learning through online social environments. The proposed architecture is merely a simplistic or generalized approach to what the inclusion of Sentiment Analysis involves in improving educational processes. The three steps presented in this working framework can be analyzed in depth and there are many other aspects that can be examined, but this work can be considered a good starting point that opens new perspectives to the context of learning through the Social Media.



## 5. CONCLUSION

The research carried out in this paper leads to the following notable findings regarding the application of Sentiment Analysis in the context of online learning through Social Media tools:

- The emotional presence represents one of the key successful factors in improving the educational processes, the necessity of adopting this kind of study being evident even in the context of online learning supported by Social Media instruments;
- Online social environments offer valuable opportunities for analyzing user's sentiment, while also representing proper means of facilitating freedom of expression and familiar interaction environments for the new generations of learners;
- Understanding the students' learning needs fosters the creation of personalized learning environments, supporting the contemporary student-centered approach of learning;
- Applying Sentiment Analysis in the context of online learning through Social Media tools can significantly diminish the barriers to understanding learners' needs and requirements for gaining knowledge;
- Understanding the emotional side of content distributed by learners provides clear opportunities for adopting measures aimed to foster the proper development of educational processes and their outcomes.

Furthermore, this paper raises the awareness on a general framework that can be experienced when the application of the Sentiment Analysis on the e-Learning systems through Social Media is desired. The suggested architecture can be adapted and used according to specific needs, but it also leaves open doors to new research areas in the field of applying Sentiment Analysis in the online educational contexts.

Certainly, this work, being predominantly focused on reviewing existing evidences in the analysed field, requires continuity in highlighting the importance and opportunities of Sentiment Analysis on the development of e-Learning systems through Social Media. Therefore, it is advisable to extend the research through the experimental application of Sentiment Analysis in the context of online social learning.

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# THE ROLE OF IDENTITY FOCUSED COMMUNICATIONS IN PERSONNEL MANAGEMENT

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Preliminary communication

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JEL classification: M12

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### **Abstract**

*The report addresses the issue of business communication and its role in organizations in the aspects of personnel management. We study how communication influences the retention and good performance of personnel. Communications are an integral part of the activity of organizations. Communications largely determine the effectiveness of personnel management. Well-designed communications reduce the time of problem solving and of adaptation of employees, help in conflict resolutions etc. In spite of obvious importance of the communications in organization the studies of this problem require new approaches and methods. We explore mechanisms that help to keep the staff in organization and to create a desire to continue its activities in this organization. On base of social identity approach (H. Tajfel, J.C. Turner) and business psychology approach (S Benton, N. Ivanova,) we studied the Identity Focused Communication (IFC). This type of communication realizes, through integrated work of organization, the development of cognitive, value-motivational and behavioral characteristics of social identity. IFC can be considered as a human development technology which helps employers in clear understanding of values, professional and social role and pattern of behavior in organization. On this theoretical basis and case studies method in different organizations we observed the role of IFC in the development of organizational culture for rising of personnel engagement and loyalty. Results of this research can be useful for business counseling and business management process, development of personnel identity, loyalty, and performance. The results allow us to see new aspects in communication, develop training programs and staff development, and improve internal communication. Our results can develop the understanding of the semantic core of effective communication's strategy of organization which include corporate "picture of world" and image of the organization. We can add the knowledge of professional values and patterns of behavioral and social roles. The data obtained can be considered as a pilot to build new hypotheses and further research on a broader sample and with the use of experimental procedures.*

**Keywords:** *business psychology, identity focused communication (IFC), personnel management, loyalty, adaptation of personnel, social identity, strategy of communication*

## 1. INTRODUCTION

The modern model of personnel management is impossible without effective communications. Within the frame work of the concept of quality management, communications are effective when they create conditions in which all participants of the process have the same access to the necessary information. Everybody has possibilities to communicate productively with others. Effective communications provide the optimal conditions for the decision-making, conflict resolution and team performance. In the same time effective communications in organization help people in self-determination and desire to demonstrate good performance and commitment to the organization.

One of key and painful problems for many organizations is staff turnover. A high rate of staff turnover does not allow forming permanent and well-coordinated professional team; create a favorable atmosphere to work and as a result to decrease the performance. That is why it is very important to study how we can avoid this situation and find good instruments to influence on personnel desire to work in organization and to realize professional aims on higher level of performance. We explore mechanisms that help to develop communicative strategy and tactics to the way of professional and social values, income and standards of behavior. All this acidity should give managers new instruments which are useful for maintaining relative stability of personnel and improving the level of their performance.

Our research addresses to the communications in organization by the new approaches to effectiveness of one. On base of social identity approach (H. Tajfel, J.C. Turner), business psychology approach (S Benton, N. Ivanova,) and communication models (Shannon-Weaver's model, GCS model), we created the Identity Focused Communication (IFC). This type of communication realizes through integrated work of organization for development of cognitive, value-motivational and behavioral characteristic of social identity. IFC can be considered as a human development technology which helps to employers in clear understanding of values, professional and social role and pattern of behavior in organization.

On this theoretical basis and case studies method in different organizations we observed two case studies the role of IFC in the development of organizational culture for rising of personnel engagement and loyalty.

### 1.1. Communications in organization

The value approach to the management of organizations, represented by theories and concepts of corporate social responsibility, organizational development, social identity, social management, consists in building social and labor relations based on organizational values. Not by chance since the beginning of the XXI century managers began to show interest to the development of corporate culture.

The traditional managerial approach to the use of values in the management of organizations is presented in the works of F. Harris and R. Moran, E. Schein, R. Waterman, T. Peters, K. Cameron and R. Quinn, D. Cotter, D. Heskett et al. (Cameron K., Quinn R., 2001; Andreeva, Betina, Kosheleva, 2008). The authors viewed the process of forming and managing organizational values as an element of maintaining organizational culture. They established a relationship between the level of employees' understanding and possession of organizational values and the successful development of an organization.

The establishment of organizational values, their understanding by employees forms the behavioral norms and standards of communication in each specific organization. The results of numerous studies make it possible to understand the role of organizational values in the management of employees' activities, the formation of a certain type of organizational culture that

can restrain or stimulate the development of an organization, and determine its success in the market.

The value of corporate culture for the development of any organization is determined by a number of circumstances. First, it gives employees an organizational identity, being an important source of stability and continuity in the organization. Then, knowledge of the fundamentals of the organizational culture of their company helps new employees to correctly interpret the events occurring in the organization, defining the most important and essential in it. Finally, an intraorganizational culture, more than anything else, stimulates the self-consciousness and high responsibility of the employee while performing his functions.

Two important factors determine the strength of an organizational culture: the degree to which the organization members accept the core values of the company and the degree of their commitment to these values.

The difficulty of maintaining the required level of organizational culture is explained by the fact that newly recruited employees bring with them not only new ideas and individual approaches to solving professional problems, but also their own values, attitudes and beliefs. Individual personal values of employees can significantly shake the prevailing cultural values within the organization. To maintain the existing system of cultural values of the organization, it is necessary to constantly influence the formation of the value orientations of employees in order to maximize their convergence with the values of the organization itself. And here organizational communications play an important role.

Corporate culture is linked with communications in the organization. The organizational culture influences the means of communication, and vice versa, the established and accepted methods of communication exert their influence on the culture. Moreover, the organizational culture manifests itself through various types of communication, and the corporate culture, aimed at correcting or initiating new processes, externally conducts these changes through new communication forms.

Communications are an important lifeline in every organization. Many of the problems that occur in organizations are the direct result of people failing to communicate (Armstrong, 2008). Organizational communication is the source of information used by managers in making decisions that affect the organization. Managers use communication to get the information necessary to decision-making, to transmit the results and intention, ideas and values important for an effective functioning of the organization.

Effective communication processes lie in a background of every company that wants to be successful in a long term (Purves, 2005). Communication fosters personnel motivation by clarifying to employees what is to be done, how it should be done and what can be done. Communications encourage commitment to organizational objectives. Organizations are social entities that rely on communication to exist. Simon puts it quite simply: "Without communication, there can be no organization" (Simon, 2015).

In our work, we investigate the role of organizational communication in formation of social identity on the basis of social identity approach and the business psychology approach.

#### Communication model

A successful activity of an organization is largely related to its communicative competence, i.e. ability of the organization to build effective communications. Communicative competence is the ability of an organization to:

- define the goals of organizational communication;
- to take into account the intentions and methods of communication partner;

- to choose adequate communication strategies;
- to evaluate the success of communication; to change communicative behavior as necessary.

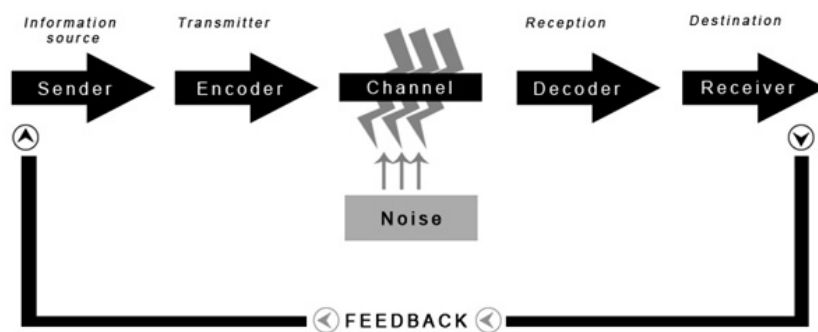
Initially, in the organizational theory, communications did not receive as much attention as we can observed now. For example, F. Taylor, a representative of the “scientific management” school, understood by communication no more than a “one-sided, vertical process directly connected with the transfer of a work task”, implying that communications are exclusively formal, planned, hierarchical (Miller, 2014).

The human relations school had a completely different position, considering communications as a factor directly influencing the motivation of employees. Its representatives (E. Mayo, D. McGregor, F. Herzberg and others) attracted attention to communications in the organization, focusing on the importance of their informal form and the development of communication skills of a manager.

Finally, the social systems approach to organization (C. Barnard), combining already existing ideas, defined communications as “a process that ensures the interdependence and consistency of the functioning of all internal parts of an organization, outlining the external boundaries of the system”.

Following the Shannon-Weaver’s data transmission model (see Fig. 1), we can outline some essential stages of communication process:

- encoding of the message in a certain form, or media;
- choosing the way of interaction with the audience, the channel of communication, depending on the characteristics of the group;
- decoding / interpretation of the message by recipients, depending on their existing value settings and group membership.



SHANNON-WEAVER’S MODEL OF COMMUNICATION

Figure 1 Schematic diagram of the Shannon-Weaver model

Here important are: 1) senders (communicators) and receivers (recipients) of informational messages; 2) the manifestation of communication means (codes used in symbolic forms, information flows), channels of communication (means of information transfer); 3) the subject of communication (knowledge); 4) “effects of communication” that are the consequences of communication expressed in changes in the internal state of the subjects of the communication process, in their relationships or in their actions” (Balandina, 2017).

These “effects of communication” will be crucial in the formation of social identity, the transmission of organizational values, in the formation of employee commitment and involvement.

## 1.2. Identity focused communications

As we mentioned early a modern trend of study of communication is the search for interdisciplinary approaches to understanding their mechanism in an organization on the base of interdisciplinary approaches. Our research based on the business psychology and social identity approaches.

Business psychology approach developed as combined the psychological and managerial basics. The problem of communication is the important issue in business psychology research and practice (Benton, Ivanova, 2016). According with this approach communication consider from the perspective of personality, organization and business as a whole. It means that results of the business psychology research should be useful not only for the personal development, but in the same time for the management of business. It helps to understand of the psychological nature of communication as a result of deep processes in personality. In the same time, it will be useful for development of new methods of management in organization.

According to the theory of social identity group membership is supported by a system of intra-group and intergroup attitudes and actions, therefore, social identity may be a factor of behavior individuals and groups in organizations (Taifel, 1982, Tajfel, Turner, 1986). In this approach considered as the most important psychological structure, through which is refracted the perception of the social world and following behavior (Augoustinos, Walker, 2012.).

We assume that communication focused of identity help to the self-determination process of personality and the identity formation. Actualized identity is a cognitive basis for the understanding own professional level and competence, and to receiving the values and behavioral standards in organization. All of these are important for commitment and performance in organization.

Our suggestion is that IFC in organization support and forming different aspects of social identity of employers relevant to the organization. This can be manifested in different aspects of social identity, such as loyalty, engagement, awareness of own aims and benefits etc.

Using the well-known approach developed by the international group Government Communication Service (GCS) (Government Communication Services, 2015) we can suggest a model of IFC consisting of the following parts:

1. Definition of the main policy of the communication (Organization / Policy Objectives), based on which the goals and objectives of communication are formed (Communication Objectives);
2. Evaluation and use of input resources (Inputs), i.e. the totality of everything that the organization does before and during the achievement of goals;
3. Production and dissemination of ideas in forms that will be perceived by the target audience (Outputs) and can be quantified;
4. Practices of consumption by the audience of messages (Outtakes), or everything that the audience thinks, feels during the initial perception of the information received information;
5. The immediate results of communication (Outcomes), expressed in informing and changing the behavior or attitudes of the target audience;
6. The model also assumes that at each stage it is possible to use the Feedback that helps to evaluate the results and to correct the actions to improve the process of information transfer and the achievement of the objectives.



Now let's "shift" this model to the phenomenon under study and its real aspects (Fig.2). According to the theory of communication and of social identity, we can say that the main objectives of organizational communication (Communication Objectives) will be the formation of the employees' desire to continue working in a specific organization (personnel retention) and the maintenance of a personal engagement, motivation and perceived loyalty of the personnel. On this basis, as input data (Inputs) we will understand values, patterns and standards of behaviour, motivational and cognitive elements. In turn, the "Outputs" of such "inputs" will be various forms and practices of intraorganizational communications, existing job instructions, different corporate events. In other words, these are all the many channels of communication that convey a message about the specific organizational culture which can be measured quantitatively. Speaking about Outtakes, we will have in mind the totality of employees' attitudes to the corporate culture and different forms of organizational work practices. The immediate effect (Outcomes) of IFC is a creation of a new social identity of the personnel of an organization.

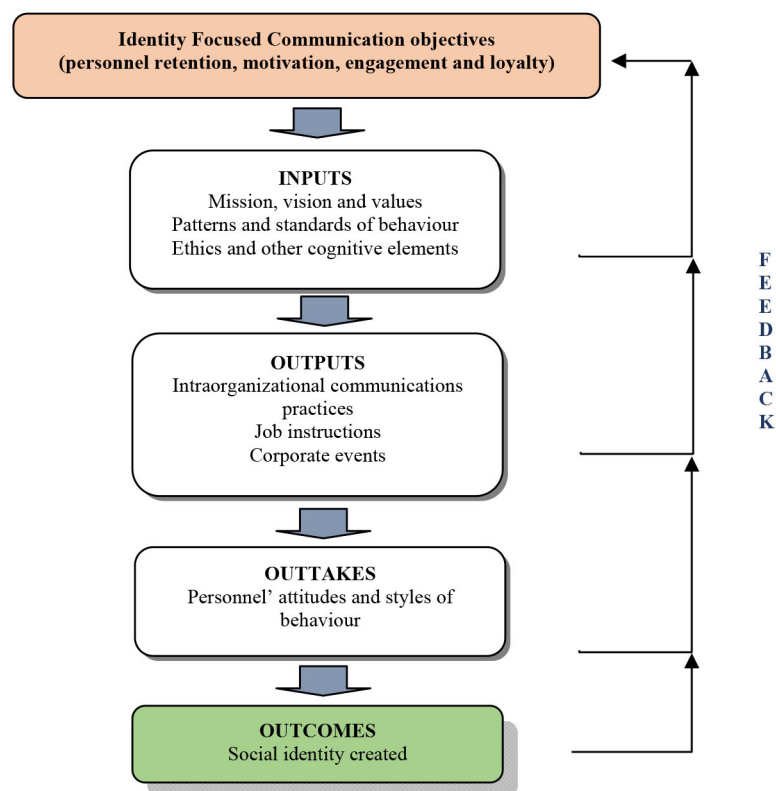


Figure 2 Identity Focused Communication Model

### 1.3. Model and Data

The aim of the empirical study was to determine the role of IFC in maintaining the desire of staff to continue its activities in the company. In particular we have studied the role of IFC in the adaptation of personnel, engagement and loyalty.

We used qualitative methods with partial use of quantitative data. The main method was the case study.

The study was conducted in two stages. At the first stage we choose the organizations which lived problems with staff turnover and which undertook measures to retain staff. Among two organizations first realized the project of corporative events; second – developed the program of reducing staff turnover. Moreover, these organizations (or some of their departments) have formed communications close in sense to IFC. Management has developed programs of staff

retention and used some indicators for understanding the results of their activity such as: loyalty (first case), and engagement (second case). We studied in those organizations how these indicators are related with the IFC. Leaders of the first organization believe that effective management of loyalty leads to reducing staff turnover, to incising the competitiveness of the company in long term etc. The leaders of the second company believe that it is necessary to increase the level of the employees' engagement to reduce staff turnover and incise the level of performance.

At the second stage we compare the indicators of behavior which every organization used. The general sample of our research (N= 356) included participants from three organizations: first (N=79), second (N=277).

Methods: observation, analyses of documents, authors questionnaires, statistic analyse (SPSS, Excel).

To study the level of engagement: Gallup Q12 Personal Engagement Survey and the Utrecht Work Engagement Scale (UWES). To study the level of loyalty: The technique of staff loyalty to the organisation (L. Pochebut).

## 2. FORMAT GUIDELINES

### 2.1. IFC and loyalty (first case study)

For the purpose of staff retention, the management of the first organization (trade company) used different corporative events. The organization has spent a lot of money for events during last 3 year. But the result in staff performance and stability hasn't satisfied the management. We studied how IFC can help to change this situation.

All staff (N=94) was asked to mark the events they attended and liked (in the collecting of dat took part Ms. M. Balikoeva). There were tree main types of events: first was aimed on the development of narrow professional skills – hard skills (such as training of professional operations), second – on the development of communication skills – soft skills (such as training of public speech, communication with special clients), third – on the development of general social and professional competence (such as team professional game). Employees liked 16 events which took place in 2018. We named this event as favorite (table 1).

Table 1 Number of favorite events in organization during 2018 year (total = 16)

Type of events	Hard Skills	Soft Skills	General
Number	6	4	6

This result shows that people in organization participate and prefer events of different types. Comparison of the level of correlations between loyalty and number of participation in events was non-significant ( $r=0,208$ ). It means that frequent participation in corporate events is not related to the level of loyalty to the organization. There was a significant but low correlation between hard and soft skills favorite events and loyalty. But the correlation between general favorite events and loyalty was highly significant ( $r= 0,778$ ).

Results show that general events play the most important role for the supporting and development of loyalty. This type of event reflects what we mean by the IFC (through observation and content analyses of the events programs). Every general event included cognitive information about some aspects of profession, current tasks, leader's position, social norms, social values, personal impact to the organizational life and other cognitive elements of IFC. Moreover, all these events were conducted with positive emotional attitudes to the company, its leadership and good example of personnel performance.

This case study showed that IFC can be an organizational resource for development of loyalty of employers. Our practical recommendation to the personnel management was about possibilities to use IFC communication in every type of events which is also important for some reasons. IFC can help in the optimizing of the cost-benefit ratio of the events.

## 2.2. IFC and personal engagement (second case study)

In second organization (local zoo) personnel management worked with the problem of the staff turnover. Observation and employer survey showed that there are some important problems in personnel management based on difficulties in communications. In the frame of the current organizational culture leaders seldom communicate with staff, there are a lot of mistakes and misunderstanding in priority tasks. As a result, some employees do not perform their work well enough. Moreover, the level of turnover increases during last years. We studied how IFC can be useful for changing this situation.

In this organization leaders believe that it is necessary to incise the engagement of employees to reduce staff turnover and incise the level of performance. They know that main personnel have high level of interest in their profession and job in general. But they observe that the level of performance and performance of tasks important for the whole organization is very pure. That is why we analyse the results of the big research devoted to the employers involvement. All staff (N=277) were tested by the Gallup Q12 Employee Engagement Survey and UWES. After this we compared the level of engagement in different departments of the organization. Results show that there some departments with low level of engagement and with low one (table 2).

Table 2 Average level of staff engagement in the departments (N=277)

Departments/average level of engagements	Q12	%	Q17	%	Δ%
Administration	8,2	68	5,1	85	+17
Finance	10,7	89	5,4	90	+1
Veterinary	9,3	77,5	5,4	90	+12,5
Outdoor	8,3	69	4,8	80	+11
Ungulates	9,2	77	4,4	73	-4
Small primates	7,8	65	5,0	83	+18
Research and information	7,3	61	4,1	68	+7
Ornithological	8,7	72,5	5,1	85	+12,5
Tropical World	6	50	4,5	75	+25
Predatory animals	7,5	62,5	4,9	82	+19,5

From these data we can say that there are similarity dates about many departments. The level of engagement is heterogeneous. Only one department has a high level of engagement: the financial office.

This study allows us to say that only in financial department the IFC obtained its goal – a high level of engagement and high level of performance.

Results show that the IFC major differences concern the strategy of competition. Personnel with professional identity demonstrate much higher level of competition strategy compared with the general sample. We assume that it can linked with the characteristics of the sample. Sampling personnel were younger. It is also possible that it reflects specific features of a method of identifying the strategy which is in the nature of a situation: clear and predictable working condition or uncertain and difficult.

But at the same time, the results raise important questions: How to develop the IFC in other departments? Which kind of support will be useful to change the communication culture in this organization? These and similar question formed the basis of the training program for the personnel in the organization.

### 3. CONCLUSIONS

We emphasize that the research was pilot in nature. But the results of this study show that business psychology (a comprehensive view of communication factors) and social identity approaches (understanding people behavior in organizations through their identity structure) help us to find new type of communications in organizations which we named identity focused communications (IFC). The model of IFC include following components: cognitive elements (information about profession, social roles, perspectives etc.), values (information about moral norms, ethic, mission, vision as well as emotional background of interactions), behavioral (personal brand, standards of conduct).

We consider communications as an important factor of specific influence on the motivation and behavior of employees. Effective communications in organization help people to clearly define themselves, understand their place in professional and social environment and behave accordingly. These communications increase with high probability the desire to continue working in the organization. On the contrary, inefficient communications in this sense create uncertainty and reduce this desire. Development of IFC in organization helps to create a psychological basis for the retention of staff. Any projects in which employers are involved can be useful for the purpose of retention of staff by using of IFC. In this article we presented two examples from the organization's life, which clearly demonstrate that IFC contributes to the staff retention. High level of staff engagement were observed in the department where all components of IFC worked. Corporate events conducted on the model of IFC led to an increase of organizational loyalty. And main factors of new staff adaptation reflect the result of IFC.

The results allow us to say that the communication is the main instrument of self-determination. IFC helps people in organization to self-define in professional and social aspects. Result of this self-definition process are a clear social identity and self-esteem in accordance with organizational norms. This process is the basis of the employee's deep understanding of his/her professional and social role, and acceptance of the organization and its members as such. Therefore, the analysis of the IFC in organization can be an important resource for personnel management in the organization. The development of this approach will be the development of IFC techniques and of training program for HRs and managers of the organization.

We developed approaches which allows us to outline an empirical research program aimed to determining the characteristics of effective communications for retention of personnel in organization. Unlike manipulative communications, IFC (and social identity approach as well) can give to personnel a feeling of contentment and harmony. In the organizational context IFC can give new opportunities to develop the new corporate culture and achieve high working result.

Results of our work can be useful for consultants and coaches who work with the problems of development of social and professional identity, loyalty, and performance. The results will be usfull for the personnel management in understanding of new functions of communication, developing training programs based on IFC model. Moreover, as we believe, our results can be usefull to create a communication's strategy in organization addressing professional values and patterns of behavioral and social roles.

The data obtained can be considered as a pilot to build new hypotheses and further research on a broader sample and with the use of experimental procedures.

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# BROADBAND INFRASTRUCTURE AND ECONOMIC GROWTH: A PANEL DATA APPROACH FOR SELECTED COUNTRIES

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Preliminary communication

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### Abstract

*The world economy is increasingly becoming digital. The internet not only provides a faster and more reliable communication along the supply chain, but also expands the market for the firms by creating better opportunities to communicate with new customers. As literature stresses, broadband infrastructure stimulates total factor productivity by reducing the transaction costs of communication, leading to a higher GDP growth. In this paper, we analyze the effect of broadband subscriptions on GDP per capita using data for 57 countries covering the 2001-2016 period. By employing the dynamic GMM (Generalized Method of Moment) estimator between the years 2001-2016 for selected countries, we found the positive relationship between the broadband infrastructure and economic growth for these countries. The results indicate that the number of internet users also promotes GDP per capita. In this respect, states are advised to direct resources to broadband infrastructure with an aim to provide high quality, accessible and affordable telecommunication.*

**Keywords:** *Broadband, economic growth, GMM (Generalized Method of Moment)*

## 1. INTRODUCTION

Broadband telecommunication infrastructure and information and communications technology (ICT) are vital to countries' economic growth, social development, and technology intensity (Markova, 2009). Enabling greater access to the broadband infrastructure results in more firms and households to benefit from technological advancements. In addition, broadband access is also very important part for the adoption of other complementary ICTs. Firms with access to broadband obtain a digital platform that can be used compatibly with a range of hardware and software technologies. They also have a larger incentive to implement new ICTs due to a greater rate of return on investment than those connected to slower internet.

Many of the developed and developing countries the state undertake the responsibility of broadband investment as natural monopoly. The structure of the telecommunications market



changes during the stages of development for each country. In the beginning of the economic development, it is usually said that the structure of the market is a natural monopoly through liberalization into an oligopolistic market, and then finally into a market of monopolistic competition. Competition in telecommunication sector leads to low call charges for customers and increases the total welfare (Kovačević et al, 2017). Low population density and distances made the cost of providing high-speed wired connections uneconomic for incumbent telecoms operators. State broadband infrastructure investment is important for rural areas.

Investing on broadband connectivity and broadband speed promotes economic growth owing to the fact that its components and products such as cable, switches, fiber optic cables lead to increases in the demand for the goods and services used in their production. Since internet connects several sectors of the economy such as health, tourism, education, and manufacturing through back-up and forward-linkages thereby creates spillover effects, the economic benefits of broadband infrastructure investment are much bigger than the cost of investment (Markova, 2009) Many of the broadband strategies that have been taken by governments find to enable internet access for all households nationwide . Currently more than half of the world's households (53.6 percent in 2016) now have access to the Internet at home, compared to less than 30 percent in 2010 (ITU,2017).

This paper proceeds as follows. Section1 provides a brief overview of the nexus between telecom infrastructure and economic activity. Section 2 briefly depicts the literature. Section 3 includes econometric analysis and presents its results. Section 4 concludes.

## **2. BROADBAND INFRASTRUCTURE AND ECONOMIC ACTIVITY**

Digital transformation have three waves which are driven by innovation and digital technologies. The first of these waves, telecommunications technology, enables remote access of information by using fixed and mobile broadband. The second wave entails the dispersing of the internet, marketplaces and search engines which facilitate the networking of customers and sellers. The third wave involves the artificial intelligence, big data, internet of things and sensors (Katz, 2017)

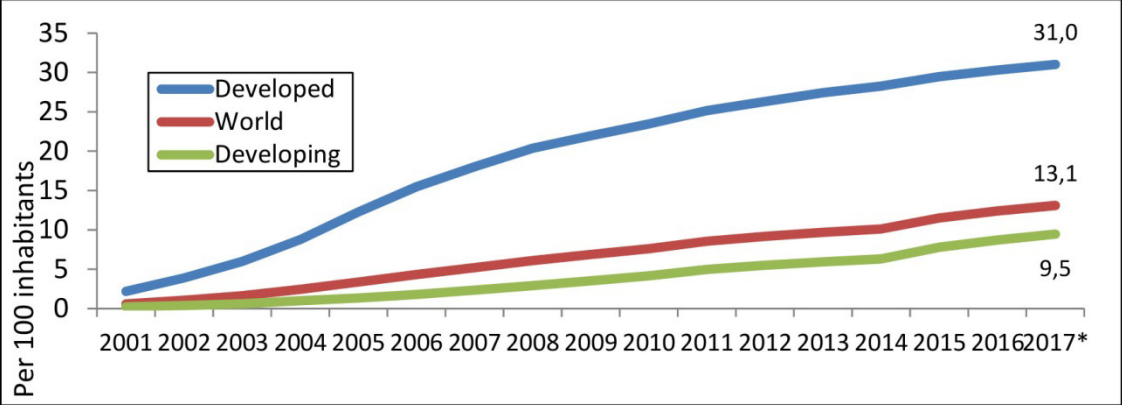
Internet has been widely used by local and rural firms and there are many economic benefits of internet access. Broadband, or high-speed internet connection, is a necessity for doing business anywhere in the world. Future advantages of broadband usage to economy comprise of efficiency gains through digital economy, e-trade, e-logistics, better management, and increased efficiency through telecommuting. Broadband infrastructure enables greater availability of public services such as e-government services and applications, health care, and improved access to educational opportunities, and digital learning (Shideler et al, 2007). Broadband infrastructure affects economic growth and improves automation through operational productivity, such as decreasing of transaction costs. In the same way, broadband infrastructure and high speed internet access provides new business opportunities, promoting employment and entrepreneurship (Katz, 2017).

One of the advantages of improving the telephone and internet system is decreased costs-leading to ease in doing business. For that reason, broadband technology and high speed internet provides significant advantage to firms in terms of efficiency. Firms located in rural areas gain from broadband infrastructure since they can access to foreign markets via internet (Mack, 2014). Access the international resources through broadband access technologies can improve the living standards of small businesses and marginal communities (Markova, 2009).

There are many important cases showing the importance of internet access in rural areas, hotels and restaurants. Catalan villages tend to build their own high-speed broadband networks which name is Guifi.net, a wireless community network that connects15,000 homes, hotels in Spain covering 63,000 km of wireless links (Zorina,2016). Hotel owners report that the first thing guests ask for is Wi-Fi, indicating that they see internet more important than the breakfast. Since



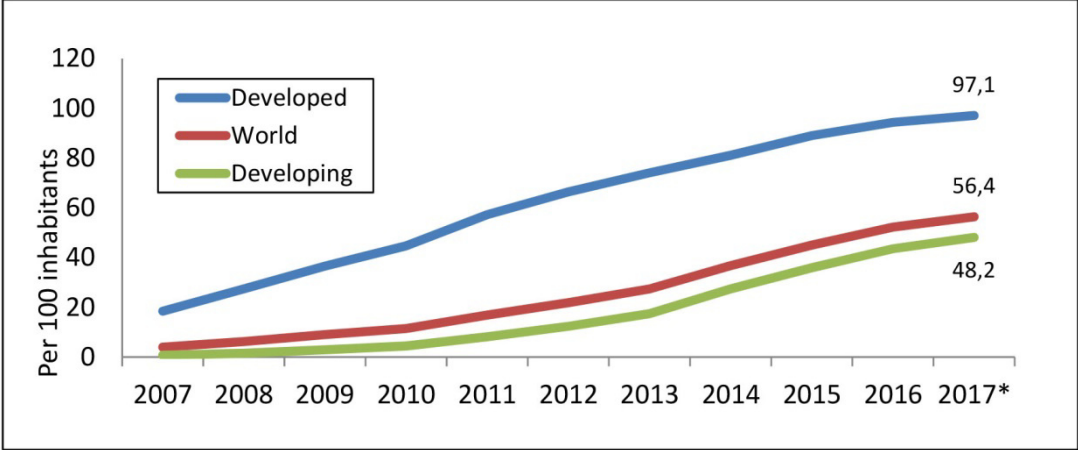
remote rural locations are often not economically feasible for telecommunication companies to invest, farmers and local business owners, seeing broadband as an essential tool for them, find their own solutions (Financial Times, 2017).



Source: TU World Telecommunication /ICT Indicators database, The developed/developing country classifications are based on the United Nations, see: <http://www.itu.int/en/ITU-D/Statistics/Pages/definitions/regions.aspx>

Figure 1 Fixed broadband subscriptions per 100 inhabitants, 2001-2017\*

Figures 1 and 2 show fixed and mobile broadband subscriptions per 100 inhabitants for the years between 2001-2017, respectively. Both figures denote data for developed and developing countries separately. Mobile-broadband charges as a percentage of GDP per capita reduced between 2013 and 2017 worldwide through digital innovation (ITU, 2017a). In developed countries, the share of households with the fixed broadband internet at home is three times higher than in developing countries. Similarly, people with mobile broadband subscriptions are nearly half of their peers in developing countries. Therefore, we can say that there is a huge difference between developing and developed countries in terms of fixed or mobile internet subscription.



Source: ITU World Telecommunication /ICT Indicators database, The developed/developing country classifications are based on the United Nations, see: <http://www.itu.int/en/ITU-D/Statistics/Pages/definitions/regions.aspx>  
 Note: \* Estimate

Figure 2 Active mobile-broadband subscriptions per 100 inhabitants, 2007-2017\*

### 3. LITERATURE REVIEW

DeStefano et al (2017) finds that firms with access to broadband increase their investment in complementary hardware and software technologies. Gaining access to advanced internet technologies appears to increase the rate of return on certain types of ICTs, thereby leading to a greater investment of these technologies. Advanced and fast broadband internet technology boosts the productivity of telecom markets, diminish transaction costs in various product and factor markets, and promotes economic growth. Shideler et al (2007) conclude that broadband access has a significant positive impact on employment growth since telecommunications infrastructure reduces costs and ease market access which leads to job creation.

To estimate the effect of broadband lines / population ratio and other explanatory variables on economic growth and employment Crandall et al (2007) find a strong link between broadband access and economic growth. The authors stress that the effect of broadband is most significant in explaining employment growth in education, health care, and financial services. Czernich et al (2011) investigate the impact of broadband infrastructure, on economic growth using panel data for OECD countries during the 1996–2007 period. They find that a 10 percentage point rise in broadband penetration increase GDP per capita growth by 0.9–1.5 percentage points. Similarly, Ng et al, (2013) estimate the effect of broadband diffusion on economic growth in the panel of 10 ASEAN countries and find a positive relationship between broadband infrastructure and economic growth.

Katz and Koutroumpis (2013) tested the impact of digitization on economic growth. By employing the digitization index as a proxy of technology progress, they find that a 10 point increase in the digitization index stimulates GDP growth by 3 percentage points. Katz et al (2010) calculated the impact of investment in broadband technology on German employment and economic output. The authors conclude that broadband technology stimulates economic output and employment through a multiplier effect.

Katz and Callorda (2018) using an econometric model for 75 countries showed that fixed broadband has had a significant impact on the world economy during the period (2010-2017). An increase of 1 per cent in fixed broadband penetration yields an increase in 0.08 per cent in GDP. According to the mobile broadband model, an increase of 1 per cent in mobile broadband penetration yields an increase in 0.15 per cent in GDP.

Literature on broadband and economic growth mostly pointed out broadband as an essential input for the transformation to a knowledge-based economy. Wireless and fixed broadband infrastructure play an important role in protecting against cybersecurity threats, and providing map updates for automated driving and software updates for mobile phones. In the future, it is expected that cars will need wireless infrastructure on highways (ITU, 2017b).

### 4. DATA AND METHODOLOGY

#### 4.1. Data

In the empirical part of the study, we analyze the effect of broadband subscriptions on GDP per capita using data for 57 countries covering the 2001-2016 period. The definitions of variables and their sources are denoted in Table 1. The description of our data set and the correlations between variables are denoted in Tables 2 and 3, respectively.

Table 1 Data Sources and Variable Definitions

Abbreviation	Variable	Source
Broadband	Fixed broadband subscriptions (per 100 people)	International Telecommunication Union
Phone	Fixed telephone subscriptions (per 100 people)	International Telecommunication Union
Gfcf	Gross fixed capital formation (% of GDP)	World Bank
Internet	Individuals using the Internet (% of population)	International Telecommunication Union
Labor Force	Labor force, total	World Bank
GDP per Capita	GDP per capita (constant 2010 US\$)	World Bank
Trade	Trade (% of GDP)	World Bank
Population	Population, total	World Bank

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Broadband Users	912	14.95854	12.5825	0.000197	45.1347
Phone Users	912	33.14708	17.4931	1.842964	74.74272
Gross Fixed Capital Formation	912	22.80521	5.607214	2.000441	45.51477
Internet Users	912	50.81991	27.91951	0.660146	98.24002
Labor Force	912	3.82E+07	1.18E+08	158414	7.87E+08
GDP per Capita	912	25733.73	20020.69	593.1272	91617.28
Population	912	7.90E+07	2.34E+08	284968	1.38E+09
Trade Openness	912	97.96982	68.87221	19.79813	442.62

Table 3 Correlations Between Variables

	GDP per Capita	Broadband	Phone	Gfcf	Trade	Internet	Labor Force	Population
GDP per Capita	1							
Broadband	0.68	1						
Phone	0.8264	0.5767	1					
Gfcf	0.1121	0.0444	0.0036	1				
Trade	0.234	0.2261	0.2301	0.0212	1			
Internet	0.7556	0.8411	0.5824	-0.0664	0.2343	1		
Labor Force	0.2366	-0.1341	-0.2712	0.1639	-0.456	-0.1729	1	
Population	-0.2279	-0.1721	-0.2332	0.4540	-0.2302	-0.2410	0.9809	1

## 4.2. The Dynamic Panel GMM Estimator

In the empirical part of the study we employ the dynamic GMM estimator which was introduced by Arellano Bond (1991) and advanced by Arellano and Bover (1995) and Blundell and Bond (1998). Dynamic models include lagged dependent variable as a regressor which introduces endogeneity. Dynamic panel GMM estimators solve the endogeneity problem by adding lagged values of dependent variable as regressors and independent variables as instruments to the regression. Furthermore, the GMM estimator solves the autocorrelation problem caused by including the lagged value of dependent variable as a regressor by differencing the lagged value of the dependent variable.

The derivation of the Arellano-Bover/Blundell-Bond estimator is denoted below:

$$y_{it} = \alpha_i + \sum_{j=1}^p \rho_j y_{it-j} + \beta X_{it} + u_{it} \quad (1)$$

Equation (1) shows the standard dynamic panel estimator.  $\alpha_i$  is the time-invariant unobserved individual effects,  $y_{it}$  is the dependent variable,  $y_{it-j}$  is the lagged dependent variable,  $X$  is the vector of independent variables, and  $u_{it}$  is the error term. Taking the first-difference of both sides eliminates fixed effects and bias related to time-invariant unobserved heterogeneity.

$$\Delta y_{it} = \alpha_i + \gamma_j \sum_{j=1}^p \Delta y_{it-j} + \beta \Delta X_{it} + \Delta u_{it} \quad (2)$$

Equation (2) denotes the difference GMM estimator introduced by Arellano and Bond (1991). This methodology involves estimating equation (4) by using lagged values of the independent variables as instruments denoted in equation (3). It should be noted that instruments should be uncorrelated with the first difference of the error term.

$$Z = \{y_{it-1}, y_{it-2}, \dots, y_{it-n}, X_{it-1}, X_{it-2}, \dots, X_{it-m}\} \quad (3)$$

However, there are two possible problems related to the difference GMM specification. First, first-differencing could amplify the impact of measurement errors on the dependent variables (Griliches and Hausman, 1986). Second, instruments denoted in equation (3) might be weak for first-differenced equations (Arellano and Bover, 1995). To overcome these problems, Arellano and Bover (1995) and Blundell and Bover (1998) proposed employing the first-differenced variables as instruments for the equations in levels in a system of equations denoted in equation (4).

$$\begin{bmatrix} y_{it} \\ \Delta y_{it} \end{bmatrix} = \delta \begin{bmatrix} y_{it-j} \\ \Delta y_{it-j} \end{bmatrix} + \beta \begin{bmatrix} X_{it} \\ \Delta X_{it} \end{bmatrix} + u_{it} \quad (4)$$

The system GMM estimator generates more efficient estimates than the difference GMM estimator (Blundell and Bover, 1998). However, there is still unobserved heterogeneity in the model. To remove the remaining unobserved heterogeneity, the model is assumed to have the orthogonality conditions shown in equation (5). This involves instrumenting the differenced equations with lagged levels and level equations with lagged differences.

$$E[\Delta X_{it-j}(\alpha_i u_{it})] = E[\Delta y_{it-j}(\alpha_i u_{it})] = 0 \quad (5)$$

Two critical assumptions need to hold for the consistency of the system GMM estimator. First, there should not be autocorrelation in the error term. This condition could be tested by employing the Arellano–Bond test for serial correlation. Second, the error term and instruments should not be correlated. The exogeneity of instruments could either be tested by employing the test of overidentifying restrictions proposed by Sargan (1958) or Hansen’s J test (Hansen, 1982), depending on the use of one-step and two-step system GMM estimators. Finally, since two-step GMM estimators usually have lower bias and standard errors, it may lead to higher significance levels compared to the one-step estimations. To address this issue, I use the standard error correction proposed by Windmeijer (2005).

### 4.3. Unit Root and Cointegration Tests

To avoid getting spurious results we analyze the stationarity of the series. In this respect, we employ the second generation CIPS unit root tests developed by Pesaran (2007). The null hypothesis of the CIPS test is non-stationarity. As seen in Table 4, all series are nonstationary and become stationary after taking their first differences. Thus, the CIPS test implies we should employ variables in their first differenced forms.

Table 4 The CIPS Unit Root Test Results

	Series		First Differenced Series	
	Intercept	Intercept + trend	Intercept	Intercept + trend
GDP per Capita	1.568	3.123	-5.956***	-3.048***
Broadband	-0.530	2.005	-11.637***	-8.591***
Phone	3.115	3.781	-4.660***	-8.663***
Gfcf	1.435	3.849	-2.721***	-7.616***
Trade	2.105	3.142	-3.236***	-4.111***
Internet	1.817	5.213	-4.995***	-12.736***
Labor Force	-1.058	2.894	-5.783***	-7.634***
Population	-2.111	3.092	-6.789***	-7.562***

\*, \*\*, \*\*\* indicate that statistics are significant at the 10%, 5% and 1% level of significance, respectively. For the CIPS test the null hypothesis is nonstationarity.

However, there might be a cointegration relationship between series. Cointegration allows employing nonstationary variables in levels without creating a spurious relationship if a linear combination of them are integrated of order zero (Atasoy, 2017). To test cointegration, I employ the Durbin-Hausman test proposed by Westerlund (2008). The Durbin-Hausman test uses panel (DHp) and group (DHg) tests to take cross-sectional dependence into consideration. The null hypothesis for both the DHp and DHg assert that there is no co-integration between variables. The DHp imply that the autoregressive parameter is the same for all cross-sections whereas the DHg permits the autoregressive parameter to differ across cross-sections. For both tests, we conclude that there is co-integration if the null hypothesis is rejected. Table 5 denotes the results of the Durbin-Hausman test. Since both tests reject the null hypothesis of no-cointegration, we confirm the co-integration relationship between the series. Therefore, we proceed by employing variables in levels.

Table 5 Westerlund Durbin-Hausman Test Results

	Value
DHg	5.94***
DHp	5.32***

\*, \*\*, \*\*\* indicate that statistics are significant at the 10%, 5% and 1% level of significance, respectively. The null hypothesis is no cointegration.

#### 4. 4. Estimation Results

Table 6 denotes the results generated by the Arellano-Bover/Blundell-Bond estimator. In our model it is assumed that trade openness, gross fixed capital formation and the lagged value of GDP per capita are endogenous. Accordingly, GDP per capita increases as fixed broadband subscriptions increase. This result indicates that it is possible to promote GDP by extending the coverage of broadband connection. In this respect, the governments could either promote broadband use by giving effective incentives to the private sector or build a high quality network by using budget revenues. Contrary to broadband connection, fixed telephone subscriptions has a fairly limited effect on GDP per capita as the coefficient of phone users per 100 people is significant in only two specifications. Finally, the number of internet users also seems to effect GDP per capita positively, despite losing significance when regressed alongside with phone users.

Table 6 Estimation Results

	(1)	(2)	(3)	(4)	(5)
Lagged GDPPC	0.9423*** (0.0046)	0.9427*** (0.0046)	0.9449*** (0.0053)	0.9388*** (0.0061)	0.9501*** (0.0033)
Broadband Users	0.028*** (0.0032)	0.017** (0.0083)	0.077*** (0.0015)	0.0902** (0.0448)	0.054*** (0.0014)
Phone Users	0.0381 (0.0235)	0.0383** (0.0192)		0.0404 (0.0351)	0.0451*** (0.0032)
GFCF	0.038*** (0.0003)	0.038*** (0.0003)	0.051*** (0.0002)	0.039*** (0.0004)	0.033*** (0.0002)
Internet	0.0041** (0.0022)	0.0047 (0.0101)	0.0053*** (0.0002)	0.0031*** (0.0002)	
Labor Force	0.037** (0.018)		0.102*** (0.0012)		0.035** (0.019)
Trade Openness	0.002*** (0.0001)	0.018*** (0.0001)	0.027*** (0.0001)		0.022*** (0.0001)
Population		0.004 (0.0010)		0.0014 (0.0011)	
Constant	0.2608*** (0.0424)	0.3471*** (0.0331)	0.4017*** (0.0559)	0.3300*** (0.0490)	0.2789*** (0.3990)
<i>Observations</i>	854	854	854	854	854
<i># of groups</i>	57	57	57	57	57
<i># of instruments</i>	25	25	24	23	24
<i>Time dummies</i>	Yes	Yes	Yes	Yes	Yes
<i>Hansen p-value</i>	0.36	0.41	0.37	0.51	0.45
<i>Sargan p-value</i>	0.18	0.21	0.19	0.26	0.22
<i>AR(2) p-value</i>	0.52	0.50	0.44	0.55	0.66

Windmeijer (2005) corrected robust standard errors in parentheses. The dependent variable is Natural Logarithm of GDP Per Capita. The table also includes time dummies, number of groups, number of instruments, Hansen and Sargan over-identification tests, and AR(2) test of the error terms. \*, \*\*, and \*\*\* denote statistically significant coefficient at the 10%, 5% and 1% levels, respectively. Lagged value of GDP per capita, trade openness and gross fixed capital formation are treated endogenous.

In line with our expectations, labor force and gross fixed capital formation have powerful positive effect on GDP per capita. Trade openness is also found to have a stimulating effect on GDP per capita, in line with the literature. Thus, policy makers could prop labor, capital and trade openness with a well-defined digitalization strategy that aims to achieve a widespread use of high speed internet, the broadband network in particular. In this respect, governments could speed up this process by directing both public and private resources to broadband infrastructure with an aim to provide high quality, accessible and affordable telecommunication.

## 5. CONCLUSION

In this paper we examined the effect of broadband use on GDP per capita for 57 countries by using data for the 2001-16 period and employing the system GMM estimator. It is found that broadband telecommunications infrastructure promotes GDP per capita. It is also found that fixed telephone use has a positive effect on GDP per capita, but its effect is somewhat weaker than the effect of

broadband use. Finally, the results indicate that the number of internet users also promotes GDP per capita.

We also included other variables such as labor force, gross fixed capital formation and trade openness that are likely to affect GDP. In line with the literature, these variables are found to affect GDP per capita positively. Therefore, it is crucial for policy makers to supplement the traditional growth model that combines labor and capital under an open economy with the components of digital economy such as broadband internet use. In this respect, they are advised to direct resources to broadband infrastructure with an aim to provide high quality, accessible and affordable telecommunication.

Broadband infrastructure is essential to countries' economic development. When we look at the literature there is a big consensus that broadband internet is compulsory for a digital economy and fosters sustainable economic development and job creation. Therefore many countries have identified broadband as a critical input to broader efforts in building a knowledge-based economy. If we think the future jobs and industry 4.0, we see that broadband infrastructure will be most important factor to build future technologies and digital economy. Governments must provide incentives for investment in high-speed broadband networks in rural areas to stimulate job creation and restoring rural development.

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# **CHILDREN AS A TARGET MARKET IN THE BRANDING PROCESS WITH EMPHASIS ON ETHICAL ASPECTS**

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## **Abstract**

*Technological innovations in communication and distribution of information have changed the way in which a relationship with clients is nurtured. Expectations of customers have grown considerably over time so companies have to work hard to attract them and build a brand. In process of building strong relationship with clients firms use media and send messages to the end – users, and more often – kids. That is happening because children and teenagers have a major impact on family purchases. Brands become a part of their personality, and building loyalties is growing rapidly in teenage years. Firms engage psychologists, sociologists, psychiatrists to get deeper into their heads and achieve as tight a relationship with children. The desire for profit can be attributed to unethical behaviour, hence the existence of numerous legal and ethic restrictions for children does not guarantee protection. But, some countries have have completely banned advertising to children under the age of 12. In the short term, it may also make sense, but in long run when children have unlimited Internet access where advertising can hardly be controlled, these children have no one who can protects them. In these paper the influence of brands on the behaviour of children will be explored and it will examine the ethical aspects of advertising to children.*

**Keywords:** *children as target market, branding for children, advertising for children*

## **1. INTRODUCTION**

For every manufacturer, the main goal is to sell the product to as many people as possible to achieve profit. In order to succeed, manufacturer need to inform potential clients about his products, then convince them that they need their product in everyday life. In order for the manufacturer to know

who should be informed, the market have to be explored. Besides that he has to follow consumer's desires and financial possibilities. However, marketing theory and practice has determined that consumer's desires and financial possibilities change with life expectancy, and marketing specialists have been particularly interested in the role and impact of children when purchasing a wide range of products and services. This market has become interesting because today it is commonly known that children and teenagers have major impact on family purchases and they are considered the fastest growing market segments.

This paper will examine how big brands take care of their youngest clients – children, how their strategy of creating brand is focused on children, and how much children are perceived as the target market. In this paper it will be also determined which marketing trends aimed at children are popular in the world and to determine how media influence on the behaviour of children in purchasing goods and their impact on parents' buying. The aim of this research is also to highlight the future of marketing communication with children in the right way. Along with this, we have explored sustainability and ethics in relationship between media and children as one of the most vulnerable groups exposed to media content.

In this paper we will explore the following:

1. First chapter is introduction in our theme and answers on questions as what is main goal for every manufacturer and how big brands take care of their youngest clients – children.
2. In the second chapter we will explore children as target market and their power to influence parent purchases.
3. In the third and fourth chapter we will explore why children become one of the main interests of contemporary marketing and the brand awareness of children and how brand and licensed mascots are persuasive and powerful tool for marketing to children.
4. In fifth chapter we will explore which are the most important ethical issues and controversies in marketing advertising and branding toward children.
5. In sixth chapter we will present the legal regulation and explore is legal regulation sufficiently developed.

The data necessary for this research will be collected from secondary sources by browsing the Internet and Internet databases as well as the expert literature, by analyzing strategic documents and statistical data.

## **2. CHILDREN AS THE TARGET MARKET**

When marketing is addressed to children as a target market, everyone usually think about advertising toys and sweets, but today marketers are increasingly focusing on advertising other products for children, such as clothing, footwear, sports equipment, but also products intended for adults like cars and credit cards. This is very important since it has been established that 50% of new products on the market are integrated into the family precisely thanks to children. This happens because children want to keep up with the novelty in order to integrate into society and with this wish they come to parents who have the purchasing power and can fulfill their wishes. (Somesfalean, 2012.)

Marketers are considering children not only as existing consumers but also as future consumers. They do that because of the discretionary income of children and their power to influence parent purchases and also because enormous increase in the number of available Television channel has led to smaller audience for each channel, thereby creating a growing space for children and children's products. Parents always ask their children for advice about purchasing. From vacation choices to car purchase, to meal selection and so on. They really have power over the family finances. The survey indicates parents' strong desire to prepare their children for adulthood. Children are being turned into consumers at a very early age through the desires and

with the encouragement of their parents, who also provide the financial support in the form of pocket money. (Gupta, 2011.) Parents ask the children's opinions for certain categories of products, as food products, toileters, games, books and toys, clothing or footwear, gades, IT school supplies primarily for personal use. Also parents are accompanied by their children when doing shopping, and they ask them about purchase products that are not currently part of children's area of interests, but they develop preferences for them over time for example smell of laundry detergent, color of soap and so on. (Aldea, Brandabur, 2015.)

Göksel, Baytekin, Maden (2013.) say that children take a role in the marketing scene by affecting their families' purchases, by becoming consumers on their own and by representing a future market. Right along with children's close relationship with marketing starting in their first year of existence, current kods usage of Internet, other media and their effects on children consumer behaviour rise the importance of children marketing.

In order to show the extent of spending on children and their impact on purchasing, it can be pointed out that in France 50% of the cost in family is made up of products for children (Moreau, 2008.), and cost categories will be shown in Table 1.

Table 1 Cost categories

Category	The amount in euros
Toys	Over 2 billion a year
Food	Over 4,5 billion a year
Clothes	4 billion a year

Source: Authors' table

School was previously a place where children were somehow protected from advertising, but today it is no longer a case because many brands "force" schools to allow them advertising in exchange, for example, new computers, money for educational material and so on. It should not be forgotten that children are increasingly using new technologies such as the Internet so brands can easily become part of children's lives. (Foehr, Rideout, 2005.) Brand to be able to increase profits relies on two new types of customers: those who leave the competition and those who have not yet entered the market. It is considered that those who leave the competition will be less faithful than those who are growing up with the brand. Evidence how far did it go, are the words that are pronounced by the president of Prism Communications: "They are not children so much as what we like to call them "evolving consumers". (Beder, 1998.)

### 3. BRANDING FOR CHILDREN

Recent research shows that marketing experts are increasingly pointing to children as target market and children become one of the main interests of contemporary marketing, not only because that is an easy way to attract adults but because they are a major and significant market. (Kuterovac, Jagodić, 2005.) Precisely because of this, many people criticize media that they do not allow children to enjoy their childhood. That is because media are promoting sex, violence, drugs, fast food, false values and so on. (Buchingham, 2007.)

Numerous of researchers investigate the brand awareness of children, and their conclusions were that as the children grew older, the number of the brand names and products that the children remembered increased. Aktas et al in their research found out that children were more successful at remembering the products than remembering the brand names. That means that children associate the brand logo with the product belonging to the brand. Also, authors found out that the children were successful at remembering the brands that are targeted at them. The brand names and the products that children most remember were a snack brand *Cheetos* and toy brands *Winx* and *Hotwheels*. That is because children use those brands in their daily lives and

always see the logos of those brands in addition to seeing them on television commercials. (Aktaş, Tas, Oğul, 2016.) In their research, The European Consumer Organisation found out that brand and licensed mascots are persuasive and powerful tool for marketing to children. They are often used on packaging of food products and on TV or games. Problem is that, for example, food companies often use licensed mascots to promote foods which are high in fat, salt and sugar as defined by the WHO nutritional criteria. Instead, they should promote healthier foods to children. Food companies should be very careful because brand mascots and licensed media characters often evoke a sense of fun, humour or adventure copying common themes in popular children's programmes and because of that children have an initiative to ask their parents to buy them that products. That is very big problem because children develop emotional bonds with personified characters as if they were their friends.

It should be emphasized that most of the marketing effects of marketing toward children are focused on the effects of food and beverage advertising. Especially newest researchers research that theme. A good example is the recent research carried out by Cairns et al who pointed out that *food promotions have a direct effect on children's nutrition knowledge, preferences, purchase behaviour, consumption patterns and diet-related health. Current marketing practice predominantly promotes low nutrition foods and beverages.*

Regarding the legislation on the promotion of food and drink for children, there are some more research in the following articles:

Hawkes, Lobstein (2010.) *describe the global regulatory environment around food marketing to children in 2009 and they identified changes in this environment.*

Seideres, Petty (2007.) *explore the policy implications of the findings in this special section for potential remedies and opportunities for further research in the critical area of obesity.*

Harris, Graff (2011.) *say that food marketing targeted to children almost exclusively promotes calorie-dense, nutrient-poor foods and takes advantage of children's vulnerability to persuasive messages.*

Raine et al (2013.) *explore that obesity presents major challenges for public health and the evidence is strong. Lessons from tobacco control indicate a need for changing the policy and environments to make healthy choices easier and to create more opportunities for children to achieve healthy weights.*

Furthermore, children can't distinguish advertising and entertainment programmes marketing tools, so brand mascots can strongly influence them. Besides that, researches show that using brand mascots during childhood can persist into adulthood. That is "brand loyalty". This demonstrates that even grown adults with developed cognitive ability to understand advertising can still be affected by positive associations linked to brand mascots initiated in childhood. All that could make parents more receptive to a child's purchase requests for the same brand. That is proof that mascots affect consumer behaviour. For example, in UK, a breakfast cereal decided to not only bring back their mascot, they also decided to change the cereal's name to include reference to the mascot. That has sparked the strong feelings of nostalgia, trust and loyalty. (The European Consumer Organisation, 2017.) Furthermore, every marketing specialist is focusing more and more on the family segment as a specific consumer group because it is very profitable segment that buy and spend a large amount of money. However, marketers need to know, understand and consider that this segment has its own rules when they are making a purchase decision so they can attract and retain this segment. (Kasić, 2011.) Children and teenagers can have significant impact on budget allocation, and along with that the birth of the baby is a big event that creates the need for new, wide assortment of products that has not been within the family budget so far. (Peter, 2005.) The proof for this is a study that children also affect sales of cars worth 9 billion dollars a year. One car dealer even explains: "Sometimes the child is literally our buyer. I watched the child choose the

car.” This means that even car industry should not ignore children in marketing campaigns. (Beder, 1998.) Some of the examples will be shown in Table 2.

Table 2 Examples of car compaigns that include children

Brand	Marketing campaign
Nissan	Sponsorship of the American Football Team of Youth
Chrysler	Distribution more than 100.000 carton pop-up books by mail
Chevrolet	Advertisements with children in them

Source: Authors’ table

Critics of consumer culture who believe that children are passive victims in all this, often emphasize parents’ concerns to their children, because of that brands should know that children and parents should like advertisers. In fact, parents are actually on the edge of two extremely important things, on the one hand they want to give their children a real example and protect them from bad influences, and on the other hand they want them to develop their own personality using new and popular things. Another today problem is that parents spend more and more time working to ensure a decent life for their children so they are trying to replace lost time and lack of attention by purchasing things that children want.

#### 4. BRAND STRATEGIES FOR CHILDREN – CHILD-CENTERED MARKETING

When it comes to so-called *child-centered marketing*, the first thing that comes to mind is moral criticism because neither products nor services should be sold to children, and children should not be targeted in marketing because they have not built identity and opinion, which is why they are easily affected by brands. Besides that, marketing experts in the new strategies use psychological conseling to understand children, and that is very controversial. (Feloni, 2013.)

Many brands also use marketing tricks in advertising to children. These are the psychology and packaging of products. Regarding psychology, brands rely on the fact that children will “annoy” their parents until they buy them what children want and on that, brands are building their own strategy. Furthemore, the packaging of products are colorful and have distinctive mascots because that is what children prefer. Today, great influence on product advertising have influencers, those are the young men and women who publish personal photos on the Internet with certain product. They often publish videos about how to use a particular product and that product become popular product and that product become popular because young people prefer a product that is used by people similar to them, rather than celebrities. It is important that parents are constantly researching baby products because they want to buy the best products on the market so they could protect their babies against products with poor quality. They do that by browsing product websites, reviews, consumer reports and more. A particularly vulnerable group are couples who become parents for the first time because they easily fall under the influence of a particular company from which they receive information on a daily basis. This is very important because, according to the research in the period from 2008. to 2010. it is noticeable that expenditures increased by 13% on baby clothes, and that proves that the baby’s clothing has become a status symbol, claims Barford (2011.)

#### 5. ETHICAL QUESTIONS IN BRANDING STRATEGIES FOR CHILDREN

In today’s world, it is very important that child care extends beyond the close family. It must be emphasized how neighbourhood or community can have a strong impact on the growth and development of children and besides that today that is all moved to digital world as a result of



which children are daily bombarded with messages that brands can improve their lives, but just because brands want to sell their products. (Linn, 2010.) Commercialization and digitalization has led to many public and health problems that children are facing like juvenile narcotization, tobacco use, eating disorders, and violence, and all that is related to advertising and marketing. The problem is also that the fundamental message of advertising has become that we should buy products because that will make us happy, which ultimately leads to over-buying which leads to depression and low self-esteem in children. (Linn, 2010.) Thanks to the easier access to television channels, radio stations and web sites, big brands can send informations to a younger audience faster and easier. Another problem is that, despite the fact that American Pediatrics Academy (2005.) recommends that children younger than 2 years are not allowed to watch television, Zimmerman, Christakis and Meltzoff (2007.) prove that 40% of three-month-olds in United States regularly watch TV programs or DVDs for up to 45 minutes a day, on the other hand, Rideout and Hammel (2007.) in their paper say that 19% of children under one year have a TV in their bedroom. Along with that, mobile phones have become one of the most important platforms that target young people, because mobile phones enable companies to offer a special offer to each user based on previous purchasing history, locations and other important data. Examples of large brands who use this will be shown in Table 3.

Table 3 Examples of large brands and their strategies

Lego + McDonald's, Sony, Warner Brothers	Video game <i>Lego Batman</i> whose main characters were sold in <i>McDonalds' Happy Meal</i>
McDonald's	Using 600 California Franchises inviting children to send text messages via cell phone so they can get coupon for free <i>McFlurry</i> ice cream Advertised on buses, posters and even writing "Send McFlurry 73260" in the sky ( <i>skywriting</i> )
KFC	In advertisements they used a high tone " <i>MosquitoTone</i> " that can only hear children and if children guess where exactly the high tone is used they get a 10\$ coupon for a chicken meal.
Coca Cola	"My Coke Rewards" program where consumers use special codes from the Coca Cola product and with that they can for example download the ringing sounds
Erste bank	Advertisements for children's savings in which main character is an animated bear although the children do not know the meaning of the word savings, but because of the song they like and the bear, they encourage parents to use it, at the end, that is the main purpose of this advertisement
Croatian Telecom	A commercial in which boy asks his mother what he will do at summer holiday at grandma's and she says send messages, be on internet, and then commercial addresses his parents to buy him 60GB mobile traffic

Source: Authors' table

From this table authors of this paper have concluded that in advertising and manipulation toward children, goes beyond all ethical and moral boundaries, all that because they want to sell the product.

There are many researches that prove how media manipulate children into buying some products.



Regarding ethical issues, the authors are already rather early, 1999., examining the effects of internet advertising on children.

An example is the research conducted by M. Jill Austin, Mary Lynn Reed (1999.) in their article Targeting children online: Internet advertising ethics issues highlighting the ethical issues of internet promotion.

For example Martin Lindstrom (2011.) in his research explains that Apple's marketers know that once mom or dad passes iPod Touch to their children, the child can't help but get hooked on the gizmo and will eventually be asking for Apple computer of their own. Also, he says that marketers increasingly advertise beauty products at kids. Lindstrom cites an NPD report that says that the percentage of girls age 8 – 12 who regularly use mascara and eyeliner doubled from 2007. to 2009. And now 18% for mascara and 15% for eyeliner. He also references Peggy Orenstein's book *Cinderella Ate My Daughter*, which says that half of 6 – 9 year old girls use lipstick and lip gloss and their parents spend more than 40 million dollars per month on beauty products.

Calvert in her research says: "Marketing practices such as repetition, branded environments, and free prizes are effective in attracting children's attention, making products stay in their memory, and influencing their purchase choices in future. Thus, public policy regulates how advertisers can interact with children via television, online environments are now and probably always will be less heavily regulated than more traditional media."

## 6. LEGISLATION ANALYSIS

Brands want to be successful and because of that they are targeting younger costumers, in order to succeed they are looking for new techniques to attract children but through them their parents too. However, the problem is that brands are rarely paying attention to ethics, and the limit in the consumer world rarely exists. This is why brands should ensure that market communications are applied with social and professional responsibility and they should act with fair market principles. Communication should not harm consumer confidence in marketing and should not contain statements or processing images or sounds that violate the standards of decency that people currently respect in the country. Brands should not take advantage of customer's trust or lack of knowledge or experience. (Lane et al, 2011., citat u Ferboković, 2015.) Children often understand things literally, and media characters play a big part in their life which is why marketing advertising is deceptive to them.

It can certainly be said that the media are involved in raising awarness of the importance of protecting the rights of the children and raising the standard of child protection in our society, and if a brand or media decides to participate in an unethical marketing project, they will face lawsuits and it will decrease their sales. Media strategy and media policy towards children are an integral part of the media strategy and policy in all developed democratic countries in the world, and with development of the media industry, market laws and globalization, they are becoming more and more aware that children are exposed to content that is more suitable to adults than them, especially advertisements for tobacco products, alcoholic beverages and lottery games. Because of this, the companies should be aware that they influence on social and cultural behaviors of children through the market performance. Very often products increase self-confidence in children, especially clothing and IT products, which is why an increasing problem of materialism has emerged among the youngest population, and children are more and more focused on consumption rather than on real life values. (Crane, Kazmi, 2010.) Many countries want to protect their children from the negative impact of television and other advertising, so they have numerous advertising laws. Strenghtened provisions to protect children from inappropriate audiovisual commercial communications for foods high in fat, salt and sodium and sugars, including by encouraging codes of conduct at EU level, where necessary. Video-sharing platforms also have to respect certain obligations for the commercial communications they are responsible for and to be

transparent about commercial communications that are declared by the users when uploading content that contains such commercial communications.

More flexibility in television advertising. Instead of the current 12 minutes per hour, broadcasters can choose more freely when to show ads throughout the day, with an overall limit of 20% of broadcasting time is maintained between 6:00 to 18:00 and the same share allowed during prime time (from 18:00 to midnight).

The media landscape has shifted dramatically in less than a decade. Instead of sitting in front of the family TV, millions of Europeans, especially young people, watch content online, on demand and on different mobile devices. Global internet video share in consumer internet traffic is expected to increase from 64% in 2014 to 80% by 2019. (European parliament, 2019.)

Although the control in this area is relatively weak in United States, legislation in Europe and Australia is much better. (Kuterovac, Jagodić, 2005.) The rights of the children in European Union have developed gradually and first were focused on specific aspects of economically and politically motivated initiatives that are related to children within the area of consumer protection, but recently children's rights are part of a coordinated European Union program. For the purposes of this paper, authors have researched how some of the major countries and Republic of Croatia regulate promotion for children. This will be shown in Table 4.

Table 4 Countries and their legislation

Country	Legislation
Republic of Croatia	The HURA codex of Advertising and Market Communication, paragraph 18., which states that: "In communication with children and young people, social behavior, lifestyles and attitudes should not be undermined. Products that are not suitable for children should not be advertised in the media intended for children or be released close to the places or areas where children are staying, especially in schools and kindergartens. Also inexperience and vagueness of children should not be exploited." Law and legality in Croatia limit the advertising and teleshopping of alcohol and alcoholic beverages and should not be directed directly to juveniles nor show juveniles how to consume such drinks
France	Banned advertising of alcoholic drinks to juveniles and their advertising on television programs or in cinemas
Sweden	When children watch the cartoon Pokemons, at the end of series they do not hear the jingle "You have to gather them all" that hear other kids in the world because of alluding to buy all Pokemon cards Since 1991., all television commercials for children younger than 12 years have been banned
Greece	It is totally forbidden to advertise toys like rifles, tanks and other war equipment, and advertising other toys is forbidden between 7 o'clock in the morning and 10 o'clock in the evening
England	Advertising for children is strictly forbidden, and advertising industry is regulated independently by national and international law. It is not allowed that the child feels inferior if he or she does not buy the product, it is not allowed to exploit the child's vice and companies have to be sure that with advertising they do not encourage the child to buy the product independently
Russia	It is proposed to abolish movies and cartoons that contain violence, such as Russian cartoon "Wolf and rabbit" and Tom & Jerry

Source: Authors' table

From this table, authors have concluded that children, because of their their susceptibility, delinquency, lack of life experience, have special protection in many countries and they do that by prohibiting and restricting market communications for many products and behaviour.

It should still be mentioned that because of the nature of the media, it is difficult to control them, but not impossible. There are a numerous brands whose unethical behaviour was punished, and some of them will be shown in Table 5.

Table 5 Brands' unethical behaviour and punishment

Brand	Unethical behaviour and punishment
Kellog	Has put a series of falsehoods during the advertising of his cereals to emphasize the benefit of consuming such products, because of that his site was put off after the Advertising Board's pressure because his statements were not supported by licensed healthcare professionals
Weetbix	Offended children who did not eat their cereals and were banned from advertising

Source: Authors' table

Although practice has shown that it is difficult to control the content in which children were exposed, especially in the virtual world, the growing pressures point to the fact that advertising to children will experience major change and more and more countries will follow the example of Sweden. However, if we work together and if we actively engage in creating marketing strategy for big brands, we can protect our children.

Similar research was also carried out by Deborah Roedder John (1999.): "in which she review what we know about children's development as consumers. Her focus is on the developmental sequence characterizing the growth of consumer knowledge, skills, and values as children mature throughout childhood and adolescence."

## 7. DISCUSSION

Today we are exposed to large amounts of media every day, it is very difficult to keep track of all the unethical actions of advertisees and even more difficult to protect our children. Since we live in a time when advertising is allowed in schools, on the Internet, in children's shows, in sports competitions, parents can not stay close to their children in every moment of their lives so they can not always protect them. Because of this, brands daily exploit the vagueness and naivety of children and that become their main strategy, According to this, children become secondary consumers or "shadow cinsumers" that affect their parents' purchase. Children have a lack of life experience, so everybody try to legally protect them, but in all that, companies need to participate too. They have to introduce the product realistically and not earn profits based on abuse of trust or disruption of parental authority. Despite numerous codes and laws, this research has shown that lot of brands knowingly violate these laws and with that they are harming children. This is why it is very important to educate children how to interpret the content in the media. Although one part of these education is implemented within the education system, that is not enough because children often do not take that seriously, so it is crucial that parents raise their children and talk with them about this from the earliest childhood. We should also warn that if brands do not pay attention and make changes in advertising to children, the countries will be forced to ban advertising for children as it did Sweden. In order to be satisfied, both sides need to agree with each other, but an important question is, are large brands willing to give up profits or loyal future customers, and are parents ready to talk and educate their children about media.

So the main question we all need to ask is whether it is acceptable to advertise to children, and is it ethically correct to link brand and the child? In addition, it should be noted that unethical behaviour can only result in short-term success but will never become a basis for long-term profitability!

## 8. CONCLUSIONS

The subject that the authors of this article have explored is very complex and many researchers who have been researching this topic over the last decade have failed to fully identify the consequences that media have on people's lives, especially children. Despite that, the authors of this article have concluded that there are numerous studies of the harmful impact of media on children. That happens because children do not have enough life experience so that is why the media can easily manipulate them. It should be noted that although there are numerous laws and regulations that prevent the manipulation of children, big brands continue to succeed because children are exposed to the media on a daily basis. It is very important that parents and educators become mediators between children and the media because with that they shape children's attitudes, and then children will use them in the future. To achieve this, it is necessary to help people understand media content and they have to be competent in that. Except for negative sides of media, it also has numerous positive sides, for example, they give information about events in our environment, but despite that, it is very difficult to ethically connect brand and child, and many people believe that brands should not advertise to children. But, as long as media have a direct role in the upbringing of children, parents can only protect their children if they learn what is media and what media represent and with that they need education. In order to achieve this, all countries need to harmonize laws and regulations because if we do not work together, innocent children will be harmed, and they should actually build our future.

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# THE POSSIBILITY OF USING ONLINE TOOLS TO INCREASE THE ATTRACTIVENESS OF A NAUTICAL TOURISM PRODUCT

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Preliminary communication

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## **Abstract**

*The article focuses on yacht cruises treated as complex tourist products. For the purposes of the article, it was assumed that the measure of attractiveness of such products is the satisfaction of the tourist after the end of the consumption process. It is influenced by the ability to choose from among a wide range of individual products that are best suited to the needs of a given tourist. The main purpose of the article was to indicate the possibility of using online tools that facilitate the access to information on individual tourist products and support the subsequent stages of consumption of the tourist product. The article presents a typical process of consumption of a nautical tourism product, research on the activity of sailors and their purchase preferences regarding goods and services purchased in the visited ports. It also presents the possibilities of making nautical tourism products more attractive by Internet tools, for example by facilitating the finding of up-to-date information, its consolidation or increasing the safety of navigation. At the end, recommendations regarding the widespread use of online tools by entities offering goods and services purchased by sailors are presented. The article uses such research methods as: critical literature analysis, participant observation and questionnaire surveys.*

**Keywords:** *nautical tourism, tourist product management, attractiveness of a tourist product, IT tools in tourism*

## **1. INTRODUCTION**

Nautical tourism is a form of active tourism that involves traveling and yachting in water areas [Łapko, 2015, p.14]. According to T. Luković it may be also defined as: *navigation and stay of tourists on sailboats, as well as stay in nautical ports (...)* [Luković, Łapko, Vuković, 2019, p. 41]. Active tourism is a form of tourism in which the main element of the travel - regardless of the duration of the tourist activity - is a particular form of recreational and hobby activity [Merski, 2009, p. 21]. According to K. R. Mazurski, it consists in traveling for recreational purposes with the use of own physical activity in covering a distance [Mazurski, 2006, p.31]. It is created specifically for a given participant and is sometimes co-created by him. Moreover, it requires not only physical activity, but also intellectual and natural one [Mazurski, 2006, p. 21]. This tourism is usually associated with traveling between yacht ports, visiting port towns, meeting new people and making intensive contact with the natural environment. In addition, the nautical tourism entails the need to service the vessel, which requires both physical and intellectual effort. Of course it can be undertaken with differing participants skill levels [Jennings, 2007, p.23]. Cruises are usually organized independently



by tourists, or by specialized travel agencies, but considering the individual needs and desires of the clients.

Recognizing the essence of the trip in this way, it can be regarded as a complex tourist product, which is a composition of ingredients satisfying various complementary needs and desires of tourists. Therefore, these ingredients will be individual tourist products.

According to the definition of the need, it is a state of perceived lack that constitutes an inseparable part of the human condition and structure. Desires, on the other hand, are forms that embrace human needs shaped by culture and individual personality [Armstrong, Kotler, 2016, pp. 37-38].

S. Smith distinguishes five groups of elements included in the tourist product. In his opinion these are: natural values, services, hospitality (understood as the ratio of the population of the reception area to tourists), freedom of choice resulting from the diversity of the offer, and the involvement of tourists due to the nature of travel. The article focuses mainly on issues related to three aspects: services, freedom of choice and involvement of tourists, which can be supported by modern technologies and significantly increase the attractiveness of a nautical tourism product [Smith, 1994, pp. 587-595].

The article uses such research methods as: literature analysis and participant observation. The results of surveys, which were carried out in 2017 in Baltic sea ports located in Germany, Poland, Denmark, Russia and Lithuania, were also used. The research was carried out by the South Coast Baltic project team. The author of this article is a member of that project and took an active part in the process of developing methodology, conducting research and developing results therein.

The main research question was to find how the online tools can facilitate the access to information on individual tourist products and support the subsequent stages of consumption of the tourist product.

The subject related to the product of nautical tourism is very rarely mentioned in the literature, therefore it can be concluded that the article organizes the available knowledge and also fills in the existing theoretical gap. The article presents recommendations regarding the possible applications of modern technologies that may positively affect the attractiveness of the product offered by nautical tourism.

## **2. THE CONSUMPTION PROCESS OF NAUTICAL TOURISM PRODUCTS**

If a cruise under the nautical tourism is treated as a product, it should be noted that despite being one of many consumer products, it has a special meaning for the buyer. This is due to the fact that it is not a regular product but an eligible one. It is purchased relatively rarely (the time in which you can afford to go for a cruise can be limited by many factors, such as the availability of free time or adequate financial resources), and its purchase is associated with a large commitment from the buyer. This commitment results from the specificity of experiencing a tourist product, which is usually divided into three phases [Kaczmarek, Stasiak, 2010, p. 78]:

1. The preparation phase, covering various activities from the moment of realizing the need of rest to start the journey (searching for an offer, analysis of alternatives, booking, for example, access means of transport, yacht charter or places in the marina, purchase of selected products needed during the voyage, route planning, completing equipment, etc.).
2. The consumption phase, which lasts from the moment the tourist leaves the house to return. This phase is related to the actual consumption of purchased goods and services, as well as any non-commercial events that occur during the trip. In this phase, the quality of the promised and expected quality is also compared.

- The memory phase, which is called the "echo of the product". It begins after the end of consumption, and its duration depends on the personality of the tourist and on the intensity of experience experienced during the consumption phase, in special cases it may last even several dozen years. The stimulus to memories are, for example, souvenirs brought from the trip.

The process of traditional consumption of a nautical tourism product including particular phases is shown in Figure 1.

It presents the individual stages of travel, typical activities performed during a given stage by the tourist and the corresponding phase of experiencing the tourist product.

It should be noted that not all of the mentioned activities must always appear during the trip, because, as it was mentioned above, they depend to a large extent on the needs of tourists, and here there are absolutely no restrictions.

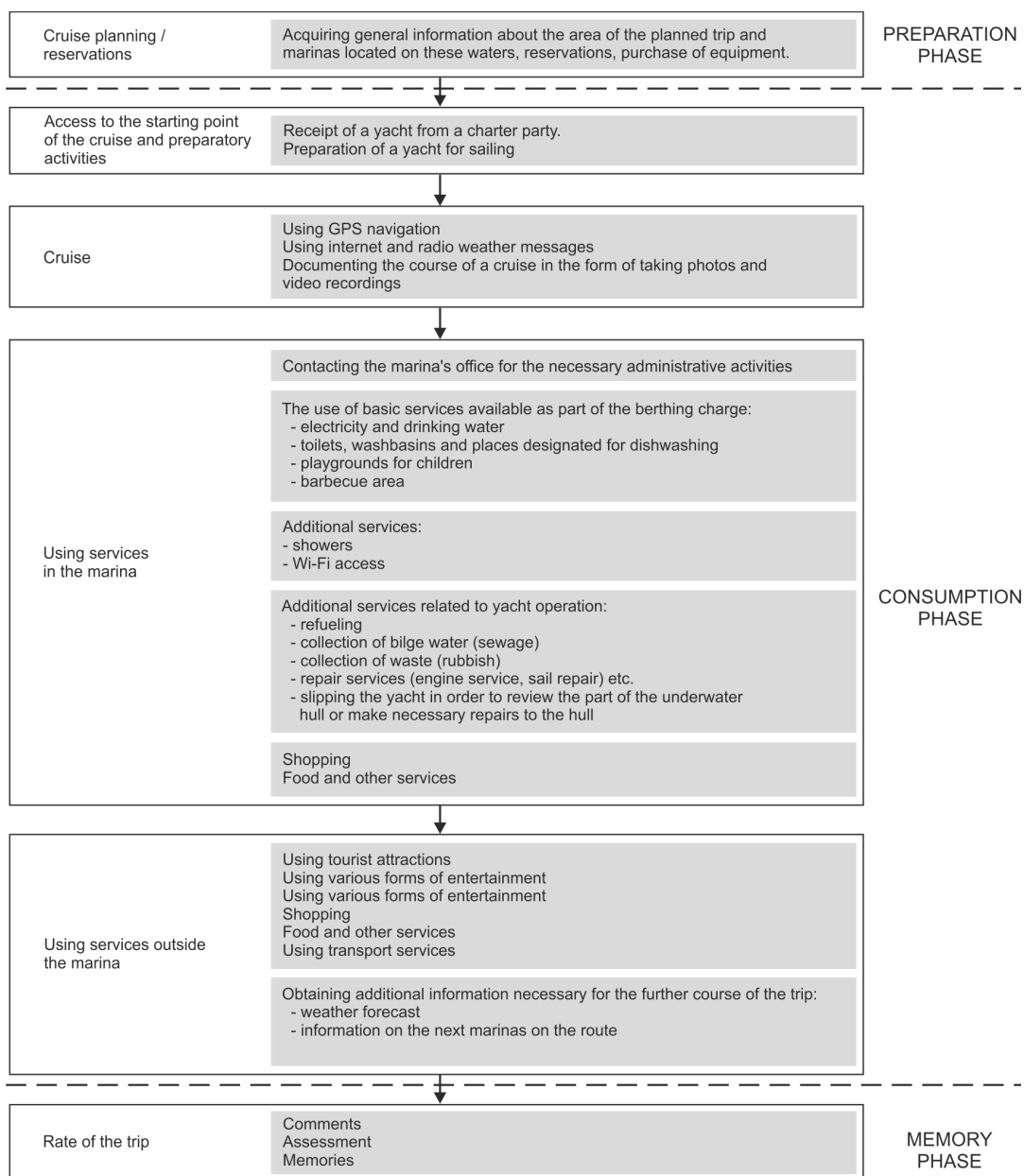


Figure 1 Process of traditional consumption of a nautical tourism product

The research carried out in July 2017 in 70 yacht ports located in Germany, Poland, Denmark, Russia and Lithuania (with 1188 sailors participating in the research) was very diverse in this respect. The research was a part of the *South Coast Baltic* project (Establishing durable cross-border boating destination management on the basis of the MARRIAGE cooperation network) which is financed under Interreg South Baltic Programme 2014-2020.

The questionnaire method and standardized interview technique were used, using random selection of the sample (persons on board of their vessels were asked to take part in the survey while research was conducted at the port). Tourists were asked to answer the question of what they were doing or going to do in a given port, and they could give any number of answers. Obviously, the activities mentioned included those that did not involve the consumption of services or the purchase of material products. They resulted from the desire to satisfy the needs of these tourists and motivated them to visit a given port. These are: the desire to rest, swim in the sea and the desire to visit friends. The services mentioned, or products the willingness to buy / consume was declared by tourists, included those that could be bought / consumed in the port area, outside it (in the port town), or anywhere (Table 1).

Table 1 Answers to the question: What have you done/intend to do during the stay in the current harbour/marina?

Activity/service	Percentage of answers (%)	Place of purchase of a service or other product	
		Port	Town
Use the available facilities	75,48	X	X
Buy foods and other things that are needed	66,67	X	X
Going to restaurants & / or cafés	65,24	X	X
Go swimming in the sea	53,81		X
Take a rest before continuing the voyage	50,95	X	X
Go shopping / visiting the town	41,19		X
Visit cultural attractions (museum, exhibitions)	40,95		X
Visit nature attractions	40,00		X
Make a bike trip in the surrounding	33,81		X
Spend time in the company of other sailors	30,00	X	X
Make barbecue	21,19	X	
Participate in an event taking place nearby	19,52	X	X
Make required repairs of the yacht / equipment	16,67	X	
Practice sailing skills	14,76	X	
Go for sports - hiking	10,48		X
Visit friends living nearby	9,76		X
Go for sports - diving	1,90		X
Go for sports - surfing / kiting	1,19		X
Go for spa, wellness or beauty offers	0,95	X	X
Go for sports - golfing	0,71		X

Source: Own study based on research carried out as part of the South Coast Baltic project. Survey results worked out by M. Forkiewicz from Gdańsk University of Technology (Poland)

As can be seen from the data presented in Table 1, sailors purchase different products and use various services during their cruise. Only some of them are available in the port area. The products and services available in the port town and its immediate vicinity are also very important. They are all individual tourist products included in the final product. Its final attractiveness is measured by the satisfaction of a given cruise. It is the greater, the more it coincides with consumer expectations, and this convergence is conditioned by its complexity, which results from a wide

range of individual tourist products. The wide offer allows the sailors to compose the final product - a cruise / travel according to individual needs and preferences [Panasiuk, 2010, p. 65].

However, the condition of consumption of these products is to provide tourists with information about their availability. Appropriate availability of up-to-date information facilitates selection of a place, time, date and, possibly, tourist events, that sailors want to participate in during the cruise, as well as getting interesting information about tourist reception areas. The information should be easily accessible and, like the offer itself, should be comprehensive. This requires cooperation between various entities offering individual tourist products (located in and outside the port) and IT tools that ensure efficient information flow and their consolidation.

### **3. USE OF INTERNET TOOLS AS FULFILLMENT OF TRADITIONAL TOURISM PRODUCTS IN NAUTICAL TOURISM**

Demographic factors are crucial for planning marketing activities [Weaver, Lawton 2010, p. 63]. As a result of the natural succession of generations among sailors, the number of people born in the late 1980s and in the 1990s is growing. In the scientific literature this generation is sometimes called: Generation Y, Millennials or Generation Tech [Kolnhofer-Derecskei, Reicher, 2017, p. 107]. The character of this generation shows that they are, among others, ambitious, curious, innovative, and impatient. They want to be motivated and get pleasure out of life. They prefer to communicate more quickly and effectively via email, social networks or text messaging as opposed to traditional means of communication. The Internet appeared when they were small, so it is a natural tool for them [Gures, Inan, Arslan, 2017, p. 2015]. There are also more and more representatives of the Z generation, i.e. people born in the first decade of the 21st century, which is also called the Nation of Facebook and its members are defined as digital natives [Akçayır, Dündar, & Akçayır, 2016, p. 435, Benenett, Maton, & Kervin, 2008, p. 775]. This generation does not know the world without the Internet. The Internet means their friends, all the information they get and sharing their knowledge and opinions about various products (including tourist ones) on social networks [Csobanka, 2016, p. 66]. This trend cannot be ignored. For young sailors digital technologies and instant access to information is something natural, which is why they show great openness to the possibility of using new applications dedicated to sailors [Raport 2016, p. 79]. In the ranking of portals and websites most visited by sailors, Facebook is ranked first. [Raport 2016, p. 111]. This is due to the fact that, when planning a trip and charter, the surveyed sailors most often look for recommendations of friends [Raport 2016, p. 64]. Entities responsible for the creation of nautical tourism products (both yacht ports and other entities located outside them) must use modern technologies to communicate with these tourists. Traditional, printed travel guides, press advertisements, and even radio and television broadcasts will not go to representatives of the Y and Z generations. People are looking for information on the Internet and there they should find it. In addition, the internationalization of the nautical tourism market should be taken into account, which requires the preparation of messages in many languages.

As research conducted among Polish marinas located on the Baltic Sea Coast has shown, most of the ports do not even have their own website (only 3 ports out of 18), and for those existing independent or shared with other facilities there is a lack of basic information such as services available in the port, prices, tourist attractions in the area, etc., that is, information that people planning their trips are looking for. The vast majority of websites are available only in Polish, which excludes their use by foreigners [Hącia, Łapko, 2018, p. 78]. The situation of marinas located in the Mediterranean region is slightly better. Out of the 234 ports (belonging to 10 different countries), only 20 do not have their own websites, but only on 129 websites there is information in English (out of a total of 160 ports). The quality and availability of information contained there, however, is not always sufficient [Benevolo, Spinelli, 2019, p.].

The presented results reflect, that we live in a time when it is difficult to consider the website as a modern communication tool, for many it is rather a basic and obvious tool. People using the Internet to

plan their trips (including cruises) want to get the information they need as quickly as possible. That is why they often look for places where information is consolidated, so not so much as standalone websites but platforms. Online platforms are complex IT systems that enable the sale of goods or services, as well as the exchange of knowledge and information between different types of users (enterprises, private individuals) [Martens, 2016, p.3]. Transaction and booking platforms such as Trivago and Booking.com are best known in tourism. They allow tourists to find and book accommodation, read the opinions of other users and give their own one, get acquainted with the tourist offer of the place, order transfer from the airport, etc. However, if it concerns multifunctional platforms dedicated to nautical tourism, unfortunately there are very few of them. Those available have a very limited offer, e.g. they focus only on the charter possibilities, or only on the possibility of booking parking spaces in yacht ports. Therefore, it forces the tourist planning a cruise to make further searches, and thus may negatively affect the experience of the preparation phase.

The availability of solutions based on modern technologies used in the consumption phase is much better. There is a wide range of solutions to facilitate navigation - from smartphone applications with constantly updated weather information, interactive maps, to advanced systems of automatic transmission of weather information and warnings requiring the assembly of appropriate receiving devices on the unit. The choice of a given solution depends only properly on the needs, preferences and financial resources of a given tourist. These solutions certainly contribute to the safety of people sailing. With positive impact on the safety and comfort of tourists, they contribute to a better consumption phase of the tourist product.

The memory phase is also supported by modern technologies, which is largely due to the widespread use of smartphones. The devices used for digital image and sound recording, such as cameras and cameras, enable easy documentation of experiences. Videos and photos are souvenirs that help refresh the memories many years after the cruise.

## 4. CONCLUSIONS

Based on the analyzes carried out in the article, the following conclusions can be made:

1. The needs and desires are very diverse, and in order to satisfy them, tourists take advantage of the goods and services available both within the marina itself and in the port town and its surroundings
2. Sailing cruises are specific, complex tourist products that are a composition of various goods and services (individual tourist products). Due to the fact that nautical tourism is a form of active tourism, the sailors / tourists play a major role in creating these products.
3. All single tourist products included in the final product, which is a sailing cruise, serve to satisfy the needs and desires of tourists.
4. The needs and desires are very diverse, and in order to satisfy them, tourists benefit from the goods and services available both within the yacht port itself and in the port town and its surroundings.
5. The condition to use the goods and services available is to have up-to-date and comprehensive information about them. Consolidation of information in one place, e.g. on a website or platform requires cooperation of various entities/offer providers and appropriate IT tools.
6. Modern technologies support each of the three phases of experiencing a tourist product and thus increase its attractiveness. They provide information necessary for planning a cruise route, allow to make the necessary reservations and provide knowledge about the reception areas. In the consumption phase, they increase the safety of cruise participants, e.g. through access to up-to-date weather and nautical information. They enrich the phase of memories by providing the possibility of documenting individual stages of the voyage.

7. Although modern technologies play an important role as a support for tourist products, this role will grow. This is the result of the growing share of consumers belonging to Y and Z generation on the tourist market. These technologies are natural tools for acquiring and collecting information for them.

Following the above conclusions, it should be stated that if the entities involved in nautical tourism are interested in directing their offer to younger people, they must intensify the use of IT tools for marketing communication. As research carried out in Poland and the Mediterranean basin has shown, many ports do not even have their own website, or there is incomplete information on this page. A major negligence is the lack of access to the English language version, which practically excludes reaching foreign tourists. Of course, such research should be deepened, but it can certainly be said that the tool which is a website should be considered as the absolute minimum. A good solution would be the presence on online platforms devoted to sailing tourism. The platforms should contain not only an exhaustive description of the ports themselves, but also provide access to information about the port town, the offer of goods and services, the possibility of booking some services (e.g. yacht charter, reservation of a parking space, purchase of transfer, accommodation booking, etc.), tourist information, nautical, meteorological, etc. Consolidation of all information in one place allows to simplify the search process and significantly accelerates it.

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# CHARACTERISTICS OF ORGANIZATIONAL CULTURE ON FACULTIES OF SOCIAL SCIENCES AND HUMANITIES – CASE OF THE UNIVERSITY OF MOSTAR

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Preliminary communication

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### **Abstract**

*Organizational culture, as relatively permanent and specific system of values, beliefs, standards and customs, that determines behaviour and directs employees' activities, is a characteristic of any organization and have impact on its all activities. Conclusions about it can be made based on what people say, do and think within the organization. The main aim of this work is to explore characteristics of organizational culture on faculties of social sciences and humanities at the University of Mostar. The aim is to conclude, based on responses of teaching staff of these faculties, whether we can speak more about dynamic or static organizational culture. For this purpose, we have analyzed six groups of factors: (1) development and entrepreneurial orientation factors, (2) decentralization factors, (3) social orientation factors, (4) bureaucracy factors, (5) maintaining status quo factors, (6) formalization factors. Research results have showed that characteristics of static organizational culture are more present at the analyzed faculties.*

**Keywords:** *organizational culture, faculties of social sciences and humanities, teaching staff*

## **1. INTRODUCTION**

There are different definitions of organizational culture. However, as Kordić points out (2002, p. 312) almost all definitions observe organizational culture as relatively permanent system of behaviour and way of life of organization, and groups and individuals inside it. That is a system made of certain values, beliefs, standards, customs, opinions, symbols and other values, system accepted by most members of organization and consider it as efficient and transfer it to its new

members as proper way of perceiving life and work in organization and in relation with organization.

So, the organization's culture is made of its members, their customs, forms of behaviour and relations with the work and organization. Organizational culture directs employees' behaviour and it is shaped from their behaviour.

Smircich (according to Žugaj et al., 2004, p.16) states the following four main functions of organizational culture:

- giving members sense of identity or belonging to organization,
- achieving loyalty to organizations of their employees,
- making stability in organization as social system
- structuring employees by making them realize in what environment they are.

Organizational culture is on one of the most important factors for successful business, progress and development of a organization. However, it is not some finished recipe that can be used in any organization and any situation. Environment features as well as its components require creation and development of appropriate organizational structure and appropriate organizational culture.

In a turbulent and uncertain environment organizations that foster creative, innovative, entrepreneurial and team culture i.e. dynamic organizational culture, pointed towards environment, oriented to future and that looks for innovations and changes, function successfully.

On the other hand, static culture, that does not encourage changes, does not value innovative and creative employees, that is inside and history oriented and towards maintaining current state, certainly does not contribute to survival and development of organization nowadays.

In order to organizational culture be accepted through its values and beliefs and designed and developed properly, it is necessary to clearly maintain mission and vision of organization, its strategic goals and needs of organization and its employees.

As stated in Buljan Barbača, Bačić and Milun (2012) positive compatibility of personal and organizational values results in bigger personal and organizational efficiency, and their understanding and development are the main source of comparative and especially competitive advantages on the global scene.

Faculties, i.e. higher education institutions according to Vrhovski and Živković (2010) can be seen as rational organizations that balance demands for quality, quota etc. in relation to market needs. In that struggle for survival, growth and development faculties have to pay special attention to the organizational culture as important part of an efficient business system.

Research of organizational culture, were and certainly will remain in the focus of interests of many scientists. Thus, for example, Žugaj, Bojanić-Glavica and Brčić (2004) in their researchs conducted in economic subjects and state administration, analyze organizational culture as a function of organizational performance. Rman (2004) and Koprić (1999) were engaged in their research in organizational culture in state administration. While, Belak and Ušljebrka (2014), Iljins, Skvarciany and Gaile-Sarkane (2015), among others, have written about effects of organizational culture on the process of organizational changes.

Bahtijarević-Šiber (1992) carried out a research of the dominant type of organizational culture, in eight big industrial companies from different regions in Croatia. The start for this research were two problems that could be seen in determining key dimensions and structure of organizational culture as well as in determining basic features and dominant type of culture in researched companies. Research results have shown that in researched companies static, bureaucratic culture have perpetuated, culture that is oriented on things and rules and not on people and knowledge nor changes and innovations; based on hierarchy and autocratic

management instead of decentralization and autonomous, self-management team; strict instead of flexible structure etc. (Bahtijarević-Šiber, 1992, p. 36.).

This research of organizational culture on faculties of social sciences and humanities at the University of Mostar is based on similar basis and it begins also from the model stated by Buble et al. (2005, p. 305-306).

As far as authors are familiar with, research of organizational culture in higher education institutions are not sufficiently represented in literature, and in Bosnia and Herzegovina and especially at the University of Mostar there is no research with mentioned theme.

The main research of organizational culture at faculties of social sciences and humanities within the University of Mostar was to find out, based on answers of teaching staff, whether there is dynamic or static organizational culture.

For this purpose, we have analyzed six groups of factors: (1) development and entrepreneurial orientation factors, (2) decentralization factors, (3) social orientation factors, (4) bureaucracy factors, (5) maintaining status quo factors, (6) formalization factors. The first three groups of factors are features of dynamic, and other three groups are features of static organizational culture.

## 2. RESEARCH METHODOLOGY

The questionnaire is consisted of 30 questions related to characteristics of organizational culture or on six groups of factors that are basis for determination of dominant form of organizational culture. The mentioned groups of factors are: (1) development and entrepreneurial orientation factors, (2) decentralization factors, (3) social orientation factors, (4) bureaucracy factors, (5) maintaining status quo factors, (6) formalization factors. Respondents needed to choose one of four given responses on each question (from 1-none, to 4-fully).

Online research is conducted in March 2019. The population was consisted of all permanently employed teachers on the faculties of social sciences (Faculty of Economics and Faculty of Law) and humanities (Faculty of Humanities and Social Sciences) at the University of Mostar. The requirement to include teachers into population was to be permanently employed. Link with the questionnaire was sent to 120 e-mail addresses, and 60 teachers have filled the questionnaire (return rate 50%).

Results are shown as relative frequencies (%) and for each question and for aggregate indicators mean and standard deviation are calculated. T-test for independent samples was used for testing differences in average rates of factors regarding field of science. The level of significance is set at  $p=0.05$ . The analyze was made in SPSS 20.0.

## 3. RESULTS

Results of research are presented by groups of factors.

- Development and entrepreneurial orientation factors

Based on development and entrepreneurial orientation factors it can be determined, as the name suggests, whether organization is development and entrepreneurial oriented or it is satisfied with the existing situation. In order to see whether faculties included in the research are development and entrepreneurial oriented, seven factors were analyzed: openness to changes, creativity and innovation, future orientation and development, ambitious and high goals, orientation to market, domination of economic criteria in decision-making and willingness to take risk. Results are given in the Table 1.

Table 1 The share of responses in development and entrepreneurial orientation factors (%)

Development and entrepreneurial orientation	Share (%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How much the faculty is dynamic and open for changes?	3	37	48	12	2.683 (0.725)
How much faculty encourages creativity and innovation in all areas?	12	40	38	10	2.467 (0.833)
How much the faculty is directed to future and development?	3	32	55	10	2.717 (0.691)
How much the faculty's goals are ambitious and high?	5	32	57	6	2.650 (0.685)
How much the faculty is oriented to market?	7	53	33	7	2.400 (0.718)
How much economic criteria dominates in decision-making on the faculty?	2	17	58	23	3.033 (0.688)
How much the faculty is willing to take risk?	7	63	28	2	2.250 (0.600)
Total	6	39	45	10	

M – mean; SD – standard deviation

Source: author's calculations

Table 1 shows that 45% of respondents consider that development and entrepreneurial orientation is fairly present, and 10% that is fully present, what makes in total 55%. However, not small number of 45% consider that the orientation is present little or not at all. Analyzis of certain questions speaks in favour of the mentioned. At majority questions dominant are fairly and fully responses, and average rates tend to 3. Exceptions are questions on encouragement of creativity and innovations in all areas and question about willingness to take risk, where rates tend to 2.

- Decentralization factors

Decentralization factors points out to level of autonomy of narrow parts of organizations in terms of setting goals and decision-making. The level of decentralization on analysed faculties is analysed by two factors. The first factor is related to decentralization of decision-making, and other to focus of each organizational unit on achievement of own goals without taking in account faculty as a whole. Results are given in the Table 2.

Table 2 Share of responses in decentralization factors (%)

Decentralization factors	Share (%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How much decentralized decision-making is present at the faculty?	25	45	27	3	2.083 (0.809)
How much organizational units tend to achieve own goals without taking in account faculty as a whole?	15	52	32	1	2.200 (0.708)
Total	20	48.5	29.5	2	

M – mean; SD – standard deviation

Source: author's calculations

Regarding decentralization factors, according to 48.5% of respondents decentralization is little present and according to 20% of them it is not present at all. Based on this, it can be concluded about relatively small level of decentralization on analysed faculties. This is also confirmed by rates for certain questions. Low rates are dominant what indicates high level of centralization.

- Social orientation factors

Today it is often stressed that people i.e. employees are the most important factor and basic competitive advantage of any organization. Thus, it is necessary to determine how much social orientation is present on faculties of social sciences and humanities at the University of Mostar. In order to determine that, 13 factors are analysed and they are mostly related to inter-personal relations in company (especially relation superordinate-subordinate), participation of employees, encouragement of cooperation, professionalism, competencies etc. Results are given in the Table 3.

Table 3 Share of response in social orientation factors (%)

Social orientation factors	Share (%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How much safety faculty ensures to its employees?	5	33	47	15	2.717 (0.783)
Have employees possibility for improvement and progress in profession?	1	45	42	12	2.633 (0.712)
Are there harmonious inter-personal relation at the faculty?	15	43	39	3	2.300 (0.766)
Have subordinates possibility to participate in decision-making regarding their work?	8	42	43	7	2.483 (0.748)
Do superordinates include subordinates in process of planning and implementing changes at the faculty?	10	52	32	6	2.350 (0.755)
Are employees encouraged to freely express their opinion and doubts regarding changes?	25	45	20	10	2.150 (0.917)
How successful arisen conflicts are solved at the faculty?	13	43	37	7	2.367 (0.802)
How much confident and reliable relations are present among employees?	11	57	27	5	2.250 (0.728)
How much identification of employees with the faculty is present at the faculty?	5	35	53	7	2.617 (0.691)
How much professionalism and competency are appreciated at the faculty?	8	44	40	8	2.483 (0.770)
How much employees are appreciated as persons at the faculty?	7	40	40	13	2.600 (0.807)
How much are informal friendly relations between management and other employees developed and cherished at the faculty?	13	54	28	5	2.250 (0.751)
In what extent cooperation and teamwork are present at the faculty?	7	52	33	8	2.433 (0.745)
Total	10	45	37	8	

M – mean; SD – standard deviation

Source: author's calculations

According to 45% of questioned, social orientation is little present at the analysed faculties. If we add 10% of those who consider that the orientation is not present, it can be concluded that dedication to employees is not at high level and certain changes are necessary.

- Bureaucracy factors

Bureaucracy factors represent those factors that are opposite to entrepreneurial orientation of organization since bureaucracy on certain way dampens free initiative that is core of entrepreneurial culture and requests behaviour according to written rules and standards. In order to determine presence of bureaucracy factors four questions are asked related to: hierarchical structure, high formalization, presence of autocracy leadership and centralized decision-making and insisting on written forms and information. Results are given in the Table 4.

Table 4 Share of responses in bureaucracy factors (%)

Bureaucracy factors	Share(%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How strict and respected is hierarchical structure at the faculty?	2	3	65	30	3.233 (0.593)
How detailed and strictly formal faculty is organized?	2	13	70	15	2.983 (0.596)
How much are autocracy leadership and centralized decision-making present at the faculty?	10	23	42	25	2.817 (0.930)
How many written forms and information are requested in work?	2	13	73	12	2.950 (0.565)
Total	4	13	62.5	20.5	

M – mean; SD – standard deviation

Source: author's calculations

For the bureaucracy factors results show 62.5% of *fairly* responses and 20.5% *fully* responses what reflects significance of development of bureaucracy culture at analysed faculties. The mentioned is also confirmed by average rates that are in range from 2.8 to 3.2.

- Maintaining status quo factors

Maintaining status quo factors are those factors that tend to maintain existing situation in organization and are directly opposite to development and entrepreneurial orientation factors. How much analyzed faculties are oriented to maintain status quo is analyzed based on responses on two questions regarding maintaining existing situation and taking relatively safe activities with less risk. Results are given in the Table 5.

Table 5 Share of response in maintaining status quo factors (%)

Maintaining status quo factors	Share (%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How much the faculty is oriented to maintain existing situation?	0	15	75	10	2.950 (0.502)
How much only relatively safe activities with less risk are taken at the faculty?	0	23	60	17	2.933 (0.634)
Total	0	19	67.5	13.5	

M – mean; SD – standard deviation

Source: author's calculations

According to 67.5% of respondents, maintaining status quo is fairly present at analysed faculties, and according to 13.5% of them it is fully present. Average rates are around 3. This significant orientation for maintaining existing situation can be rated by resistance factor to development and entrepreneurial orientation of these faculties.

- Formalization factors

Formalization factors represent factors aimed to prescribe rules of behaviour and to disable individuals and groups in organization to behave outside the rules. These factors are directly linked with bureaucracy factors, and opposite to development and entrepreneurial orientation factors. In order to determine effects of these factors on organizational culture two factors are analysed related to diversity of organization on many independent organizational units and number of procedures and rules for regulation of employees' behaviour. Results are given in the Table 6.

Table 6 Share of response in the formalization factors (%)

Formalization factors	Share (%) of responses, N=60				M (SD)
	None (1)	Little (2)	Fairly (3)	Fully (4)	
How much faculty is divided on many independent organizational units?	28	32	37	3	2.150 (0.880)
How many rules and procedures to regulate employees' behaviour are at the faculty?	5	40	48	7	2.567 (0.698)
Total	16.5	36	42.5	5	

M – mean; SD – standard deviation

Source: author's calculations

From the table 6, it can be seen that formalization is moderately present at analysed faculties. 52.5% of respondents gave responses *little* or *none*, 42.5% of them gave response *fairly* and 5% *fully*.

- Total development of organizational structure

The total rate of certain factors of organizational culture and total rate of all factors as well as common average rates are given in the Table 7.

Table 7 Rate of development of organizational culture, in total and for faculties, i.e. field of science

Organizational culture factors	Total		Faculties of social sciences		Faculties of humanities	
	M	SD	M	SD	M	SD
Development and entrepreneurial orientation factors	2.600	0.509	2.531	0.629	2.679	0.315
Decentralization factors	2.142	0.538	2.031	0.581	2.268	0.461
Social orientation factors	2.433	0.620	2.389	0.691	2.484	0.535
Dynamic organizational culture	2.392	0.467	2.317	0.545	2.477	0.348
Bureaucracy factors	2.996	0.395	3.078	0.446	2.902	0.307
Maintaining status quo factors	2.942	0.470	3.062	0.435	2.804	0.478
Formalization factors	2.358	0.576	2.156	0.530	2.589	0.545
Static organization culture	2.765	0.274	2.766	0.286	2.765	0.266
Organizational culture	2.578	0.273	2.541	0.316	2.621	0.213

M – mean; SD – standard deviation

Source: author's calculations

The results show that at analysed faculties more present are factors that are characteristic of static organizational culture (Table 7): bureaucracy factors, maintaining status quo factors and formalization factors. The average rate of the static organizational culture (2.765) is slightly higher than average rate of the dynamic organizational culture (2.392) whose characteristics are (Table 7): development and entrepreneurial orientation factors, social orientation factors and decentralization factors. If we compare average rates given by faculties of social sciences and faculties of humanities, some differences can be seen. Faculty of humanities has higher average rate of the dynamic organization but difference is not statistically significant, while average rates of the static organization culture are relatively even. The general rate of organizational culture is slightly higher at the faculty of humanities. If we observe rates of certain groups of organizational culture factors, it can be seen that in accordance with higher rate of dynamic structure faculty of humanities has also higher rates of certain groups of factors but without statistically significant



differences in relation to faculties of social sciences. From the other side, at factors of the static organization culture significant differences can be seen in rating factors of maintaining status quo and formalization factors. Faculties of social sciences are more prone to maintain status quo (the average rate is significantly higher than for faculty of humanities,  $p=0.032$ ), while faculty of humanities is prone to formalization (the average rate is significantly higher than for faculties of social sciences,  $p=0.003$ ).

Regarding differences in the conceptual, spatial and temporal scope of previous and this research, it seemed appropriate to do comparisons of obtained results with results of previous researches.

#### 4. CONCLUSION

Having in mind the fact that business environment of companies is increasingly unstable, heterogeneous, complex and uncertain, the need to abandon classical, bureaucratic forms dominant and to accept modern, dynamic, organic forms of organizational structure and culture are dominant.

Since, the results of the research have shown higher presence of the static organizational culture, it is necessary to work on development of other i.e. characteristics of the dynamic organizational culture, and this is primarily related to development of entrepreneurial and social orientation. In other words, it is necessary to develop organizational culture whose main determinants and values will be:

- encouraging initiative and entrepreneurship through making working atmosphere that will positively affect working motivation of employees and their productivity, creativity and innovation
- respecting employees and understanding their needs, interests, expectations and motives
- focusing on team work and efficient task solving
- ability to jointly articulate and achieve goals of certain parts of organizations and organizations as a whole
- openness, trust and mutual respect and ability for quality integration of different parts of organization by building quality system of information and communication
- development of democratic, participative management style that includes inclusion of employees in defining goals, decision-making, problems solving and implementing of changes.

It is extremely important to work on developing and maintaining features of dynamic organizational culture since just such culture is key determinant of organizational success. Such culture is especially important to the fact of unfavourable economic, social, technological and demographic situation in Bosnia and Herzegovina that affects not only higher education institutions, but other institutions as well.

The main limitations of research are size of the sample and manner of sampling. Used sample does not allow general conclusions for higher education institutions from mentioned area. In future research sample should be expanded with organizational units of the University of Mostar and other universities in Bosnia and Herzegovina. This will make basis for research of connection between organizational culture and areas of science. Beside, private higher education institutions also have to be included and that will enable comparison of organizational culture of public and private institutions.

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# FACTORS INFLUENCING STRATEGIC DEVELOPMENT OF INSURANCE BROKERS MARKET IN THE CZECH REPUBLIC

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## **Abstract**

*The aim of the paper is to recognise the relationship among Gross Premiums Written and Average Gross Nominal Wage (Average Wage) in the Czech Republic. The literature review has characterised insurance market in the Czech Republic. Based on the secondary data of Czech Insurance Association, Czech Statistical Office and Czech National Bank has been created PESTEL analysis, determined the rate of influence of the factors influencing the insurance brokers, evaluated by scale from 1 to 5. The secondary data for regression analysis has been obtained from annual reports of CNB and CSO in period 1996 to 2015. The method of regression analysis has tested the relationship among average gross nominal wage as one of the macroeconomic factor and the "premiums written" which is used for measurement of the overall insurance market level in the Czech Republic. The model was verified through the economic, statistical and econometric verification. The statistical data has been elaborated in software Gretl. Part discussion and conclusion have been focused to the comparison of obtained results and reaction recommendation on upcoming predicted situations on the market.*

**Keywords:** *Strategic development, insurance market, brokers*

## **1. INTRODUCTION**

Insurance market in the Czech Republic consists of several subjects, the insurance companies, their clients and insurance intermediaries. These intermediaries can be natural or legal person and they facilitate a communication among insurance company and client (Curland, 2004, Samaroo 2011, Dionne, 2012). Surveillance function of this market is guided by Czech National Bank (herein after CNB). According to statistics of CNB, in the Czech republic, there currently operate 54 insurance

companies, 881 foreign insurance companies which provide foreign services, 155 980 domestic insurance intermediaries, 6020 foreign insurance intermediaries and 263 liquidators of insurance event (CNB, 2017). The premiums written is used for measurement of efficiency of the insurance market and each insurance company (Cummins, Doherty, 2006, Niehaus, 2008, Cebul et al., 2011).

The aim of the paper is to recognise the relationship among Gross Premiums Written and Average Gross Nominal Wage (Average Wage) in the Czech Republic. The purpose of this paper was to analyse and assess the main macro environment factors which affect the segment of insurance brokers in the Czech Republic. With usage of PESTEL analysis and synthesis of the individual factors, there were stated the most important factors. Based on the secondary data of Czech Insurance Association, Czech Statistical Office (herein after CSO) and Czech National Bank has been created PESTEL analysis, determined the rate of influence of the factors influencing the insurance brokers, evaluated by scale from 1 to 5.

The secondary data for regression analysis has been obtained from annual reports of CNB and CSO in period 1996 to 2015. The method of regression analysis has tested the relationship among average gross nominal wage as one of the macroeconomic factor and the "premiums written" which is used for measurement of the overall insurance market level in the Czech Republic. The model was verified through the economic, statistical and econometric verification. The statistical data has been elaborated in software Gretl.

## 2. LITERATURE REVIEW

In the second half of 20<sup>th</sup> century, insurance market was strongly influenced by political situations. The main change was the monopolization of this market. After Fall of Communism, the monopoly of state insurance company was cancelled and created competitive insurance market as we know. The Join of the Czech Republic to European Union in 2004 meant the integration to EU insurance market. (Karfíková, Přikryl 2010)

The insurance market is focused on insurance protection and creation of reserves with the aim of stabilization of economic subjects, coverage of their potential losses and creation of reserves of insurance companies on the market. (Hungelmann, 2001, Dionne, 2012)

The existence of insurance broker in the Czech Republic started after The Velvet Revolution with the beginning of competitive market. In Western countries, this profession originated much earlier and has a respected position in the insurance market. In Europe, the Directive 2002/92/ES changed the conditions for insurance brokers. It enabled to carry on their business in all of EU countries. Nowadays, segment of insurance brokers has increasing trend and significant influence on insurance market in the world and also in the Czech Republic. (Kutina, 2010, Brar, Singh, 2016) According to Hrubošová (2009), insurance broker represents the highest level of intermediary. It can be natural or legal person. Two basic tasks of broker are risk analysis and offering of proper insurance product. Broker works for the client on the basis of contract and offers him a large quantity of services. Every broker is obliged to be insured for material responsibility with limit of indemnity of 1,2 million EUR in case of each insurance event. (Kutina, 2010, Goulde, Lester, Gonulal, 2012).

The volume of premiums written as an indicator which indicates the amount of premiums on the market in certain year, is influenced by the amount of insurance contracts, the sum of payment and types of risks which are insured. The premiums written is used for measurement of efficiency of the insurance market, each insurance company the gross premiums written has long term increasing trend, which is nowadays more stable. (Niehaus, 2008, Ninova, 2018). Nevertheless, it still means a positive development of whole insurance market in the Czech Republic. Non-life insurance is a long term more popular in population of CR. In 1996, the portion of life insurance was only 26,6 % in comparison to non-life insurance which reached portion of 73,4 %. Nowadays,

the portion of life insurance is much higher; it reached 40, 7 % and it is approaching the trend of European Union (Clipici, Bolovan, 2012, CNB, 2017).

### 3. REGRESSION ANALYSIS

The most important factors from PESTEL analysis which influence the insurance brokers have been evaluated. There have also been determined the rate of influence. Individual factors have been evaluated by scale from 1 to 5. Number 1 means low influence, number 5 means high influence. The chosen value have been highlighted by black bold colour.

Table 1 Rate of Influence of Factors from PESTEL

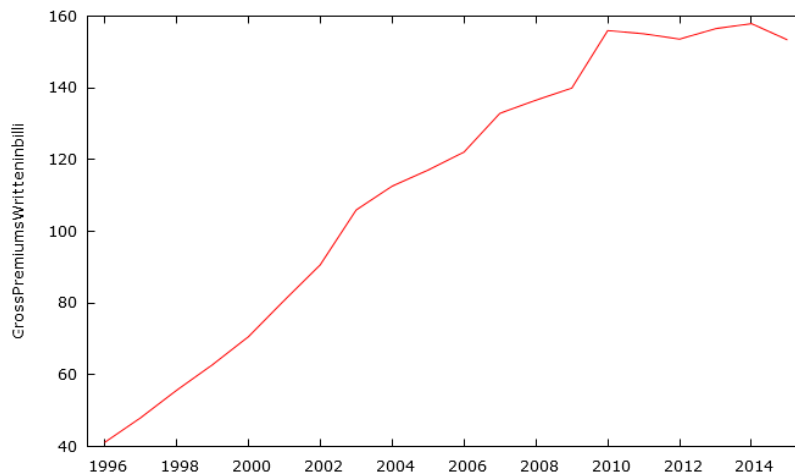
Factors		Rate of Influence				
Political	Legislation of Czech Republic - Insurance Market	1	2	3	<b>4</b>	5
	Legislation of European Union	1	2	3	<b>4</b>	5
Economic	Gross Domestic Product	1	2	3	<b>4</b>	5
	Inflation	1	2	<b>3</b>	4	5
	Unemployment	1	2	3	4	5
	Average Wage	1	2	<b>3</b>	4	5
	Number of Inhabitants (Age)	1	2	3	<b>4</b>	5
Social	Level of Education	1	<b>2</b>	3	4	5
	Computer Technology	1	2	3	<b>4</b>	5
Environmental	Protection of Nature	<b>1</b>	2	3	4	5
Legal	General Legislation of Czech Republic	1	2	<b>3</b>	4	5

Source: author's calculations

From the table, it can be stated that the most important factor for insurance brokers has been the legislation of Czech Republic which regulates the work of insurance brokers. The next important factors have been legislation of European Union, Gross Domestic Product, number of inhabitants and their age and computer technology. The factors, which were in the middle of scope, were inflation, unemployment, average wage and general legislation of Czech Republic. The factor, which does not have strong influence, has been level of education. The least important factor has been the environmental factor, which do not influence insurance brokers almost at all. With usage of Gretl, it has been tested the relationship among Gross Premiums Written and Average Gross Nominal Wage (Average Wage) in the Czech Republic. The secondary data for this analysis were in form of Time Series from years 1996 to 2015 and they were obtained from databases and annual reports of Czech National Bank and Czech Statistical Office.

#### 3.1. Specification of Econometric model

In this model, the Gross Premiums Written has been dependent variable (explained by model). The Average Gross Nominal Wage has been represented independent variable (explanatory variable). The development of Gross Premiums Written in the CR from year 1996 to 2015 can be seen at the figure 1.



Source: author's calculations

Figure 1 The Development of Gross Premiums Written in Czech Republic (Gretl)

Table 2 Variables in Econometric Model

Variables	Denomination	Description	Unit
Dependent	Y	Gross Premiums Written	in billions of CZK
Independent	X	Average Gross Nom. Wage	in CZK

Source: author's calculations

The expected sign of coefficient  $\beta$  has been positive. It has been assumed that with increasing wage, people will spend more money for life insurance and as well as they will need more and better insurance for their property. In the following table, there have been compared the functions forms in order to choose the most suitable form for our model.

Table 3 Comparison of Function Forms

	Linear	Quadratic	Inverse	Lin-log	Log-lin	Log-log
R2	0.974690	0.990113	0.966273	0.988262	0.919780	0.971558
AIC	134.2601	117.4604	140.0023	118.8921	-24.13323	-44.87149
SIC	136.2516	120.4476	141.9937	120.8836	-22.14177	-42.88002
HQC	134.6489	118.0435	140.3910	119.2809	-23.74448	-44.48273

Source: author's calculations

In the table, there were compared R2 (coefficient of determination) and three Information Criteria. In Log-lin and Log-log form, the information Criteria have been negative thanks to the logarithm of dependent variable. Nevertheless, it has been obvious that Quadratic form have had the highest R2 and lowest Information Criteria. It can be stated that the most suitable model is quadratic. The expected sign of  $\beta_1$  has been still positive, but it has been expected that parabolic model will growth into maximum of this function and then, it will decrease. Thus, the expected sign of  $\beta_2$  has been negative.



### 3.2. Quantification of Econometric Model Subchapter

For the estimation of coefficients values, there has been used the Ordinary Least Squares method. In the following table, the OLS estimation from Gretl can be found.

Table 4 OLS Estimation of Parameters

	Coefficient	P-value
const	-90.1445	<0.0001
AverageWage	0.0151958	<0.0001
sq_AverageWage	-2.18192*10 <sup>-7</sup>	<0.0001

Source: author's calculations

### 3.3. Verification of Econometric Model

Economic verification: the sign of  $\beta_1$  in the equation has been positive and the sign of  $\beta_2$  has been, negative, as it was expected.

Statistic verification: for the T-test, has been used the Golden Rule for use of P-value. Table 5 confirms that all p-values have been <0.0001. It means that all p-values in this model have been lower than 0.05, thus, there can be rejected  $H_0$ . The regression coefficients have been statistically significant.

Table 5 ANOVA table

Analysis of Variance	Sum of Squares	df	Mean Square	Fstat	Fquantile	P-value
Regression	30868.4	2	15434.2	851.229	0.990113	9.08* 10 <sup>-18</sup>
Residual	308.239	17	18.1317	-	-	-
Total	31176.7	19	1640.88	-	-	-

Source: author's calculations

For the F-test, there has been used the Golden Rule of P-value. The ANOVA table determines, that the p-value is equal to 9.08\*10<sup>-18</sup>. Thus, there can be rejected  $H_0$ . It has been verified that the model is statistically significant. Coefficient of determination and Information Criteria, these values have already been used in specification of econometric model in order to choose the best function form. The best option was the quadratic form with R<sup>2</sup>= 0.990113, it means that this model explained 99% and prove quality.

Econometric verification:

Classical Assumption 1 – There has been tested the correct specification of model by RESET test and LM test. The hypothesis were:  $H_0$ : correct specification,  $H_1$ : incorrect specification.

Table 6 Tests of Classical Assumption 1

Test	P-value
RESET test	0.304
LM test (squares)	0.447742
LM test (logs)	0.137214

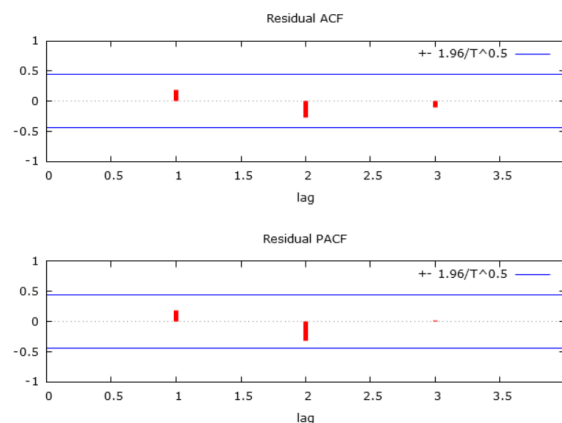
Source: author's calculations

All p-values have been higher than 0.05, thus,  $H_0$  about correct specification of our model was not rejected

Classical Assumption 2. This condition has been automatically fulfilled due to usage of OLS.

Classical Assumption 3. According to correlation matrix, this model does not have problem with correlation of errors and regressors.

Classical Assumption 4. There has been tested the serial correlation with usage of Ljung - Box test. There has been used p-value and the hypotheses were as follows:  $H_0$ : no serial correlation,  $H_1$ : serial correlation. P-value in Ljung – Box test has been equal to 0.374 which is higher than 0.05. Thus,  $H_0$  was not rejected. For the verification of autocorrelation, there has been used also Residual Correlogram. The following figure depicts that none of the values crossed the blue lines, non-rejection of  $H_0$  has been confirmed.



Source: author's calculations

Figure 2 The Residual Correlogram (Gretl)

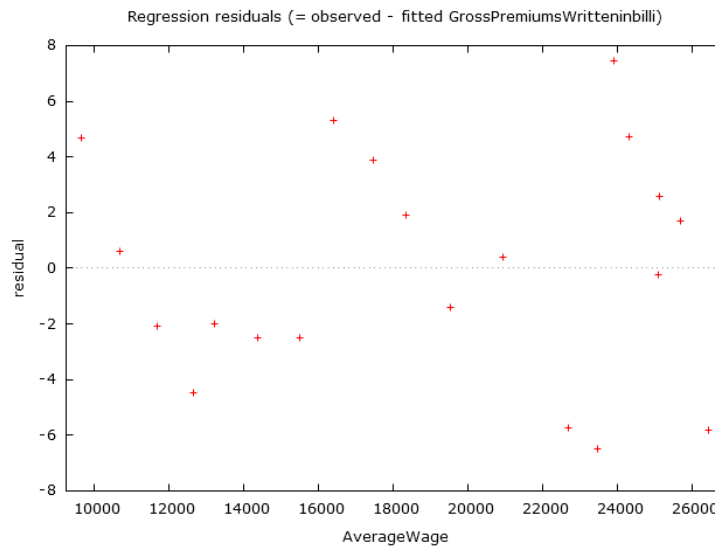
Classical Assumption 5. There has been tested the heteroscedasticity of this model. The hypothesis were:  $H_0$ : Homoscedasticity,  $H_1$ : Heteroscedasticity

Table 7 Tests of Heteroscedasticity

Tests	P-value
White's test	0.708267
Breusch – Pagan test	0.595956

Source: author's calculations

The p-values of both tests were higher than 0.05.  $H_0$  has not been rejected and there was fulfilled also the fifth classical assumption. This result can be confirmed by the following graph of residuals. The figure showed that there were no curvature in the graph of regression of residuals. This confirms the test and the not rejection of  $H_0$ .



Source: author's calculations

Figure 3 Graph of Residuals (Gretl)

Classical Assumption 6. In this model, there has been used only one explanatory variable, so this assumption cannot be broken. Thus, this assumption has been automatically fulfilled.

Classical Assumption 7. There has been tested the normality of residuals. The hypothesis were:  $H_0$ : Error term has normal distribution,  $H_1$ : Error term has not normal distribution. The p-value of this test was equal to 0.81866. It can be stated, that the last classical assumption was also fulfilled.

### 3.4. Summary of results

There were performed the economic, statistical and econometric verification of this model. It was ascertained that all tests were successfully fulfilled. None of the Classical Assumptions were broken, so it can be stated that our model is BUE. The OLS estimations of parameters have been unbiased, consistent, they have minimum variance and normal distribution. It can be proved that there has been the relation among Average Gross Nominal Wage and Gross Premiums Written which is used for measurement of the overall insurance market level in the Czech Republic.

## 4. DISCUSSION

The insurance brokers segment create important part of insurance market, as they serve as a certain type of mediators among insurance companies and clients. Eckardt states, that the most important factors, which influence the overall insurance market are the general economic conditions, legislation, situation on financial market. (Eckardt, 2007). Vaughans claim that the insurance penetration is one of the basic indicators of insurance industry (Vaughan, Vaughan, 2008). It was stated that it is connected with Gross Domestic Product and gross premiums written. According to insurance penetration, it was described the development of life and non-life insurance (Focht, Richter, Schiller, 2013). Nowadays, the non-life insurance is supposed to be more stable and profitable (Zevnik, 2004). The insurance penetration in the Czech Republic is relatively low so there is a big potential to gain new customers and insurance brokers should use this favourable situation (Mazzeo, 2002, Karaca-Mandic et al, 2016). Janata and Niehaus claim that the

Gross Domestic Product, inflation, wages and other economic conditions influence the insurance industry and also insurance brokers (Janata, 2008, Niehaus, 2008).

## 5. CONCLUSION

The purpose of this paper was to analyse and assess the main macro environment factors which affect the segment of insurance brokers in the Czech Republic. With usage of PESTEL analysis and synthesis of the individual factors, there were stated the most important factors. Through the regression analysis, it was ascertained, that there is the relationship among average gross nominal wage and gross premiums written. It can be supposed that with increasing wages, the gross premiums written and the overall insurance market will also grows. The current situation on the market of insurance brokers is quite stable. It is obvious, that there still can be some predicted and unpredicted changes. The proper observation of above mentioned factors can significantly influence the success on the market.

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# APPLICATION OF BLOCKCHAIN TECHNOLOGY IN MARITIME LOGISTICS

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Preliminary communication

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## Abstract

*Blockchain technology is mainly implemented in the financial services. However, there are more and more companies from different industries considering the possibility of using this technology. Potential benefits of blockchain are also recognized in logistics management. In sea shipping similar to other transport modes the application of blockchain-based solutions is still a new phenomenon. The paper presents a growing interest in blockchain technology in the area of transport and logistics and in maritime logistics in particular. The main aim of the paper is to classify current and planned applications of blockchain technology in sea shipping. To achieve this goal, two research methods were used: web content analysis and multi-case study. The results show that there are several container shipowners active in the blockchain projects, however, in terms of tonnage, they represent as much as 84% of the world's container fleet. Four main ways of developing blockchain technology in the field of maritime logistics management are distinguished: shipowner's projects, ICT providers' projects, supply chain operators' projects, dedicated consortia projects. The main fields within which blockchain technology is currently tested or already implemented are identified as: contracting and documentation flow (e.g. Bill of Lading), smart contracts, container/cargo track-and-trace, marine insurance, ship register system, bunker tracking system, crew certification system. The results of the paper have some managerial implications. They can help in making strategic decisions by sea shipping companies and maritime logistics operators to decide if it is worth to engage in such projects and choose the best option for themselves.*

**Keywords:** *blockchain, sea shipping, maritime logistics, maritime supply chain management*

## 1. INTRODUCTION

Blockchain technology offer a new way people and companies exchange value and information over the Internet. The first application of that technology was Bitcoin – a digital asset which works in a distributed data structure based on peer-to-peer network, without the use of any trusted third party (Queiroz, Telles, Bonilla, 2018). Blockchain technology allows the running of small programmes (i.e. smart contracts), which potentially enable trusted automation of contractual relations between trading parties (Hofmann, Strewé and Bosia, 2018). Blockchain technology is



sometimes regarded as a breakthrough achievement that can change the approach to making transactions. Its innovative solutions and expectations regarding the effects are sometimes compared to the scale of changes introduced by the Internet network (Hileman & Rauchs, 2017).

The financial sector remains the most promising application area for blockchain-based tools, however other areas and industries are gradually joining. The five most promising ones that have already invested funds in research and first applications include: financial services, healthcare, land registry, food provenance, automotive (Holden, 2018). It is also among the most important business and technological trends in the area of distribution logistics management (Łapko, Wagner, 2019). The obvious goal of implementing new technology should be to increase the efficiency of maritime logistics processes. Blockchain relates to increased security and speed of transactions and data exchange. Blockchain is a potentially better integration in supply chain management.

The paper collects and analyses the examples of pilots as well as solutions that have been already implemented and classify them in terms of the type of leader and the area of applications in sea shipping. The main aim of the paper is to identify the interest of blockchain-based solutions comparing to other modes of transport and classify areas of testing and implementing blockchain solutions in sea shipping. To achieve that goal three research questions were asked:

RQ1: How big is the interest in blockchain technology in maritime logistics? How it is motivated?

RQ2: Who are the leaders of testing and implementing blockchain-based solutions?

RQ3: What areas in sea shipping have the biggest potential of development blockchain technology?

## 2. RESEARCH APPROACH

The research method used in this paper falls within the scope of website content analysis and multi-case study. The main research was carried out with the use of two research methods: web content analysis and multi-case study. The first method was used in order to identify the quantity and context of publications dedicated to technology blockchain. The second method allowed for the analysis of several projects devoted to implementation of blockchain technology representative for maritime logistics.

The web content analysis method was used twice in two different scopes of analysis. Firstly, in a wide range of professional web portals monitoring events on the transport and logistics market, secondly in the portals of the largest container shipowners. In both scopes the interest in blockchain technology was measured by the number of times the key term *blockchain* appeared. The starting point for this analysis is the assumption that the interest in blockchain technology among practitioners and managers could be assessed by the number of publications in industry press and professional web portals devoted to the actual market issues. Managers making decisions about implementing a new solution and investing in technological innovation often make their opinion about expected possible results based on information obtained from professional press, industry web portals and conferences, instead of scientific publications published in prestigious journals. Hence the decision to focus in this paper precisely on information provided for practitioners and managers posted on industry websites.

The selection of container shipping companies for the second scope of the web content analysis is motivated by the fact that they are the best integrated in maritime logistic chains (Wiśnicki, 2018). Standard container units in a great way facilitate this integration. The 100 largest container operators listed in the Alphaliner TOP 100 ranking were included in the tested sample. During the research based on the analysis of websites content, it was verified which shipowners publicly disclosed their involvement in blockchain projects, including blockchain-based tests as well as commercial tools.

The multi-case study method was chosen to analyse projects and tests that use blockchain technology in various areas of maritime logistics. The aim is to identify areas of possible blockchain-based applications not only limited to shipping logistics but covering a wider perspective of shipping industry.

### **3. BLOCKCHAIN-BASED SOLUTIONS IN MARITIME LOGISTICS**

#### **3.1. Popularity of blockchain issues in sea shipping industry**

Until March 2019 the number of scientific papers indexed in Scopus database concerning blockchain technology in maritime transport in the business and managerial aspect is 5 and 2 of them were classified as conference papers. The first paper in this field was indexed in 2017. The research papers analyse the attitude toward implementation and possible benefits of blockchain technology expected by managers rather than hard evidence whether or not this technology is effective.

The common research method is an interview conducted among managers. In general, they are interested in blockchain technology and are aware of potential benefits offered by it however there is a high amount of uncertainty, awareness of limitations and lack of understanding how the system could be adopted by the whole industry. The doubts expressed concern mainly required organizational conditions needed for the technology to reach industry-wide adoption which is necessary to harness its full potential (Loklindt et al, 2018; Czachorowski, 2019). Similar doubts of executives reveal research devoted to the strategic aspects of blockchain implementation in supply chains not focusing on the specificity of a particular transport branch but rather on the problems in implementing a disruptive innovation (Dobrovnik, 2018; Wang et al., 2019).

The thematic area covering the professional use of blockchain technology in supply chains indexed in Scopus contained much more research papers (81 of which 38 were conference papers) than papers devoted only to sea shipping. These numbers indicate the initial phase of scientific research, in particular with regard to studying blockchain applications in maritime parts of supply chains.

Internationally recognisable maritime logistics web portals and e-magazines were chosen for assessing the popularity of blockchain technology. Additionally, web-based professional portals representative for land and air transport modes were selected. In twelve portals which were the subject of the research (table 1): the first six are devoted strictly to maritime issues, next four (no 7-10) represent air, road and railway transport, two concentrates on supply chain issues (no 11-12) discussed often from the strategic point of view. Among portals there are web versions of traditional paper magazines (e.g. Lloyd's List, Port Technology International, Polska Gazeta Transportowa). Three most popular Polish e-portals were included in the list (no 6, 10 and 12).

The research shows the number of times the term blockchain has appeared in the title or body of the web article. A time period limit was not settled down. The research was conducted on April 8, 2019 and results are presented in table 1.

Table 1 The number of occurrences of the term *blockchain* in selected e-portals

No	Branch information portal	The occurrence of the term <i>blockchain</i>
1.	www.worldmaritimenews.com	416
2.	www.marineinsight.com	205
3.	www.lloyd's list.maritimeintelligence.informa.com	307
4.	www.maritimeprofessional.com	1040
5.	www.porttechnology.org	7350
6.	www.gospodarkamorska.pl	86
7.	www.aircargoworld.com	303
8.	www.trucknews.com	70
9.	www.globalrailnews.com	1
10.	www.rynek-kolejowy.pl	2
11.	www.supplychain247.com	19700
12.	www.pgt.pl	2

Source: Own elaboration based on selected e-portals

Topics regarding the application of blockchain technology were often raised and discussed in the maritime media. Some sea shipping portals pay more attention to technology matters than others. Porttechnology.com gained the biggest number of posts because it is focused on technology matters. The number of mentions on general maritime information portals varied between 205 and 1040. Topics related to the use of blockchain were much more popular for sea shipping than for rail or land transport, but very similar to air transport. The biggest disproportion between sea shipping portals in relation to rail transport is observed, where such a reference appeared only once. Similar dependencies are visible in Polish online media, where the marine-focused portal had 86, and the railway portal had only 2 posts. Among the surveyed e-portals most about the use of blockchain technology was written in the media devoted to supply chain management. Many of those articles were about the effects of new technology on flow of documents and information in a strategic sense, not on the physical flow of goods. In this type of approach, the carrier may represent any branch of transport.

In scientific research papers the topic of blockchain-based solutions in maritime logistics is not frequent at all, whereas on the maritime industry information e-portals is quite popular.

Articles published on sea shipping e-portals and in magazines for practitioners in 2018 mainly announced the creation of new consortia, gaining new partners and plans for carrying out tests and experiments. Many new projects were initiated in 2018, so their results are not yet available. If any information about the preliminary results of tests are made public, it is done in a rather modest form. Analysed articles also discussed doubts and concerns expressed by market experts or managers, mainly regarding market architecture and systemic solutions.

### 3. 2. Shipowners involvement in blockchain technology projects

In the second part of the research, it was checked to what extent container shipowners are interested in participating in tests and commercial solutions based on blockchain technology. Containership operators listed in the Alphaliner TOP 100 ranking involved in blockchain technology project initiatives with information about the fleet capacity and market share is included in table 2.

Table 2 Containership operators engaged in blockchain technology projects

Position in global ranking	Containership operator	Fleet capacity [TEU]	Share in the global container fleet [%]
1	APM-Maersk	4090930	17,9
2	Mediterranean Shipping Company	3358432	14,7
3	COSCO Group	2804882	12,3
4	CMA CGM Group	2661046	11,6
5	Hapag-Lloyd	1671234	7,3
6	ONE (Ocean Network Express)	1533239	6,7
7	Evergreen Line	1236686	5,4
8	Yang Ming Marine Transport Corporation	682318	3,0
9	Hyunday M.M.	436768	1,9
10	PIL (Pacific International Lines)	417793	1,8
11	Zim	315480	1,4
36	Seaboard Marine	36322	0,16
41	Transworld Group	19884	0,09

Source: Own elaboration based on: [alphaliner.axsmarine.com/PublicTop100/](http://alphaliner.axsmarine.com/PublicTop100/) and public information obtained from ship owners' websites and sea shipping information portals listed in table 1

The analysis based on shipowners' websites shows that mainly the market leaders are interested in participation in the development and use of blockchain-based tools. It is significant that the first eleven shipowners are engaged in such projects. Beside them, two more shipowners are interested in this type of solutions - Seaboard Marine (rank 36) and Transworld Group (rank 41). The former joined the platform created by APM-Maersk and IBM, while the latter develops its own solution together with other companies of its own capital group. Shipowners active in the blockchain projects, in terms of tonnage, represent as much as 84% of the world's container fleet. This commitment takes various forms.

The pioneer in the field of blockchain-based digital platform designing for global trade is APM-Maersk, which in 2017 together with IBM began work on creating such a solution called Tradelens. Other entities joined the system in the next stages, such as PIL (ranked 10 in table 1), ZIM (ranked 11) and Seaboard Marine (ranked 36). The entities forming the platform belong to various functional areas of the supply chain. These are: beneficial cargo owners, 3PL, inland transport operators, customs/government authorities, ports and terminals, ocean carriers, financial service providers, software developers (Tradelens, 2019). To get as many new members as possible Tradelens convinced them that their goals will also be met by the given platform. In April 2019, more than 100 organizations participated in the Tradelens platform.

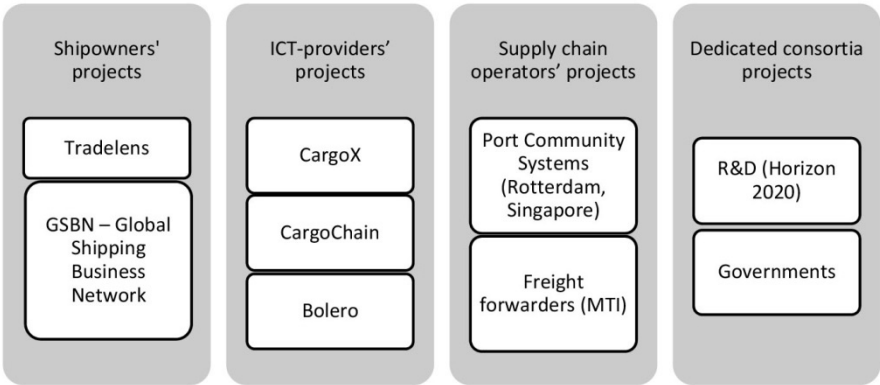
During the construction and testing phase, Tradelens was associated only with one container operator with the largest market potential. This probably raised some concerns among other ship operators regarding the neutrality of this solution. Therefore, the remaining giants in the container market have not decided to join Tradelens but formed the alternative consortium instead. The Global Shipping Business Network (GSBN) was established in November 2018 and is only in the design phase. The consortium includes: CMA CGM, COSCO Shipping Lines, Evergreen Marine, OOCL, Yang Ming, DP World (port operator), Hutchison Ports (port operator), PSA International Pte Ltd, Shanghai International Port, CargoSmart (solution provider). The biggest difference between Tradelens and GSBN approach is the beginning phase of the platform development process. Tradelens was created by one shipowner, and subsequent entities are joining the solution. In contrast, GSBN is not intended to be associated with a single shipowner, but

with a larger number of initiators. The consortium insists that collaboration is the main way of introducing innovation and digital transformation to the supply chain (Baker, 2018).

In addition to the crucial role of container operators in blockchain-based maritime logistics projects, the involvement of ICT companies, ports and different entities participating in the supply chain should be noticed. On the maritime market there are several examples of such different size and scope projects. An example can be Silsal pilot project which in June 2018 tested the capabilities of the blockchain technology to exchange, identify and acknowledge cargo documents and certificates between Abu Dhabi Ports and the Port of Antwerp. The plans are to offer a tool to the trade community as a complementary tool to Maqta Port Community System which is presently in use in Abu Dhabi Ports (MSC, 2018). Another example of successful test can be a pilot made by ocean carrier APL, Kuehne&Nagel, AB InBev and Accenture. Its aim was to eliminate the need for printed shipping documents and create efficiencies and cost savings for the freight and logistics industry (Todd, 2018).

Authors of this paper analysed partners and the scope of current projects, which allowed to prepare their initial classification. Blockchain technology in the field of maritime logistics management can be initiated in various ways, it can distinguished (figure 1):

- shipowner’s projects,
- ICT providers’ projects,
- supply chain operators’ projects,
- dedicated consortia projects.



Source: author’s own.

Figure 1 Initiators of main Blockchain technology projects for maritime market. Classification with examples

Shipowners initiated projects aimed to create universal tool for global container shipping market. This category examples are Tradelens - the tool Maersk is behind, and much wider GSBN consortium. Ibrahim Gokcen, chief digital officer at Maersk, said: “The projects we are doing and with IBM aim at exploring a disruptive technology such as blockchain to solve real customer problems and create new innovative business models for the entire industry” (Groenfeldt, 2017). Consortia always include a technology vendor. In the tool development process more and more participants performing various functions in the supply chain are invited to join a platform.

Projects created by ICT providers aimed to develop “neutral” platform not decisively controlled by any of the entities that use their services. This may be the biggest advantage and most desirable trait that will determine platforms being widely adopted. On the other hand, if the platforms created by ICT companies (often start-ups) are not joined by the market leaders, then it’s

very hard to achieve the market share that guarantee commercial success. The examples of such blockchain-based platforms are: CargoChain, CargoX, Bolero International.

Supply chain operators' projects partners are initiated by main actors serving the door-to-door maritime logistics services, e.g. port and intermodal operators, freight forwarders. Container operators are included in projects to the extent that results from their role in the supply chain. The example of such a platform is Calista – a tool created, among others, by the port in Singapore.

Last category of dedicated consortia projects is not unambiguous to define. Shipowners are not always the initiators, but they play very important role in the proof of concept stage. Project tests and experiments are conducted by consortia incorporating research institutions, governmental institutions, digital technology developers, ports and other market entities. Their main aim is to test a solution in particular conditions not to develop an industry-wide tool.

Regardless of the way blockchain-based technologies are developed and implemented in the maritime logistics, the concerns expressed by the managers are similar. The most important are (Baker, 2019a, 2019b):

- lack of standards of interoperability between rival platforms which would enable them to integrate,
- lack of critical mass, which would be measured not only with number of shipping operators, but also other entities which cooperate with them in supply chains,
- lack of jurisdiction. It is not known how a dispute would be settled.

One of the biggest obstacles that can cause too little interest of entities in using blockchain technology tools is the lack of interoperability and common standards between applications. However, there are some signals on the market that indicate taking steps to counteract this practice. A new association – Digital Container Shipping Association (DCSA) was established in April 2019 by four funding members: A.P. Moller-Maersk, Hapag-Lloyd, Mediterranean Shipping Company and Ocean Network Express. Its aim is to promote common information technology standards across the container shipping industry (Hapag-Lloyd, 2019). The initiators recognize the need for a neutral body acting in favour of all participants in the maritime logistics. They claim to work for digitalisation, standardisation and interoperability in the sea shipping industry. The association was created for all IT solutions, not only for blockchain.

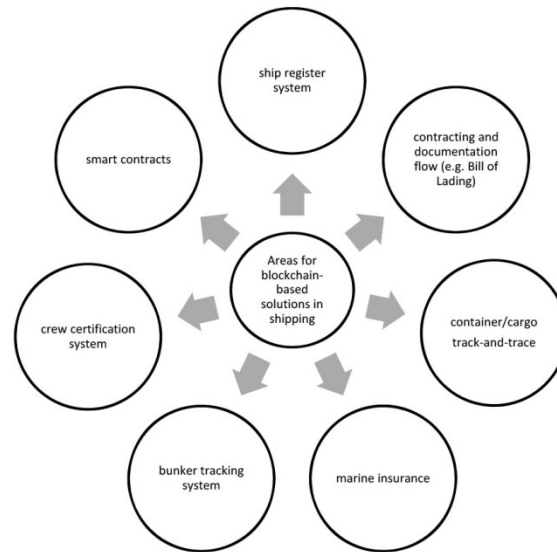
There are also other examples of initiatives which aim to encourage the use and adoption of blockchain-based solutions and develop industry standards. Another example of association from transport market is BITA - Blockchain In Transport Alliance. Also World Economic Forum (WEF) noticed that blockchain technology could bring transparency to the fragmented supply chain industry. WEF announced a new initiative *Redesigning Trust with Blockchain in the Supply Chain* to ensure blockchain technology is deployed in an "interoperable, responsible and inclusive way". Among the participants there are for example: APM-Maersk, Port of Rotterdam or Port of Los Angeles (World Economic Forum, 2019).

It turns out that although all entities see the need for integration and standardization, not only several similar platforms are created, but also many associations and initiatives that are to harmonize the rules of cooperation on the market.

### **3.3. Areas of blockchain technology applications in maritime industry**

Support from blockchain technology for maritime industry does not only cover the creation of ICT solutions allowing efficient supply chain management, facilitating paperless documents flow in particular. Different areas of maritime business are also included in the process of implementing up-to-day information technologies. Figure 2 presents the main fields within which blockchain technology is currently tested or already implemented.





Source: author's own.

Figure 2 Maritime industry areas in which blockchain technology is developed

One of the applications is the blockchain platform for the insurance sector. The first such platform is called Insurwave and was developed in collaboration of APM-Maersk, Ernst&Young (EY) and their partners (blockchain company Guardtime, Microsoft Azure, broker Willis Towers Watson and insurers MS Amlin and XL Catlin). The aim of the platform is to integrate information from clients, brokers, insurers and third parties with insurance contracts in a standardised, secure and transparent format (Faulkner, 2017). As in the case of applications in maritime logistics, here also the involvement of the largest container shipowner allows testing the solutions immediately on a large scale. The platform was launched in 2018 and is supposed to support more than half a million automated ledger transactions and help manage risk for over 1000 commercial vessels in the first year of its activity (EY, 2018).

Another pilot solution for sea shipping industry is the blockchain-based seafarer certification system. The demonstrator project is funded by the Lloyd's Register Foundation through a consortium called Maritime Blockchain Labs. The aim of the tested tool is to help tackle a number of seafarer documentation issues. It is mainly in interest of crew agencies, shipowners, training and education entities, regulatory bodies and seafarers themselves (Clayton, 2018).

The subject that has been also tested within blockchain technology pilots is bunker tracking. In this type of projects, the Maritime Blockchain Labs works in cooperation with shipowners such as NYK and CMA CGM and Port of Rotterdam. Biofuel was used. The aim of conducted demonstrations was to test the ability of end-to-end traceability of marine bunkering transactions from storage to the vessel's fuel tank, thereby providing assurance to shipowners and charterers (MBL, 2018).

The next area in which the blockchain tests are carried out is a ship register. The first classification society that decided to make such an attempt has very long tradition and is well known on the maritime market. Lloyd's Register of Shipping announced the launch of prototype blockchain-enabled class register in September 2018. The idea is that the blockchain-based ship register in a form of a platform provides trusted and up-to-date information on ships, which enables more efficient execution of many transactions on the market, such as financing, insurance and payments (Lloyd's Register, 2018).



Another example of blockchain-based digital platform is shipowner.io which is created for financing assets in the sea shipping industry. This tool is a little bit different than other solutions because it runs on tokens and use Ethereum smart-contracts governed eco-system. It claims to be an offer for everyone who would like to invest in maritime assets (Shipowner.io, 2018). Very similar idea has been developed by Value on Chain start-up, which created a platform built on blockchain that will enable investing in sea shipping assets. For shipowners it means lower costs than a traditional IPO and flexibility to offer part of one ship to the investment community, rather than enter the entire company to the stock exchange (Lowry, 2018).

## 4. CONCLUSIONS

Based on the analysis of the state and perspectives of blockchain technology implementation in maritime logistics management conclusions can be formulated that allow for the answer to previously formulated research questions.

Shipping company management toward the widespread use of digitization and future technologies is one of the most important challenges faced by the maritime industry. The implementation of blockchain technology in maritime logistics is still in the early stages. Currently, we can talk about single implementations and some preparations to establish a market standard. There is a great interest in this technology of containership shipowners, much bigger in comparison with operators and carriers representing other branches of transport. This disproportion of operators' approaches can result in the diversity in the whole supply chains.

Motivations of leaders and members of project consortia testing blockchain technology seem different and are not always possible to determine. One of the significant motivations seems to be the desire to improve the competitive position on the market and the company's image. The implementation of blockchain technology is undoubtedly a common trend and is positively perceived by customers of carriers and logistic operators.

Containership operators are the leaders or key partners of most consortia implementing technologies in maritime logistics. It is determined by their role in the supply chain. Among the leaders of project teams are also ICT providers and operators of intermodal supply chains. Implemented solutions, although tested on a smaller scale, ultimately have a global reach and an unlimited number of users.

The analysed projects are currently at the stage of technology development, testing in small scale real-market conditions or expanding the group of project participants. Blockchain development potential depends on meeting specific technical requirements (level of process digitization) and on openness for transparency connected with IT systems (common databases and share of smart contracts). The fastest implementations in the entire supply chain are possible in case of ownership links between entities operating on a given market, for example in the form of alliances and sub-market holdings.

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# UNDERSTANDING THE ROLE OF CONSUMER BEHAVIOR IN FORECASTING THE IMPACT OF INDUSTRY 4.0 AND THE WAVE OF DIGITAL DISRUPTION DRIVING INNOVATION IN RETAILING

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Review

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## **Abstract**

*Industry 4.0 technologies and business practices are expected to radically transform the competitive landscape and society. Retail industries which make up approximately one third of global GDP will be particularly affected by these changes. This paper, guided by the literature concerning the wave of digital disruption brought about by new technology, changes in consumer demand and new forms of business competition are discussed. The drivers of innovation in marketing and the critical role of understanding the consumer value chain. A model of consumer value and the impact of digital disruption and how retail impact can be better understood is discussed. Implications for industry and macroeconomic policy makers and calls for further research based on this research are discussed.*

**Keywords:** *Industry 4.0, Digital Disruption, Macroeconomics, Retailing, Trends in Consumer Behavior.*

## **1. INTRODUCTION**

Global retailing is expected to be a 28 trillion USD industry by 2020 and currently represents 31% of global GDP. (Berkshire Hathaway 2016) Currently, across a global landscape the retail sector is experiencing the effects of digital disruption stemming from new technologies, new business forms and new patterns of consumer behavior. This is perhaps the fourth major retail disruption in the last 150 years and arguably will be the most significant, Lewis & Dart (2014). Some analysts

have stated that retail is expected to change more in the next five years than in the last fifty (Davies 2017).

Some have stated that this new wave of digital disruption is the third wave of digital disruption to occur the effects will be much more significant than what industry has experienced to-date. Moeller et al. (2018) argue that, "Although many practices, products, and services have evolved...few enterprises have had their core businesses disrupted. But this is about to change." The coming wave of digital disruption brought about by this third wave of digital disruption (Teixeira 2019) represented by Industry 4.0 is expected to have a much more fundamental impact because of the degree of interconnectivity it will bring among new technologies, see Exhibit One: The third wave of disruption. Kagermann (2015) states that, "Digitization—the continuing convergence of the real and the virtual worlds will be the main driver of innovation and change in all sectors of our economy."

Moeller et al. (2018) have stated:

"During the next few years, the technologies associated with this wave — including artificial intelligence, cloud computing, online interface design, the Internet of Things, Industry 4.0, cyberwarfare, robotics, and data analytics — will advance and amplify one another's impact. Products and processes will routinely learn from their surroundings; markets will converge to an unprecedented extent. As electric power did, the new wave of technological advance is expected to alter a wide array of business practices, in nearly every sector, and in both business-to-business and business-to-consumer firms."

Projected impacts will ripple across not only the retail industry but across consumers, suppliers and impact the workforce of nations. In the USA some estimates have up to 25% of the workforce is employed in retail or supporting firms. Retail automation is expected to put 30% to 50% of these positions at risk. (World Economic Forum (2017). Today many of those jobs are in jeopardy as firms deploy new technology such as robots, AI, machine learning, digital, VR and new business models using these technologies. Globally these changes will affect both developed nations as well as the developing economies in fundamental ways. Along with disrupted jobs new opportunities are expected to be created that require skill sets that many workers are not currently prepared. Currently there are differing opinions among experts regarding the net, net employment impact of these new technologies.

The primary purpose of this research is to review the literature on digital disruption in retailing and its impact on this key global industry and to summarize implications for assessing and forecasting likely impacts on this key industry. Of particular interest is understanding which forces are key to driving digital disruption and innovation in retailing and develop managerial insights.

This research reviews the academic and practitioner literature on current and future projected technological, consumer, and business trends in retail and discusses implications for retail strategy and execution, and potential governmental policy implications. In addition to examining the literature we use exploratory interviews with retail leaders, leading suppliers, retail trade associations and technology service providers about their thoughts on the speed and impact of disruption on retail evolution/revolution. Analysis will use existing models of technology and business model diffusion, together a discussion of how the current disrupted environment is different and/or similar to past technology disruptions. The expected impacts of retail disruption will also be examined using Teixeira (2019) model of industry disruption and potential impact on industry innovation. This research focuses mostly in the food/CPG and apparel industries given past research and access opportunities with industry leaders.

## 1.1. Innovation and Drivers of Change in Retailing

Lewis & Dart (2014) in their book about the *New Rules of Retail* describe four major waves of change in retailing. The first wave of change they labeled "Producer Power," it developed in the mid-19<sup>th</sup> century and lasted until the 1920's. The time was characterized by the move from rural to more urban locations stemming from the industry revolution and new technologies such as the telegraph and railroads which spurred the development of the first large scale retail chains such as Sears. It was also characterized by fragmented markets and a limited production capacity relative to demand. The second wave, "Demand Creation" was from about the 1920s until the 1980s. This second wave was focused on marketing and demand creation and led to the development of branding, infrastructure for mass markets, and a consumer economy. The third wave, "Consumer power" which followed was driven by globalization and a proliferation of brands, products, media and new competitors. The fourth Wave, "Technology Explosion" began in the early 2000's and is accelerating today. It is characterized by oversupply, increased discounting, and increased diversity of the population. Additionally, it is characterized by technology that is embedded in every business process leading to Industry 4.0 where our world is increasingly digitally interconnected and markets are being disrupted. Rifkin (2015) notes that in 2007 there 10 million sensors connected to the web, by 2013 that number had grown to 3.5 billion and it is estimated by 2030 the number of web enabled sensors will exceed 100 trillion.

In looking at common threads across these four waves of change, three key factors or drivers of change emerge. First is the influence of new technology for communication, transportation & infrastructure and business processes. Deloitte (2017) in its Global Powers of Retailing report also found these three factors as the key drivers of change in retailing. For example, new communication technology driving change over this period includes the telegraph, telephone, radio, television, mobile phones and the internet. Transportation technology includes railroads, the internal combustion engines which lead to autos, trucks and aircraft using integrated transportation networks. Infrastructure includes warehouses, electrical grid, and climate control, mass and "mass" custom production. These new technologies have been characterized by increasing productivity of production and distribution and increased interconnections between technologies leading to lower costs and increased consumer convenience.

A second driver of retail innovation is new forms of competition that evolved to offer consumers better value. These new forms of retail enterprises include grocery stores/super markets, department stores, specialty stores, discount stores, convenience stores, big box stores and a growing myriad of online options with a growing role of Omni-channel distribution. Rigby (2011) describes Omni-channel in the December issue of the *Harvard Business Review*, entitled, "The Future of Shopping," which described Omni-channel distribution as a system where, "retailers will be able to interact with customers through countless channels, such as websites, physical stores, kiosks, direct mail, catalogs, call centers, social media, mobile devices, gaming consoles, televisions, networked appliances, home services, and more." Omni-channel relies on an integration on new technologies deployed in a manner to give consumer's 24/7 access to products, information and communication. Online shopping which is currently about 10% of retail has been estimated to be about 40% by 2027, World Economic Forum (2017). Thus business capability is tightly linked to technological capabilities and the development of business models that have a new customer centric focus as opposed to a product centric focus.

A third driver, is changing consumer preferences. Consumer demand conditioned by new technology, new competitive forms along with societal changes is evolving at a rapid pace. Here changing demographics and consumer values are key drivers of changing consumer preferences. Arguably, changes in consumer demand are the most important of these drivers of retail evolution. Teixeira (2019) notes that it's not new technology or startups that causes market disruption, but that the real cause of disruption is changes in consumer demand. Technological inventions or new business models must be accepted by the market to become successful innovations. Thus key to

successful innovation is understanding the nature of demand and the preferences of consumers. The World Economic Forum (2017) conducted research on the future of retailing and concluded, “Consumers will be central to shaping the future direction of the industry. As their expectations around cost, choice, convenience, control and experience continue to climb, they will challenge the industry to keep up. At the same time, new and disruptive technologies will fundamentally impact the end-to-end industry value chain, benefitting both the industry and consumers.”

## 1.2. Innovation in Marketing: Understanding Consumer Demand

Court et al. (2009) introduced a new conceptual model to study consumer decision making. They labeled this new model, “The consumer decision journey (CDJ).” Their conceptualization was in response to a growing recognition that previous models (the funnel model) increasingly failed to capture what they described as, “all the touch points and key buying factors resulting from the explosion of product choices and digital channels, coupled with the emergence of an increasingly discerning, well-informed consumer.” See Figure One: The Consumer Decision Journey. In the decade since it was introduced this model has been widely accepted both in academia and in industry. Hamilton & Price (2019); Lemon, K. N., & P. C. Verhoef (2016). Finneman, Bo & Dave Elzinga (2017) report that Mckinsey has developed a database of over 125,000 consumer decision journey for over 350 products in over 30 different industries. They found the CDC model reflects a more complex reality of shifting choices, decision criteria, digital touchpoints important to consumers and key triggers. In particular, its critical for brands to be in a consumers initial consideration set, provide digital touchpoints and information at the right moments and provide trust/quality experience with a product or service.

Innovation in marketing plays an increasingly important role in value creation in the economy. Value has migrated from physical assets to intangible assets among many corporate enterprises today. Marketing assets such as brand are growing as a percentage of company market value, reflecting the role that marketing has in a world that is becoming more customer centric as opposed to product centric. Indeed, when looking at the personal wealth of the world’s most successful business people such as Bill Gates and Jeff Bezos it appears the source of their success lies not in technical innovation but innovation in marketing. Ungerman et al. (2018) studied the impact of marketing innovation and report that, “Business considers the greatest impact of innovative marketing in the context of Industry 4.0 to be the increase in enterprise competitiveness.” Key to marketing innovation is an understanding of how customers perceived value and how products and services are adopted into their lives. These perceptions of value and lifestyle represent a moving target for marketers and we need better processes to understand the needs of the market.

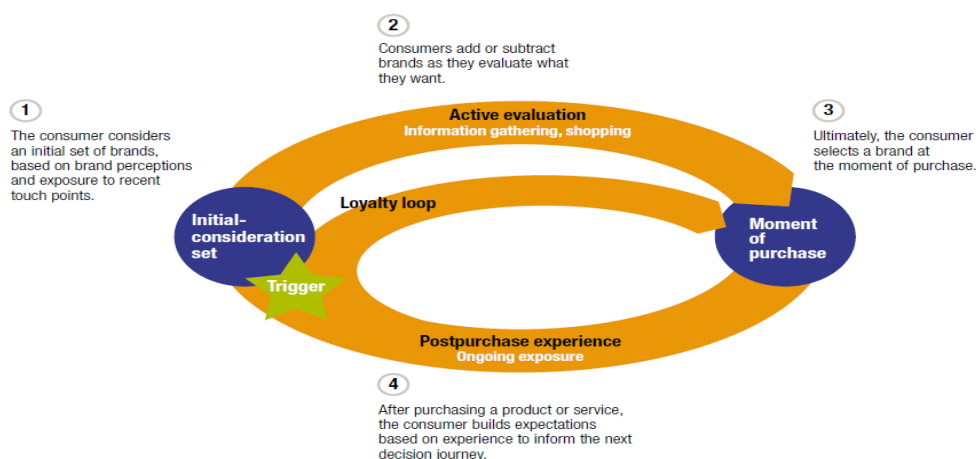


Figure 1 The consumer decision journey (McKinsey, 2009)



The stages of the CDJ (Awareness, evaluation, choosing, purchasing and consuming/experiencing) provide a rich framework which to study consumer processes throughout their journey experience. Increasingly firms develop detailed maps of the CDJ for different target customers and look to match marketing efforts (touch points) to guide and reinforce consumer associations of a positive experience with a brand. Insights from a better understanding of CDJ processes can be used to enhance the ability of a retailer to strengthen its business model to create, deliver and capture customer value.

Recently, Teixeira (2019) has created a process that builds on the framework of the CDJ that maps the “consumer value chain (CVC).” Where the value chain model developed by Michael Porter (1985) primarily targets a set of value creating activities of firms. Teixeira’s model is focused on understanding the value chain of consumers. For retailers, this approach offers the promise of a methodology to better understand how their customer receive value and the specific activities linked to value creation, delivery and capture. In Teixeira’s model he identifies (maps) all of the activities a consumer engages in during the entire consumption process journey and examines if these activities can be decoupled from each other. He argues that this decoupling of a consumer’s value chain has provided firms utilizing new technology and business models to disrupt incumbent firms and entire industries. An overview of this can be seen in Figure Two: A typical consumer’s value chain (CVC). Digital disruption has enabled new entrants in a market to unbundle, or decouple and recouple activities that contribute to consumer value in novel ways. Retailer value propositions that bundled activities across the CDJ process now face competitors whose business models have decoupled two or more of those customer value chain activities and re-coupled those activities into their own business models. An example of this using Figure Two is online retailers which target consumers who visit traditional bricks and mortar retailers (Best Buy) and use those stores as a showroom examining products, collecting information & sales advice and then finally purchasing products online from the disruptor retailer such as Amazon. Showrooming has become a major competitive threat for many traditional retailers given online business models that decouple the consumer value chain and consumer willingness to adapt their shopping behavior using digital tools. Another example, might be Uber where it has decoupled the consumer’s value chain (CVC) focusing on making it easy for consumers to purchase and then utilize its ridesharing service. Amazon provides another example, research shows that in the U.S.A. today more than 50% of consumer product searches begin on Amazon. Retailers would be well served to study consumer value chains for opportunities to create, deliver and capture customer value thus remaining relevant for consumers.

Teixeira (2019) below, describes this decoupling process as step three in the current wave a digital disruption which began with unbundling company value propositions leading to a second stage of disintermediation where new entrants eliminated intermediaries by going direct to consumers. Today, this third stage of **decoupling** of CVC activities allows new entrants the ability to create and capture customer value utilizing tools of disruption. It is critical for retailers to understand where opportunities to decouple and recouple consumer value exist.

1. “Unbundling, the first wave of digital disruption, began in about 1995. Newspapers, once a source for articles, classifieds, and restaurant reviews, saw readers slowly drift away to Google, Craigslist, and Yelp. “Start-ups at the time decided to unbundle the newspaper,” Teixeira said. “The product was unbundled, and the start-ups were offering their customers one part of the product.”
2. The second wave, disintermediation, began in the early 2000s and affected products that were a combination of digital and physical. Instead of going to a travel agent to book hotels, flights, and tour activities, consumers took the process into their own hands. “You, the consumer of travel services, started going directly to the providers,” he said.
3. Ten years later, it seems the third wave of disruption arrived. **Decoupling** is big, Teixeira explained, because it affects each step of the consumer’s purchasing process: evaluating, choosing, purchasing, and consuming.”



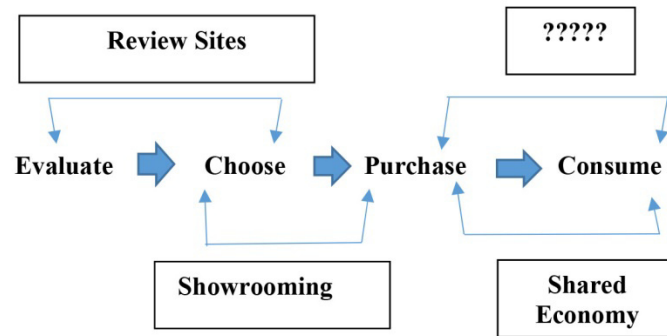


Figure 2 A Typical Consumers Value Chain (CVC): Digital Disruption enables firms to Decouple Customer Value Delivery, Teixeira (2019)

Retail examples of decoupling include, a woman walking the aisles of a Costco store in Portland, Oregon holding her smartphone to scan the products on the shelf while she narrates prices and opportunities to buy to thousands of online shoppers in China. In essence, she is providing a shopping service that has decoupled Costco's value proposition and recoupled it in a manner to provide value for consumers in China. How much value, this one woman has a million dollar per month business! Another example, is a retail company, also founded in Portland, called Hoopla Global which utilizes JD.com's shopping platform. Hoopla Global represents American manufacturers of CPG products wanting to sell in China, it maintains an online retail store on JD.com and actively promotes these products in China using a digital influencer strategy and ships using a "virtual free trade zone" model which in China features no tariffs, no special labeling, and direct delivery to Chinese customers from this virtual free trade zone. Additionally, Hoopla Global has created a backend digital supply chain using block chain technology that allows its vendors to easily prepare and ship their products to this virtual free trade zone in China. Thus it provides both demand-side and supply-side value to its customers. It has effectively decoupled CVC activities and recoupled them in a manner that provides greater customer value and greater operational efficiency.

Teixeira identified three types of decoupling:

- **Value-creating activity:** hearing a song you like on the radio.
- **Value-eroding activity:** hearing a song you don't like.
- **Value-capturing activity:** A promoted song or ad that the listener pays the station

The digital disruption stemming from Industry 4.0 largely comes from consumers adopting new technologies and new shopping behaviors from novel business models offered by both new market entrants and existing retailers with the foresight to reconfigure their business models in a customer centric manner. Yohn (2018) reports that a recent study among chief marketing officers (CMO's) found that only 14% believe that their companies are acting in a customer centric manner and even fewer of their customers (11%) would describe them as customer centric. She argues that company culture is critical to achieving a customer centric business and describes a process for building a customer centric culture. To understand and unlock the customer value chain a customer centric as opposed to a product centric or a sales centric orientation is critically important. Amazon is often used as an example of a customer centric business whose organization structure and culture is designed around providing customer value. Managing with a customer centric perspective views customers as a valuable firm asset and seeks to manage to maximize lifetime customer value.

Technology has become an important tool in driving CVC decoupling and allowing firms to recouple value producing activities in novel ways. We will now overview a number of technologies

that are having an impact or potential impact on the customer's value chain. Recently, many of the large technology companies such as Microsoft, IBM, Intel have created experience centers or divisions focused on providing examples of technology for retailers. Figure Three overviews some of the instore shopping technology from IBM. We visited Microsoft's Retail Experience Center which exhibits an array of retailer technologies using the CDJ process to organize. Recently, Microsoft has been forming alliances with retailers such as Kroger to speed the deployment of technology into the retailers and their customer's value chain.

**Teixeira (2019) identified five steps that disruptors take to decouple the consumer journey:**

1. **Identify the consumption chain.** "Look at their customers to see what they're doing to get these products."
2. **Look at the weak link.** "Where are customers satisfied with the activities?"
3. **Identify the type of the adjacent activities.** "Are these value-creating, capturing, or eroding activities?"
4. **Increase the force of specialization.** "Reducing the monetary the effort or the time cost for the customer."
5. **Anticipate the competitor response.**



Figure 3 Retail Changes coming from the IoT

<https://www.ibm.com/blogs/internet-of-things/iot-transforming-retail-industry/>

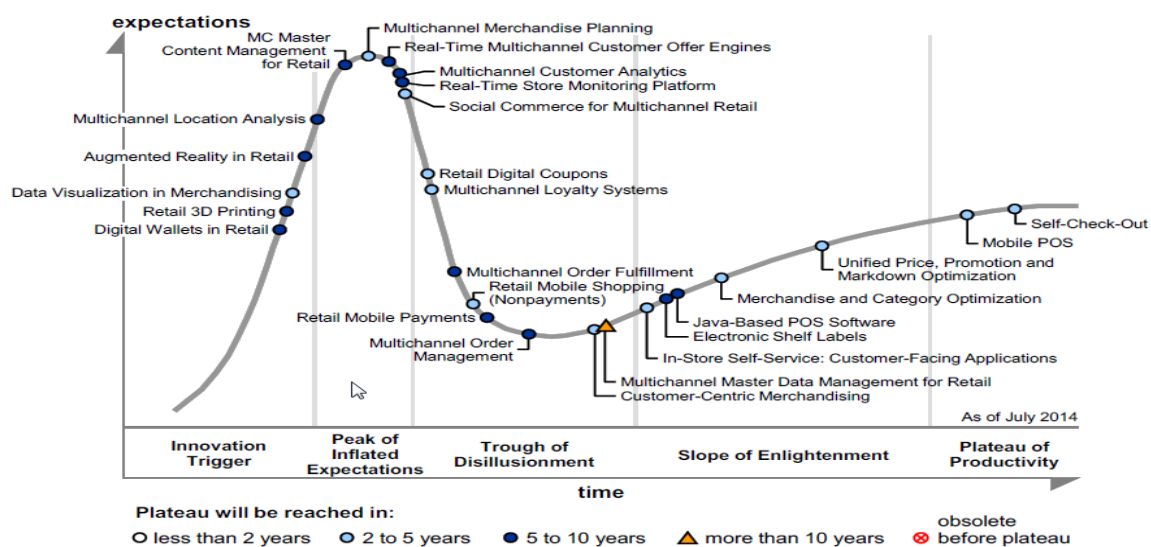
There are literally thousands of novel new technologies that are vying to create value for retailers and their customers. These technology stretch across both the retailers and the customers value chains. Examples include robotics deployed both in the supply chain and consumer facing in stores and online, data analytic models that use big data and machine learning, smart sensors and displays throughout the supply chain, AI deployed as management and customer interfacing tool. Gillpatrick and Blunck (2019) describe many of these technologies in a recent review. Key to whether these technologies can contribute value to consumer by ultimately lowering their costs or by improving the shopping experience. The Gartner group has developed a model that overviews new technologies and their stage of market acceptance, Figure Four overviews technology adoption in retail.

In the retail world new entrants have entered the market and have built share by lowering customer costs and providing customer convenience. New competitors like Bonobos and Warby Parker have offer customers value by providing convenience of in-home shopping, reducing shopper search costs and acquisition costs in the process. Disruptors often enter at the extremes of customer value perceptions by providing superior experiences or lower costs driving some traditional retailers to become, "stuck-in-the middle" as Porter (1985) would describe where their value propositions are diminished by passionate shoppers searching for lower costs or better

service experience or both. These “stuck-in-the-middle” retailers are disappearing from the competitive landscape at an increasing rate. An example is the struggles of the once might department stores such as Sears, Macy’s and JC Penny. In all cases the customer’s role in driving retail innovation through changing shopping behavior is critical. Following consumer trends has never been so important than it is today’s rapidly changing world of consumer preferences

Keeping up with consumer, technology and business model trends is a daunting task for retailers and all firms today.

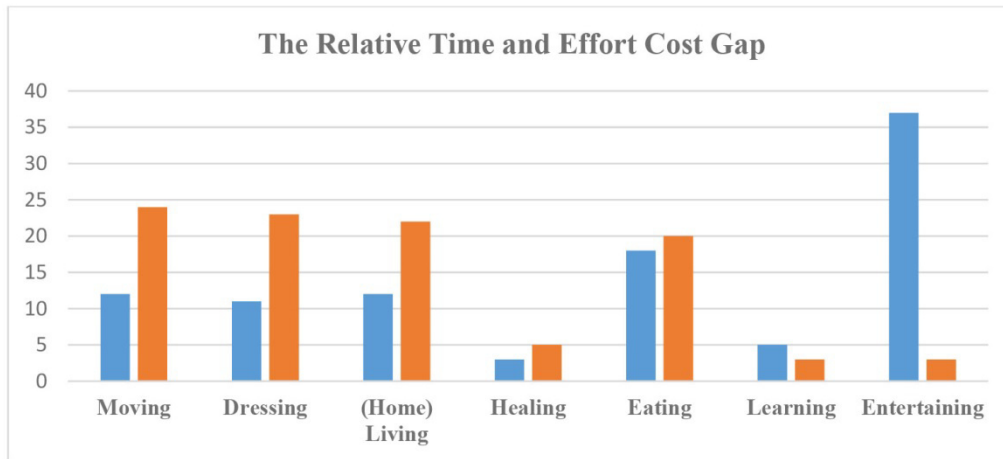
Teixeira (2019) proposes a novel way to monitor changes in the consumer value chain. While there are hundreds of industry market classifications detailed in census data, he observes only seven of these account for the vast majority of consumer consumption. Additionally, because of the size and prominence of these leading industry categories they impact most other industries as well. He believes that following current trends in these seven can provide an accurate barometer of how to prepare for future trends in consumer preferences and shopping behavior



source: Gartner (July 2014)

Figure 4 Gartner Group Hyper Cycle for new Retail Technologies (2014)  
<https://www.gartner.com/en/documents/3883976>

So what are these key consumer industries? He identifies them in terms of categories that reflect the choices we make on how we live or lives. These include choices about where we live (housing and home goods), mobility (transportation), eating (food, drinks and preparation), what to wear (fashion, cosmetics and personal care), learning (education), entertainment (media, sports, electronics) and healthcare. In total, these seven categories make up 97% of consumption in America. He then uses U.S. Bureau of Labor Statistics data which has been collecting consumer data on how we consumer our time to determine an estimate of the amount of effort consumers expend each week in the seven consumption categories. Figure Five: below, describes how consumers spend their discretionary time after sleeping and working. The biggest allocation of times goes into entertainment about 39% of discretionary time allocation. However, effort spent to acquire this time for entertainment is relatively small as seen in the Figure below. Where there is a relatively high amount of effort required relative to the time spent in a category may be an indicator of potential for disruption according to Teixeira. For example, there is a large amount of effort required for moving about (transportation) he argues that business models that reduce consumer efforts (consumer costs) here may offer high potential for disruption.



Note: % Effort spent sums to 100 percent and % total time sums to 100 percent.

Source: Adapted from U.S. Bureau of Labor Statistics, darker bars represent total time, lighter represent effort.

Figure 5 Relative amount of time and effort spent in major consumer consumption categories, Teixeira (2019) p. 266.

## 2. DISCUSSION

In reviewing both the academic literature and the trade literature in retailing there is a general consensus that retailing is entering an era of profound change where existing business models and consumer habits are being disrupted by new technology and new retailers using innovative competitive formats. The World Economic Forum (2017) estimates that over the next decade that approximately over 90% of the growth in retail will come from online sales. That same research estimates that adaption of Industry 4.0 technologies could unlock nearly three trillion dollars in value to retailers over that decade due to increased consumer benefits and business cost savings. Of that total amount it estimates that the consumer impact will comprise about 68% of the total benefits with the other 32% going to industry that amounts to over a two trillion dollar benefit to consumers over the next decade.

As shown in Figure Four above there are a plethora of new technologies that are expected to impact retailers and consumers. Among those technologies Accenture and the World Economic Forum (2017) estimate that four will have the greatest impact on retailers:

1. **“Internet of Things** will drive a high business value as it secures proprietary consumer data to create personalized experiences in connected stores, and delivers cost efficiencies in inventory-management. It will revolutionize the in-store experience for both consumers and organizations, providing unparalleled insights based on the data collected. Shaping the Future of Retail for Consumer Industries
2. **Autonomous vehicles/drones** will bring cost savings from automated long-haul trucking of goods and last-mile delivery. These developments will also increase utilization, make deliveries faster and improve road safety.
3. **Artificial Intelligence/machine learning** can increase revenues through a deeper understanding of consumer behavior, while saving costs associated with supply chain optimization. In-store pricing and assortments will be optimized and, when combined with predictive recommendations, will clearly benefit consumers and the organization itself.
4. **Robotics** will drive cost savings through operational efficiencies, primarily in warehousing and distribution. Software bots can also work faster to complete simple and repetitive

tasks. Robotics will enable higher utilization, greater flexibility, improved accuracy and faster transaction times.”

Along with new technology the retail and entrepreneurial world is bubbling with new transformative business models that deploy new process and new technology to offer consumers greater value in their lives as well as to reduce retail costs. The merging of online and offline retail models with integration of technology from Industry 4.0 using Omni-channel and another innovative business models will have profound impacts on which retailers thrive and which vanish from the competitive landscape. Increasing firms are looking to decouple the consumer value chain through the use of shopping apps and retail models that disrupt the business models of retail incumbents and provide value enhancements for shoppers. *Bloomberg* (2019) reports that the company - which shook up the Swiss watch world years ago by creating an affordable, fashion-forward brand - “is setting up a drive-through store where it will sell products from its namesake label packed in burger boxes and brown paper bags.” The store will be next to the company’s headquarters in Biel, Switzerland, but “while Swatch plans just one drive-through site in the out-of-the-way city for now, the move shows how the brand is trying to inject novelty into the buying process. After years of insisting that customers prefer the boutique experience before splurging, Swiss watchmakers have been revamping retail networks as consumers increasingly search for and buy products online.” Other examples of the evolution of retail business were given the World Economic Forum report (2017) to impact three areas of retail most significantly. The customer experience, technology like AI/AR will enable a greater degree of personalization and there will be an increased focus instore on customer experience and as a showroom. A second trend will be a new era of consumer facing employees and technologies including the use of AI and greatly increased use of robots. And there is a good deal of discussion today about repurposing retail stores and malls as places of social interaction- lifestyle centers. Indeed recent research reports that in America Gen Z consumers, sometimes referred to as “Digital Natives” prefer in person retail encounters and shopping malls more than their parents. *Field Agent* (2019)

But while the trends of new technologies and business models in retailing are pervasive and indeed game-changing. This review of the literature on Industry 4.0 and retail innovation has identified that trends in buyer behavior are the most critical factor driving the evolution of retailing today and into the future. Innovations in marketing are the key value driver for business and for consumers. *Ungerma et al.* (2018) define “marketing innovation as doing something fundamentally new with ideas, products, services, or technologies based on market-based ideas that stem from a variety of customer desires.” The challenge for retailers, technology providers and investors as well as government policy makers is how to predict the evolving preferences and desires of consumers.

### 3. CONCLUSIONS

The stakes are big. In the USA fully a quarter of the workforce is tied to retailing and globally millions more. Retail real estate represents trillions of dollars in investment, just in America. In a recent interview with real estate investors regarding retail properties the number one topic of interest was better information about how consumer will adapt their shopping habits in the future. Market volatility of retail stocks has increased with winners and losers. Industry 4.0 initiatives have the likely potential to transform our lives and economy. Business and government has not well prepared for the impacts of Industry 4.0 according to surveys of executives and policy makers.

Traditional marketing models used to understand consumer behavior have proven to be less useful and have led to the development of new models such as the Consumer Decision Journal and Consumer Value Chain models. Consumer shopping and purchase behavior is rapidly evolving with increased preferences for shared consumption over ownership, use of mobile technology, consumer co-creation of value, online shopping and an increased preference for experiences over



material things among the many changes in preferences. Teixeira (2019) has presented an innovative marketing approach to estimating consumer preference trends and which type of innovation may be forecasted as most valuable for consumers. Moeller et al. (2018) state, "The constraint for your company will not be the technology. It will be your ability to bring the three drivers to bear: to lower costs, engage customers, and make better use of assets. If you can employ digital technology to do that effectively, you will be among the winners of the age of digital disruption." This research also calls for the development of new ways to understand consumer preferences and the evolution of those preferences. Initiatives such as MITs "Open Voice Network," which seeks to better understand technology, policy and consumer preferences for the use of voice technology (i.e. Alexa; Google Home) and engages both universities and industry should be encouraged. Organizations and policy makers need to address as well the impact of retail and society brought about from Industry 4.0. The World Economic Forum (2017) research found that over 68% of the nearly three trillion dollars of value created by Industry 4.0 in retail industries flows to consumers which demonstrates the need to better anticipate and understand how consumer receive value. Both companies and public policy makers need to "follow the consumer" to extract maximum value from new technologies, business forms and the evolution of buyer needs.

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# NET PRESENT VALUE CALCULATION: REAL LIFE APPROACH

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Review

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JEL classification: G11, E31

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## **Abstract**

*Net Present Value (and IRR) is calculation considered as the most widely accepted measures of investment's financial evaluation. Both methods apply long-term cashflows for 5 to 15 years ahead. During that period inflation certainly has an effect on both cash inflow and outflow figures. Literature often does not take into account the inflation or suggest a simplified inflation-corrected calculation method. Author proves that it is not appropriate in case of long-term physical investments. A new method: life-long financial simulation is suggested by the author for financial evaluation of physical investments.*

**Keywords:** NPV, investment, inflation

## **1. INTRODUCTION**

This paper deals with the inflation treatment in case of medium- and long-term real (physical) investments. Pure financial investments are not topic of this paper, just a physical investment in a company environment where those real investments are contributing for increased sales of the company's product(s) and by it to the increased net income of the company.

Inflation definitely will be experienced during the 5 15 years' life-cycle of the investment in real business environment. Question is how to treat the inflation in the NPV (and IRR) calculation in case of a new physical investment in real company framework. This paper reflects the Author's opinion that recent inflation treating methods are not appropriate for physical investments and in the CONCLUSION point Author suggest a new calculation method for this purpose.

## **2. NPV CALCULATION**

General formulae of NPV calculation can be found below in Formula 1 and Formula 2. While Formula 1 shows the generally accepted method of NPV calculation, Formula 2 is characteristic for the physical investments, where cash inflow and cash outflow figures has to be calculated separately and the net cashflow figure is the outcome of a subtraction in a given time period.

NPV Calculation formulae:

$$\text{Formula 1: } NPV = \sum_{t=0}^n \frac{NCF_t}{(1+D/100)^t}, \text{ where:}$$

- t =** time factor, that is basically a year
- n =** maximum number of time periods, expressed in years (see above). It also includes the year 0, when the investment starts and being finished
- NCF<sub>t</sub> =** net cash-flow, directly associated with the investment in year t. It is calculated as shown in Formula 2.
- D =** discount factor, expressed in percentage, applied throughout in the calculation, that means that it should not be changed for a later year figures' calculation.

$NCF_t$  = net cash-flow, directly associated with the investment in year t. It is calculated, as shown in Formula 2.

$$\text{Formula 2: } NCF_t = CIF_t - COF_t, \text{ where:}$$

$CIF_t$  = cash inflow, directly associated with the investment in year t, expressed in local currency

$COF_t$  = cash outflow, directly associated with the investment in year expressed in local currency

It is interesting to see that inflation, per se, is not included in the formulae above. It is taken into account indirectly in the discount factor (increasing it by the possible future inflation rate) or in the yearly cash flow figures (increasing both the cash inflow and cash outflow figures).

Treatment of inflation differs according to literature sources. In point 3 the possible treatment methods by the recent literature resources can be found.

### 3. REVIEW OF LITERATURE

There are three main streams in the relevant literature regarding the treatment of inflation. Below some examples are shown from each approach.

Approach 1: literature does not deal with the inflation at all or inflation is mentioned, but not any further discussion can be found in the text. This approach is characteristic in case of "early" publications of 1970-1990 years as well as publications where stronger theoretical support can be found in connection with capital investments. From the Reference list, the following publications can be classified into this group: Gisser (1981), Joy (1983), Nagy (2011), Neven(1985) and Reekie (1975).

Approach 2: literature does deal with the problem of inflation, however not any specific method is described how to treat the inflation properly in capital investments. From the Reference list, the following publications can be classified into this group: Black-Hirt (1987), Damodaran(2002), Francis (1980) and Pálínkó-Szabó (2006).

Approach 3: literature in this group does deal with inflation and also gives a suggestion to its treatment. From the Reference list, the following publications can be classified into this group: Andor (2017), Boudreaux (2017) and Brealey-Myers-Allen (2017). It seems that some authors recognised the importance of inflation treatment in recent years and incorporate it into their publication. The suggested method, however, is the same in each case, that is worthwhile to review on the basis of the worldwide recognised textbook of Brealey-Myers-Allen (B.M.A), (2017), see the example below from the pages of 137-138 of this book.

A calculation example suggested by B.M.A:

- Cash flow in year 0= -100 (Million USD)
- (Net) Cash flow in year 1: +35 (Million USD)
- (Net) Cash flow in year 2: +50 (Million USD)
- (Net) Cash flow in year 3: +30 (Million USD)
- Inflation rate projected at 10 % a year
- Nominal discount rate: 15 %

Calculation of discounted cashflow:

- Cash flow in year 0: no change
- Cash flow in year 1:  $35 \times (1 + 10/100) = 38.5$
- Cash flow in year 2:  $50 \times 1.1 \times 1.1 = 60.5$
- Cash flow in year 3:  $30 \times 1.1 \times 1.1 \times 1.1 = 39.9$

Supposing that (net) cash flows above were expressed in constant prices, but the discount rate reflects the effect of inflation, the cash flows and the discount factor should also be expressed in real terms, as below:

- NPV=  
 $-100 + 38.5 / (1 + 15/100) + 60.5 / (1.15 \times 1.15) + 39.9 / (1.15 \times 1.15 \times 1.15)$   
NPV= +5.5 (Million USD)

Since NPV is  $\geq 0$ , therefore, this investment (100 Million USD) is suggested

Next, the suggested method of the inflation treatment by B.M.A. is shown below:

- Real discount rate=  $(1 + \text{nominal discount rate}) / (1 + \text{inflation rate}) - 1$
- Real discount rate=  $(1 + 15/100) / (1 + 10/100) - 1 = 4.5 \%$
- NPV =  $-100 + 35 / (1.045) + 50 / (1.045 \times 1.045) + 30 / (1.045 \times 1.045 \times 1.045)$
- NPV= +5.5 (Million USD), that is the same figure as previously calculated

Based on this calculation method the inflation rate is mathematically eliminated from both the nominator and denominator of the formula. How B.M.A. (and some other authors) solve this problem, the future inflation rate does not play any role in the calculation of several years' cashflow and financial effectivity calculation of a capital investment. This elegant solution could definitely "calm down" the investors, because along with several other problems, they do not have to deal with problem of inflation, at least. A cautious planner, however, can raise a question in connection with this "elegant" solution, it really can solve the issue of long-term inflation in case of real, physical investments? Answer of Author of this paper is definitely: NOT, and rest of this text deals with its problem and the possible solution.

#### 4. PROBLEMS IN NPV CALCULATION

The main problems of the NPV calculation is threefold, as below:

A. General planning problems that are not directly related to inflation:

A.1. Estimation of yearly cashflows. This is a general problem of medium- and long-term planning, especially in case of cash inflow figures. Those considerations are not topic of this paper.

A.2. Determination of the discount factor. Although it correlates with inflation, however its estimation requires special calculations that is not topic of this paper.

B. Inflation-related calculation problems:

B.1. Uncertainty in later years' inflation rates. It can also be considered as a general problem of the long-term planning.

B.2. Acceptance of the unified inflation rate throughout the whole calculation. With a relatively long time horizon of the calculation, risk of calculation operators are also increasing, so establishing a unified rate of inflation is really questionable.

C. "System error" in case of real (physical) investments. How it was shown above in Formula 2., net cashflow is to be calculated as difference between cash inflow and outflow figures in a given year. It means that net cashflow, per se, does not exist in case of physical investments, it is just a product of a subtraction of two somewhat independent operators.

In summarizing the points above, it can be stated that inflation rates is worthwhile to take into account separately for cash outflow and cash inflow figures in the calculation, how it is shown in points 5 and 6 below.

## 5. INFLATION IN CASH OUTFLOW

Cash outflow figures are influenced by inflation differently, since:

- Purchased materials' cost change can be the closest figure to the general inflation rate because they are comprised several (hundreds) of material purchases, tending towards the (calculated or projected) material inflation rate
- Labour cost change is also influenced by the inflation, but just a long-run. In certain periods they can be over- or below the general inflation rate. For example recent years in Hungary the general inflation rate was between 1 and 3 per cent yearly, while labour cost increased by close to 10 per cent.
- Some other cost items change, like service cost rates, are influenced by the general status of the economy, rather than the general inflation rates. See above the example of Hungary: labour-centered services grow higher rate while public services' prices remained on low level.

Suggestion: treat the different cost items differently and NOT BY A UNIFIED INFLATION RATE!

## 6. INFLATION IN CASH INFLOW

Cash inflow basically can be calculated as the product of quantity sold and the average unit price. In connection with it there are two basic problems:

- Problem 1. Uncertainty about the future market situation is related to "our product", too.
- Problem 2. Sales quantity of our product is also influenced by our sales price, generally in negative direction.

In Figure 1. a general picture can be seen in connection with life-cycle phases of a theoretical market situation of a product (own editing, based on several literature sources).

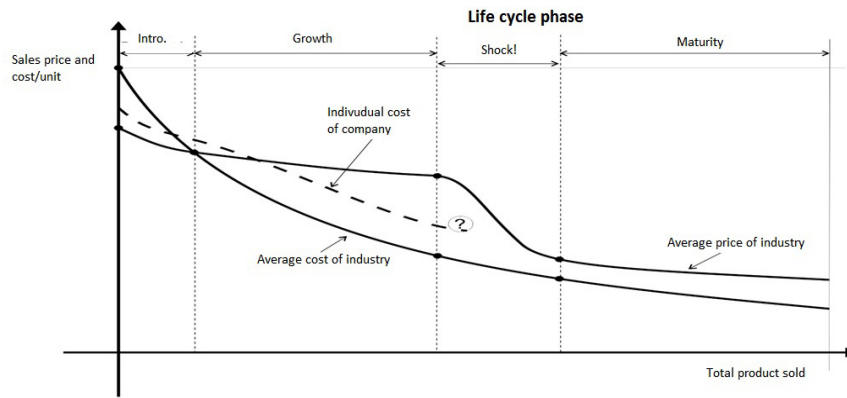


Figure 1 Theoretical life-cycle picture of a product market.

As it can be seen above, sales prices are constantly decreasing (in real term) throughout the course of the full life-cycle of the product in question. This phenomenon is explored by business science long time ago and verified as a general tendency most of the cases of real sales histories.

Deriving from the facts above that sales prices are to be set according to the general market situation of the life-cycle phase and the sales intention of the individual company, so inflation plays just an indirect role in the price setting.

## 7. CONCLUSION

In case of physical investments the main conclusions can be formulated in connection with treatment of inflation, as below:

- In real (physical) investments cash inflows and cash outflows should be calculated differently in order to get an appropriate net cashflow.
- In case of cash outflow(s), different types of cost items should be inflated by their projected behaviour-influenced individual inflation rates.
- In case of cash inflows, determination of the price(s) should be the subject of the intended market moves of the given company at the market's actual life-cycle phase and not just the expected future general inflation rate of the market.
- To suppose a situation that future inflation rates for the cost items and the sales price is EXACTLY THE SAME IS CONSIDERED AS A RARE EXCEPTION RATHER THAN A RULE!

Just to show the financial consequences of the points above, see a modified NPV calculation of the example by Brealey-Myers-Allen shown at point 3.

Yearly cashflows: unchanged

Cost inflation: 10 per cent (unchanged)

Discount rate: 15 per cent (unchanged)

Profit content of 1 unit (for example 1 Million USD) sales value: 20 per cent (estimation of the Author)

Inflation of product sales price: 9 per cent – only 1 per cent less than cost inflation!

New NPV: -3.7 Million USD, against the originally calculated +5.5 Million USD, that is a BIG CONTRADICTION! Based on the original calculation the investment is suggested financially, but only 1 per cent difference between cost and price inflation rates (that is quite realistic) means a

negative financial judgement for the investment. It is not exaggeration to establish that the traditional inflation treatment method is not solid enough for such an important decision making.

We can make a conclusion based on the facts above that the simple inflation treating method in NPV calculation suggested by Brealey-Myers-Allen CANNOT BE HOLD in case of real physical investments!

New NPV (and IRR) calculation suggestions from the Author:

- In case of a real physical investments a full life-cycle financial calculation method is suggested.
- In case of cash inflow calculation the physical sales of the product(s) and sales prices can be taken into account according to the given phase of the market life-cycle and the intended market move of the given company.
- In case of cash outflow calculation, different cost items' individual inflation rates can be determined by their expected future behaviour.
- Yearly net cashflows of the full life-cycle should be calculated and to be discounted by an appropriate discount rate that reflects not just the future inflation, but business risks, too.
- Several business scenarios should be calculated and evaluated by the same methodology in order to obtain a more realistic financial picture of the investment variant.

Note: Author developed a financial model (LIBFIMS) to assist the calculations described above.

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# THE CIRCULATION OF INFORMATION IN YACHT PORTS

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Review

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### **Abstract**

*The main aim of the article is to present the results of the analysis concerning the selected aspects of the circulation of information in yacht ports. It is very important issue for people who plan sailing cruises and also for yacht port operators. A particular attention has been paid to the problems in this field. In addition, it presents an overview of possible approaches to solving these difficulties. Completion of the goal determines research procedure and structure of the article. The tabular and graphical methods have been used in the presentation of the research results.*

**Keywords:** nautical tourism, information, management

## **1. INTRODUCTION**

Improving the functioning of the information circulation system in yacht ports in Poland has become necessary due to the increasingly developing nautical tourism in this region and the world. In the current situation, the processes are implemented in an inefficient manner, and the quality of their execution often leaves many doubts.

The information system can be defined as a multiple-level structure, thanks to which a person using it, with the help of appropriate models and actions, has the ability to convert incoming information into information that has the expected value and quality. As a result of receiving such information, the system user is able to make a specific decision that brings him or her closer to the desired goal or problem. For this reason, the information system can be analyzed as part of the decision chain (Kisielnicki, Sroka, 2005, p. 16).

One of the most important elements is the system user himself who downloads and enters information, which in turn is obtained from the environment. The information is being changed, therefore the tools and methods for the transformation of these data and their interrelationships are its inseparable part. Thanks to this construction and the work of individual components, the final result is created in the form of desired data (Kisielnicki, Chibowski, Sobolewska, 2006, p. 67).

According to another definition, an information system is a structure with multilevel characteristics, composed of many intentionally connected subsystems, the task of which is to



cooperate with each other and control decision processes. In addition, the system should be able to collect and store data so that they can be converted and interpreted, and finally made available (Stabryła, Wawak, 2014, p. 188).

The information and IT system (as a related concept and an element of the entire information system structure) is defined by many authors (Gospodarek, 2018; Kroenke, 2008, p. 203; Woźniak, 2012, p. 34; Kuraś, 2009, p. 264; Gupta, 2011, p. 18). However, one of the specific elements of the IT system is computer hardware and software, which was omitted in some previous considerations regarding systems.

Another issue closely related to the subject of the article is the yacht port. It is a set of port basins, hydrotechnical port buildings, land structures and technical devices, providing safe berthing and service of yachts and other recreational or tourist vessels and floating devices (Mazurkiewicz, 2003, p. 32). At the same time, yacht ports are facilities where services are provided to vessels, means of land transport, and people (Łapko, Hącia, 2017, p. 157).

The main aim of the article is to present the results of the analysis concerning the selected aspects of the circulation of information in yacht ports. Research was carried out in several yacht ports in Poland to identify the most important problems that inhibit both port development and nautical tourism in a given region.

## 2. TECHNOLOGICAL EQUIPMENT IN YACHT PORTS

Technology is a collection of such elements as various types of machines, computer software and information. A set of such components is used by given entities or organizations in order to offer services or other products more quickly and easily, thus increasing their quality (Mrowca, 2012, pp. 33-34). The use of machines and software opens up new possibilities for the entire system in which these elements will be applied.

Current technological capabilities are also used in yachting in the world. The reason why yacht ports decide to use computer programs is the excess of information that marina employees need to manage. In this case, the software allows faster and more effective handling of information, which translates into time and sometimes financial benefits.

One of the example software used in yacht ports in Poland is the eMKa Marine program (Information..., 2018). It is an electronic client service system that makes it easier to use the services that yacht ports offer their clients. The possibilities allowed by such software include the use of, among others: equipment to collect impurities from yachts, water supply points and electric energy, lighting devices, showers and toilets, accommodation.

The eMKa Marine program is a pre-paid system, which means that to use it, a boater must first set up an account at a given marina and make a payment of any sum of money, which is later charged when using selected devices. Fees are charged using a special card that every user registered in the system receives.

Each card has a built-in computer chip, which, after approaching a special device charges the appropriate fee and allows the use of the service. Devices reading card signals are placed in the vicinity of all elements that work with the eMKa Marine system.

On the other hand, in Italy's yacht ports, which are much more developed compared to the ports in Poland, all the described services are realized by means of a website or mobile application ([www.marinadiportofino.com](http://www.marinadiportofino.com), [accessed 6.01.2019]). Their quality is adapted to the increasingly demanding tourists. They are often assessed using scientific methods according to a specially prepared methodology (Benevolo, Spinelli, 2018, pp. 229–241).

Ich jakość jest dostosowywana do coraz bardziej wymagających turystów. Często są oceniane z wykorzystaniem metod naukowych według specjalnie przygotowanej metodologii.

Another software that greatly facilitates the circulation of information in the context of location and reading information about specific yachts is KWCamping Pro (Information..., 2018). With the help of this software, it is possible to view the location of all yachts located throughout the port in real time. It was created for the individual needs of the yacht port in Świnoujście.

The operation of this system is based on the scheme of the whole port area, entered into the program database, where berths, wharfs and yachts as well as information about them are marked. The software operates in particular thanks to the database and special cameras located throughout the port, with built-in sensors that analyze the location of yachts on a regular basis and send them to the program. Examples of information displayed by the program are: date of arrival and planned date of departure, name and surname of the yacht owner, name of the yacht, wharf and the number of the position on which the yacht is berthing, the sum paid, yacht settlement status. The program enables fast and transparent reading of information, which allows for more efficient handling of available knowledge.

One of the important elements of the technological equipment used in yacht ports is also the CCTV system. Unfortunately, many marinas in Poland, due to the implementation costs, do not have their own specialized programs to monitor the entire area like the said KWCamping Pro. In this situation, standard cameras are used that allow a real-time preview (Information..., 2018). The role of CCTV monitoring systems is to provide comprehensive information (in the form of a picture) about the current status of the protected area to the appropriate facility protection system (Buczaj, 2011, p. 216). It also serves the protective function for the facility. The CCTV system is controlled by port employees using a program or a special controller.

The software becomes necessary when due to the size of the port or its location, the port administration office does not have a view of the approach path to the port. In this situation, a real CCTV view of the area is the only option to obtain information about the vessel arrival in the marina area and enforce payment for berthing.

The entire camera operation process is carried out in the port administration office, by authorized persons. Thanks to the cameras set up in the most critical places in the yacht port, employees have access to many useful information for operating the port. This system can accelerate the circulation of information, because they are available in real time and cameras show a view of all the most important places. Such a system allows for faster decision-making process.

### **3. THE ROLE OF PORT ADMINISTRATION OFFICE IN THE CIRCULATION OF INFORMATION IN THE YACHT PORT**

Each enterprise has its own decision center, a place where the most important decisions concerning a given organization are made. A similar situation takes place also in nautical tourism. Each yacht port has its own administrative building called port administration office, in which most or even all organizational matters are carried out. Therefore, it is crucial for the information circulation system in yacht ports. Port administration office also has an informative function. Clients have the opportunity to obtain information about the area where the port is located, nearby tourist attractions and how to get to them.

All activities related to registering sailors are carried out in the port administration office. To obtain permission to use port services, each yacht owner must provide the following information: name of the yacht, master and owner, home port and destination port, number of crew, time of arrival and departure, length of yacht.

Most yacht ports in Poland, due to the relatively small number of yachts operated, do not use special programs to store such data (SCB, 2019). This is due to the fact that each software is an additional cost, and considering the low interest in the still developing nautical tourism, the implementation costs of such systems may be too high for port owners. Port administration

employees use special paper logs, to which they enter all the information provided by the sailors manually.

Unfortunately, despite the established requirements for entering the port, in Poland very often there is a situation in which yacht ports have no information about who and when intends to enter the marina. In such cases, the logs are filled only after the yacht has entered the port and moored at the berthing. In other cases, sailors contact ports in advance in time using mobile phones or VHF radio communication. Contact numbers to port administration offices are widely available on the websites of given ports, leaflets and locations (*Locja ...*, 2015, p. 12).

Registration in the yacht ports of Croatia, which belong to the chain of Adriatic marinas looks slightly different, as they are ports of very high standard (an interesting study showing the differences between the yacht ports in Poland and Croatia is Luković, Łapko, Vuković, 2019). Sailors register using a website or application on the phone, where they choose the marina among the 22 covered by this system. The process of booking a place in each of these ports requires sailors to submit information about the yacht and the length of the planned stay. In addition, there is a possibility to make a special card (ACI) guaranteeing discounts and many additional port services ([www.aci-marinas.com](http://www.aci-marinas.com) [accessed 3.01.2019]).

In port administration office, sailors also have the option of making eMka Marine card or making additional cash payments.

#### **4. BASIC PROBLEMS RELATED TO THE CIRCULATION OF INFORMATION IN YACHT PORTS**

The information circulation system is the interconnection of several cooperating elements. Their amount depends on the size of the organization in which such a system operates. This situation also occurs in the case of yacht ports, where more complex consists of a much larger number of elements than the smaller ones. The functioning of individual components plays a very important role in the whole structure, because the fault in even one of them can lead to a serious problem. Therefore, continuous surveillance and problem identification is a key aspect in the context of the proper functioning of yacht ports.

In many Polish ports in the South Baltic waters, nautical tourism is poorly developed (SCB, 2019). When analyzing this state of affairs can lead to the conclusion that the ports located in Poland do not provide services that would potentially encourage new sailors or the quality of their performance is insufficient.

Precise identification of problems that occur in ports is necessary to establish and implement appropriate concepts that will help streamline the circulation of information in yacht ports.

Many marinas in Poland do not have their own websites (Hącia, Łapko, 2018, pp. 72-80) and mobile applications that could provide sailors with a lot of information about ports and prices. In the present situation, sailors are forced to use the messages contained in leaflets, on unofficial websites or obtained from other people which may not be up to date. Having an official port website and a mobile application would undoubtedly increase the awareness of sailors and the comfort of their navigation. In addition, the website is also a great advertising tool and could increase the number of yachts using a particular port. The websites are platforms for promotion, sale and distribution (Benevolo, Spinelli, 2016). Marinas need to approach their target market with a proactive marketing and communication strategy (Luković, 2013).

Obsolete technology has a very large impact on the proper functioning of individual elements of the information circulation system in yacht ports. The use of outdated technology leads to many problems related to the processes of servicing sailors, and also reduces control over

the entire facility. The equipment used in the port administration office or mounted on many elements of the port infrastructure is nothing but technological equipment. The use of appropriate software and modern devices will undoubtedly increase the attractiveness of a given port, as the quality and speed of services offered will increase. Innovative solutions are also aimed at improving the comfort of sailors using port infrastructure as well as port workers.

Another problem worth noting is the way port and region advertising. In many Polish ports, the issue of marketing is neglected and needs improvement. Sailors who do not know the region where the port is located and nearby tourist attractions, are often reluctant to use port services besides the necessary refueling and using food and other supplies services. This is due to the lack or insufficient information. Implementation of solutions that will improve marketing and broaden sailors' knowledge about the region may increase the attractiveness of a given port. The introduction of a position or space where all possible information about the city, tourist attractions as well as nearby ports will be found, give sailors additional entertainment options and show them the potential directions of travel. Such a concept may encourage sailors to stay in the port and continue to use their services, and to some extent cause development and cooperation with other ports. A similar situation is with the manuals and rules for the use of port infrastructure. The biggest problem is encountered by people who are inexperienced in yachting, as well as by foreign sailors who do not know how to use the equipment available in the port area. Therefore, detailed description of the services offered and the presentation of manuals and instructions in the most understandable way may result in the sailors starting to use the given port more often.

Port administration office is an important facility of the yacht port. In the majority of Polish ports, the way it is located and furnished is unique. Its location in the port area is not so important, but the appropriate marking as well as the construction of the interior can play an important role in the circulation of information. The port administration office is servicing sailors; therefore it is worth implementing a concept that will help people entering the port to find this building. The best solution is to place this office in the center of the port. However, in many cases, due to the location of the port, this is not possible, so every effort should be made to ensure that the way to such a building is best marked. Dividing the interior of the port administration office into appropriate zones is very important in the context of work organization and elimination of chaos. In the current situation, many Polish ports have one workstation - better or worse equipped - for the implementation of processes related to the service of sailors. Such a situation often leads to many errors related to the excess of documents and duties performed at one station, or possibly slows down the work process. The implementation of a concept to introduce a similar look of a port administration office in each port may result in an increase in the quality of service and comfort of work.

Man is another important element of correct information circulation in ports. Sailors expect an individual approach from the employees of the marinas. Each sailor has individual requirements, that is why it is necessary to ensure proper training of the employees so that they are able to meet them.

Another problem that occurs in the information circulation system is poorly developed interport communication. The proper functioning of such a circulation consists not only of the processes carried out inside the port, but also those that take place in its vicinity. In the current situation, Polish marinas contact each other by phone or via e-mail. Some ports also cooperate through participation in various projects. Although the communication system between ports is present, but it is used very rarely, and it is worth improving. Port workers often have information about the intended direction of a given sailor, but they do not provide it to that particular port. For smaller yacht marinas, this information can be very important, as they will be able to prepare for the arrival of an additional yacht. Knowing the size of the yacht, you can prepare an appropriate parking stand. In the case of larger ports, such information is not necessarily important, but such an approach strengthens cooperation and develops sailing tourism in a given region. However, one of the better solutions that will improve communication is mutual advertising and increasing the

awareness of the environment about the attractiveness of nautical tourism, because only the joint encouragement of new sailors will lead to the development of all Polish marinas. Another solution that can improve communication between ports is joint organization and participation in projects. A joint analysis of current port problems and ways of solving them would lead to better cooperation, which would translate into a better-functioning system of information circulation.

It is also worth noting the lack of experience of owners in the management of ports (SCB, 2019). Undoubtedly, this is due to the current situation of nautical tourism in the waters of the South Baltic, which is not as developed in places as in other regions. Therefore, to improve the information circulation system in Polish ports, the innovations used by, for example, Croatian or Italian ports should be applied and modified to individual requirements as they are characterized by a high standard of services.

## **5. CONCEPT OF INFORMATION CIRCULATION SYSTEM IN YACHT PORTS**

Acceptance of sailors, their handling and processing of related information can be a key aspect in the information circulation system in yacht ports.

To date, most of the yacht ports in Poland do not use specialized computer programs to store information about sailors, crew and their yachts. Paper logs and manual entering of data work because in the current situation in Poland the possibilities of ports are not being used to the maximum. However, taking into account the continuous development of nautical tourism, the increasing number of yachts, or the development of tourism in port cities, one should expect an increase in the intensity of influencing new or permanent clients to marinas. Undoubtedly, this will result in the necessity of effective information handling. In this situation, paper data logs, and more specifically the speed of finding specific information about a sailor or yacht in order to handle it, will become more burdensome and definitely slower.

The problem with the paper log is definitely the way in which data is stored. In this situation, it does not matter whether the client was already registered in the port or visited it for the first time. In both cases, the data is entered into a new column, because even if the client is already in the log, due to the paper form, it is not possible to copy this information. The employee finds details about the sailor or yacht in order to facilitate their re-entering (it is more important in the case of complicated foreign names), while when the data is not current, they are simply corrected by him. By analyzing such a system, one can come to the conclusion that the process of entering new data can be much faster and facilitate client service.

Attention should also be paid to the form of a paper log, which additionally has several other disadvantages. One of them is certainly the limited number of places to enter data. Even if searching for information about clients makes it a little easier to re-enter information, a problem arises when managing more of such data. There may be a situation in which the information about a particular sailor who enters the port not for the first time was in a log that is no longer used due to lack of places and has been archived.

The concept of improving the above-described storage and information circulation system assumes the creation of a computer program with a database to which all data on sailors and their yachts could be entered. The only problem when implementing such a concept can be the cost of the software. Creating a specialized program tailored to the individual needs of a given marina is very expensive. However, there are also solutions that do not require large financial outlays and should not burden budgets. Smaller marinas, the capacity of which will never exceed a certain level, can take advantage of the opportunities offered by programs such as Microsoft Access or Microsoft Excel, which are often already used in ports and do not require employees to have a high level of computer skills.

In the case of much larger yacht ports, where the number of yachts operated is large and can still increase, specialized software tailored to the requirements of such marinas as well as their individual needs should be used. The advantage of such a program would undoubtedly be the possibility of saving more information about one yacht, as well as storing photos, which is impossible in the case of paper journals. Increasing the number of stored information will not significantly slow down the service process, but it will facilitate possible identification of the yacht in problem situations.

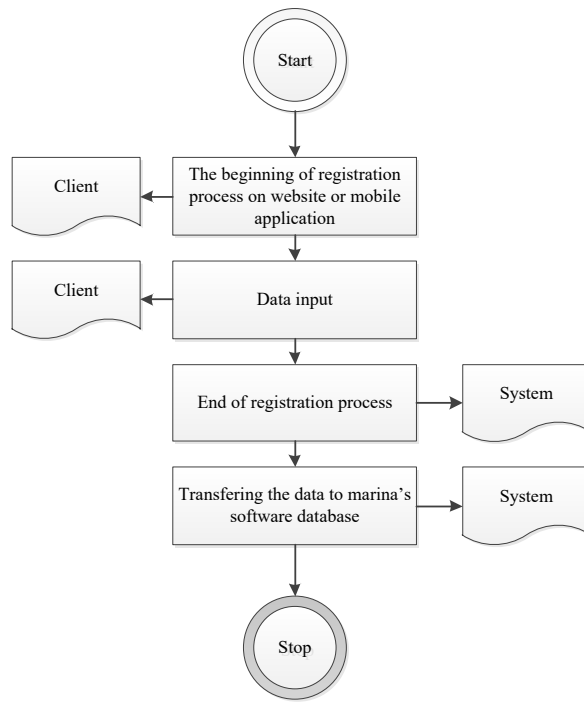
In a model using special software, registering and handling a client that already exists in the database will become much more effective. The ability to copy information or update the data in existing files will speed up and facilitate the work of port employees. However, the registration process of a new client will not be significantly slowed down, as manual input will be replaced by entering information using a computer. This will allow more information to be stored.

Computer programs for storing information can be additionally connected to the eMKa Marine system or other systems used in the port. This will give the opportunity to implement several or even all of the services offered by ports using only one software.

The current technological advancement in the world gives the yacht ports additional development opportunities. This program can be enlarged with additional elements that would improve its functioning. One of such elements may be the introduction of reservation of berths by means of a website or a telephone application. During the registration process, sailors would be required to submit some important information about the yacht, which will be sent to the software database immediately after registration. The application of such a solution would allow employees to use data on the sailor before entering the yacht port area. The described process is shown in Figure 1.

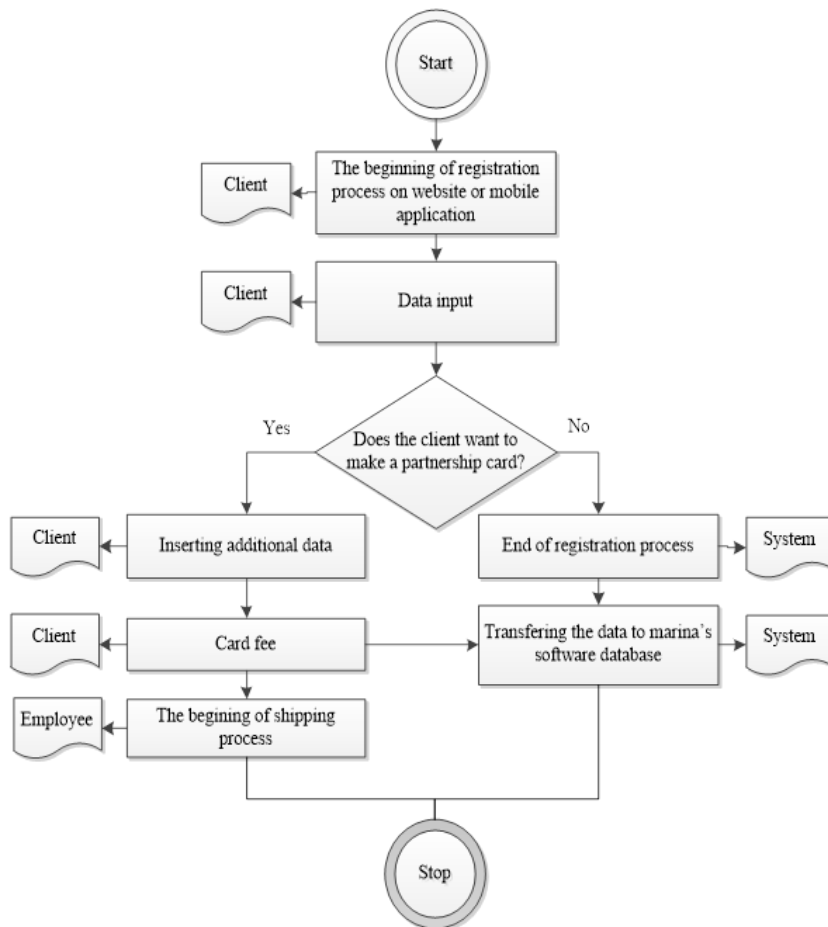
Additionally, for the needs of the proposed concept, it is possible to create a special partnership card for all Polish ports, thanks to which the sailors who have it will gain further amenities in using port services. With such a solution, the possibility of purchasing such a card should be included in the registration process. The card could be made at every marina. A sailor who registers on a website or application would be able to buy a card in such a situation, or only to book a position at a selected marina. If a client uses the option to purchase a card, he would be obliged to make prepayment and provide his address for the purpose of sending the card. The above process is shown in Figure 2.





Source: own study

Figure 1 The proposed client registration process



Source: own study

Figure 2 Improving the proposed client registration process



The introduction of such a card would create a common database in all ports in Poland, which would certainly improve the cooperation between them. This would be also comfortable for sailors who will be able to make reservations online or through the application. In such systems, it is also possible to add the option of online fees for port services. It will be a benefit both Polish and foreign sailors as well as port workers whose work comfort will undoubtedly increase. Foreign sailors will not have to worry about whether the currency they have will be accepted, or where they can possibly exchange it, and Polish sailors will receive an additional form of payment. However, the cash system should not be completely eliminated, as many people still use this form of payment.

## 6. CONCLUSIONS

The developing nautical tourism in Poland and the increase in the number of yachts sailing in the South Baltic waters forces the owners of marinas to constantly develop and expand the services offered. For this purpose, it is necessary to constantly identify problems and implement concepts that will improve the functioning of ports.

Observing the situation of nautical tourism in Italy or Croatia, where there is a high standard of marinas, it can be concluded that the use of innovative solutions has a positive impact not only on the information circulation system, but also on the development of tourism in the region and encouragement for new people to start yachting.

In every yacht port, new technological solutions should be used, which will ensure continuous development and help eliminate problems arising. Computer equipment and specialized software will allow for greater automation of certain processes implemented in ports and will undoubtedly increase the comfort of work of the staff. Thanks to the use of modern systems, the safety of people staying at the marina will also increase and the entire information circulation system will be improved.

The proper functioning of the port administration offices and the proper use of technological equipment also positively affects the process of accepting sailors. Registration via a website or a mobile application becomes incomparably more comfortable and allows more boaters to be accepted at the same time. For the purposes of further development yachts in Poland should follow the example of Italian and Croatian ports, where the use of state-of-the-art solutions has led to the creation of an efficient information flow system.

Based on the analysis carried out on the current situation in yacht ports in Poland, it can be noticed that currently used technology needs improvement. Implementation of the proposed concepts will allow for the elimination of many errors, thus improving the information circulation system in ports.

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# THE IMPORTANCE OF TEACHING ETHICS IN PROFESSIONAL STUDY PROGRAMMES

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Review

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## **Abstract**

*Analysed in this paper are two aspects of teaching ethics in professional study programmes. The first part discusses the importance of teaching ethics, and the second part discusses the responsibility of professional study programmes in educating future managers, executives, and businesspersons. Scientific and higher education institutions emphasise how important it is to acquire knowledge, skills, attitudes and values in response to the challenges and requirements of some particular role or function in life. Therefore, highlighted is the importance of teaching ethics as a generic competence that is general, mutual and transdisciplinary, and necessary for a wide spectrum of jobs and situations. Business ethics is of vital significance for success in the contemporary world and this is a fundamental condition for any higher education study programme. Key reasons for teaching ethics are: to allow students to develop critical thinking skills, to expose students to opposing opinions through debates, to prepare students for making decisions, as well as to familiarise them with flawed rationalisation and social pressures. Ethical values are under the influence of culture and the upbringing of each individual. For numerous students, their studies are places of encounters with diverse attitudes and opposing opinions. By teaching ethics and applying ethical debates, not only are students exposed to opposing opinions, but they are also provided with the opportunity to understand diversity. As a result, students can expand their understanding of ethics, sometimes changing their own values and decision-making processes. Skills related to decision-making, such as creating values, critical thinking and leadership, are considered superior attributes for students who have graduated. The development of decision-making skills provides young people with the opportunity to set themselves apart from others and respond to the demands and challenges they are faced with. The objectives of this paper, based on the research conducted so far and the existing, recent literature, determine the importance of teaching ethics in professional study programs. An added contribution to the work of an internal survey conducted among students that substantiates claims in previous researches.*

**Keywords:** *ethics, generic competence, values*

## **1. INTRODUCTION**

As a philosophical discipline, ethics, and its teaching, takes on great importance in higher education. Institutions around the world emphasise ethics through various learning objectives

which include ethical decision-making and social responsibility. The real purpose of teaching ethics is to introduce students to ethical dilemmas which will allow them to develop critical thinking skills they will use in decision-making. Business ethics and its teaching are of vital significance for success in the contemporary world, which is a fundamental requirement for any kind of business study programme. Without ethics and trust, there can be no foundation for developing a successful career. Therefore, education institutions have the obligation to instil such values into students.

This paper analyses two aspects of studying ethics in professional studies. The first aspect is the importance of studying ethics and the second is the responsibility of higher education institutions in teaching ethics and educating future business professionals. Scientific and higher education institutions stress the importance of acquiring new knowledge, skills, attitudes and values that will help young people to make personal and business decisions and which will serve as responses to challenges and demands they face. It is, therefore, essential to highlight the importance of teaching ethics as a generic competence which is general, mutual, transdisciplinary and needed in a wide spectrum of businesses and situations. The quality of higher education is an important concept that refers to defining and establishing the mission and objectives of the institution and thereby the establishing of certain levels of values. Business-making is not merely an area of creating and maximising profit – it presents human excellence and ability which is seen in decision-making and the behaviour of individuals and organisations. With that in mind, ethics is an important prerequisite. The complexity of the global and dynamic business world, in which non-economic and economic issues coexist, provides ethics with the key role in human activity, always bearing in mind the development of potential to achieve human excellence.

### **1.1. Responsibility, importance and values**

In order for the results of every undertaking to be successful, it is important to establish objectives. As far as the importance and responsibility of teaching are concerned, every teacher, professor, lecturer considers the following objectives important:

- a) Create good people.
- b) Create good citizens.
- c) Encourage every individual to achieve his/her maximum.

These objectives are constantly being emphasised and most of us accept them as the definition of education. They can be achieved only by combining the dual approach of teaching: applying the various mechanisms of the education system and developing critical thinking skills but also encouraging young people to beyond their stereotypical assumptions and create experiences and decisions which are in line with values in life.

In the world of changes, it is essential to be a change. By changing the approach and deviating from the standardised student evaluation and testing ever so slightly, it is possible to achieve better results in teaching business ethics and social responsibility. After introducing new didactic methods such as workshops, discussions, panels and debates, the teaching of ethics resulted in a greater number of interested students and higher satisfaction with the course. This paper will also interpret the comments made by students in the evaluation poll of the Business Ethics course and its instructor at Zagreb School of Business.

## **2. THE IMPORTANCE OF TEACHING ETHICS**

Ethics has an important place in all areas of life, as does education which is a fundamental process of human life. Ethics in education plays a vital and efficient role and in order to understand the importance of it, ethics needs to be included in the teaching curriculum. This paper brings forward the reasons why it is important to teach ethics and what the responsibility of a higher education

institution is in that process. Before presenting the theses, a brief introduction to ethics and education is in order.

Ethics is the most important and the most functional branch of philosophy. Generally speaking, ethics is a moral philosophy that speaks of values and virtues that make our everyday deeds and experience the subjects of ethics. Human beings are the only living beings with the ability of introspection, self-examination and reflection about own actions which enables them to take responsibility for their decisions and actions. The philosopher Edgar Morin said that the central ethical problem of each individual is his/her own internal barbarity. In order for humans to overcome the barbarity, autoethics constitutes a single true mental culture which is much more difficult but more needed than physical culture (Morin, 2008, p. 93). Autoethics is first and foremost the ethics of self towards self which naturally leads to ethics towards others. It requires us to make the effort to think well and to think well of ourselves: integrating the observer into one's observation and coming back to self with the aim of understanding, being objective, and correcting, which is what at the same time makes both a single principle of thought and ethical need (Morin, 2008, p. 94).

Education is an act or experience that has a formative effect on the mind, character, or physical ability of an individual. Education is a process of learning and acquiring information and at the same time, it is both teaching and learning which turns us into civilised individuals with the ability to maximise our own capital. The thoughts of Socrates, Plato and Aristotle on education contribute to the development of the education system. They believed that the aim of education was, or is, to improve the entire humankind. Plato, the founder of the Academy, the first school in the world, believed that the main goal of education was to develop abilities of an individual which would better serve the society (Plato, 2000, p. 209). On the other hand, Aristotle claimed that only citizens can be educated. He believed that an educated person is a fulfilled person and that education helps to develop motoric and mental abilities. In ancient Greece, education was a tool for society and state but also for its citizens. Education institutions are the basic frameworks of education which help to create a model citizen and human, all of which is greatly contributed by the teaching of ethics.

## **2.1. The role of ethical education**

Ethical education can be divided into four stages:

- a) Ethical education in the family
- b) Ethical education at school
- c) Ethical education at higher education institutions
- d) Ethical education in business

Ethical education in the family focuses on children observing the action of their parents and acquiring social facts on ethical behaviour. At school, children learn what is right and wrong, that is, they learn what values are and they become equipped for making ethical decisions. Schools encourage children to become reliable, responsible, and fair people. Higher education institutions should teach business ethics. This type of teaching enables students to understand what is right when making business decisions. In addition, students should be ready to evaluate different moral standpoints and develop critical thinking. In the ethics of business, people learn how to act morally through the codes of ethics of their line of work. These serve as guidelines and instruct how to behave and conduct themselves in the business world.

Graduates of business schools will become businesspersons and leaders which is why it is essential to instil them with the responsibility and importance of business ethics which they will utilise in their working environment. Those who teach ethics play an important role in that process. Ethics should be taught in an astute and interdisciplinary manner by putting forward various

ethical theories and learning about how to best use them and apply them in businesses when making important decisions. There is no single best method because each method has its importance and role, as well as the impact of the one who teaches it. Moreover, it will never be possible to determine where that impact stops – it stretches into eternity.

## 2.2. Reasons for teaching ethics

It is today, in the current crisis of civilisation and the crisis of interpreting value, that there arises a sudden need not just for ethics, but also for what is clumsily referred to as spirituality (Morin, 2008, p. 103). Ethics points to the need of having a bit more consciousness which would encourage and be encouraged by self-reflection and self-criticism, a part of which is the consciousness of human complexity (Morin, 2008, p. 103). It is difficult, if not impossible, to imagine a society in which there are no codes of conduct, ways of determining what is desirable and undesirable. Even if such codes are considered to be a means of survival, there still exists an implicit obligation to understand what is right and wrong.

Studying ethics offers opportunities and chances of thinking deeply about the values that shape life. Without thinking, there are slim chances of expanding one's consciousness and the consciousness about the values of other people. A study of ethics should lead to development of the skills of articulating own values, discerning the reasons behind certain politics, institutions and social values in general. Science cannot be carried out without a society that respects the laws which protect its citizens from violence, enslavement, torture, discrimination... Without a stable ethical foundation, not even the common practice of using the Internet would be possible. The question "What should I do?" can only be answered if we can answer another question first "What story or stories am I a part of?" In other words, we enter a human society with one or several assigned attributes and roles and we must learn them in order to understand how others react to us and how our reactions to them might be interpreted (MacIntyre, 2002, p. 236). Ethics teaches us to face the world and endure everything that happens to us, and it helps us develop mechanisms which we will use to confront life and appreciate it. Ethics arises as the necessary moral need.

## 2.3. Methods and approaches to teaching ethics

To develop abilities, competences and skills in students, a diverse approach to education must be applied and developed, which is not solely focused on learning from books. Teaching should focus on the concept of dialogues and certain forms of cooperative learning. All this would have an impact on a somewhat different method of examination and student assessment (Vujčić 2013, p. 463).

Several methods and approaches to teaching ethics have brought about excellent results, reactions and student feedback:

### 1. Encourage and develop critical thinking skills

Case studies, articles that put forward moral dilemmas, and examples of personal experiences help students to learn ethics first-hand. Such real-world examples can help when examining ethics and moral responsibility. By studying and deliberating case studies, students are provided with possibilities of participating in business decision-making and solving moral dilemmas or doubts. By using the Socratic method, students interested in deep thinking achieve a greater level of certainty when adopting an attitude. Critical thinking means analysing facts in order to form a judgement and an opinion. It also means having the efficient ability to communicate and solve problems as well as remain dedicated to overcoming egocentrism and sociocentrism.



## 2. Debate: expose students to opposing viewpoints

The culture and upbringing of every individual have a great impact on ethical values. For many students, studying is the first opportunity to leave their home and face different and opposite experiences and standpoints of their colleagues. Ethical discussions not only expose students to contradicting opinions but they also – first and foremost – provide them with the opportunity to understand differences and diversities. As a result, students expand their understanding of ethics and each other, sometimes changing their own values and their decision-making process.

## 3. Introduce students to rationalisation

Debates and discussions on the issue of moral thinking and decision-making enable and help students to comprehend and recognise rationalisation. It refers to making up non-existing reasons to mask the real reasons for failure, mistakes, or wrong decisions. Debates and dialogues are, therefore, highly desirable and acceptable in teaching.

## 4. Preparing students for successful and moral business upon completion of studies

Skills related to decision-making such as critical thinking and leadership are considered to be the top attributes of graduates. However, recruiting business organisations often experience the rarity of such skills. It is, therefore, essential and desirable to encourage the development of ethical skills of decision-making in students because that is what makes them more competitive in the labour market, properly preparing them to become future business leaders.

## **2.4. Interpreting the comments made by students in the evaluation of the Business Ethics course and its instructor at Zagreb School of Business**

This section lays down and describes the results of an evaluation of a course and its instructor by students, carried out each semester. The poll was not carried out by the authors of this paper – it was conducted by an external agency engaged by Zagreb School of Business. The authors of this paper believe that the results of this poll are extremely important in order to support the arguments, thoughts and methods of teaching ethics in order to prove the hypotheses put forward by the authors. The polls are available to the conference organisers upon request. The poll was an evaluation of the course entitled Business and Communication Ethics and its instructor. In this poll participated 73 students. The poll gives the possibility of qualitative evaluation of the professors, and from the comment section we can see how satisfied students are with the Business and Communication Ethics course on the study programs they are performing. Their comments confirm the thesis of how important ethics is to teach in professional study programs.

Students who attended the course participated in the evaluation. The poll consisted of four tables with questions, the first of which referred to the information on the student sample, the second on the average value related to the instructor's performance, the third on the frequency of the choice of a certain value related to the instructor's performance, and the fourth concerned the average value of the evaluation of the questions on the instructor's performance. Students are very pleased with clearly defined learning outcomes, methods, examples and tasks that facilitate learning outcomes and well-structured teaching. The teacher's work and the use of different teaching materials and techniques that raise the quality of teaching (pre-prepared materials, discussion questions, everyday examples) are highly evaluated. At the end of the poll, there was a comment section comprising four questions. It is these comments that provided a valuable contribution to this paper as it also confirmed the hypotheses and theses brought forward in this paper.

When asked about the methods and manners of teaching in this course, as well as on the interdisciplinary approach, the instructor received largely excellent marks. The instructor also received high marks in the questions on dialogue teaching and the utilisation of methods



discussed in the previous section of this paper. The use of debates and opposing viewpoints were assessed by students as an excellent method for analysing and acquiring course contents. Furthermore, the students stated that the concept of dialogue in class was what pointed them to pay attention to the opinions of other colleagues and different attitudes they may have had, which resulted in a change of their own behaviour, making them more tolerant. They emphasise the expertise of the instructor during lectures in terms of providing examples and interacting with students. Ultimately, to develop competences and skills in students, it is essential to apply and develop a diverse approach to teaching which was confirmed by the student satisfaction upon completion of the course.

### **3. TEACHING ETHICS IN HIGHER EDUCATION INSTITUTIONS**

Teaching ethics at higher education institutions is the question of responsibility towards the society and its citizens. Ethics, as a course, belongs to generic competences in teaching students, which are general, mutual, transdisciplinary and not directly linked to a field or an area of study, but which are needed in a wide spectrum of businesses and situations. As a generic competence, ethics is important for the labour market and the society of knowledge and the social community that wishes to consist of active citizens. It is right and sound to carry out courses in study programmes which belong to the group of generic and general competences because they are common to all programmes. In his theory of ethics, Kant places the rightness before the goodness, because the moral law, derived from pure reason, is a thing-in-itself, always good and which is required for all other goods (Kant, 1974, p. 101). Taylor criticised Kant's approach because he believes that morality is solely a guide for action; he claims that we should only deal with what should be done because it is right, rather than what should be good. The idea of the priority of rightness before goodness or goodness before rightness is a thing to ponder for everyone studying ethics.

#### **3.1. Responsibility and obligations of higher education institutions in teaching ethics**

As higher education institutions educate and train future businesspersons, business leaders and managers, it is essential they set high standards of education and teaching in their courses that belong to generic competences, i.e., that are common to all study programmes, such as ethics. This represents a great challenge but also the necessity of creating and organising an innovative approach to education and teaching. The good news is that students have reacted positively to developing competences and that they are fond of thinking about ethics and corporate social responsibility. Students have shown positive attitudes towards CSR with a major focus on ethical action and a somewhat minor focus on financial questions. The course contents of business ethics should encompass learning about values, humanism, solidarity, the common good, business culture, corporate social responsibility, virtues, responsibility, and the ethical fundamentals of management.

The awareness of responsibility is a trait of a single individual-entity gifted with autonomy. Responsibility, however, should be intertwined with the feeling of solidarity, that is, the feeling of belongingness to a community. We must take responsibility for our lives (not allow strange forces or mechanisms to take over our fate) and at the same time our responsibility towards others (Morin, 2008, p. 101).

#### **3.2. Methods and manners of teaching ethics at education institutions**

Teaching approaches at professional higher education institutions benefit from the dual method of teaching. Apart from the theoretical aspect, which is invaluable, a great emphasis is placed on the

practical aspect of teaching. One method supplements the other and the success thereof is reflected in the application of theoretical knowledge on practical examples and in practice. What follows are a few methods of implementing acquired knowledge in practice:

#### 1. Guest lecturer

Professional universities of applied sciences provide their students with frameworks and theories that help them learn how to take decisions on investments, recruiting, marketing, etc. However, it is much harder to introduce the real world into the classroom without concrete and tangible examples. Apart from case studies, one of the efficient and valuable methods is to bring in guest lecturers. Such lecturers are usually persons from the real sector, from the reality which is not simulated and which brings with itself authentic experiences which are then shared and discussed with students.

#### 2. Case studies

Business and professional education institutions have been using case studies for some time. Stories from the real world and cases that really occurred encourage the discussion on how a certain situation could have been dealt with or how someone would have responded. Such methods provide a valuable application of acquired theory and prepare students for making decisions.

#### 3. Simulation

A simulation is an active learning method. Modelling the functioning of a real process or a system enables students to learn a lot from practice. Replicating ethical dilemmas during a simulation enables students to evaluate their own values and decide where they are ready to compromise. Often times, these simulations require students to work in teams which presents one of the greatest challenges they have to face when dealing with ethical difficulties and dilemmas in real life.

#### 4. Self-assessment and deliberation

Developing critical and independent thinking. Solidarity and empathy – values that should always be present in order to develop the strategy for future career and work, the integral part of which will be founded on ethical principles and which will act as a compass for managing future challenges.

In the processes of finding an appropriate way of developing entrepreneurial knowledge, skills, and competences, the traditional methods of teaching and coursebooks are certainly relevant for establishing the foundations of entrepreneurship. However, in order to achieve a higher level of critical deliberation, it is vital to study, test, analyse and adapt one's knowledge. To achieve skills, we need to practice our trade and to achieve competence, we need a lot of knowledge and skills (Cadotte 2014, p. 280). It is in that context that active teaching methods provide the desired approach.

## 4. CONCLUSIONS

After everything that has been said, it is safe to establish that education is, in fact, an ethical strain. The aim of ethical education is to enable people to make decisions at their own will. Studying ethics, therefore, has a profound and essential place in the education process. Students who graduate from faculties and universities are highly educated professionals but that is simply not enough. The wish of every professor is for his/her students to be good and civilised individuals who will in their respective business environments become desirable colleagues and leaders. Today, ethics has an important place in all areas of life. Education is the fundamental process of human life and teaching ethics has a very important and efficient role. It represents success in life, both personal and professional.

Business ethics is of vital importance for success in the contemporary world. Without ethics and trust, there are no foundations for building a successful career. Organisations and society as a whole recognise that ethical and corporate social responsibility plays an important role in good business practices. This cognition should act as a guide and motivation for studying ethics and social responsibility in the spirit of solidarity and the common good.

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# **DIGITISATION, TRENDS AND FUTURE OF MARKETING**

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Review

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## **Abstract**

*One of the ways to succeed in the competitive environment is more effective communication with target customers. The rapid development of technologies offers ever greater opportunities to explore behavior, perception and emotional engagement of customers. The development of communication technologies coupled with the use of direct advertising targeting offers the possibility of adapting marketing communication to both the target segment and the media that communicates to consumers. The paper describes selected marketing trends and marketing methods in a digital age and a future.*

**Keywords:** *marketing, digitisation, trends*

## **1. INTRODUCTION**

New opportunities for rapid scattering, targeting and placement of advertising communications and the use of media, on the other hand, meet the overwhelming and unattractive attitudes of consumers. People go through the day in different environments where there is no segmentation of communication, exhibiting nationwide, world-wide media where communication is targeted at the broadest masses. In this way, general communication makes people less interested or even worse, resisting any form of communication. As advertising grows overwhelmed by consumer awareness, the potential for targeting and the right placement of advertising communications is losing efficiency. Investing money in communication campaigns is a bet rather than reasonably spent money. It is necessary to realize how the traditional concept of marketing communication changes.

Currently, marketers are being challenged by the fast-evolving changes driven by digitalisation: a process which has created more channels, opening up new ways for customers and businesses to interact, as well as increased availability of existing and new data-driven products and services. Digitalisation has placed power into the hands of the customer. Businesses were faced with customer relationships breaking down as expectations changed. Digital elites, such as Facebook, Uber and Airbnb, are creating innovative business models that deliver a superior experience to customers, providing them with increased control. This transforms customer expectations in terms of how consumers interact with services, the dialogue customers can engage in and the innovative products that they will come across to fulfil their needs.

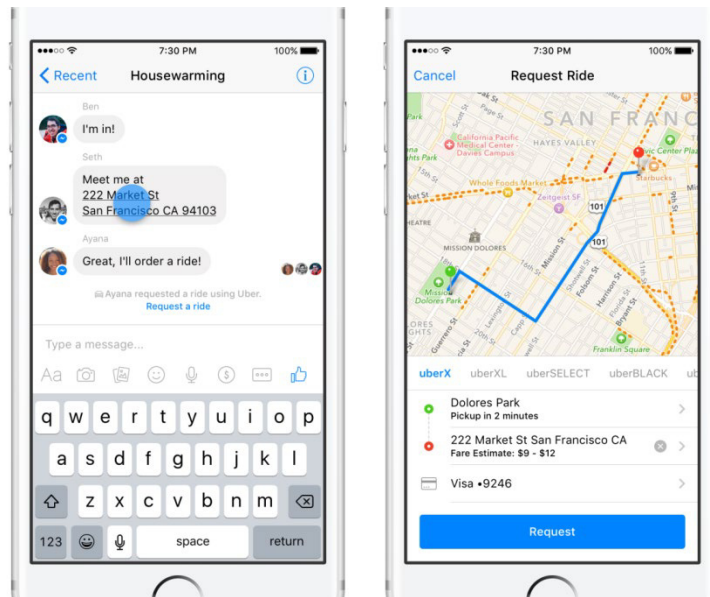
### **1.1. Selected Marketing Trends in the Digital Age**

Year 2018 progresses and the digital marketing landscape that encompasses social media, SEO, content marketing, PPC (pay per click) and more is witnessing a dramatic shift – which businesses can no ignore longer. There are many new digital marketing trends and strategies that are evolving in the current high-tech era and businesses now need to use them to succeed in their efforts. The key is to stay on top of the trends and figure out what is the best for a business in these days. The trends are following (Dave, 2018):

#### **Chatbots**

Chatbots are an important digital marketing trend in 2018. This Artificial intelligence-based technology uses an instant messaging format to chat in real-time, day or night, with your customers or site visitors, and many businesses are already using this feature. They have the ability to meet the growing demands of customers of this highly connected digital era by enabling smooth and instant communication with customers and prospects. Chatbots will help businesses save a lot of money per annum, especially in the banking and healthcare industries. Many customers prefer interacting with chatbots as they are responsive and give answers promptly and accurately and never lose patience. These virtual assistants offer outstanding customer service, meeting customers' expectations and automating repetitive tasks that let organisations focus on more important work. Chatbots can answer questions, provide complete information about products and services, and ask for an email address to send details without any human involvement. They can also retain information so that a customer doesn't have to start over with every new interaction.

The Uber app uses chatbot technology (Fig. 1) to communicate with customers, making it easy for them to hire cars even on Facebook Messenger. Passengers can use the menu to choose the type of ride, make a request, track the location of the car, send friends a time estimate of their arrival, and even make payment.



Source: (Dave, 2018) Digital Marketing Trends you can no longer ignore

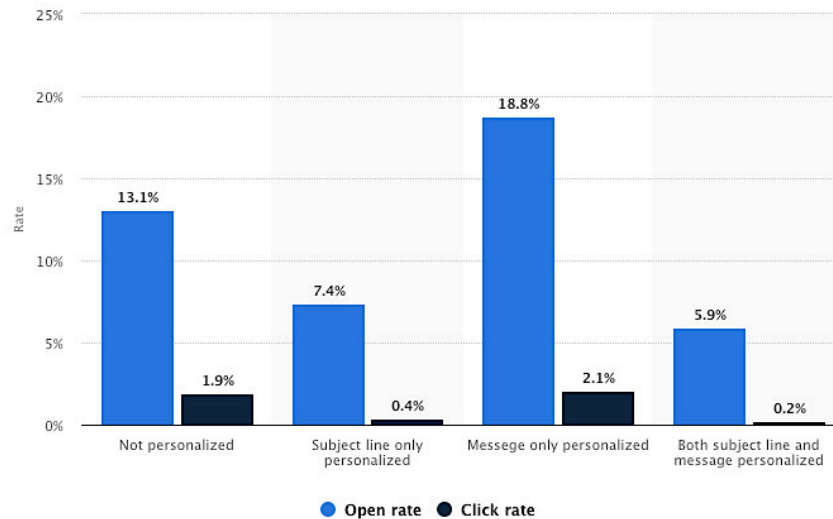
Figure 1 Chatbot Technology

### Programmatic Advertising and Artificial Intelligence

Programmatic advertising is using Artificial intelligence to automate the buying of ads and being able to target audiences more specifically, which increases the chances of success of the marketing campaign and reduces the customer acquisition costs. Artificial intelligence can analyze consumer behavior and search patterns, utilizing data from social media platforms and blog posts to help businesses understand how users and customers find their products and services. Businesses adopting Artificial intelligence in 2018 will be able to save costs and accelerate growth, getting an edge over their competitors.

### Personalization

Personalization or personalized content has become a major aspect of marketing and will be vital as 2018 progresses to ensure customer delight. It delivers a unique experience to customers based on their choices and preferences and is considered a better option than “one-size-fits-all” marketing. With the availability of data like purchase history, consumer behavior and links clicked, businesses can customize their content and boost their ROI. Businesses are leveraging the power of personalization by customizing emails based on behavior, interests, and demographics. According to Statista.com, the open rate for e-mails with a personalized message was 18.8% as compared to 13.1% without any personalization (Fig. 2).



Source: (Dave, 2018) Digital Marketing Trends you can no longer ignore

Figure 2 Personalization

One of the examples of personalization is of Coca-Cola, which came out with “Share a Coke” campaign in the U.S. in 2014 with an aim to reach millennials (Fig. 3).

“Share A Coke” created a personalized brand experience for customers with individual names of the most popular first names printed on Coke bottles.



Source: (Dave, 2018) Digital Marketing Trends you can no longer ignore

Figure 3 Example of personalization

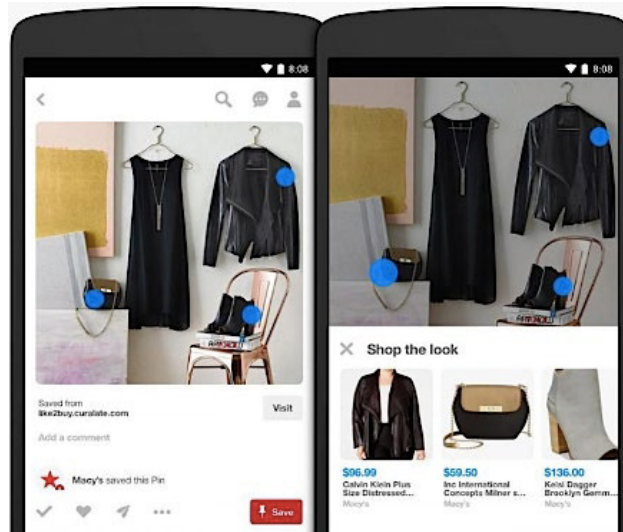
## Video

Providing informative content through visually-rich video allows conveying a message effectively to a large number of people. According to Forrester Research's Dr. James McQuivey, one minute of video is equal to 1.8 million words. Live video is gaining popularity, with a large number of businesses using it for interviews, product demos and “behind the scenes” glimpses of events, life in the office, how products are made, etc. Live videos are a great way for companies to unveil the faces behind their brand, which viewers embrace and love to see, as this instills trust in your audience and humanizes your brand. With social media platforms like Facebook and Instagram launching their own live streaming video features, it has become simpler for businesses to include live videos in their digital marketing strategy.



## Visual Search

Visual search (Fig. 4) is a new type of search engine and can take the user experience to a totally new level. With visual search, users can upload an image to conduct a search and get more specific results. Pinterest came out with Lens, a new visual search tool that allows users to snap a photo of an item to find out where to buy it online, search for similar products, or view pin boards of related items.



Source: (Dave, 2018) Digital Marketing Trends you can no longer ignore

Figure 4 Visual Search

Another one is Google Lens is a visual search engine by Google, which recognizes objects, landmarks and other things visually through a camera app (available on Pixel phones). Microsoft also has its own version, called Bing Visual Search that allows users to easily search for a particular element within an image. This visual search tool will not only find matching images, but also display product pages for that item. Another one is CamFind - a visual search mobile app, which enables users to search for anything from their mobile phones by snapping a picture and this app will tell what it is. Instead of typing queries into a search engine, it is possible directly search through images to find similar images, price comparisons, local shopping results and so on.

## Influencer Marketing

Using influencers is a very effective marketing tool that works to attract customers. Influencers can be anyone from celebrities and Instagram or YouTube stars to well-known bloggers and journalists who help spread the word about a business or product through their social channels. These people interact and engage with their large network of followers and consumers on social media, talking about a particular brand that they love and use to an audience with whom trust has already been established. Because this is not an ad or coming from the company, influencers are able to build up a brand's positive image in the minds of people, thereby helping attract more customers. Marketers are realizing how powerful is the influencer marketing, especially as an alternative to traditional advertising that can be expensive and inefficient. More importantly, consumers don't like to be advertised to and marketing messages have less credibility every day.

Influencer marketing as a strategy has been growing in popularity for the past few years, but new and different types of brands are now starting to take notice. As Raghav Haran (a content writer and marketer who helps B2B companies generate more leads) puts it, *"Influencer marketing is a type of word-of-mouth marketing that focuses on using key leaders to drive your brand's message to*

*the larger market.... Rather than marketing directly to a large group of consumers, you instead pay influencers to get out the word for you."*

<https://www.singlegrain.com/content-marketing-strategy-2/what-is-influencer-marketing-chris/>

An example of influencer marketing the Swedish watch company Daniel Wellington, which joined up with influencers on Instagram to promote its watches with a caption that included a discount code for 15% off.

### **Privacy Protection**

Privacy protection will be a major priority across the globe. With the onset of new privacy regulations across the globe, brands that sell to customers in Europe and beyond have to be prepared to comply. The new European Data Protection Regulation (GDPR), in particular, will redefine what online privacy means for all organisations, as they're faced with requests (and requirements) for the permanent erasure of customer information through the "right to erasure" and restrictions about how prospect data is collected and used for marketing initiatives. 2017's massive data breaches have had a considerable impact on how consumers everywhere think about their online privacy and security. Consumers will prioritize companies and products that put their information security first in 2018 and beyond as these attacks continue to become more common and smart marketers will begin using privacy protection and data security as a value proposition across all industries and product offerings.

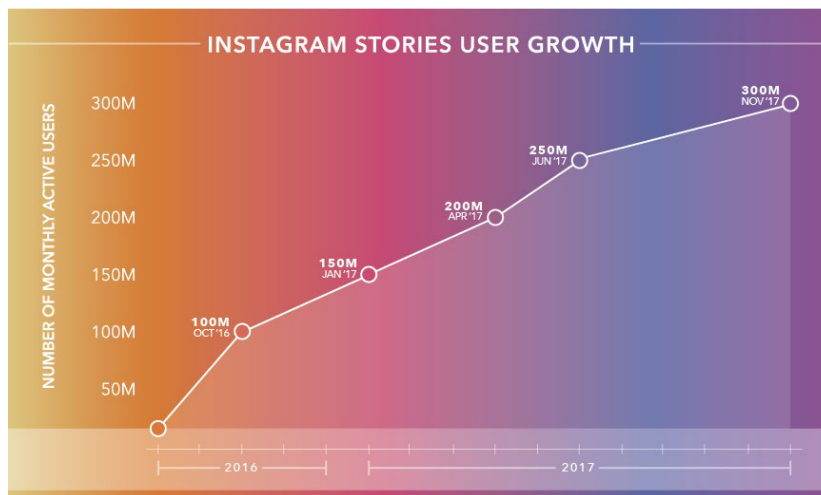
### **Voice Search**

In current digital era, it is possible to answer almost all questions through search engines. While people can get comprehensive information easily, they don't always have the patience to read through several paragraphs to fetch information. Voice search plays an important role in providing all the relevant information through audio content. Artificial Intelligence is getting smarter and many brands have included voice search in their digital marketing strategies to deliver value-based content effectively to their customers.

### **Social Media Stories**

With the growing popularity (Fig. 5) of social media "stories," it is important for marketers to consider this format in their digital marketing strategy. Savvy marketers can make use of live video, one of the most profitable social roll-outs to date, to promote engagement and brand awareness. It is important to tailor a marketing strategy to the people, not force the people to engage with a business on terms. First Snapchat came out with the concept of "My Story," then Instagram and Facebook stories were introduced, and YouTube has unveiled their own story format, "Reels." Since stories disappear after a set period of time, this is a great opportunity for marketers to make good use of FOMO (fear of missing out). With short attention spans, users like to view content and visuals whose time expires, so brands are putting their efforts in the Stories feature and generate more exciting but transient content. It is also possible to feature employees in the Stories, show the story behind the making of a product, ask for reviews about a products and services, and give a glimpse of behind-the-scenes photos and videos of a company.

<<https://digitalmarketinginstitute.com/blog/2017-12-11-5-digital-marketing-trends-for-2018>>



Source: (Dave, 2018) Digital Marketing Trends you can no longer ignore

Figure 5 Instagram Stories User Growth

A study by RetailMeNot (2018) (RetailMeNot, Inc. (formerly Whaleshark Media) is an American multinational company headquartered in Austin, that maintains a collection of coupon web sites. The company owns RetailMeNot.com and VoucherCodes.co.uk and acquires coupon sites and third-party software) revealed several key trends that are impacting the retail industry and change the types of marketing decisions being made in the future:

### Deals and Promotions

Promotions and deals will be critical when it comes to increasing revenue and loyalty among customers. Seventy-six percent of the retailers surveyed plan to increase the promotions they offer in 2018, becoming more strategic in how they play in the promotions space and working with partners to better measure the success of their promotions across channels.

Increasing sales revenue is a top indicator for success. It is ranked most often as a determining factor of the promotions that retailers and brands offer to consumer (56%), followed by new customer growth (55%) and brand awareness (50%).

Retailers that believe that engaging lapsed customers is a low priority are missing the opportunity. Deals can be a valuable marketing tool for re-engaging a customer with a particular brand and often will redirect the consumer's shopping journey back to the retailer – resulting in a sale. Consumers want savings that are easy to obtain regardless of platform or location.

### Shift toward a Social Media Spend

Seventy-eight percent of retailers surveyed will spend more in 2018 on social media marketing. And even if 67% said they will use email marketing and driving mobile conversion as a way to get more customers, some (10%) of the largest retailers reported they will keep their budgets exactly the same as 2017.

*"Brands are looking at social media not just for brand building but for acquisition and performance media,"* said Marissa Tarleton, CMO at RetailMeNot Inc. *"In the past, marketers were putting aside a social budget for brand building, but brands are now putting more investment on social media because they can see a return on investment."*

### **Shift toward a Younger Demographic**

Most retailers are shifting the focus away from Baby Boomers for the younger demographic. As shopping behaviors between generations continue to shift so do retailers' focus and targeting.

Marketers who want to capitalize on the spending habits of younger generations are shifting marketing dollars toward them and away from older generations. Retailers in 2018 are paying closer attention to the way shoppers approach the buying journey and what they are demanding from shopping experience. Marketers are increasing spend on millennials, with many retailers specifically spending more on social media. Now, marketers are investing in content utilizing brand influencers, including blog-related content to reach this group of shoppers.

### **Mobile Checkout**

Top of mind for retailers is tackling the challenges with mobile web checkout and making sure brands can improve the experience for their customers.

The survey revealed that mobile will be a key area for retailers looking to positively affect sales growth and offer consumers the smartphone shopping experience they are looking for.

Those retailers with an in-store presence, in-store cash back offers and card-linked offers rank high, with more than half (54%) planning to test these tactics in 2018.

### **Mobile Marketing to Drive In-Store Sales**

Marketers are investing more in mobile marketing to help drive in-store sales. Marketers are shifting their mobile efforts away from ecommerce to digital marketing. This is a result of the increased opportunities of having mobile marketing impact all digital and in-store channels. Seventy-two percent of the retailers surveyed use mobile marketing to drive in-store sales, followed by 82% using it for mobile app sales and 93% using mobile marketing for online sales growth. An additional 50% of retail marketers say their mobile marketing team falls under digital marketing within their organisation – up from 41% in 2016. Mobile is influencing all channels because consumers in these days are making their buying decisions on mobile devices.

*"It's about being in front of the customer where they are, that speaks to social media as well, because so much time is spent on social media on their phone,"* said Tarleton.

### **Reputation and identity management**

Reputation/identity management is already well-paid at the upper echelons, and one can imagine that the methods of finding both negative and positive communications will change further through social media and review platforms yet to exist. Companies of all sizes will realise that they need to be extra-vigilant in maintaining a watchful eye on how others portray them.

### **Market research/data mining**

The archaic methods of a researcher posting out a written form or making a call to a customer are long-gone, to be replaced by emerging techniques such as webcam interviews, text analytics, crowdsourcing, and the big mobile surveys.

## **1.2. Selected Marketing Methods in the Digital Age**

Without innovation strategies, companies will lose their competitive advantage in an increasingly commoditized world. The expectations of the new 'generation Y' or 'digital natives' mean that companies must keep up with the pace of change or lose relevance. The challenge for businesses is to face the implications of digital change: in particular, the loss of control over the customer

relationship, increased competition and threat of commoditisation, and the need to engage digitally with suppliers, partners and employees in addition to customers.

Further development of marketing and thus marketing communication is influenced by the development of socio-economic relations. This development is mainly marked by a fact that can be characterized on the one hand by the globalization of needs and supply, on the other hand, at the same time, their high differentiation. This necessarily leads to changes in the marketing science paradigm. Classical marketing, which can be characterized as transactional, changes in the marketing of relationships. *"New paradigms are information, relationship, and process orientations. By expressing this change, there are tendencies to strengthen customer relationships, customer relations, leading to loyal customers, and this is a significant factor of success."* [Tomek a Vávrová, 2009]

Correctly deployed digitization provides a new transparency that lets you know what the customer needs before he knows it. In addition, the data do not know any borders, so there is a possibility of independent placement. Above all, however, obstacles such as lacking knowledge of Big Data, clouds, etc. have to be overcome, and understanding the teachings that data is a raw material that needs to be upgraded to the useable knowledge. We are in the process of digitization and we do not need to discuss whether it is coming.

The following are briefly explaining the principles of how each new method works:

### **Neuromarketing**

Neuromarketing is probably the most discussed method used in the last few years [Ariely, 2006]. Advertising and research agencies offer its use for media campaigns and almost all kinds of communication. Opponents of this method point to advertising ethics. They are particularly concerned with the inability to resist such research [Morin, 2011]. They are afraid that researchers will find such a center in the brain that they can act to force people to buy things they do not want. How much are the methods used in neuromarketing possible and how unethical such research is the question of discussion.

For neuromarketing [Lee, 2006] are considered three methods: electroencephalography (EEG) magnetoencephalography (MEG), and functional magnetic resonance imaging (fMRI). All three methods are non-invasive, which opens up the possibility of wide use.

The Neuromarketing Method Assistance Test is done by proband being exposed to the subject of communication, concurrently measuring the activity of the brain. Depending on which parts of the brain and how much they are involved in the cognitive perception of the subject under consideration, they determine the unconscious reaction of proband to perceived communication.

### **Eye tracking**

The most widespread and also the cheapest and easiest to implement method. The method uses a computer with a so-called eye camera. Proband is seated in an armchair opposite the monitor, with an eye catcher on his head. The camera has a high speed scanning and is synchronized with the projection of an advertisement on the monitor. The problem is spatial calibration. If the proband moves the head, the position changes to the monitor and thus the recorded eye coordinates are shifted. The proband claim is not significant in this respect if testing takes place within about three minutes, after which the proband may feel uncomfortable. Several types of images can result in measurements. The first is the eye movement curve after the displayed subject of the communication. This curve is recorded and real-time eye movement can be monitored. The curve shows what the proband was first focused on and continued the vision path.

The second is a map showing the timestamp, how long the proband focused on individual elements of communication. It is also possible to determine the proportion of time devoted to the individual elements of the communication to the total time spent watching the projected communication. Depending on the software used, it is possible to define so-called areas of interest

and then evaluate them separately to the whole. The third is the so-called temperature map, which, depending on the time of observation of the communication element, draws the colors directly on the observed object. All three outputs can be combined. The results will show how much he catches, where the longest time spent, what proband most often returned and what he did not see. Based on the data obtained, the communication can be edited and retested. The disadvantage of this test is the possibility of knowingly influencing the proband result. Testing should be supplemented by a questionnaire to verify the data obtained.

There are also methods where the eye of the camera does not relieve eye fixation position at the head of the proband, but is placed on the screen opposite probands. The SW monitors the movements of the proband head and evaluates the eye movements. Another method is the motion of a proband with a camera on the head, for example, after a shop. The camera records what the proband has been watching and what it has been for so long. The advantage of this method is that it is possible to determine from the record not only the packaging but also the goods, the POS material, which has taken interest. Also placing goods in a shop outside the field of view of customers. This is especially beneficial for trade marketing, merchandising, category management and packaging design and production.

### Face reader

This method is used by Noldus uses special software to capture the human face and to analyze the data obtained. The proband face is captured by a camera whose recording is stored on the computer. The software analyzes individual points on the face and determines the level of emotion according to their relative position. For seven emotions, she draws a graph in real time and also finds the overall rate of positive or negative emotional expression. The face detection and analysis algorithm is based on a network of points covering the face. Face reader is suitable for both individual use and for use as a supplement to some other research methods. The disadvantage of this measurement is the conscious distortion. Advantage, however, is the speed of measurement and the availability of a method that does not have any special spatial or material requirements. Authors Matsumoto and Hwang [Matsumoto and Hwang, 2011] have confirmed that the expression of the face, is the expression of emotion, is universally multicultural for the seven basic emotions (joy, surprise, sadness, anger, fear, disgust, contempt). It means that the emotional reading method in the face can be used across the nations. This is especially beneficial for multinational companies using international communication campaigns. In their article, they also describe the so-called micro emotions that create emotions on the face.

### Electrodermal changes

Historically there are two methods of detecting electrodermal activity. The first method uses a very small external power source (both AC and DC can be used) and measures the amount of current flowing between the pair of electrodes placed on the skin. The second method is without using an external source and measures the potential of two electrodes placed on the skin [Radin, 2004]. Conductivity or resistance between electrodes is due to the excretion of sweat glands. Swabs are controlled by an autonomous and somatic nervous system [Klebba, 1985]. This is where the cause of the sweat glands is triggered.

EDA (Electrodermal activities) stands for multiple methods of dealing with electrodermal activity:

- CFR - skin resistance response (response skin resistance),
- SRL - skin resistance level (the level of skin resistance),
- SCR - skin conductance response (response skin conductance),
- SCL - skin conductance level (the level of skin conductance),
- SPR - skin potential response (skin potential response),
- SPL - skin potential level (level of skin potential).



Electrodermal activity is used to measure attention, excitement, anxiety, warmth and emotions [Klebb, 1985; Wang, 2008]. This method is relatively cheap and accessible, which is its advantage, the disadvantage of this measurement is difficult to compare values between them. Every person has a different conductivity of the skin. Ambient parameters such as temperature or physical stress substantially affect the measurement.

### **Heart frequency**

According to the above-mentioned methods of research of physiological parameters and heart rate indicator attitude, passion, or pleasant or unpleasant effect of an external stimulus [Wang, 2008]. Electrocardiogram (ECG) measures electrical discharges caused by contractile cardiac muscle. The authors Wang and Minor further describe a method of measuring vascular activity. It is a measure of blood pressure, volume of blood flow and heart rate. The disadvantage of this method is low reliability. These variables may be affected by environmental conditions or previous experience. It is, of course, indicators that cannot be consciously influenced. An advantage is relatively easy and available measurement, the disadvantage of its poor connection with the stimulus.

### **Pupilometry**

Pupilometry measures pupil size in response to the presented communication. Depending on how communication is perceived, it is a reduction or enlargement of the pupil. Tellis states: "... the pupilometer records pupil extensions. The pupil expands in response to interesting, pleasant or mentally challenging stimuli, otherwise it narrows..." [Tellis, 2000]. To measure the size of the pupil, use special glasses or a headset where an eye camera is attached. Eye camera captures the eye. Mostly just record one eye because the other eye responds as well. Stimulus is projected on the monitor and the proband is established to determine the distance and near are kept constant light conditions and temperature. Pupil size can be affected by settling, the long-term, repetitive activity, and fright like. In this case it is not possible to intentionally affect the size of the pupil. Besides the described static measurement, there is a version where the headset is mounted in addition to eye camera view and the camera sensing the proband. The output is the size of the pupil synchronized with the scanned surroundings of the probanda.

The size of the pupil should reflect what attracted proband's interest. This version is very difficult to evaluate due to unserviceable environmental conditions. Static pupilometry can also be used with the advertising clip. Special software detects the subject of communication such as area of interest and evaluates pupil size when viewed on this subject. In this case, pupilometry is associated with eye tracking. The disadvantage of this measurement is the ambiguous response to the subject of marketing communication and, at the same time, the inclusion of environmental conditions and all the parameters that can influence the size of the pupil. An advantage is the cost and availability of measurements. Pupilometry is appropriate in combination with other research methods described above as well as with classical inquiries using questionnaires, focus groups, etc.

In the future Pupilometry in pretest advertising communication should be only a complementary method, but by reference to flawless targeting marketing communications to target customer. Its uniqueness will consist in the impossibility of knowingly affecting pupil size. When switching to the online communication environments it could become an important factor in the whole system of communication. A great benefit would be definitely a system that would be used for the detection of the pupil, for example, camera and mobile devices based on the data obtained regulate marketing communications for the final consumer. However, there is a question of both the moral and ethical nature and the effectiveness of marketing research.



## 2. CONCLUSIONS

Brands and companies will always need promotion. We are now at somewhat of a crossroads of legacy and new media, where newspapers, radio and television still hold enough sway to be relevant alongside the multiplicity of brand new digital avenues such as BuzzFeed and Quora and Twitter, within the overall realms of SEO and paid search and more (Rossi, 2015).

From applications including anticipatory design, personalization, flexibility and interactivity, innovations in digital technology have resulted in the complete turnaround for how a brand markets its products and services.

In the industry of digital brand building, the success can be measured by the longevity of a business. Brands that continually refine their approach to meet and exceed user expectations are those that have the best chance at long-term growth and a considerable tip of the scales in their favor for market share.

The way consumers go about buying has been simplified by digital advancement. The complexity of the consumer-brand relationship has deepened. It's now more important than ever for a business to remain approachable, consistent and available to its audience.

These qualities can be extended by leveraging technologies, which can result in more focused and personal brand-consumer relationships. While implementations have to be tailored to the product or service being offered, it's essential to extend this quality of confidence to the user in lieu of a face-to-face connection (Paunovic, 2018).

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# DIGITAL TRANSFORMATION IN MARKETING AND BUSINESS – IMPLICATIONS ON RETAIL TECHNOLOGIES AND CUSTOMER ENGAGEMENT

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Review

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## **Abstract**

*Digital transformation of the global society and economy causes tectonic movements in doing business worldwide. Business marketing has become an arena where disruptive technologies literally change the marketing environment landscape, transforming the contemporary marketing into digital marketing, and thus implying newly emerged groundbreaking concepts in scientific thought in these fields. This paper discusses the phenomenon of digital marketing transformation, particularly on its impact on contemporary retail technologies, with emphasis on Russian economy. In addition to the theoretical analysis, selected relevant statistics and data are presented. Furthermore, the respective impact of marketing transformation on customer behavior in retail is elaborated. Marketing transformation implies substantial changes in retail environment of companies, because in an era of marketing digitalisation, customers are gaining enormous empowerment by development of new technologies; they are becoming more demanding, and their expectations are increasing. Consequently, companies are literally forced to constantly reevaluate and reshape their marketing strategies, especially sub-strategies that are directly influenced by development of disruptive technologies that are applied in business. Omni-channel retailing strategy is discussed as one of possible newly emerged solutions for meeting the increased customers' expectations and responding to modified behavioral patterns, as well as for attaining the required level of digital customer engagement in retail businesses.*

**Keywords:** *digital marketing transformation, retail technologies, omni-channel retailing, customer engagement*

## **1. INTRODUCTION**

Retail as an industry makes a significant contribution to the development of the gross domestic product and job creation of each country. It follows the general economic trends in terms of digitalization, such as the use of machine learning, artificial intelligence, the Internet of things, big data etc., and is quite actively affected by numerous elements of digital transformations.

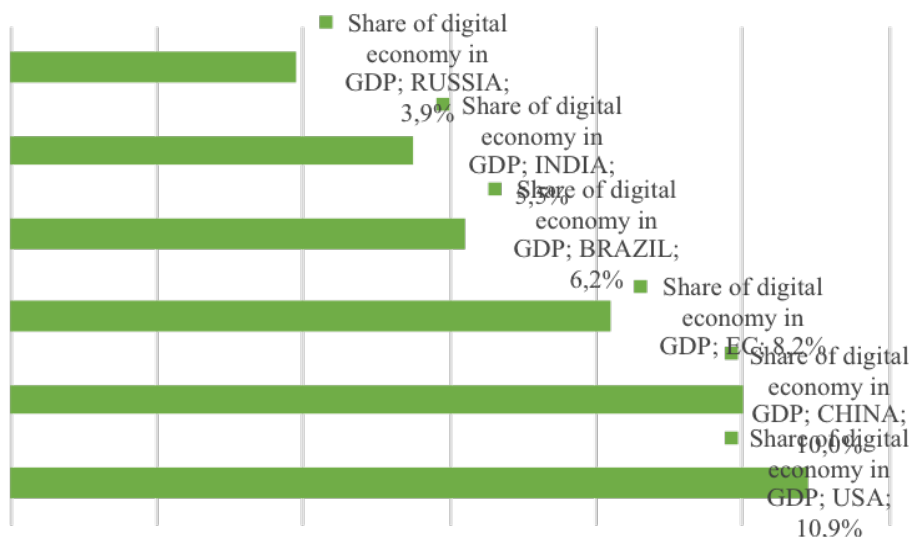
Digitalisation and newly applied retail technologies contribute to creation of innovative offline and online retail space for the “internal customers” - the company's staff, and “external customers” – clients. Digital transformation has a significant impact on the retail customer behavior, by irreversibly changing the customers’ purchasing decision making patterns and models. Purchasing is being realised in the re-created omni-channel shopping space, including the newly emerged digital services to customers related to purchasing convenience, speed, as well as additional relevant features.

This paper discusses the marketing digital transformation and its impact on one of the major sectors of the economy - retail, with special emphasis on the case of the Russian economic. Retail sector is directly influenced by the digital transformation process, by adapting digital transformation in the company's internal processes, such as online and offline space, logistics and IT system, on one hand; and, on the other hand, trying to predict the consequences of the possibility “to make - or not to make” decisions related to digitalisation, having in consideration the transformed behavior of company's customers.

From the point of view of state regulation of the economies, digitalization creates a basis for state projects and programs. From industries point of view, experts carefully consider all decisions regarding digitalization, weigh the importance of individual elements, trying to determine their importance for businesses and clients of the industry.

## 2. IMPLICATIONS OF DIGITAL MARKETING TRANSFORMATION ON RETAIL TECHNOLOGIES – GENERAL CONSIDERATION AND SPECIFICS OF THE CASE OF THE RUSSIAN ECONOMY

Digital transformation of business is associated with various areas of economic activity of companies and industries, and as a result, in a large number of countries, including Russian Federation, relevant governmental programs are being developed as a support of this process. In Russia, the Digital Economy program is already in operation, the main elements of which are reflected in various sectors of the economy ranging from telecommunications and high-tech digital products to the production of goods in metallurgy [1]. Figure 1 presents data on the share of the digital economy in the total GDP of various countries, including the Russian Federation.



Source: Digital Russia: New Reality. Analytical McKinsey report. 2017. [https://www.mckinsey.com/ru/~/\\_media/McKinsey/Locations/Europe%20and%20Middle%20East/Russia/Our%20Insights/Digital%20Russia/Digital-Russia-report.aspx](https://www.mckinsey.com/ru/~/_media/McKinsey/Locations/Europe%20and%20Middle%20East/Russia/Our%20Insights/Digital%20Russia/Digital-Russia-report.aspx)

Figure 1 Share of the digital economy in the total GDP

According to Figure 1, the USA has the share of the digital economy in the total GDP of 10.9%, China - 10%, European countries - 8,2%, and Russia has only 3,9% share of the digital economy in the total GDP. However, with regard to the case of Russia, in this context should be pointed out that over the past few years the percentage of growth in the volumes of the digital economy has increased by almost 60% and grown 9 times faster than the GDP itself. Experts also predict a significant increase in the next three years.

Based on general trends of digital transformations and according to Gartner company report [3], the following general directions for the development of commercial activity could be stressed out:

1. Active penetration of the company's business processes into the digital environment.
2. Use of new digital technologies and tools in business processes.
3. Introduction of Big Data elements into information channels.
4. Multi- and mono-channels of commerce.
5. Distribution of e-commerce as sales channels for various products.
6. Internal transformation of markets and industries.
7. Uberization of business.
8. Changes in the patterns of consumer behavior.

Companies are increasingly seeking to penetrate the digital business environment, using the mechanisms of globalization and business expansion, including in global marketplaces, e.g. Alibaba, TMall, Amazon, and the other hand, they are trying to transform internal business processes with regard to digital transformations. For example, logistics activities using the EMS system and robotization in warehouses, as well as supply chain management based on block-chain technologies, as Walmart is practicing, are all examples of the penetration of analogue business processes into the digital environment. New digital technologies, such as, VR and AR, machine learning technologies and artificial intelligence help modern companies to plan better and predict the direction of their business solutions.

Multi-channel and omni-channel business opportunities enable companies to form a specific ecosystem of online and offline platforms and solutions that enable them to implement much more efficient communications with the new generations of consumers - Y and Z, that already have different needs other than previous generations. This includes the need to be constantly connected to the World Wide Web and the willingness to make purchases using new technological solutions in the mono-channel business environment. In various fields, Big Data tools allow companies to accumulate and process a huge amount of diverse qualitative and quantitative data which later will also allow you to adjust business decisions made by the company towards a clearer targeting and focus of the sales offers for key customers.

The field of e-commerce does not require individual comments anymore and has proven its effectiveness and efficiency in terms of the sales channels of such product categories as ticketing, large and small household appliances, clothing and shoes, etc. Today it is the penetration of e-commerce in the e-grocery segment that is important, as well as cross-border trade between consumers and companies located in different countries.

Separate digital transformations lead to the transformation of entire markets and business sectors turning them into global ecosystems, such as Amazon and Alibaba in which the widest range of services and opportunities for the client are presented. In this context, the ecosystem provides the client with such value, realizing that the client no longer has any reason to move between companies that provide various goods, conditions and possibilities of purchase, the client has all these within the same ecosystem of the company to which (s)he is loyal.

«Uberisation» of business processes in general contributes the spread of the sharing model of the economy being a characteristic of the modern generation of consumers from categories Y

and Z. We are seeing the development of companies that are gaining more and more power without having a single real product. Examples of such companies are Uber, AirBnB, Booking, the whole field of car sharing and others. These companies enable a new generation of customers to receive a product or service most conveniently and most quickly understanding the values that are unique to these categories of consumers.

These changes generally transform the behavioral patterns of customers that no longer want to spend time buying goods and receiving services at a certain time and place, offline. They no longer want to buy those products that their parents used to buy which lead companies to transform the product range, for example, towards eco- or bio-products. They want to be at the center of the digital ecosystem, rotating in the omnichannel segments that this ecosystem creates for them.

Based on the McKinsey Report «Digital Champions» [4], all these digital transformations change the missions and values of modern companies when the company's overall competitiveness begins to depend entirely on its digitalization level, when digital platforms become the most valuable digital asset of companies, when digital intermediaries take over intermediaries and platforms, etc. Based on the above, we can judge the positive digital transformations of the economy. However, it is the digital environment that creates some business challenges that we would also like to mention. For example, the researchers of the global consulting company McKinsey in their analytical report highlighted a number of digital challenges related to the transformation of the labor market and the emergence of new professions in which the main place is given to programming and process control based on machine learning and algorithms. According to this source, by 2036, more than 50% of workplaces will be digitized globally in the economy. It is about the destruction of such professions as a postman, driver, packer, train driver, merchandiser and others, and replacing them with robots. In addition, another challenge is related to the security of digital information in a digital system, cyber security and cyber risk. All this requires the formation of an updated business development strategy based on the company's involvement in digital transformation.

Speaking of the industries that are being actively involved in the digital transformation process, it should be noted that experts from business schools and consulting companies give various assessments of involvement. For example, the IMD business school in the developed “digital tornado” model assumes that among the main industries, that will undergo digitalization in the next 5 years, will be technology products and services, media and entertainment, and retail. Data on industries are presented in Figure 2[5].

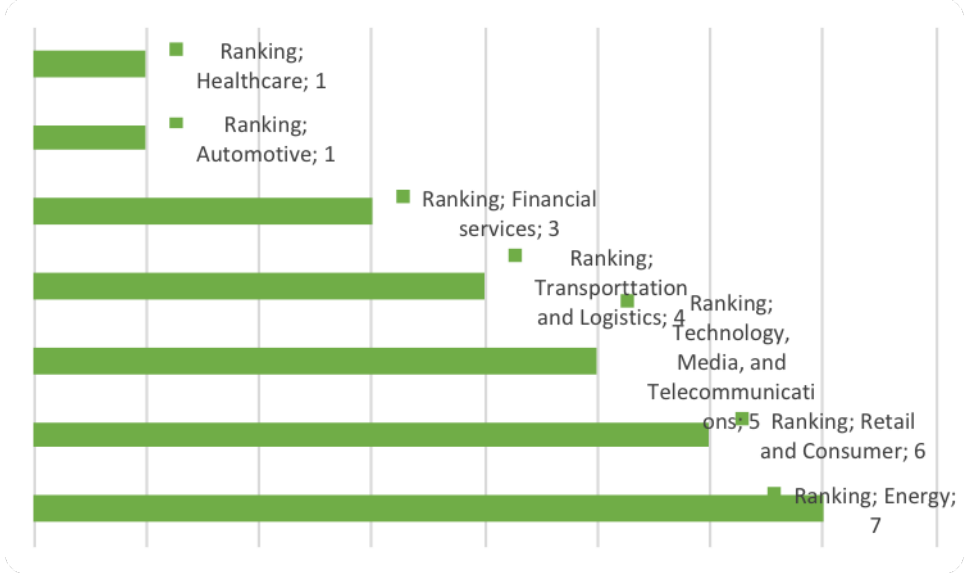


Source: Gaidar Forum 2017. Panel discussion «Banking services without banks» <http://fintech.ranepa.ru/gajdarovskij-forum-sektsiya/>

Figure 2 Digital Tornado Model



Experts of the consulting company PWC in the report «2018: AI Predictions. Insights for business strategy» [6] also gave their vision of those businesses that will be actively exposed to digital transformation in the near future. These are, for example, such industries as medicine, financial sector, transport and logistics, media and telecommunications, as well as retail. The data are presented in Figure 3.

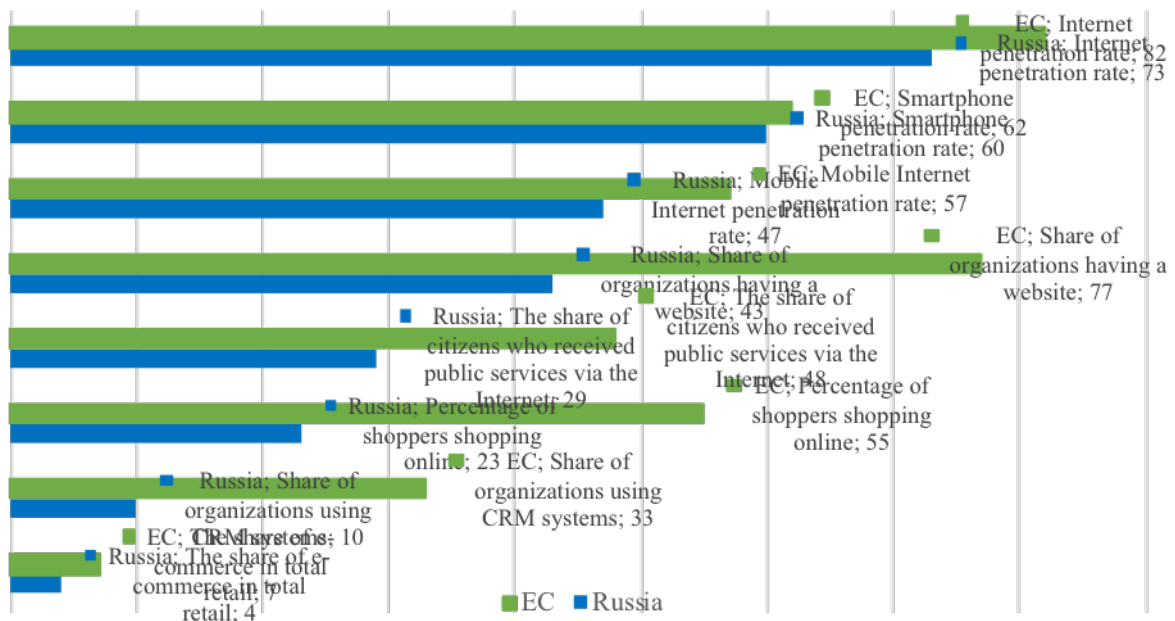


Source: PWC Analytical report: 2018: «AI Predictions. Insights for business strategy». 2018. <https://www.pwc.com/us/AI2018>

Figure 3 Digital Transformation Sectors

These indicators illustrate the current situation regarding the retail as an initially established area, in which the business model was very simple, associated only with interaction with suppliers and the subsequent sale of the goods they supplied to end customers. There is a great confidence among the experts that the retail is being transformed into a digital platform model, and the ecosystem is actively involved in digital transformations.

Speaking of digital transformations in retail, the growing possibility of Internet technologies in trading should be highlighted. For example, according to McKinsey experts in Russia and Europe, there is a varying percentage of access to digital services. These data are presented in figure 4.



Source: Digital Russia: New Reality. Analytic McKinsey report. 2017. [https://www.mckinsey.com/ru/~/\\_/media/McKinsey/Locations/Europe%20and%20Middle%20East/Russia/Our%20Insights/Digital%20Russia/Digital-Russia-report.aspx](https://www.mckinsey.com/ru/~/_/media/McKinsey/Locations/Europe%20and%20Middle%20East/Russia/Our%20Insights/Digital%20Russia/Digital-Russia-report.aspx)

Figure 4 Access to digital services

Thus, the share of e-commerce in total retail sales in Russia is about 4%, while in Europe this figure is close to 7%. The share of companies that use CRM systems in building and managing consumer loyalty systems in Europe is 33%, while in Russia only a tenth of companies pay attention to this. The share of customers who are already making purchases over the Internet for Europe has already exceeded half and is 55%, while in Russia this figure is much more modest - only 23%. The share of companies that understand and realize the value of having their own website also differs between Europe and Russia and is 43 and 77%, respectively. Data on the spread of mobile Internet and smartphone penetration are comparable and differ slightly, about 55 and 60%, respectively. More significant differences are observed in the share of penetration of Internet technologies in general: 73% in Russia and 82% in European countries.

Of course, the lag of Russia in most of the above parameters may be caused by the size and variation in the geographical location of individual regions and cities. Russia is a huge country that has a rather pronounced polarity in the processes taking place and the level of purchasing power in large cities, where Internet penetration reaches 85 percent or more, for example, in the cities. Moscow and St. Petersburg and where the volume of Internet commerce is several times higher in view of the established system of logistics and options for delivering goods to end users and smaller cities and regions that are still difficult or impossible to deliver goods ordered via the Internet and where the level of solvency and consumer activity is several times lower than in large cities.

In the context of retail digitalization as an industry, the main trends of its development could be identified as follows:

1. The penetration of Internet commerce in new business segments, such as, the sale of food products.
2. Sale of goods through marketplaces and digital platforms.
3. Active penetration of IT technologies in retail.

4. The penetration of digital technologies into internal business processes and processes related to communication with consumers.

Having in consideration the abovementioned aspects of digital transformations and the possibilities of Internet sales of goods, the spread of the Internet to new categories of products could be noticed, that were not involved in online sales in past years. Specifically, the e-grocery segment share of sales in Russia was lower than 1% of the total volume of Internet sales. However, this segment has been growing very actively and most of the trading companies, engaged exclusively in online trading or representing marketplaces, have already realized the need to transform their trading range towards the inclusion of the food product category. There are a number of examples of companies that for many years have specialized exclusively in the sale of food products online. In Russia, for example, this is the company Utkonos. It should be noted that such companies are still unprofitable, as evidenced by the data presented in the annual reports of these companies. These circumstances are associated with the complexity of online sales of this product category, consumer misunderstanding of the value of this business model, disagreement with the paid delivery of goods and the need to make a large purchase, as the company strictly regulates the minimum order amount. Only in the last two years - 2017-2018, such business model began to bring small results in terms of revenue from sales and income in view of the emerging changes in trends in consumer behavior and the formation of the need to save time and readiness to buy food over the Internet. This trend of consumer behavior was also supported by traditional offline retail chains which began to include an additional Internet sales channel in their business model, opening an online store and delivering food directly to the consumer's home, using the last mile delivery or to the nearest network store using the click & collect method, as well as to the nearest point of issue of orders which can be branded from the trading network or partner, accumulating orders from various online stores.

In addition to the classic sale of goods through online stores, we can also observe a more active penetration of the marketplace model or a similar version of the digital platform into retail. In this case, the marketplace is a digital platform, which is essentially an intermediary between a number of sellers who present products for sale on the intermediary's Internet platform, and buyers, going to the marketplace site, can compare products in terms of price, quality, value, etc. Next, the buyer is left to pay for the goods by going to the site of the supplier of goods, or in some cases the intermediary's digital platform itself makes it possible to do this immediately without going to the store of a particular supplier. For example, in Russia, Russian marketplaces function effectively, such as Ozon.ru, Goods.ru, Beru of Sberbank and others, as well as Alibaba Corp.'s foreign marketplaces with Aliexpress and Tmall platform solutions. Certainly, from the point of view of buyers, such platform solutions offer value in the breadth of the range of products presented, the ability to compare prices and select the optimal option comparing options and delivery terms, which causes a shift in consumer preferences towards these platform-based business models.

Regarding the collaboration of retail and IT technologies, an active shift of retail towards digital transformations is noticeable, and trading companies understand that traditional business processes based on analog solutions, paper and other types of solutions are becoming ineffective. Therefore, the retail sphere actively cooperates with IT companies such as SAP, SAS, Oracle, Microsoft, Google, Yandex in Russia, in terms of saturating individual trade and technological processes with their IT solutions. In particular, Big Data collection and analytics software, CRM systems, software solutions for WMS warehouses, software platforms for logistics, order collection and processing, customer analytics, and site visit analytics could be stressed out. It is the IT solutions that contribute to the emergence and spread of such a highly paid competence and even a profession, such as a data scientist which specialists have knowledge of mathematics and programming, on the basis of which many retail business solutions are modeled and predicted.

One of the most actively developing trends in retail is the penetration of digital technologies into business processes, and these technologies could be classified into two groups:

1. Technologies related to communications with the company's "external customers", that is, with consumers. Examples of such technologies include companies themselves, their mobile applications, SMM platforms and instant messengers, video blogs and so on. These technologies allow companies to communicate most effectively with customers creating the most accurate informational messages that build awareness and further customer commitment to the company, encourage the customer to purchase a particular product, help to know better about the properties of the product, train the customer in some ways to use the product, his adjustment and installation and so on. In addition, there are a number of technologies that allow you to manage customer experience at the point of contact, in the store itself. These are special digital panels and similar devices that today recognize the identity of the client and can immediately make him or her a personal purchase offer, digital systems for self-scanning products and payments, digital gadgets with which you can find out more accurate information about a product (price, origin, nutrient parameters), choose the color or size of the goods and order the right one in case there is no necessary article at this point of sale, virtual fitting and smart mirrors, AR and VR technologies, robotic assistants and many other things.

2. Technologies related to internal business processes of trade and technology business processes management. As examples of such digital solutions, the following should be mentioned:

- digital price tags which enable the company to manage dynamic pricing systems;
- CCTV and video analytics systems that allow the company to monitor the current situation in the store, collect Big Data and subsequently process them;
- smart shelves that give a signal to the merchandiser about the absence of goods on the shelf and the need to replenish stocks;
- smart carts which enable the buyer to independently select goods and subsequently pay for it, and the store to track the quantity of goods sold;
- RFID tags which are equipped with goods, which contributes to easier accounting and control of existing inventory when they are inventory, as well as contribute to greater traceability of goods;
- robotic assistants (robots and other devices), with the help of which it is also convenient and quick to make accounting and inventory of goods.

These and other digital solutions, of course, on the one hand, are aimed at creating mechanisms for mono-channel interaction between buyers and retail companies, as well as helping to optimize the company's expenses for remunerating employees, saving time spent on trade and technological operations, etc.

All the elements of digital transformations in retail mentioned above contribute to the transformation of consumer behavior when making decisions about purchasing goods.

### **3. THE IMPACT OF MARKETING DIGITAL TRANSFORMATION ON CUSTOMER BEHAVIOR AND COMPANIES' RESPONSES TO CHANGED BEHAVIORAL PATTERNS**

Marketing transformation has a strong impact on retail businesses, and one of the major implications is the rapid transformation of **behavioral patterns** of customers that are no longer willing to spend their time in traditional mode of purchasing. Traditional channels, offline stores and point of sales is no longer an effective marketing mix instrument, and instead, virtual points of sales are becoming increasingly and dominantly convenient for customers, and, therefore, important for companies, that are exploring broad new channels and vehicles for marketing communication and customer engagement. Many companies are considering cloud communications as a way of decreasing large amounts of operational expenditures in this context.

As new technologies for marketing communications emerge, customer behavior continuously evolves, and the customers' expectations are being further shaped and fine tuned by their experiences in the overall internet landscape. Having in consideration that the superior understanding of customers is the only sustainable source of competitive advantage, it is clear that in digital era, the quality of customer experience is highly valuable source of differentiation. In order to compete in such an unpredictable and demanding environment, companies need to focus on delivering a unique experience to customers, based on their recently acquired habits of engagement, in terms of an "orchestrated omnichannel customer experience that supports all customers through every interaction moment across their various journeys and helps them achieve their desired outcomes" [7]. The changes in customer behavior regarding the expected level and form of digital engagement, directly imply the need for adjustment of companies' communication strategies, but also, to the overall marketing strategies in general, in order to develop and design new digital services that would enable them to acquire, but moreover, to retain their customers.

Customers of XXI century expect to find, experience, and moreover, to subscribe to specific services of companies; customized, and also, customer-ised to satisfy their custom needs. In the era of digital transformation, and intelligent communications with customers, customers' expectations are becoming the key orientation point for companies. Companies need to understand how digitalized customers understand the delivered value, and therefore, to design and implement new strategies for value creation. Most important – companies need to understand how to deliver the value, in a shape and format expected by their customers, just in time, again, as their customers expect. It is a very complex and responsible task for companies to design, execute and coordinate such complex strategies, for instance, omni-channel retailing strategy, and the accountability of this strategy is one of the key issues that must be continuously reevaluated, due to the enormous investments required for its execution.

In an era of digital engagement and the endless opportunities for customers, channel strategy is an outdated concept that should no longer be the primary strategic orientation of companies. A key to business success in a digitally transformed marketing environment are strategies that enable maximum customer engagement. Omni-channel retail strategy is a relatively new, complex strategy designed as a response to the changed customer behavior due to the marketing digitalization. It enables creation of new services for "digitalized" customers. It is related to the variety in customers' purchasing orientations, in order to provide a unique and effective cross-channel customer experience. Customers simply have their expectations of utilizing various channels at different stages of their purchasing process.

The omni-channel retailing strategy provides numerous benefits to the customers, such as convenience, the level and format of product information, and the richness of the purchasing experience (Gensler, Verhoef and Böhm 2012). In addition to traditional physical and online point of sales and stores, newly emerges innovative channels have transformed the customers purchasing and decision making processes to a great extent (Juaneda-Ayensa, Mosquera, & Sierra Murillo, 2016; Picot-Coupey, Huré, & Piveteau, 2016; Piotrowicz & Cuthbertson, 2014; Verhoef et al., 2015b). Although the term omni-channel appeared recently, in the last decade, there is steel evident an indistinct use of the concept titles such as multi-channel, cross-channel, and omni-channel in the theory and practice.

Compared to the multi-channel retailing strategy (offering purchasing opportunities to the customers through various, but separated channels), omni-channel retailing integrates the multiple channels as "a holistic offering to appeal to the heterogeneity in customers' shopping orientations – such as varying levels of 'need for touch', 'need for cognition', or degree of 'selfreliance' – with the aim of providing a seamless cross-channel experience" (Verhoef et al. 2015). Multi-channel refers to having a presence on several channels that then work separately. In an omni-channel environment, the channels work together, in a way that customers can use digital channels for research and experience the physical store in a single transaction process (Piotrowicz & Cuthbertson, 2014). Due to the fact that the channels are jointly managed, customers expect to

have the same brand experience wherever and whenever they interact the company (Piotrowicz & Cuthbertson, 2014).

The newly emerged omni-channel concept in retail has significant practical and also, theoretical implications (Piotrowicz & Cuthbertson, 2014; Bell, Gallino, & Moreno, 2014;). It has a strong impact, both on the marketing environment complexity, and the internal business processes of companies retailers; as well as on creation of innovative purchasing patterns (Picot-Coupey et al. 2016; Verhoef and Lemon 2013;).

The key point is that customer behavior and purchasing habits are continuously evolving, and that companies must be ready to respond to these changed behavior and innovative customer behavioral patterns, or, in other words, "to orchestrate the customer experience" [7]. So called "orchestration" (Clark-Dickson and Cox, 2017) requires incredible organisational commitment in terms of focusing literally on customer centricity, understanding the essentials of customer interaction and customer engagement, and integrating this knowledge about their customers in their strategy, in a way that would be maximum beneficial for their customers, but in the same time, to fulfill the criteria for business processes optimization in companies.

## 4. CONCLUSIONS

Digital transformation occurring in the economies of various states is a global trend. Companies in various sectors of economy actively seek to be engaged in these digital opportunities to a greater or lesser extent. As a rule, key factors as the lack of financial resources, management's misunderstanding of digital transformation processes, the lack of readiness of "internal customers of the company" - personnel, to perceive the elements and digital transformation strategies, incorrect adaptation and implementation of digitalization elements, hamper the active inclusion into current corporate business processes. Retail is quite actively using the most different elements of digital transformation, creating omnichannel spaces and enabling its customers to make shopping in a store or online space much more convenient and comfortable. With proper selection of digital elements, as well as careful analysis of the target audience from the point of view of readiness and need for certain digital services, the retailer can reach a completely new level of communication with the company's key clients by implementing the most effective business model in terms of achieving the required level of customer satisfaction.

Having in consideration that each organisation is experiencing digital transformation in its own unique way, there is a need for constant reconsideration of organisational and technological capabilities in this regard, for the purposes of customer acquisition and retention, but also, by taking into account the internal issues such as business processes optimization and accountability on a short and a long run.

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# DEVELOPMENT OF PUBLIC MANAGEMENT IN BOSNIA AND HERZEGOVINA

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## **Abstract**

Public management continues to change at least in Bosnia and Herzegovina, even though it hovers at the door of the European Union. The interest in the concept of governance in public administration in Bosnia and Herzegovina is of recent date, which is why there is a lack of relevant research in this area. And certainly the specificities of the country's own organization contribute to the diversity of research and possible solutions and changes. The public sector in Bosnia and Herzegovina simply means public companies, public institutions and public administration (state, federal and county government and local self-government). This research, from the point of view of users of public administration services, also established a medium level of development of public management with regard to its functions and sought to obtain a more realistic picture from the point of view of citizens as users of its services.

**Keywords:** *public management, newpublic management, public sector, development, Bosnia and Herzegovina*

## **1. INTRODUCTION**

Management involves the ability to manage resources, devise plans and encourage investment. In this context, it should be crucial to meeting human needs. We all pay the price if it's less efficient than it should or could be.

Unfortunately, the situation is not satisfactory in the public sector. This is where the money is mainly collected from taxes paid by citizens, and yet this money is least spent to meet their needs.

The concept of public management is the concept of a recent date in the public administration system, which aims to make the public administration system more efficient and of high quality in order to fully meet the requirements of users. The application of the concept of public management enables public administration organizations to better organize their businesses, operate more rationally, increase the quality of service delivery to end-users and continue to implement certain structural reforms.

The public sector in Bosnia and Herzegovina encompasses the institutions of the legislative, executive and judicial branches of government, public administration and all activities in which the state, entities, cantons, Brcko District, cities and municipalities have legal and property

rights, such as education, health, pension, disability and social protection, public enterprises or publicly owned companies, natural and cultural resources and other. Available at: <http://www.dei.gov.ba/dei/dokumenti/uskladjivanje/default.aspx?id=10275&langTag=bs-BA> (Accessed: 30.03.2019).

The emphasis in this paper is on defining terms such as administration, public administration and public management. The scope of this research is defined in Bosnia and Herzegovina because this country is specific. On the basis of everything, the conclusion is drawn about the development of public management in view of its functions from the standpoint of its users, actually in this case only citizens.

## 2. THEORETICAL REVIEW

In order to approximate the concept of public management, it is necessary to start from the basic components of the concept of public management. First of all, the term management, and then the concept of administration and public administration, since they represent the public sector system, that is, the system of management in public administration.

If one starts from the contemporary conception of the rule of law, **the administration** exercises its public function as a regulator of social processes. In the complex and dynamic conditions of modern life, it is the public administration that organizational infrastructure which has a great professional knowledge, human and material resources for efficient and effective public activity. At the same time, with the increase of the role of the administration as a public service instrument, its role as a practitioner of political power and coercion decreases, which is reflected directly in its overall activity or administrative activity at all (Milenković, 2009).

In scientific circles, there is still no general consensus on the notion of public administration, and this area is described as more heterodox than orthodox. First of all, the distinction is made between public administration and that which is private, non-public, in view of the management context, with governance in the political context being characteristic of public administration. (Heady, 2006).

Thus, the concept of public administration is not limited to the state administration, which is a very important part of it, but also applies to regional and local self-government, public companies, the activity of concessionaires and subsidized private persons in the performance of public services (Perko Šeparović, 2006).

**Public administration** is an organization that provides services to citizens, legal entities and the wider community. Services in public administration are intangible and in this context in a slightly different position from material ones. The activity of public administration is related to the provision of state administration services in the field of social protection, health, education, culture, security, protection of rights and freedom to citizens, ecology, users, and such services are intangible. Each area of this activity contributes to the organization and quality of the overall life for the individual and the wider community (Gužalić, 2005).

**Management** is a process of shaping and maintaining an environment in which individuals, working together in groups, efficiently realize the chosen goals (Wehrich i Koontz, 1998).

The word "management" comes from the English word "management" and is most often associated with terms such as management and management. Management is both a complex concept and a complex phenomenon related to: (1) the process, (2) the holders of certain functions, (3) the skill, (4) scientific discipline, (5) the profession, sometimes at (6) function in the company. The process aspect defines management as a process of work with others and others in achieving organizational goals in a changing environment with effective and efficient use of limited resources (Buble, 2006)



Source: Wehrich, Koontz, 1994:15-17

Figure 1 Basic Management Functions

Management is necessary both in its entirety and in its parts, dealing with human beings who will be able to work together to make their own forces effective and their weakness irrelevant. We belong to any institution and we are witnesses of the implementation of good or bad leadership and fulfillment of this institution's mission. As management goes through its functions and moves from the beginning to the end it is actually a living being that is developing alongside the changes, needs and possibilities. Achievement as a major part of the internal part of the organization and external result are the main benchmarks that show the success and completeness of management (Drucker, 2005).

The concept of **public management** in itself includes and represents a greater dynamics of the work of the public administration bodies, it represents the orientation of public administration to activity by benchmarks similar to those in economic organizations in solving problems that are at the moment most important for a particular society and constitutional responsibility of the public administration (Pusić, 1993).

Public management or business management in public administration is a way that helps management to find the answer. This is a process in which management through employees implements the strategy of public administration development. Public Management implies effective and effective management and coordination of public administration in five areas: human resources management, asset management, resource management, information management and self-management (Peters, 1996).

Public management means seeking to bring most of the values and techniques of the private sector into the public sector, or seeking to reform the public sector so that it becomes more competitive and effective in the use of resources and services, and more directly accountable to the public through the application of a managerial approach in public administration as part of a broad movement to introduce market criteria into government action. The managerial approach is particularly popular in the Anglo-American countries, where it is defined as New Public Management and represents a change in the way government functions by incorporating market mechanisms and instruments in the public sector, resulting in improved efficiency, effectiveness and quality of service. the democratic effect of involving citizens in decision-making processes and setting priorities and needs that public services must meet ( Đorđević, 2008).

**The differences between public and private management** determined by comparing the jobs of leading US public and private managers are: a) a limited timeframe for planning; b) a shorter appointment period; c) differences in methods and methods of performance measurement; d) autonomy in making personal decisions and directing the organization they lead; e) Different dominant values that the organization represents and promotes; f) various measures of exposure to influence and control from politics, to the public 1 of the media; g) Different impact of legislation and judiciary on work and decisions; h) clear or blurred lines of responsibility, and others (Allison, 1980).

The managerial approach to public administration is imported from the practice of managing private companies and emphasizes the freedom of the managerial staff in the organization and its responsibility for the final result to which the entire activity of the organization is subjected. This approach is also emphasized in contemporary public administration reforms that have been implemented in many countries since the late 1970s under the umbrella of a common doctrinal matrix known as **new public management**. However, the managerial approach consistently and radically applied in public administration is often contrary to the usual settings of its operation. This applies in particular to formalized forms of communication of treatment, protection of human rights, procedural correctness, official relations and the legal status of employees who, under traditional management, rest on their careers, seniority and formal education. Also, the independence of the management staff, emphasized by the managerial approach, sometimes contradicts the principles of the hierarchical organization of public administration (eg the principle of regular communication path, impersonal hierarchical relations, etc.), there are difficulties in determining and measuring quality in the public sector. etc. (Pusić, 2002).

New public management is the management philosophy used by governments since the 1980s to modernize the public sector. New public management is a broad and very complex term used to describe a series of public sector reforms around the world since the 1980s. Based on public choice and management schools of thought, new public management seeks to improve the efficiency of the public sector and the control that the government has over the public sector. The main hypothesis in the wave of reform of new public management is that greater market orientation in the public sector will lead to greater cost-effectiveness of governments without negative consequences for other goals or considerations (Perko-Šeparović, 2006).

### **3. SCOPE OF RESEARCH**

#### **3.1. The specificity of Bosnia and Herzegovina**

Despite the fact that effective management or management is important for public administration, it does not pay enough attention to the public administration in Bosnia and Herzegovina. He has been talking about it only for the last ten years and he has only recently been paying more attention to the more effective management of public administration. Management in public administration has recently come to the literature as public management, replacing the concept of public administration that was in use before ( Možina, S., et.al., 2002).

The state of Bosnia and Herzegovina, established in its present-day constitution by the 1995 Dayton Peace Agreement, has a limited central authority with most of the functions delegated to two entities: the Federation of Bosnia and Herzegovina and the Republika Srpska. Both entities have their own governments and civilian structures. The Federation of Bosnia and Herzegovina is highly decentralized and has ten cantonal governments. Unlike FBiH, Republika Srpska has one centralized government. Brcko District of Bosnia and Herzegovina is the third administrative unit under international administration. In March 2000., an amendment to the Constitution of Bosnia and Herzegovina was adopted, regulating the Brcko District of BiH in accordance with the decision of the Arbitration Tribunal. The whole country has 14 administrative-administrative units, five levels of administration and more than 150 ministries and government agencies. Available at: <http://www.mhrr.gov.ba/PDF/LjudskaPrava/Core.pdf> (Accessed:26.03.2019). The Herzegovina-Neretva County is the seventh out of ten counties in the Federation of Bosnia and Herzegovina. It is located in the southern part of Bosnia and Herzegovina and encompasses the area around the Neretva River and overlooks the sea. It consists of the following municipalities: Capljina, Citluk, Jablanica, Konjic, Mostar, Neum, Prozor-Rama, Ravno and Stolac. The county center is the city of Mostar. Available at: <https://www.vlada-hnz-k.ba/> (Accessed: 20.03.2019).

Table 1 Population by ethnic origin in Mostar from population census in 2013.

Ethnic origin	Population
Croats	51,216
Muslims	46,752
Serbs	4,421
Others	3,408
<i>Total</i>	<i>105,797</i>

Source: Available at: <http://fzs.ba/> (Accessed:19.3.2019.)

Bosnia and Herzegovina as a country is certainly specific. Considering that the public sector in Bosnia and Herzegovina encompasses the institutions of legislative, executive and judicial authorities, public administration and all activities in which the state, entities, cantons, Brcko District, cities and municipalities have jurisdictional rights, such as education, health, pension and disability and social protection, public enterprises or publicly owned companies, natural and cultural resources and the like.

In other words, the public sector in Bosnia and Herzegovina simply means public companies, public institutions and public administration (state, federal and county government and local self-government). Available at: <http://www.dei.gov.ba/dei/dokumenti/uskladjivanje/default.aspx?id=10275&langTag=bs-BA> (Accessed:30.03.2019).

Therefore, as a geographic scope for future research, Bosnia and Herzegovina is very interesting. And as such a criterion, the city of Mostar was selected as the county center for this research.

### 3.2. The Role of Citizens in Public Management Analysis

Public management analysis can be done in the same way as private sector management analysis, taking into account differences in selecting the performance to be analyzed. Analysis of public management can also be conducted as an analysis of the management of the organization as a whole and the management of parts of the organization and areas of business, and it is necessary to consider separately the management of functions in the organization of public administration, the performance of which constitutes the process of business organization, because the management of business functions, ie functional areas business, connected as a whole constitutes the overall process of managing an organization (Jovanović, 2006).

In relation to citizens and the social environment, the most important issue is the problem of responsiveness, ie the extent to which the administration respects the requirements that come from the social environment. Management should be open to feedback from the public (citizens, civil society, the private sector) on their work, or on intended decisions (eg in the process of public policy making, drafting regulations, etc.). The relationship is two-way, from citizens to public authorities, which takes into account the opinions and suggestions of the public when making decisions or correcting their work (OECD, 2001; Bannister, Connolly, 2010).

Citizens of modern democracies are not just consumers of public services but members of a political community with special civil rights and obligations. These rights are mostly related to public administration, according to which citizens submit requests that the administration should respect and fulfill. The concept of citizenship has a connotation of activities and contradicts the passive concept of consumers, ie consumer services in the private sector. In order to exercise their rights and influence the quality of services, citizens must use formal and informal methods of pressure (media, petitions, initiatives, debates, etc.). While in contrast, private sector users may be totally indifferent to quality in a private company because it will be done for them by the market mechanism. If a citizen is dissatisfied with the service in the private sector, he will simply seek the

service and obtain it from another provider until he finds a service that fully meets his requirements, and the service providers must consider the quality and satisfaction of the customer as this is a requirement for their survival in the market. Furthermore, certain services have a monopoly position in the public sector, and there is no exaggerated tendency to increase the quality of their services ( Kettl, Dilulio, John, 1995).

## 4. RESEARCH

### 4.1. Description and Objective of Research

The aim of the research was to try to get answers among public service users, citizens, about how they see some of the elements of management functions (planning, organizing, staffing, leadership, controlling). For this research, the city of Mostar was chosen because it is a county center.

The survey sample consisted of 165 respondents. Citizens have been told in advance that the inquiry is anonymous and that the data obtained will be used for research purposes.

### 4.2. Respondent structure and importance of public management

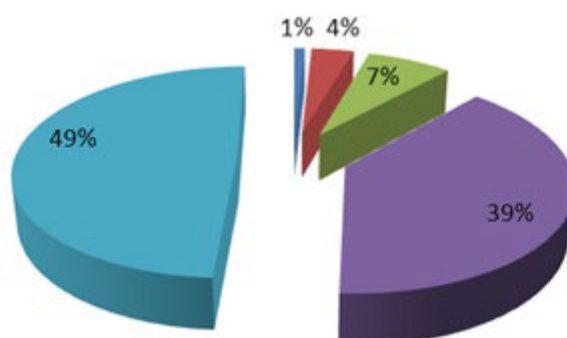
In order to gain a better insight into the structure of the respondents, an analysis was made according to socio-economic and demographic characteristics, as can be seen in the following Table 2.

Table 2 Analysis of respondents

SEX	AGE	EDUCATION
male 31%	Up to 20 years 2%	SSS or lower 20%
female 69%	21-30 25%	VŠS 8%
	31-40 40%	VSS 67%
	41-50 20%	magistrate and more 5%
	More than 51 13%	

Source: author

When asked *how important they think public management is important*, 49% of respondents think it is very important, 39% think it is important, 7% are neither important nor irrelevant, 4% are partially important, while only 1% consider public management irrelevant.



Source: author

Graph 1 The importance of public management



### 4.3. Development of public management based on its functions

As already emphasized, the development of public management has been analyzed by research of individual functions of management and / or public management, namely: planning, organizing, staffing, leading and controlling, from the point of view of the citizens of Mostar.

Respondents were offered Likret's response scale, ranging from 1 to 5, respectively, from absolutely disagree to the absolute agree.

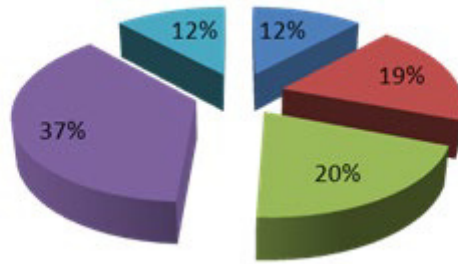
Table 3 Analysis of the results of the PLANNING function

Claims on development of PLANNING function	1 absolutely disagree		2 disagree		3 neither agree nor disagree		4 somewhat agree		5 absolutely agree		average grade
	number of respondents	%	number of respondents	%	number of respondents	%	number of respondents	%	number of respondents	%	
management is autonomous and independent in decision making	33	20	47	28,48	42	25,45	34	20,61	9	5,45	2,63
management is aware of the good and bad sides of public service	29	17,58	33	20	53	32,12	41	24,85	9	5,45	2,81
The vision and mission are clearly defined	15	9,09	25	15,15	44	26,67	55	33,33	26	15,76	3,31
the goals are clearly defined	12	7,27	3	1,82	20	12,12	55	33,33	75	45,45	4,08
strategies are known	23	13,94	43	26,06	39	23,64	43	26,06	17	10,3	2,93
The PLANNING function is developed	13	7,88	22	13,13	50	30,3	62	37,58	18	10,91	3,30

Source: author

Inquiries about the allegations concerning the ORGANIZING function were also widely answered by the respondents.

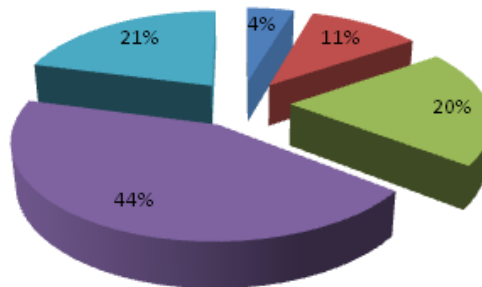
On the claim that *the funds and staff are adequately organized*, 37% of the respondents consider the date absolutely disagreeing, 20% disagree, 19% disagree or disagree, 12% disagree, while 12% absolutely agree.



Source: author

Graph 2 Resources and staff are adequately organized

According to the claim that *the organizational structure and the defined goals are harmonized*, 44% of the respondents believe that they absolutely disagree, 21% disagree, 20% neither agree nor disagree, 11% somewhat agree, while only 4% absolutely agree.



Source: author

Graph 3 The organizational structure and the defined goals are aligned

Some of the queries about the claims related to STAFFING functions were answered by the respondents:

According to the claim that *human resources needs are determined on the basis of real needs*, 65% of respondents believe that they absolutely disagree, 26% disagree, 4% neither agree nor disagree, 3% somewhat agree, while only 2% absolutely agree .

On the claim that *promotion is made possible based on work results*, 66% of respondents think they absolutely disagree, 28% disagree, 1% disagree or disagree, 2% disagree, while only 3% agree absolutely.

Table 4 Analysis of the results of the LEADERSHIP function

Claims about the development of the LEADERSHIP function	1 absolutely disagree		2 disagree		3 neither agree nor disagree		4 somewhat agree		5 absolutely agree		Average grade
	number of respondents	%	number of respondents	%	%	%	%	%			
management encourages creativity and innovation in work	33	20	47	28,48	42	25,45	34	20,61	9	5,45	2,63
management encourages teamwork	29	17,58	33	20	53	32,12	41	24,85	9	5,45	2,81
Management delegates jobs	15	9,09	25	15,15	44	26,67	55	33,33	26	15,76	3,31
The LEADERSHIP function has been developed	55	33,33	75	45,45	20	12,12	12	7,27	3	1,82	4,08

Source: author

Some of the queries regarding the claims regarding the CONTROLLING function were answered by:

According to the claim *about periodic review and comparison*, 15% of respondents believe they absolutely disagree, 6% disagree, 10% neither agree nor disagree, 55% somewhat agree, while only 14% absolutely agree.

According to the claim that *labor standards are clearly defined in appropriate documentation and regulations*, 12% of respondents believe they absolutely disagree, 8% disagree, 7% neither agree nor disagree, 62% somewhat agree, while only 11% agree agrees.

According to the opinions of the citizens of Mostar, the county center of the HNŽ, it can be concluded that public management in this research has medium development.

Citizens believe that the most attention is paid to functions such as planning and controlling, and least to organizing and leadership, while the staffing is considered inconsistent with the initial planning.

When asked, open-minded, about some of the illogicalities or frustrations that result from this management, the citizens listed the following:

- *nepotism in employment,*
- *corruption,*
- *party employment,*
- *irresponsibility of employees,*
- *lack of professionalism,*
- *lack of creativity of the staff,*
- *low quality of the services they provide,*
- *high costs,*
- *low transparency of work,*

- *the accumulation of various services and institutions without a specific goal,*
- *insufficient involvement of science, educational institutions and experts,*
- *legal restrictions,*
- *inadequate laws,*
- *increasing unnecessary regulations and more.*

These are just some of the claims that characterize the current state of public management in Bosnia and Herzegovina from the point of view of citizens. All these problems indicate that change is badly needed.

## 5. CONCLUSION

Like any business, public management requires analysis to determine its level of development, all with the aim of improving functioning.

The research was conducted in Bosnia and Herzegovina, in Mostar, which belongs to the Herzegovina-Neretva County. And given the specificity of the city and the county itself, citizens provided specific answers about the development of certain functions of public management, such as planning, organizing, staffing, managing and controlling.

According to the opinions of the citizens of Mostar, the county center of the HNŽ, it can be concluded that public management in this research has medium development.

Citizens believe that the most attention is paid to functions such as planning and controlling, and least to organizing and leadership, while the staffing is considered inconsistent with the initial planning.

Also there are some of the illogicalities that characterize the current state of public management in Bosnia and Herzegovina, such as redundancies, nepotism in employment, corruption, party employment and more. What is certain is fact that change is necessary.

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