

Varazdin Development and Entrepreneurship Agency and  
CIRU – Governance Research and Development Centre  
in cooperation with  
University North  
University of Dubrovnik



# Economic and Social Development

94<sup>th</sup> International Scientific Conference on Economic and Social Development -  
"The Dark Side of Management and Governance: power, ideology, tensions, and destructive traits" (XI. OFEL)

## Book of Proceedings

Editors:  
**Darko Tipuric, Matija Maric**



Governance Research and Development Centre



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**Editors ■** Darko Tipurić, Matija Marić

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## TEAM MANAGEMENT LEADERSHIP IN PRIVATE SOCIAL SOLIDARITY INSTITUTIONS: THE SOCIAL WORKER AS A LEADER

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### ABSTRACT

*For successful leadership, skills such as management should be measured, in addition to high emotional skills, knowing how to apply leadership styles to each situation faced within the organization. Be influential and know how to involve the team to masterfully achieve the proposed objectives. The present investigation portrays the leadership styles present and applied by leaders of an IPSS's (Private Social Solidarity Institution). Topics such as motivation, satisfaction, approaches, and leadership concepts were proposed to be studied, using the literature review of other studies already carried out. The necessary information was obtained, using a questionnaire to a sample of the active population in Lisbon Municipality Area. The results obtained from the sample of 19 responses to the questionnaire was subject to statistical treatment, showed that an effective leader must not only reveal technical knowledge to transmit to the subordinates who perform tasks, but also the ability to deal with people, to communicate with employees to get job done. These same results demonstrated the transversal preference of leaders in IPSS's for the adoption of the democratic leadership style, regardless the situational variables that explain some conflict situations. In the opposite direction, autocratic leadership style is the least adopted by them.*

**Keywords:** Leadership, Styles, IPSS's, Motivation, Social Worker

### 1. INTRODUCTION

This research analyzes the perception of leadership by IPSS team leaders towards their subordinates, namely social workers in Lisbon district region. In Portuguese context, IPSS's are a great reality with the objective of giving expression to the moral and justice duty, thus representing the national panorama with a strong pillar with regard to the provision of services in social protection area distributed throughout country (Ferrão, 2016). Leading is a change that is made through example, often without encompassing many professionals who, even well consolidated and with the best performance in terms of position, do not have the authority, power or persuasion skills to lead. Persuasion is made up of motivational stimuli that allow subordinates to perform technical and social tasks emotionally (Venâncio, 2017). In this way, it is crucial for the development of IPSS's that it has good management/leadership. Taking into account challenges and the constant change of the market and/or environment in which they are inserted, it has become important for social workers to develop management and/or leadership skills so that hiring external leadership becomes unnecessary and apart from social assistance.



In general terms, an attempt is made to evaluate the main leadership styles, leader traits, the way of acting and the exercise of leadership in Social Work in IPSS. In this sense, the following research questions are raised:

- 1) What kind of relationship can be established between professional practices and social worker principles and management principles, in the IPSS context?
- 2) Are the leadership styles of social workers in IPSS's directly linked to the management guidelines and principles of the organization or the professional experience of the social worker himself?
- 3) What is the state of professional satisfaction of social workers of the IPSS's under study and what impact do leadership styles have on this professional satisfaction?
- 4) The nature and exercise of leadership has been an extensive process throughout society. It is necessarily an agent of change, since it has an inherent process of influencing the activities of an individual or a group, through skills that make it possible to transform knowledge into action, to reach goals in a given situation, resulting in a high performance (Reis, 2021).

## **2. PRIVATE SOCIAL SOLIDARITY INSTITUTIONS**

Special emphasis was given to a group of associations, cooperatives or mutualists, which are generally referred to the third sector at the end of the 20th century. Briefly, the third sector is defined as a group of people who form a non-public organization, with social objectives and which, being private, are not for profit. With the criteria and designations used, they represent a wide variety of forms and assume responsibilities to different historical and social contexts, as well as the positions assumed by the various actors and social groups involved (Almeida, 2011, cited by Nascimento, 2012). In Portugal, and similarly to what happens in other countries, the origins of philanthropic and charitable initiatives are mostly linked to the Church. Since the beginnings, referring specifically to the 19th century, that there are organizations that are currently inserted in the third sector, which were inspired by Christian values. These associations spread across the country and currently play an important role in social protection, essentially covered by the name IPSS's (Franco et. al, 2005, cited by Almeida, 2012). In Portugal there are 5,647 IPSS's according to the Social Security Institute (2017) of which 1,017 are Social Centres, 252 Foundations, 219 Religious Organization Institutes, 375 Charities, 3,364 Social Solidarity Associations, 174 Support Houses, 85 Mutualist Associations and 252 Social Cooperatives Social Solidarity (Mapa Social, 2018 cited by Veiga, 2019). For Soares et al. (2012) the social responses in national context, 68% are provided by Non-Profit Organizations and of these, 61% are IPSS (Veiga, 2019). According to the social workers deontological code in Portugal, published and approved at APSS General Assembly on October 25, 2018, the use of the professional title of Social Worker is authorized by law, exclusively, for Graduates in Social Work. Training dates back to 1935, when the first Social Service school appeared in Portugal. The recognition, in 1989, of the degree of Social Work courses taught in Portugal, updated the legal provision of exclusive use of the professional title of Social Worker to Graduates in Social Work. Therefore, in Portugal, the qualification that qualifies for professional practice is the title of degree and not any other academic title. The deontological code states that the social worker is a social intervention professional with an inter and transdisciplinary practice, who works with and for people, in a cooperation. Social workers use a set of specific skills that complement each other in their public work, such as:

- a) Politics - influencing the political system and public opinion, with the aim of formulating public policies, raising awareness and mobilizing people and groups to act to defend their rights;
- b) Relationships - build relationships of respect, trust, empathy and cooperation for necessary changes, including networking and partnerships;

- c) Social psychology - developing social help, training and monitoring processes and support for social teaching;
- d) Assistance - meeting people's basic needs;
- e) Technical operability and reflection - knowing how to communicate, mediate, diagnose and plan within the framework of scientific, multidisciplinary and interdisciplinary methods, Implementation and evaluation.

Leadership can be defined as a process of influence, which is applied individually or collectively by people who have certain skills (such as communication, knowledge and relationships) to achieve the needs and objectives of the organization as a guide (Ferreira, Marques, Reis & Santos, 2010; Rego, 1998; Reis & Silva, 2012, cited by Ribeiro & Sobral, 2018). For Robbins and Judge (2013), quoted in Graça (2016), leadership corresponds to the ability to influence a group to follow a certain vision or achieve a set of goals, that is, it is a process of influencing behavior of one or more people, with a view to meeting objectives. An effective leader should not only reveal technical knowledge to pass on to subordinates who perform tasks, but also the ability to deal with people, to communicate with employees in order to carry out desired work (Gibson, Ivancevich, Donnelly & Konopaske, 2006 cited by Grace, 2016). According to Azevedo et al, (2010), cited in Ferrão (2016), strategically managing a non-profit organization means ensuring that: (1) The organization understands the environment in which it operates and the organization itself; (2) The organization clarifies its mission, or reason for existence, and always uses it as a reference; (3) The goal is defined at different levels; (4) Define the strategy that leads to the achievement of the established goal; (5) Implementation, through the implementation of the strategy at all levels of the organization, achieve good execution; (6) Have performance measurement that allow the organization to monitor strategy implementation and short-term results and medium to long-term impact. That is, from this perspective, strategic management means that the strategy guides the organization towards achieving the objectives set, the objectives help the organization's mission and the mission is consistent with the environment (Azevedo et al, 2010). According to Azevedo and Carvalho (2014) in their research on Leadership Styles and Motivation in a study of IPSS's, it led them to conclude that the top leadership of the IPSS normally has presidential management, that is, the president of the board has decision-making power rarely contradicted, shaping the dominant leadership style, which led the authors to a study in order to try to understand whether the type of leadership perceived by IPSS employees influences their motivation. Therefore, the social work functions of social organization have a great tendency to develop towards leading non-profit organizations, which requires professionals to master knowledge and know-how, such as: current social legislation, which is constantly updated; power relations and situation analysis; surveys, social diagnosis and social indicators, adequate technical processing of data and information obtained to determine needs and determine priorities for action; read public budgets and fundraising areas; understand the planning process and capabilities in management and evaluation of social plans and projects (Alenquar, s/d, cited by Ferrão, 2016). In theory, social workers provide psychosocial support and personalized care, centered on dependent elderly people, family groups and the wider community. In this process, they consider the psychological, social, cultural and spiritual aspects, and how they constitute risk factors and protective factors to prevent or promote active aging (Ferrão, 2016).

### **3. METHODOLOGY**

As a main objective, this investigation aims to explore the vision of IPSS's employees about the leadership of their hierarchical superiors in the context of teams and the vision of leaders about their own leadership. In this study, the objective we intend to achieve is to verify job satisfaction within the organization, from the perspective of social workers, as if this is directly affected by

the leadership variable and all its components in IPSS. We want to know if the goals and objectives proposed by the IPSS will achieve the same results, regardless leadership type, emotional intelligence and professional respect for organizational leaders, evaluate main leadership styles, leader traits, way of acting and the exercise of leadership in Social Service in IPSS. For data collection, this investigation used two questionnaires, one addressed to IPSS's employees and the other addressed to leaders/managers of the same organization to assess the main leadership styles, leader traits, way of acting, exercise of leadership in Social Work at IPSS and the employees motivation based on that same leadership in Lisbon district region. The definition of target public was based on a non-probabilistic sample, in which professionals were segmented and selected only workers who perform leadership functions trained in social work and employees, in general trained in social work. This sample consists of 11 employees. The results related to sociodemographic variables are presented. Thus, it is possible to verify that: most employees are female (n=10, 90.9%); a higher number of employees are between 18 and 30 years old (n=6, 54.5%), only 2 (18.2%) are between 31 and 40 years old and 3 are between 41-50 years old (27.3%); With regard to qualifications, most employees have a degree (n=6, 54.5%), 3 have a master's degree (27.3%) and only 1 (9.1%) has only completed secondary education. With regard to variables related to the work carried out at the IPSS, it appears that: a higher number of employees have been working at the IPSS for less than a year (n=4, 36.4%), followed by those who work between 1 and 5 years (n=3, 27.3%), 6 for 10 years (n=3, 27.3%) and more than 10 years (n=1, 9.1%); a higher and similar number have fixed-term contracts (n=4, 36.4%) and permanent contracts (n=4, 36.4%), the remaining 3 (27.3%) are undertaking professional internships. As for the results of leaders and sample characterization, it is noted that of the 8 leaders surveyed: most are female (n=5, 62.5%); a higher number are between 41 and 50 years old (n=6, 75.0%), 1 between 18-30 and 1 between 51-60; and the higher number of those have a degree (n=7, 87.5%) and 1 has completed secondary education; an upper part has worked for more than 10 years in their organization (n=6, 75.0%) and almost all (n=7, 87.5%) have an open-ended contract.

#### 4. RESULTS

It is noted that there are more male leaders (n=6, 54.5%) although there is also a very similar number of female leaders (n=5, 45.5%). It is also possible to verify that a higher number of employees prefer their leader to be male (n=6, 54.5%), although a very similar number also prefer female leaders (n=5, 45.5%). It appears that employees refer that the factors that have always motivated them at work are the opportunities (n=8, 72.7%), autonomy at work (n=7, 63.6%), communication between employees and leaders (n=6, 54.5%) and receiving compliments and feedback (n=5, 45.5%). The presence of challenges at work is something that sometimes motivates most workers (n=6, 54.5%). Finally, it is noted that a higher number of employees consider that they never care about working conditions (n=6, 54.5%). According to the collaborators opinion, it is possible to verify that the majority considers that leader is an agent of change, since he has an inherent process of influencing activities of an individual or a group (n=5, 45.45%). A lower number of employees consider that leading is guiding a group so that it can achieve its goals without ever forgetting the human being that it is (n=1, 9.09%) and that it is a process of guiding and coordinating the team towards change (n=1, 9.09%). Regarding the interpersonal skills that employees consider most important in a leader, we note that a higher proportion consider charisma (9/11, 81.82%) and emotional intelligence (9/11, 81.82%) more important. On the other hand, they consider humility (4/11, 36.36%) and communication (4/11, 36.36%) to be less relevant. With regard to job satisfaction, it is possible to observe that the majority of employees are always satisfied with their leader's ability to lead organization (n=5, 45.5%), with the fact that their manager leads by example (n=7, 63.6%), with work recognition (n=5, 45.5%) and with the possibility of reconciling personal and

professional life (n=8, 72.7%). It is also verified that a higher number of employees sometimes feel satisfied with the possibility of involving employees in decision-making processes (n=6, 54.5%). It is possible to verify that there is a high tendency for employees to feel more satisfied with the possibility of reconciling their personal and professional lives (M=2.64) and a lower tendency to feel satisfied due to the recognition of their work (M =2.00). With regard to the way in which employees analyze the leadership capacity of their bosses, we can say that a higher number consider that their bosses always treat their employees with equality and respect (n=6, 54.5%), which they distribute work based on priorities and capabilities (n=6, 54.5%), who manage and control well in situations of stress and conflict (n=6, 54.5%), who recognize and reward everyone's efforts when they achieve or exceed a goal (n=4, 36.4%), who communicate in a clean, fluid and flexible way (n=7, 63.6%), who demonstrate development and commitment to the work they do (n=8, 72.7%), who experience new methods and procedures (n=5, 45.5%), show understanding of subordinates' problems (n=6, 54.5%) and examine records, reports, documents for the purpose of checking their accuracy (n=6, 54.5%). Most consider that their bosses, only sometimes, try to involve everyone in most important decisions of organization (n=5, 45.5%). It appears that there is a greater tendency for employees to consider that their bosses demonstrate development and commitment to the work they perform (M=2.64) and that they consider less that their bosses recognize and reward employees efforts when they reach a certain goal (M =2.00). As for how employees rate their leader, we can say that a higher proportion considers him to be very understanding (9/11, 81.82%) and also confident (7/11, 63.64%). On the other hand, a lower proportion consider their boss to be absent (1/11, 9.09%) and pessimistic (1/11, 9.09%). Regarding the existing satisfaction in the relationship with the boss, the results obtained indicate that a higher proportion of employees refer that they always identify with their boss (n=5, 45.5%), feel good with him (n=7, 63.6%), makes you feel that you can achieve your goals without direct help (n=8, 72.7%), that your good work is recognized (n=6, 54.5%), your superior listens to you when you need it (n =6, 54.5%), they can make decisions at work and are supported by their boss (n=7, 63.6%), their boss asks for their help whenever they need it (n=6, 54.5%) and accepts criticism from open minded (n=7, 63.6%). A higher number of employees say that their boss never treats their employees differently (n=6, 54.5%) and that they allow them to take initiative, although they do not encourage it (n=5, 45.5%). It is still possible to state that there is a higher tendency for employees who report that their boss makes them feel that they can achieve the proposed objectives without their direct help (M=2.64) and feel good with their boss (M=2.64). On the other hand, it appears that there is a very low tendency to consider that their boss treats their employees differently (M=0.64). Responding to the question of what leadership is, most leaders (n=6, 75.00%) refer that leader is a kind of change agent since he has an inherent process of influencing activities of an individual or a group. When asked what their main characteristics as a leader are, all leaders say that it is the ability to be attentive (n=8, 100.0%) and to be understanding (n=7, 87.50%). On the other hand, they do not consider that they are pessimistic (n=8, 100.0%) or absent (n=8, 100.0%). It appears that most leaders consider that they can anticipate problems and develop plans to solve them (n=7, 87.50%). Regarding the way in which leaders consider that they react in situations where the employee performs below expectations, in order to guide their employees and seek to know the reason for what happened (n=7, 87.50%). It is possible to verify that a higher proportion of leaders state that they coordinate services (n=6, 75.00%). Only 1 (12.5%) leader claims to have a direct action. We found that half of leaders are also social workers (n=4, 50.00%). It is possible to verify that, in the opinion of half of the leaders surveyed, the compatibility between their work as a social worker and a leader satisfies them (n=4, 50.00%). Regarding the way leaders characterize a leadership profile, it is possible to verify that: a higher number of leaders always consider that leader is the one who keeps the team motivated for results (n=5, 62.5%), that he is communicative (n=5, 62.5%), who

demonstrate interest in the work they do and in their team (n=8, 100.0%), who intervene whenever necessary (n=7, 87.5%), who have a well-structured work schedule (n=5, 62.5%), is concerned with everyone's well-being and treats everyone equally (n=7, 87.5%) and always looks for win-win solutions (n=6, 75.0%); most of the leaders sometimes consider that they solve problems in a creative and intelligent way (n=4, 50.0%), that they frequently check the reports (n=5, 62.5%), little or nothing is discussed about the actions to be taken (n=5, 62.5%), which lets employees manage themselves without interfering with their work (n=7, 87.5%), which does not impose rules and is permissive (n=4, 50.0%); the majority stated that they never quickly punished their employees' mistakes (n=5, 62.5%). It is still possible to verify that there is a greater tendency for leaders to consider that the main characteristic of a good leader is to show interest in work he performs and his team (M=4.00). On the other hand, there is a smaller tendency to consider that the leader is the one who quickly punishes the mistakes of his collaborators (M=1.38). In order to verify if there is an association between the main characteristics of the leader considered by the collaborators and by the leaders themselves, the Chi-Square test was used. There are significant differences between leaders and employees ( $\chi^2=4.94$ , 0.026), with a higher proportion of leaders who point out this characteristic (8/8, 100.0%) compared to employees (6/11, 54.5%). Moreover, it appears that there is a similar proportion of employees and leaders who consider that the leader should be confident ( $\chi^2=0.00$ ,  $p=0.960$ ), absent ( $\chi^2=0.77$ ,  $p=0.381$ ), understanding ( $\chi^2=0.11$ ,  $p=0.737$ ), optimistic ( $\chi^2=0.83$ ,  $p=0.361$ ), controlling ( $\chi^2=0.11$ ,  $p=0.737$ ), liberal ( $\chi^2=3.52$ ,  $p=0.061$ ), motivating ( $\chi^2=0.04$ ,  $p=0.845$ ), authoritative ( $\chi^2=1.63$ ,  $p=0.202$ ) and pessimistic ( $\chi^2=0.77$ ,  $p=0.381$ ).

## 5. CONCLUSION

The objective that was intended to be achieved was to evaluate the degree of job satisfaction within the organization from the perspective of social workers, how this is directly affected by the leadership variable and all its components in the IPSS, and whether the goals and objectives proposed by the IPSS achieved the same results regardless the type of leadership, emotional intelligence and professional respect for organizational leaders. After surveys carried out, it can be concluded that in terms of job satisfaction, most employees are satisfied with the ability of their leaders to lead the organization by example, also giving them the possibility to make decisions during the course of their work, being one of the key factors for employees to feel motivated and energized to be in the workplace, is that they are heard and supported. The results suggest that one of the main factors that motivate workers is the offer of opportunities within the institutions themselves, giving them great autonomy, not neglecting communication with leaders. It was possible to verify that in relation to leadership, most consider that the leader is an agent of change, which has a positive impact and influence, motivating them to achieve their goals. The charisma of leaders is one of the factors they recognize as essential, because it analyzes the organization's behaviors and tries, by all means, to correct them using excessive energy to find new opportunities for action (Reis, 2018). With regard to the way in which employees analyze leadership capacity, we can say that a higher number consider that their bosses treat them with equality and respect, that in situations of stress and conflict they are able to manage and control well and that recognize and reward everyone's efforts when they meet or exceed a goal. The employees motivation is related to the stimuli and the influence that leaders also have on them, being a very important trait and that for employees is essential, as it is a constructive power that triggers harmony in the group. Regarding the way leaders characterize a leadership profile, it is possible to verify that a higher number of leaders consider that a leader is the one who keeps the team motivated for results, who demonstrates interest in the work he does and in his team and who intervenes whenever necessary. It is possible to verify that there is a high tendency for leaders to consider that main characteristic of a good leader is

to show interest in the work that team performs, and on the other hand, there is a smaller tendency to consider that leader is the one who it quickly punishes the errors of its collaborators. It is crucial for the development of an IPSS's that it has good management/leadership. Taking into account the challenges and the constant changes of the market and the environment in which they are inserted, it has become important for social workers to develop management and leadership skills so that the hiring of external leadership and separate from the social assistance. The IPSS area of action has opened up a different job market for Social Workers, often making them responsible for their management/coordination as "new companies" in the social economy, but also reflecting yet another mark of the mutations that the profession has undergone over the years over time. An effective leader should not only reveal technical knowledge to pass on to the subordinates who perform the tasks, but also the ability to deal with people, to communicate with employees in order to carry out desired work, which is why professional experience as a social worker a key factor, as they are able to understand employees in a different way because they work directly with them. Personality, motivation and ability are some of the most studied and valued characteristics of leader identification traits, and being social workers themselves, they manage to inspire the team by creating relationships at work, dealing with change in different ways, promoting and valuing it, inspiring and giving enthusiasm to the team and having the ability to deal with situations of emotional tension, always speaking with the employees as a whole and never individualizing. In order to obtain convincing results it is necessary to have effective management and efficient leadership. Leadership is a function that appeals to originality, creativity, proactivity, emotion, based on human values and principles. Leadership creates meanings, establishes emotional bonds that give meaning to tasks, in a way people feel motivated to work. In this case, leaders and employees are satisfied with leaders and leadership styles, as they think as a team, helping each other, motivating each other and allowing personal development to take place without creating barriers.

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## INSTITUTIONAL THEORY AND BOARD OF DIRECTORS: TOWARDS A RESEARCH AGENDA

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### **ABSTRACT**

*This article aims to provide an overview of the current state of research on the board of directors from the perspective of institutional theory, and to propose guidelines for future investigations. Institutional theory has emerged as an important framework for understanding board task performance, particularly in relation to board's role in achieving organizational legitimacy within their environment. Through a comprehensive review of the existing literature, we identify key research themes and gaps in the field, and offer suggestions for future research. These include further investigation into board composition and diversity as well as the processes of boardroom dynamics. At last, we argue that a deeper understanding of the institutional logics that shape boardroom behavior is essential for building governance practices that contribute to organizational success.*

**Keywords:** corporate governance, board, institutional theory, isomorphism

### **1. INTRODUCTION**

In recent years, corporate governance has gained increasing relevance in academic and professional circles, especially due to the impact of high-profile corporate scandals. Attention has been focused specifically on the position and roles of the board, which is one of the key internal mechanisms in corporate governance. The board plays a central role in overseeing and guiding the strategic direction of the organization (Judge and Zeithaml, 1992; Åberg et al, 2019). However, despite the acknowledged significance of the board, there is still a lot to be comprehended regarding how boards can contribute to organizational success. Previous research has primarily focused on examining boards from the agency theory perspective. However, there is a growing trend among researchers to incorporate other theoretical approaches in this field (Hillman and Dalziel, 2003; Zona and Zattoni, 2007; Rigolini and Huse, 2021). Institutional theory is one such perspective that, either alone or in conjunction with other approaches, effectively addresses various phenomena related to corporate governance. Institutional theory suggests that organizations are shaped and influenced by the wider institutional context in which they function. This context includes social norms, cultural values, and legal frameworks (DiMaggio and Powell, 1983). Applying institutional theory to the study of boards offers a valuable perspective for examining the societal and cultural factors that shape board structure and processes. This perspective can assist researchers in acquiring a more profound understanding of how boards are influenced by institutional pressures and how they can be structured to effectively fulfill environmental expectations. Lastly, considering the institutional context in which boards operate can enable researchers to develop a more nuanced understanding of the challenges and opportunities that boards encounter in different settings.

In this paper, we aim to explore the potential of institutional theory as a framework for studying corporate boards. Specifically, we aim to structure current knowledge in the field and to identify key research questions and areas for future inquiry. By advancing our understanding of board structure and processes from the institutional perspective, we hope to contribute to the ongoing academic debate around board's role in promoting good governance. This paper is organized as follows. Following the introduction, we first introduce the board as a key mechanism in corporate governance and provide a brief overview of the main theoretical approaches in this field. We then present the key assumptions of institutional theory and describe its application to the study of boards. In the main part of the paper, we provide a comprehensive overview of the current research on boards of directors from an institutional perspective. Finally, we conclude the paper by summarizing the key points and identifying promising areas for future research on boards in this field.

## 2. LITERATURE REVIEW AND RESEARCH OBJECTIVES

The board is a crucial internal corporate governance mechanism that performs three distinctive sets of tasks: control, service, and networking (Johnson et al., 1996). The control tasks reflect board's duty to oversee the management of the company on behalf of its owners and other important stakeholders (Fama and Jensen, 1983, Tipurić, 2008). Further, the service tasks of the board are related to advising and supporting top management, especially in terms of support for shaping strategic direction, and creation of a context for successful strategy implementation (Johnson et al., 1996, Huse, 2005). At last, board's networking tasks relate to providing crucial resources from the environment and building relationships with key stakeholders of the company (Pfeffer and Salancik 1978, Postma and van Ees, 2000). Previous research has examined the effectiveness of the board in performing its tasks from different perspectives. Agency theory has dominated board research since the 1970s, and has been instrumental in the development of the scientific discipline and practice of corporate governance. According to this theory, the board's primary task is to establish a control system that aligns the interests of managers and owners, and reduces potential agency costs by implementing appropriate monitoring mechanisms to oversee managerial decisions and performance (Jensen and Meckling, 1976). Resource dependence theory has also made significant contributions to board research by viewing the board as an organizational instrument for reducing dependence on key resources by connecting the company with important entities in the environment (Pfeffer and Salancik, 1978). Other relevant theories such as upper echelon theory (Hambrick and Mason, 1984) and stewardship theory (Davis et al., 1997) have also been used to provide useful insights into board effectiveness. Another valuable theoretical framework for studying the roles and effectiveness of the board can be provided by the institutional theory. Institutional theory explains how institutions shape organizational behavior and outcomes (Krajnović, 2018). The theory is based on the assumption that institutions are socially constructed and embedded in social, cultural and political context (Meyer and Rowan, 1977, Scott, 1995). Within institutional theory, two key concepts, isomorphism and legitimacy, have been developed, which can have significant implications for board research. Isomorphism can be defined as *a constraining process that forces one unit in a population to resemble other units facing the same set of environmental conditions* (Hawley, 1968: 334). This concept is applied at the organizational level, and it is interpreted as organizations adapting to environmental challenges through the process of homogenization (Hannan and Freeman, 1977). Legitimacy, on the other hand, refers to the degree to which an organization's actions are accepted by its environment, including shareholders, other stakeholders, and society at large. Institutional theory postulates that the purpose of adaptation to the environment is to achieve legitimacy and, consequently, the resources necessary for its survival (Meyer and Rowan, 1977).

Ultimately, institutional theory explains how the external environment of a company is a source of regulatory, normative, and cultural pressures that companies must conform to in their search for legitimacy (DiMaggio and Powell, 1983). According to institutional theory, corporate governance practices are not simply a matter of choosing from a vast array of options (Krenn, 2016), but are shaped by three types of pressures: coercive, mimetic, and normative. Coercive isomorphism results from political power, which is most clearly manifested in the legislative or regulatory process. Mimetic isomorphism emerges in response to environmental uncertainty, and consulting practices are among the key sources of this pressure. Finally, normative isomorphism refers to the legitimation of an organization through its members' membership in professional associations (DiMaggio and Powell, 1983). In the context of board research, institutional theory provides a useful framework for understanding why boards tend to adopt similar structures and practices over time. This theory explains how boards conform to external regulations, emulate the practices of other boards, or adhere to industry norms. Moreover, institutional theory emphasizes the significant role of the board in achieving organizational legitimacy, which is increasingly crucial in the aftermath of various corporate scandals, as maintaining the trust of stakeholders becomes imperative. Although the importance of institutional theory in understanding the operations of boards has been recognized, the literature lacks clear guidance on valuable research in this area. Our argument is that structuring theoretical perspectives and empirical findings on board structure and effectiveness through institutional theory can provide valuable insights into the factors that influence board decision-making and identify strategies to enhance board effectiveness. Therefore, this article aims to present an overview of the current state of research on the board of directors from an institutional theory perspective and propose directions for future investigations. By conducting a thorough review of existing literature, we aim to identify key research themes and gaps in the field, as well as suggest areas for further research.

### **3. RESEARCH ON BOARDS WITHIN THE INSTITUTIONAL THEORY**

The application of institutional theory to corporate governance and the role of the board gained significant attention after the work of Judge and Zeithaml (1992), with a substantial increase in published papers after the 2008 financial crisis. During the first period of research, studies were mainly conducted in the Anglo-American context, while the second period saw an internationalization of samples, with Europe and China being slightly dominant. The majority of studies in both periods employed quantitative methodology, with only a few using qualitative or mixed-method approaches. In total, in our analysis we identified and examined over 40 journal articles on institutional theory and the board of directors.

#### **3.1. Institutional theory and board task performance**

A significant portion of research on boards, viewed through the lens of institutional theory, is focused on board task performance. To begin with, based on a sample of 114 board members in American companies, Judge and Zeithaml (1992) concluded that organizational age and financial performance are positively associated with the extent of board involvement in strategy, while board size, diversity, and the presence of insiders on the board are negatively associated. Further, based on a qualitative study on the extent to which boards participate in the development and oversight of strategy and how they balance their monitoring and strategic roles, Parker (2007) found that strategic plans are largely ceremonial in nature, while strategic discourse is informally imposed. With that, Parker (2007) also notes that strategic discussions are often predominantly framed in financial terms, and that strategic initiatives are viewed through the lens of organizational politics. Further, Porter and Hunter (2002) investigated the extent to which various aspects of corporate policies towards social networks have become institutionalized, and find that industrial mimetic pressures have a greater impact on social

network policies than regulatory pressure. Young et al. (2000), on the other side, examined the monitoring role of the board, which strengthens in response to competitive pressures from the environment. Their results suggest that independence of the board chairman and the level of market competition are some of the key factors associated with the formalization of the board's assessment of CEO performance. Lastly, Jonnergard and Stafsudd (2009) concluded that a higher proportion of women on boards has a positive impact on the scope of the board roles, while Jewer and McKay (2012) found that certain elements of board composition (as well as organizational factors) influence the degree of board involvement in overseeing IT processes.

### **3.2. Institutional theory and board composition and structure**

The next segment of studies within the institutional theory framework focuses on the composition and structure of the board. Firstly, a significant part of the research in the field focuses on board independence as one of the key characteristics of its composition. Examining whether external board members have an impact on firm performance during institutional changes and what leads to their appointment in the absence of legal obligations, Peng (2004) concludes that external board members have an influence on revenues, but not on return on investment. Further, Chizema and Kim (2010) identify factors that have forced Korean companies to appoint a higher proportion of external board members and question whether this is isomorphism or convergence towards Anglo-Saxon norms. They find that larger companies under greater government control appoint a higher proportion of external directors to their boards. Next, Johanson and Ostergren (2010) find many similarities in the board independence norms in the United Kingdom and Sweden which is attributed to mimetic isomorphism where a less developed country adopts the best practices of a more developed country to gain legitimacy. Wang and Young (2010) find that the appointment of additional independent members often represents a response to environmental pressures. Using institutional theory lens to explain the proliferation of independent board members, Zorn et al. (2012) find that boards in which the general manager is the only remaining insider are characterized by lower success in control task performance. Chang et al. (2012) investigate whether the relationship between company size and social responsibility is moderated by the number of external board members and find that corporate social responsibility is more strongly related to the number of external board members than to company size. Ponomareva and Ahlberg (2016) explore whether coercive isomorphism can explain why family firms accept the concept of board member independence. In their conceptual study, the authors are concerned with the question whether the introduction of independent board member leads to favoring control over the strategic function of the board. Further, numerous studies have focused on different dimensions of board diversity. For example, Terjesen et al. (2014) investigate the factors that lead governments to legislate board gender quotas. In their conceptual paper, the authors propose a model of three institutional factors that explain the establishment of a legislative framework for gender quotas, and Norway is identified as a source of mimetic isomorphism for other countries. Furthermore, Carrasco et al. (2014) find that differences in the representation of women on boards can be attributed to two cultural characteristics: the tolerance for inequality in the distribution of power and the greater appreciation of male roles. Iannotta et al. (2016) study a sample of 5,910 members of European boards and show that certain features of the social environment (such as a high number of men on paternity leave, a high percentage of women in the workforce, etc.) are associated with the proportion of women on boards and indicate that introducing quotas is not a sufficient mechanism for achieving gender-balanced boards. Singh et al. (2015) examine how the introduction of gender quotas could change the composition of boards and find that, in anticipation of legislating quotas, boards become more gender-diversified. Gregorič et al. (2015) study a sample of 502 Scandinavian firms and investigate how companies respond to institutional pressures for gender-balanced boards.

They conclude that preferences for maintaining the status quo, integrated into the process of selecting board members, are important barriers to deinstitutionalization processes driven by social pressures. At last, particularly interesting are the results of Marquardt and Wiedman (2016), which suggest that shareholder activism has an impact on board diversity. Kilincarslan et al. (2020) investigated the impact of corporate governance structures on environmental reporting practices and found a positive influence of gender diversity on environmental disclosures. Selma et al. (2020) explored whether differences in board diversity affect philanthropic donations and how the institutional context may change this relationship. Their results suggest that there is a link between corporate donations and functional board diversity. In their research on the relationship between environmental perceptions and reputational exposure, Gaganis et al. (2021) discovered that age diversity has a moderating effect on the connection between positive environmental public perception and reputational exposure. Allemand et al. (2021) investigated the impact of board member networks on the appointment of women to boards and how regulations related to board diversity affect these networks. They concluded that board member networks hinder the appointment of female members, and regulations that promote board diversity reduce the influence of these networks. In their study on the impact of gender diversity on international entrepreneurship, Wang et al. (2022) found that boards with a higher proportion of women are more effective and that there is a negative relationship between the proportion of women on boards and international entrepreneurship. The third group of studies focused on the size of the board. Among studies in this group, Musteen et al. (2010) confirmed a positive relationship between corporate reputation and board size. Further, Ntim and Soobyroyen (2013) explained through the lens of neo-institutional theory that larger boards are associated with a higher degree of management oversight. Examining whether differences in board characteristics and ownership structure can explain differences in the level of voluntary compliance with corporate governance codes and disclosure of data, Elmagrhi et al. (2016) found that companies with larger boards disclose more data, regardless of the existence of a corporate governance committee or ownership structure. Lastly, Shahab and Ye (2018) found a positive impact of board size on reporting on corporate sustainability while Alshbili et al. (2018) were unable to confirm the same impact. Finally, we have identified several studies that explore some additional aspects of board composition and structure. For example, Luoma and Goodstein (1999) concluded that legal frameworks, industrial regulation, and company size are related to the number of stakeholder representatives on boards, but not on committees. Li and Harrison (2008) explored to what extent national cultural context defines the composition and structure of boards in multinational companies. They conclude that in certain cultures that favor individualism and strong leadership, the strategic role of the board is not pronounced and strategic direction is in the hands of top managers. Next, examining corporate governance in Japan, Jackson (2009) concludes that there has not been a convergence towards the Anglo-American model, but that various hybrid forms have emerged. Furthermore, Reddy and Sharma (2012) identify the Asian Development Bank as a disseminator of coercive isomorphism through a program to establish corporate governance standards in Fiji. De Moura et al. (2014) investigate the level of corporate governance reporting in the banking industry in Brazil, examining isomorphic pressures through differences in reporting between companies listed only in Brazil and those with dual listings in Brazil and on the NYSE, but fail to confirm the influence of mimetic isomorphism. Jones et al. (2015) are interested in how boards of NYSE-listed companies established corporate governance committees, highlighting in numerous ways that mere compliance with normative frameworks does not necessarily strengthen the quality of corporate governance. Interestingly, Kilic et al. (2020) find that the institutional framework is associated with the adoption of integrated reporting, with stakeholder pressure being crucial in this regard. Aluchna and Kuszewski (2021) investigate how companies respond to recommendations to adopt codes of best practices.

They find that the degree of acceptance varies over the years, and that companies sometimes have strategies for resisting isomorphic pressures. Huo et al. (2021) conclude that the appointment of foreign directors contributes exclusively to attracting foreign investment, which is explained by these companies' search for international legitimacy, while Setiawan (2021) shows that there is a positive relationship between boards composed of foreign directors and corporate social responsibility.

### **3.3. Institutional theory and board social capital**

Finally, a segment of studies employed institutional theory to examine board social capital. In that sense, Hailinag et al. (2019) investigated the relationship between board social capital and the level of corporate environmental responsibility and find a positive impact of political organizations and universities as coercive and normative pressures and a negative impact of industrial mimetic pressures. Additionally, Hailiang et al. (2019b) explore the relationship between corporate social responsibility and interlocking directorates and establish a positive association between symbolically responsible firms and such connections. Lastly, the study carried out by Rigolini and Huse (2021) is particularly intriguing, as it shows how various forms of social pressure to increase the number of women on boards can result in different attributes of board members' social capital.

## **4. DISCUSSION AND CONCLUSION**

In this paper we examined the current body of knowledge on board of directors from the perspective of institutional theory, with the aim of identifying promising areas for further research. Our review of the literature suggests that institutional theory can be a valuable framework for understanding the functioning of corporate boards, as well as the broader context in which they operate. In particular, the concepts of institutional isomorphism and legitimacy can help us to understand why boards operate in a certain way as well as why some boards are more effective than others. Based on our review, we identified several areas where future research is needed. Firstly, with regards to the effects of coercive pressures on boards of directors, it would be valuable to investigate how individual characteristics of board members (such as gender, age, competencies, tenure, etc.) influence their ability to successfully navigate such pressures. Additionally, it is particularly interesting to explore how coercive pressures from different stakeholders, such as shareholders, regulators, and the general public, affect group dynamics and decision-making within the board. Further, regarding mimetic pressures, we believe that it would be useful to conduct more research on the main sources of mimetic pressures on the board of directors when it comes to selecting board members based on their background, competencies, and experience. Additionally, it would be valuable to investigate the potential effects of mimetic behavior among board members on board innovativeness. Lastly, concerning normative pressures, we suggest exploring whether specific institutional or cultural factors affect the level of normative conformity among boards of directors. It would also be beneficial to investigate how normative pressures impact directors' values and beliefs and how these, in turn, influence boardroom dynamics. Overall, we call for more research inquiries on effects of institutional pressures on boardroom behaviour and decision-making. We also advocate that more research is needed to demystify the relationship between institutional change and board effectiveness in different cultural contexts. We argue that by addressing these gaps in the literature, future research can contribute to better understanding of the board's role in corporate governance and its relationship to broader environment. This research agenda can also guide the development of more effective governance structures and practices, in terms of board composition and structure.

The institutional theory provides a comprehensive framework for understanding the factors that influence board effectiveness, including the external pressures and forces that shape the behavior and decision-making of boards. The institutional theory helps to explain why boards may be resistant to change or may face challenges in implementing new practices or strategies. By identifying the institutional factors that shape board behavior, the theory can help researchers and practitioners develop more effective strategies for improving board effectiveness. For research on boardroom effectiveness, legitimacy suggests that boards must demonstrate that they are fulfilling their role as representatives of shareholders and overseeing the management of the organization in a responsible and effective manner. Researchers might explore how boards communicate with stakeholders, how they are perceived by stakeholders, and how they address concerns or criticisms from stakeholders.

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# INTERNET SKILLS AND RANGE OF ACTIVITIES: INFLUENCE OF INTERNET LITERACY ON RESILIENCE TO ONLINE PRIVACY VIOLATION

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## **ABSTRACT**

*This research examines the impact of internet skills and a range of internet activities as the antecedent of resilience to online privacy violation. Previous research has found contradictory evidence that the perceived level of development of internet skills both increases and reduces resilience to online privacy violation; however, they do not analyze the factors that affect that relationship. Based on the survey data, an empirical analysis was conducted on a representative sample of internet users in Croatia. Empirical methodology is organized in the two steps. In the first step, the reliability, consistency, and dimensionality of latent constructs is tested. In the second step, the research model was estimated using regression techniques. This research fills the gap in existing literature by analyzing different perceptions of internet literacy development to make individual more resilient to online privacy violation in the context of socio-demographic characteristics of respondents, digital anxiety, as well as the intensity and variety of online activity of respondents. Initial results indicate that the range of internet activities is more important than development of internet skills to make an individual more resilient to online privacy violations. The results of this research could be useful to national policy and business strategy providers, particularly in the context of the new GDPR regulation introduced in 2018.*

**Keywords:** Croatia, internet activities, internet skills, online privacy violation, resilience

## **1. INTRODUCTION**

Nowadays, the benefits an individual gets from using the Internet largely depend on how much insight they are willing to provide about their personal information. The publication of personal data on the Internet occurs consciously (e.g., by self-publishing your profile on social networks, commenting or filling in various forms where personal data is requested) and unconsciously (e.g., by using "cookies" or traces left in search engines or purchases). This disclosure of personal information improves and personalizes services available online for each individual. Furthermore, for-profit business models increasingly rely on the collection of personal information clients profiling for client-customized online services (Saurwein et al., 2015). Taking this into account, it is very difficult and ineffective to completely exclude services that could potentially lead to online privacy violation incident (OPVI). Moreover, Acquisti et al. (2015) point out that nowadays individuals constantly have to balance the benefits of disclosing personal information with the risk of OPVI. However, although users are increasingly concerned about their online privacy, research reveals the phenomenon of the "privacy paradox", meaning that despite growing concerns about privacy violations, individuals nevertheless share information that could threaten their privacy, especially on social networks (Norberg et al., 2007). Resilience is a multidimensional and complex phenomenon that appears in various fields and disciplines (Budak et al., 2021), so it is also often included in public sector research and usually shows how the system reacts to extreme stressors (Hiller and Blanke, 2017). Considering that online privacy violation incident can be defined as a stressful event, resilience and privacy relationship in an online environment is worth investigating. When their privacy is endangered, people tend to change their behaviour which may affect their personal

life, their social networks and have economic outcomes. People who experienced OPVI might change their intention to adopt new online services which can lead to a slowdown in the acceptance of new technologies. The literature indicates that there is a link between the level of digital literacy and resilience. Previous research has mostly focused on studying OPVI on social networks (Chen and Chen, 2015; Feng and Xie, 2014), especially among young users. Tran et al. (2020) use a sample of Vietnamese students and show that as students are digitally literate, they are more likely to be digitally resilient. Internet users with insufficiently developed digital competences are especially susceptible to OPVI (Smith et al., 2015). However, as the Internet is currently available to more than 80% of the population in developed countries (International Telecommunication Union, 2015), this research focuses on general public and focuses on the effect of Internet skills and range of activities performed online on resilience to OPVI. A special contribution of the research is that it uses a nationally representative sample of Internet users from 2021, which is not biased with regard to Internet skills or privacy attitudes. This paper is structured as follows. The second chapter briefly explains the variables used in the model and the applied methodology, followed by a section on the description of the survey data. The results of the analysis are presented in the fourth chapter. Finally, the fifth chapter gives concluding remarks and implications for future policies.

## **2. VARIABLES AND EMPIRICAL METHODOLOGY**

The central variable in the model is the individuals' resilience to OPVI (RES). This was measured using the Short Resistance Scale developed by Smith et al. (2008) who defined resilience as the ability of an individual to "bounce back to the old way", i.e., to successfully recover from a stressful situation. The original BRS scale was adapted to test the resilience after OPVI and its psychometric characteristics were validated as appropriate (Rajh et al., 2021). Internet skills (SKILL) and the type of Internet service or activity used (WEB) can significantly determine the level of resilience to online privacy violations (Tran et al., 2020; Smith et al., 2015). Frequent and advanced Internet users, on the one hand, may be more aware of the risk of privacy violations in the online environment and therefore may be more resilient; but on the other hand, such Internet users may be so addicted to the Internet that they simply do not feel any concern for the violation of their privacy, and, as such, are less resilient to online privacy breaches. Online privacy concern (OPC) involves the rights of an individual concerning the storing, reusing, provision of personal information to third parties and displaying of information pertaining to oneself on the Internet (Malhotra et al., 2004). Research done by Ginosar and Ariel (2017) pointed to three separate domains of OPC: (1) user privacy concerns and behavior, (2) website privacy notices and practices, and (3) state privacy policies and regulations. Individuals, Internet users, vary in their privacy concerns about collection, sharing and unauthorized manipulation with their personal sensitive information and their their resilience will depend on this concern. The model was also extended with a measure of digital anxiety (DA), which is defined as a fear of computers and technology in general and leads to an increased level of concern for privacy in the online environment (Stewart and Segars, 2002). Previous research found that individuals who experience high levels of DA behave less comfortably around computers (Škrinjaric et al., 2018) and are thus speculated to have lower levels of RES. Social support (SS) refers to the number of close confidants, the sense of concern from other people, and the relationship with neighbors with a focus on the accessibility of practical help. This was measured using Oslo 3 Social Support Scale (Kocalevent et al., 2018) adapted for this research where three-item scale was condensed into a single scale. Individuals can also take certain steps to increase their resilience to OPVI i.e., they can adopt certain types of protective behavior (PB). Lwin et al. (2007) stated that protective behavior implies personal information fabrication, withholding and protecting by using privacy enhancing technologies, which should make them more resilient to OPVI.

This research adopts the constructs and measures from Lwin et al. (2007) and includes them into conceptual framework. Personality traits (PT) can be defined as “the substance of personality” (McCrae and Costa, 1987), an individual’s tendencies resulting in different attitudinal and behavioral patterns across a diverse set of situations. Thus, depending on their personality, individuals’ opinions and actions regarding resilience to OPVI differ. The upside of personality traits in explaining resilience to OPVI is their hereditary origin (Bergeman et al., 1993), as well as their stability across an individual’s lifetime (McCrae and Costa, 1987) and across cultures (Salgado et al., 2003). Personality traits were measured using the Big Five framework (Tupes and Christal, 1992) which divides personality into five traits: (1) openness (to experience), (2) conscientiousness, (3) extraversion, (4) agreeableness, and (5) neuroticism (emotional instability); using abbreviated 10-item scale developed by Rammstedt and John (2007). The conceptual framework was tested using the following empirical model:

$$RES_i = \alpha + \beta_1 SKILL_i + \beta_2 WEB_i + \beta_3 OPC_i + \beta_4 DA_i + \beta_5 SS_i + \beta_6 PB_i + \delta' PT_i + \gamma' X_i + \epsilon_i, \quad (1)$$

where resilience to OPVI (RES) is the dependent variable, SKILL is an approximation of the respondent's skills on the Internet, WEB is the range of activities respondent performs on the Internet, OPC is online privacy concern, DA is digital anxiety, SS is the social support that respondent receives from their environment, PB is protective behavior on the Internet, **PT** is the matrix of respondents’ personality traits (extraversion, agreeableness, conscientiousness, neuroticism and openness), and **X** is the matrix of other respondents’ socio-demographic characteristics (gender, age, education, household size, household income, occupation, settlement size, region). Description of all these variables are presented in Table A1 in the Appendix. All latent variables (SKILL, WEB, OPC, DA, PB, PT) enter the equation in their standardized form with a zero mean and unit standard deviation, and are hence interpreted in units of standard deviations from the average. Description of all items used to estimate latent variables are presented in Table A2 in the Appendix

### 3. DATASET USED

The data used in this paper were collected by a survey on a sample of Internet users in Croatia over the age of 18 who have had (at least subjectively) the incident of violating their online privacy in the past three years. The survey was conducted by computer-assisted telephone interviewing (CATI) software from January to February 2021. An online version of the telephone directory was used as a sampling frame, and data from the Eurobarometer 91.1 study (European Commission and European Parliament, 2019) were used to estimate the number of Internet users. To estimate the number of Croatian Internet users with privacy violation incidents, results of Anić et al. (2019) were used, who used a similar dataset to propose an extended model of online privacy concerns. The sample was created based on two-way stratification by counties in Croatia and the size of settlements, where the sample assigned to each stratum was proportional to the estimated number of Internet users with privacy violation issues in each stratum. With a response rate of 4.6 percent, the final sample consisted of 1,000 Internet users aged 18 or older who had a case of privacy violation in an online environment in the last three years. Descriptive statistics of socio-demographic indicators of all respondents in the final sample are shown in Table A3 in the Appendix.

## 4. RESULTS

### 4.1. Estimating latent constructs

First, reliability of items and psychometric properties of estimated latent constructs is analyzed (Table 1).

Latent construct	Items	Loading	CA	DG	CR	AVE
Resilience to online privacy violation (RES)	res_1	0.831***	0.776	0.869	0.787	0.689
	res_2	0.798***				
	res_3	0.861***				
Internet skills (SKILL)	skill_1	0.954***	0.939	0.949	0.876	0.824
	skill_2	0.971***				
	skill_3	0.871***				
	skill_4	0.828***				
Internet activities (WEB)	web_1	0.624***	0.828	0.723	0.579	0.707
	web_2	0.556***				
	web_3	0.008***				
	web_4	-0.136***				
	web_5	0.575***				
	web_6	0.279***				
	web_7	0.685***				
	web_8	0.412***				
	web_9	0.329***				
	web_10	0.384***				
	web_12	0.488***				
	web_13	0.655***				
	web_14	0.085***				
	web_15	0.456***				
Personality traits - extraversion (EX)	ex1	-0.011	0.718	0.355	0.725	0.749
	ex2	-0.835***				
Personality traits - agreeableness (AG)	ag1	0.858***	0.478	0.791	0.795	0.655
	ag2	0.757***				
Personality traits - conscientiousness (CO)	co1	0.613***	0.655	0.798	0.844	0.676
	co2	0.989***				
Personality traits - neuroticism (NE)	ne1	-0.159***	0.718	0.183	0.719	0.878
	ne2	0.728***				
Personality traits - openness (OP)	op1	0.681***	0.726	0.792	0.859	0.735
	op2	0.453***				
Digital anxiety (DA)	da_1	0.867***	0.561	0.819	0.574	0.693
	da_2	0.797***				
Online privacy concern (OPC)	opc_1	0.815***	0.778	0.871	0.786	0.692
	opc_2	0.814***				
	opc_3	0.866***				
Protective behavior (PB)	pb_1	0.797***	0.721	0.795	0.786	0.697
	pb_2	0.732***				
	pb_3	0.667***				
	pb_4	0.456***				
	pb_5	0.73***				
	pb_6	0.325***				

Table 1: Estimation of latent constructs

Notes: (\*\*\*) denotes significance level at  $p < 0.01$ . Abbreviations: CA – Cronbach's alpha, DG – Dillon–Goldstein's rho, CR – composite reliability, AVE – average variance extracted.

(Source: Authors' own work)

The discriminant validity of the measurement model represents the extent to which a construct is truly distinct from other constructs by empirical standards (Hair et al., 2021), which can be examined through Fornell–Larcker criterion.

Fornell–Larcker criterion, which compares the square root of AVE with correlations between latent variables, shows that square root of AVE is larger than the largest correlation with any other construct in all cases (Table A4 in Appendix). Therefore, constructs considered in this study possess adequate discriminant validity.

#### 4.2. Estimating main model

Model 1 was estimated using the ordinary least squares (OLS) method (Table 2). The model was estimated in two iterations so that more covariates were included in each successive iteration - version 1 is a simple case in which RES is regressed to other latent variables in the model and to two indicators of Internet use – Internet skills and variety of Internet use; and version 2, which includes all socio-demographic characteristics of the respondents.

Regressors	Version 1	Version 2
Internet skills	0.052	0.065
Internet range of activities	0.176**	0.132**
Time spent online	-0.015	-0.010
Online privacy concern	-0.231***	-0.218***
Digital anxiety	-0.073*	-0.085**
Social support	0.146***	0.133***
Protective behavior	0.101**	0.095**
Personality traits		
Extraversion	-0.080	-0.056
Agreeableness	0.089**	0.092**
Conscientiousness	0.048	0.047
Neuroticism	0.078**	0.077**
Openness	0.097***	0.098***
<i>Socio-demographic characteristics</i>		
Male		-0.072
Age		0.002
Household size		0.003
Education (benchmark: Primary)		
Secondary		0.162
Tertiary		0.201
Post-graduate		0.080
Work status (benchmark: Employed)		
Unemployed		0.309
Retired		0.095
Student		0.198
Settlement size (benchmark: less than 50,000)		
10,001–50,000		-0.040
50,001–100,000		-0.087
More than 100,000		-0.118
Household income (benchmark: less than 10,000 HRK)		
5.001-10.000 HRK		0.159
10.001-15.000 HRK		0.046
> 15.000 HRK		0.100
Region (benchmark: Panonian Croatia)		
Adriatic Croatia		-0.018
City of Zagreb		-0.229
North Croatia		0.112
Number of observations	777	777
Adjusted R-squared	0.253	0.266

*Table 2: OLS estimation results of Model 1*

Notes: (\*\*\*), (\*\*) and (\*) denote significance level at  $p < 0.01$ ,  $p < 0.05$  and  $p < 0.1$ , respectively. Standard errors are omitted to conserve space. As of January 1<sup>st</sup>, 2023, Croatia adopted the euro as its official currency with the official fixed exchange rate 1 EUR = 7.53450 HRK. (Source: Authors' own work)



Before interpreting the results of the analysis, it should be pointed out that, given that the analysis is based on cross-sectional data (as opposed to a panel data structure), the analysis reveals only correlations or associations (instead of causation) and all the following results should be interpreted exclusively as such. A unit standard deviation increase in estimated Internet range of activities was associated with a 0.176 to 0.132 standard deviation increase in resilience to OPVI. A unit standard deviation increase in estimated Internet skills was associated with a 0.052 to 0.065 standard deviation increase in online privacy concerns. However, neither this relationship, nor time spent online were found to be statistically significant in explaining variation in RES. Both social-psychological factors (digital anxiety and online privacy concern) proved to be statistically significant in both versions of Model 1. A unit standard deviation increase in digital anxiety was associated with a 0.073 to 0.085 standard deviation decrease in RES. Likewise, a unit standard deviation increase in an individual's online privacy concern is associated with a 0.231 to 0.218 standard deviation decrease in RES. Furthermore, social support and protective behavior were shown to exert a positive influence to individual resilience to OPVI. Finally, in terms of individual personality traits, agreeableness, neuroticism and openness were shown to be associated with higher levels of resilience to OPVI. In the second version of Model 1, of the eight analyzed socio-demographic factors, none of them were statistically significant in explaining variation in RES. This is somewhat surprising as one would expect that younger, more educated people living in urban areas to be more resilient to OPVI as they likely have more experience in using the Internet. However, our results do not support this hypothesis, suggesting that resilience is not affected by any socio-demographic characteristic and is instead more associated with psychological factors. Version 2 of Model 1 was also estimated using ordered probit method (Table 3). The dependent variable in Model 1 RES can take on five different modalities (outcomes) measured on a Likert scale ranging from 1 to 5 (1 – Very low resilience, 2 – Low resilience, 3 – Neutral, 4 – High resilience, 5 – Very high resilience). These discrete outcomes were obtained by rounding the RES value to the nearest whole number for each respondent and are as such entered the ordered probit model. The other latent covariates still enter the equation in their standardized form and are therefore interpreted in standard deviation units.

*Table following on the next page*

Regressors	Very low resilience	Low resilience	Neutral	High resilience	Very high resilience
Internet skills	-0.007	-0.014	-0.009	0.018	0.012
Internet range of activities	-0.012**	-0.025**	-0.015**	0.031**	0.022**
Time spent online	0.001	0.001	0.001	-0.001	-0.001
Online privacy concern	0.025***	0.050***	0.030***	-0.062***	-0.043***
Digital anxiety	0.006	0.013	0.008	-0.016	-0.011
Social support	-0.014***	-0.029***	-0.018***	0.036***	0.025***
Protective behavior	-0.010**	-0.021**	-0.013**	0.026**	0.018**
Personality traits					
Extraversion	0.006	0.013	0.008	-0.016	-0.011
Agreeableness	-0.008*	-0.015*	-0.009*	0.019*	0.013*
Conscientiousness	-0.007*	-0.014*	-0.009*	0.018*	0.012*
Neuroticism	-0.007*	-0.015*	-0.009*	0.018*	0.013*
Openness	-0.010***	-0.021***	-0.013***	0.026***	0.018***
<i>Socio-demographic characteristics</i>					
Male	0.008	0.016	0.010	-0.020	-0.014
Age	-0.000	-0.000	-0.000	0.000	0.000
Household size	0.001	0.002	0.001	-0.002	-0.001
Education (benchmark: Primary)					
Secondary	-0.008	-0.015	-0.008	0.018	0.012
Tertiary	-0.009	-0.018	-0.010	0.022	0.015
Post-graduate	-0.004	-0.007	-0.003	0.008	0.005
Work status (benchmark: Employed)					
Unemployed	-0.030	-0.069	-0.061	0.082	0.078
Retired	-0.006	-0.011	-0.006	0.013	0.009
Student	-0.020	-0.044	-0.032	0.054	0.042
Settlement size (benchmark: less than 50,000)					
10,001–50,000	0.006	0.013	0.008	-0.016	-0.011
50,001–100,000	0.001	0.002	0.001	-0.002	-0.002
More than 100,000	0.011	0.022	0.013	-0.027	-0.019
Household income (benchmark: less than 10,000 HRK)					
5,001-10,000 HRK	-0.019	-0.037	-0.021	0.046	0.031
10,001-15,000 HRK	-0.007	-0.013	-0.006	0.016	0.010
> 15,000 HRK	-0.013	-0.024	-0.012	0.030	0.019
Region (benchmark: Panonian Croatia)					
Adriatic Croatia	0.004	0.008	0.005	-0.010	-0.007
City of Zagreb	0.032	0.056	0.023	-0.071	-0.041
North Croatia	-0.007	-0.017	-0.013	0.020	0.017
Number of observations	777	777	777	777	777

*Table 3: Ordered probit estimation results of Model 1*

Notes: (\*\*\*), (\*\*) and (\*) denote significance level at  $p < 0.01$ ,  $p < 0.05$  and  $p < 0.1$ , respectively. Standard errors are omitted to conserve space. As of January 1<sup>st</sup>, 2023, Croatia adopted the euro as its official currency with the official fixed exchange rate 1 EUR = 7.53450 HRK. (Source: Authors' own work)

The results of the ordered probit model generally confirm the OLS results. A one standard deviation increase in range of Internet activities is associated with a 3.1 percent increase in the odds of an individual becoming highly resilient to OPVI and a 2.2 percent increase in the odds of being very highly resilient. This finding is consistent with the previous OLS result, which confirms that Internet users who perform a multitude of tasks on the Internet will be more resilient to OPVI. This model also shows no significant result regarding the Internet skills of the time spend online. Likewise, an increase of one standard deviation from the average online privacy concern translates into an increase in the probability of having very low resilience or low resilience (2.5 and 8.3 and 5.0 percent, respectively) and a decrease the likelihood of being

highly or very highly resilient to OPVI by 6.2 and 4.3 percent, respectively. This result is also consistent with previous OLS results that people who are more concerned about their online privacy are less resilient to OPVI. Ordered probit results are also in line with OLS results in terms of protective behavior and social support where a unit increase in these measures are associated with increased odds of being highly resilient or very highly resilient to OPVI. Regarding the individuals' personality traits, being more agreeable and open-minded is positively associated with the odds of being highly resilient or very highly resilient to OPVI. Finally, just like with OLS estimates, various socio-demographic characteristics are not statistically significant in explaining various outcomes in resilience to OPVI.

## 5. CONCLUSION

This study shows that Internet users with a higher level of digital literacy will be more resilient to online privacy violation incidents. However, the effect is greater on the side of increased range of Internet activities rather than on the side of Internet skills. The magnitude of the range of Internet activities effect as an antecedent to resilience to OPVI is fairly stable as more controls are added to the initial estimates (as we move from version 1 to version 2 of Model 1). This result can be explained by the fact that individuals who are more exposed to various activities performed on the Internet, regardless of their specific Internet skills, are simply more aware of all possible forms of violation of their privacy on the Internet, and therefore more resilient to any potential OPVI. As far as other variables are concerned, online privacy concern has the strongest negative effects on resilience to OPVI while the social support has the strongest positive effect. This result, combined with the observed importance of the variable approximating the variety of online activities used, leads to the conclusion that Internet users who are less concerned about their privacy, who perform various tasks on the Internet, and receive high degree of social support from their close family, relatives and friends, are more resilient to OPVI. Anderson and Rainie (2014) point out that in the future privacy and control over personal information will become a luxury good and that only those with adequate digital literacy will know how to protect their privacy, while for all others the perceived benefits of quick access to information will be greater than the fear of being violated online of privacy. What should be strived for is the complementarity of access to the Internet, the development of Internet skills, and adequate protection of personal information. Hence, it is advisable for governments and all educational institutions to seriously invest in creating a safe, educational environment to enhance digital literacy among their citizens. Lastly, it is worth mentioning limitations of this study and suggest avenues for future research. Firstly, a representative sample of population over 18 years old is used in this research, nowadays children begin to participate in an online environment from an early age, and their level of resilience may differ from that of older population. Secondly, resilience level changes over time in line with technological environment changes, so any further analysis would benefit from inclusion of time dimension as well. In the same vein, as our dataset is of cross-section type as opposed to panel structure, obtained results are only interpreted as correlations or associations, instead of causations. Thirdly, this model is set to analyze digital literacy effects on citizens resilience to OPVI, while this adverse event may have also included other spillover effects to individuals themselves and to their social circle, which are currently not included in the model. Finally, this research is based on data from one country in specific socio-cultural heritage and economic conditions, and thus, cannot be generalized outside these conditions.

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## APPENDIX

Variable	Description	Values
RES	Resilience to online privacy violation	1 – Very low resilience, 2 – Low resilience, 3 – Neutral, 4 – High resilience, 5 – Very high resilience
SKILL	Internet skills	1 – Not at all, 2 – Not so well, 3 – Okay, 4 – Well, 5 – Very well
WEB	Range of activities performed online	1 – Never, 2 – Rarely, 3 – Sometimes, 4 – Often, 5 – Very often
EX	Personality trait – extraversion	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
AG	Personality trait – agreeableness	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
CO	Personality trait – conscientiousness	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
NE	Personality trait – neuroticism	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
OP	Personality trait – openness	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
DA	Digital anxiety	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
OPC	Online privacy concern	1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree
PB	Protective behavior	1 – Never, 2 – Rarely, 3 – Sometimes, 4 – Often, 5 – Very often
SS	Social support on online issues	1 – Very difficult, 2 – Difficult, 3 – Possible, 4 – Easy, 5 – Very easy
GENDER	Gender of respondent	1 – Male, 0 – Female
AGE	Age of respondent	18 to 86 years old
HH	Respondents' household size	1 to 10
EDUCATION	Education of respondent	1 – Primary school or less, 2 – Secondary education (high school), 3 – Tertiary education (university, college), 4 – Post-graduate education (PhD, MBA, ...)
INCOME*	Average household income of respondent	1 – 5,000 HRK, 2 – 5,001-10,000 HRK, 3 – 10,001-15,000 HRK, 4 – More than 15,000 HRK
REGION**	NUTS 2 region of respondent	1 – Panonian Croatia, 2 – Adriatic Croatia, 3 – City of Zagreb, 4 – North Croatia
OCCUPATION	Respondent work status	1 – Employed, 2 – Unemployed, 3 – Retired, 4 – Student/Pupil
SETTLEMENT	Settlement size of respondent	1 – 10,000 or less, 2 – 10,001-50,000, 3 – 50,001-100,000, 4 – More than 100,000

*Table A1: Description of variables in the model*

*Source: Authors' own work*

Notes: \* As of January 1st, 2023, Croatia adopted the euro as its official currency with the official fixed exchange rate 1 EUR = 7.53450 HRK. \*\* Definition of NUTS2 regions are available here: <https://ec.europa.eu/eurostat/web/nuts/nuts-maps>.

Latent construct	Items	Description	Mean	St. dev.
Resilience to online privacy violation (RES)	res_1	I bounced back quickly after the most recent online privacy violation incident.	2.93	1.22
	res_2	It didn't take me long to recover from the most recent online privacy violation incident.	3.32	1.21
	res_3	I came through the most recent online privacy violation incident with little trouble.	2.24	1.21
Internet skills (SKILL)	skill_1	I can use a browser (e.g., Chrome, Firefox, Safari) to navigate the internet.	4.39	0.91
	skill_2	I can register a new e-mail address (e.g., Gmail) or social network (e.g., Facebook) account.	4.26	1.05
	skill_3	I can work with/edit bookmarks.	3.85	1.35
	skill_4	I can save contents from internet pages to my device.	3.71	1.39
Internet activities (WEB)	web_1	Receiving and sending e-mails	4.01	1.04
	web_2	Using chat/instant message services (e.g., Messenger, WhatsApp, Viber)	4.13	1.05
	web_3	Downloading music and/or movies	2.45	1.23
	web_4	Playing online games	2.34	1.34
	web_5	Paying bills/e-banking	3.18	1.41
	web_6	Attending courses online	2.32	1.41
	web_7	Online shopping	2.50	1.28
	web_8	Live streaming and/or watching multimedia content (e.g., YouTube, online radio)	3.44	1.19
	web_9	Making audio/video calls and/or meetings (e.g., Skype, Zoom)	2.86	1.27
	web_10	Using social networks (e.g., Facebook, Twitter, Instagram, TikTok)	3.65	1.34
	web_11	Following daily news online	3.75	1.05
	web_12	Using search engine to find information (e.g., Google)	4.30	0.84
	web_13	Search for a map of driving instructions	2.87	1.15
	web_14	Using online forums	2.01	1.10
	web_15	Using public services available online (e.g., e-gradani, filing taxes online, e-upisi, e-dnevnik)	2.76	1.24
Personality traits – extraversion (EX)	ex_1	I see myself as someone who is reserved.	2.57	1.01
	ex_2	I see myself as someone who is outgoing, sociable.	3.97	0.92
Personality traits – agreeableness (AG)	ag_1	I see myself as someone who is generally trusting.	3.55	0.83
	ag_2	I see myself as someone who tends to find fault with others.	1.91	0.92
Personality traits – conscientiousness (CO)	co_1	I see myself as someone who tends to be lazy.	2.08	1.04
	co_2	I see myself as someone who does a thorough job.	3.95	0.84
Personality traits – neuroticism (NE)	ne_1	I see myself as someone who is relaxed, handles stress well.	3.41	0.99
	ne_2	I see myself as someone who gets nervous easily.	2.55	1.07
Personality traits – openness (OP)	op_1	I see myself as someone who has few artistic interests.	3.36	1.20
	op_2	I see myself as someone who had an active imagination.	3.35	1.17
Digital anxiety (DA)	da_1	Digitalization is a real threat to privacy.	3.45	1.09
	da_2	I am easily frustrated by increased digitalization in my life.	2.99	1.15
Online privacy concern (OPC)	opc_1	I am concerned about my online privacy.	3.31	1.03
	opc_2	I am concerned about extensive collection of my personal information over the internet.	3.69	1.08
	opc_3	I am concerned about my privacy violation when using the internet.	3.50	1.07
Protective behavior (PB)	pb_1	I give fictitious responses to avoid giving the web site real information about myself.	2.08	1.09
	pb_2	I use another name or e-mail address when registering with certain web site without divulging my real identity.	2.05	1.22
	pb_3	When registering with certain web site, if possible, I only fill up data partially.	3.27	1.27
	pb_4	I try to eliminate cookies that track my internet activities.	3.17	1.25
	pb_5	I try to disguise my identity when browsing (private browsing option).	2.49	1.29
	pb_6	I refuse to provide personal information to untrustworthy websites.	3.91	1.25

*Table A2: Description of items used to build latent constructs*

*Source: Authors' own work*

Notes: "St. dev." denotes standard deviation.

Variable	N	Mean	St. dev.
Gender*			
Female	513	0.51	0.5
Male	487	0.49	0.5
Age categories*			
18-29	253	0.25	0.43
30-39	184	0.18	0.39
40-49	186	0.19	0.39
50-59	187	0.19	0.39
60+	190	0.19	0.39
Number of people in household	1,000	3.35	1.42
Education*			
Primary or less	20	0.02	0.14
Secondary	518	0.52	0.5
Tertiary	426	0.43	0.49
PhD or post-grad	36	0.04	0.19
Occupation of respondent*			
Self-employed	50	0.05	0.22
Manager	45	0.05	0.21
Professional	160	0.16	0.37
Technician/clerk	191	0.19	0.39
Worker	191	0.19	0.39
Retired	159	0.16	0.37
Student	111	0.11	0.31
Unemployed	93	0.09	0.29
Income of respondents' household*			
Up to 2.500 HRK**	12	0.01	0.11
2.501-3.500 HRK	26	0.03	0.16
3.501-5.000 HRK	64	0.06	0.24
5.001-6.500 HRK	80	0.08	0.27
6.501-8.000 HRK	98	0.1	0.3
8.001-10.000 HRK	131	0.13	0.34
10.001-12.000 HRK	130	0.13	0.34
12.501-15.000 HRK	123	0.12	0.33
15.001-20.000 HRK	74	0.07	0.26
> 20.000 HRK	39	0.04	0.19
No answer	223	0.22	0.42
NUTS2 region of respondent*			
Panonian Croatia	263	0.26	0.44
Adriatic Croatia	353	0.35	0.48
City of Zagreb	163	0.16	0.37
North Croatia	221	0.22	0.42
Place or residence size*			
10,000 or less	309	0.31	0.46
10,001–50,000	296	0.3	0.46
50,001–100,000	79	0.08	0.27
More than 100,000	316	0.32	0.47

*Table A3: Descriptive statistics of respondents' socio-demographic characteristics*  
*Source: Authors' own work*

Notes: "St. dev." denotes standard deviation. \* These variables were converted into binary variables for each possible outcome, so that the arithmetic mean in this case represents the percentage of respondents with a given outcome for each variable. \*\* As of January 1<sup>st</sup>, 2023,



Croatia adopted the euro as its official currency with the official fixed exchange rate 1 EUR = 7.53450 HRK.

	RES	SKILL	WEB	EX	AG	CO	NE	OP	DA	OPC	PB
RES	(0.689)										
SKILL	0.008	(0.824)									
WEB	0.057	0.248	(0.189)								
EX	0.001	0.002	0.001	(0.783)							
AG	0.011	0.001	0.003	0.134	(0.675)						
CO	0.003	0.001	0.011	0.024	0.036	(0.692)					
NE	0.014	0.002	0.008	0.014	0.008	0.001	(0.293)				
OP	0.007	0.002	0.003	0.005	0.011	0.013	0.001	(0.356)			
DA	0.034	0.001	0.001	0.01	0.016	0.001	0.001	0.001	(0.687)		
OPC	0.094	0.001	0.001	0.006	0.008	0.004	0.005	0.006	0.235	(0.682)	
PB	0.027	0.129	0.031	0.037	0.026	0.013	0.003	0.004	0.023	0.076	(0.427)

*Table A4: Fornell–Larcker criterion for assessing discriminant validity*

*Source: Authors' own work*

Notes: Square roots of average variance extracted (AVE), as discriminant value indicators, are shown on a diagonal line in parentheses. Abbreviations: RES - Resilience to online privacy violation, SKILL - Internet skills, WEB - Internet activities, EX - Personality traits - extraversion, AG - Personality traits - agreeableness, CO - Personality traits - conscientiousness, NE - Personality traits - neuroticism, OP - Personality traits - openness, DA - Digital anxiety, OPC - Online privacy concern, PB - Protective behavior.

## CRYPTOCURRENCY MARKET TURMOIL IN 2022 REVEALS THE NEED FOR UNIFIED APPROACH TO REGULATION

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### **ABSTRACT**

*Although the year of 2022 was very dramatic for the crypto asset market, the development of digital assets continues, and it is important to better regulate the cryptocurrency ecosystem to mitigate the damage and harness the potential possibilities and benefits of digital assets. This paper analyzes the recent market developments and their associated risks, as well as regulatory and supervisory developments. Cryptocurrencies' growth has been volatile. Although the size of crypto market itself is not necessarily pose a financial stability risk, the lack of regulation, growing interlinkages within the market and with regulated financial institutions might. Second crypto winter and substantial risks to market integrity, consumer and investors' protection, and financial integrity which occurred, put pressure on authorities all over the world to enhance their supervision and regulation of the crypto market. Given the cross-border nature of crypto assets, the absence of global standards, the lack of common taxonomies and reliable and consistent data on markets, make regulation, supervision and enforcement particularly challenging. Developing a comprehensive and complex regulatory framework designed to support responsible innovation, focused on consumer protection and anti-money laundering, while managing risks – especially those that could disrupt the financial system and economy - requires close cross-sectoral and cross-border cooperation.*

**Keywords:** *crypto assets, risks, consumer protection, financial stability, regulatory framework, cooperation*

### **1. INTRODUCTION**

The last few years have been marked with an extraordinary blast of retail and institutional interest in cryptocurrencies, non-fungible tokens (NFTs) and other blockchain-based securities. Drivers of interest in crypto in 2021 were quick profits and cheap money, inflation, restrictions on capital and money movement, techno-optimism and e-commerce. Last two months of 2021 had the overall crypto market capitalization at nearly \$3 trillion, Bitcoin (BTC) touched the all-time-high of \$69,044 in November 2021 – but since then the entire crypto market, led by the king coin BTC, has been on a downtrend and there are several causes. The COVID-19 pandemic also played an important role in the increased interest for crypto currencies, especially in BTC. With the turmoil of stock markets and the global economy, investors were turning to BTC, as a safe investment haven and inflation hedge. During the pandemic governments across the world resorted to currency printing, aimed to preserve jobs, to stimulate their economies and to pay increased healthcare costs. The economic aftereffects of the pandemic (such as the lack of certain products, transport and logistic problems, the rise in energy prices) and Russian invasion of Ukraine have ushered in the skyrocketing global inflation levels. As the world returned back to normalcy, central banks began pulling cash out of the market by increasing interest rates, which resulted in the overall downfall in the value of all investment assets. Under the complex background of the global monetary tightening and many “black swan events” the crypto ecosystem shed \$2 trillion in market value in 2022, that led to a disintegration of investor confidence in cryptocurrency. The failure of stablecoins, Terra USD and Luna, in May and the collapse of FTX in November, resulted in the insolvency of several major market players and were the greatest market shocks.

This caused a huge collapse in asset valuations, known as the second “crypto winter”.<sup>1</sup> Cryptocurrencies experienced extreme price volatility and a loss of consumer trust. However, concerns around consumer protection and growing interconnectedness with traditional financial institutions have only been augmented following the market turmoil in 2022. The fact that digital assets depend primarily on cryptography and distributed ledger technology (DLT) in which users are pseudonymous, makes them particularly suitable for money laundering and other criminal activities. Safety and stability are among some of the biggest concerns. They require a complex regulatory framework including privacy, consumer protection, and anti-money laundering and terrorist financing (AML/TF) standards which need to be made more robust before adopting this technology as means of payment. It’s necessary to reduce the reputational risks around cryptocurrencies and increase investor confidence. Despite those risks, the development of digital asset industry continued with innovations. For the purpose of this paper focus is given to the analysis of recent turmoil in the crypto markets, the risks that emerged from it and the progress of international regulatory trends. The paper is structured as follows. Chapter 2 provides crypto assets’ (CAs’) taxonomy and explanation of their main characteristics. The chapter 3 gives an overview of recent market turmoil in 2022 and the analysis of specific sources of risk which urged the need for increased regulation. The following chapter provides a brief overview of key regulatory concerns and approaches relating to crypto-assets, followed by conclusion remarks.

## **2. CRYPTO ASSETS’ TAXONOMY AND CHARACTERISTICS**

The term “crypto-assets” (CAs) is used to refer to a wide variety of assets. Despite its frequent use, there is no generally-accepted definition of what constitutes a CA. Different definitions have been adopted by regulatory authorities and standard-setting bodies (SSBs) for the purpose of their monitoring and supervisory work. European Banking Authority’s (EBA’s) definition is the most appropriate for the scope of this paper: “an asset that: a) depends primarily on cryptography and distributed ledger technology (DLT) or similar technology as part of its perceived or inherent value, b) is neither issued nor guaranteed by a central bank or public authority, and c) can be used as a means of exchange and/or for investment purposes and/or to access a good or service”. They are a global phenomenon, created by private actors in various countries all over the world. They are cross-border in their application and infrastructure, and they are easily accessible, transferable, exchangeable and tradeable from nearly anywhere in the world (Houben and Snyers, 2020). CAs can take on different forms and have various characteristics, each providing unique benefits, as well as risks, regulatory challenges and complexities. No internationally agreed taxonomy exists for CAs. Taxonomy that has been adopted by many financial regulators, globally, differentiates: 1. cryptocurrencies (traditional non-backed cryptocurrencies and backed-stabelcoins) and 2. tokens (investment and utility tokens). Central Bank Digital Currencies (CBDCs) have been studied by various central banks across the world during the past couple of years, but haven’t yet been officially implemented in any country so they are out of the scope of this paper. The paper also does not discuss non-fungible tokens (NFTs), since they usually fall outside the scope of financial regulation. Traditional “non-backed” cryptocurrencies are intended to play the role of currency, but they do not represent any underlying asset, claim or liability, making them prone to high price volatility (Bullmann et al. 2019). Unbacked CAs are not currency since they do not fulfill the three common functions of money. They do not serve as a unit of account, a store of value, nor as a medium of exchange.

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<sup>1</sup> The phrase is mostly used to describe the period of crypto market stagnation, caused by a decline in the value of cryptocurrency assets and trading volume over a time period. The first crypto winter is generally considered lasted from January 2018 till December 2020. It can be associated with a concept of a bear market within the traditional capital markets, when stock values have declined by 20% from peak values.

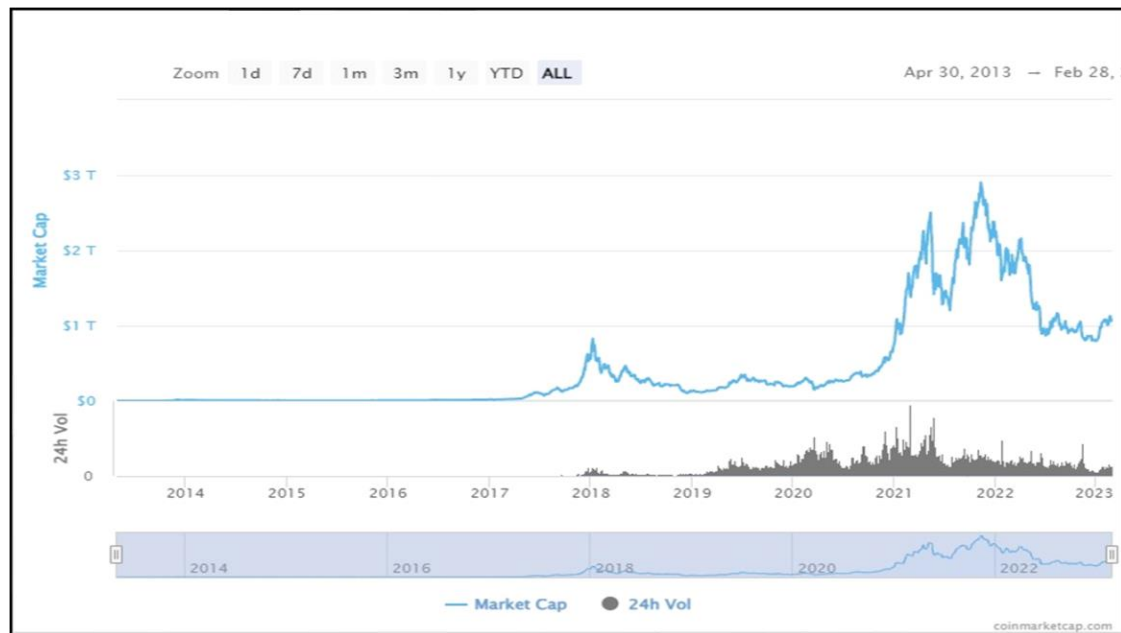
Given the high price volatility they are a poor store of value and unit of account and they are mostly used as speculative investments. Even where some crypto assets are legal tender, their use as a payment or remittance tool remains very small. They are still not considered a viable medium of exchange and they are less likely to be used by vulnerable or unbanked consumers despite a focus on financial inclusion (Alvarez et al., 2022). Leveraged trading prevails even among retail users and is offered in both centralized and decentralized exchanges, as high as 125 times the initial investment, further increasing utility as a speculative tool (Houben and Snyers, 2020). Cryptocurrencies are private in nature, generally make use of some form of DLT and are not issued or guaranteed by a central bank, the opposite is true for CBDCs (Ibidem). They do not have an identifiable issuer or at least not an institution that can easily be held accountable towards the users. Backed crypto assets (stablecoins) are a subcategory of cryptocurrencies typically pegged or linked to the price of another asset. There are three types of stablecoins: i) crypto-backed, where the token is collateralized by cryptocurrencies; ii) fiat-backed, in which the token is pegged to either USD or Euro; and iii) algorithmic coins that rely on algorithms to maintain their supply and demand, and maintain their price to a USD. Designed to maintain a stable price value, stablecoins typically represent a "claim" on a specific issuer or on underlying assets or funds, or some other right or interest (G7 Working Group, 2019). Cryptocurrencies have not been widely adopted as a means of payment due to their extreme price volatility, lack of integration with service providers and limitations on transaction. Cryptocurrency price volatility stems from several factors (e.g. speculation, price manipulation, misleading advertising and regulatory uncertainty), leading to a lack of stability compared with leading national currencies (Noam, 2018). Cryptocurrencies are not subject to the stabilization policies that central banks can provide as a public service, nor are cryptocurrency issuers necessarily motivated to offer stabilization policies in the first place (White, 2022). Tokens are those CAs that offer their holders certain economic and/or governance and/or utility/consumption rights. Broadly speaking, they are digital representations of interests, or rights to access certain assets, products or services. Tokens are typically issued on an existing platform or blockchain to raise capital or new entrepreneurial projects, or to fund start-ups or the development of new (technologically) innovative services (Annunziata, 2019). Investment tokens are generally issued for the purpose of capital raising (i.e. through an ICO) and show similarities to traditional debt and equity instruments. Utility tokens are those tokens that grant their holders access to a specific application, product or service often provided through a newly developed (blockchain-type) infrastructure (Blemus and Guegan, 2019). They typically only provide access to a product or service developed by the token issuer and are not accepted as a means of payment for other products or services. Cryptocurrencies and stablecoins may, in certain use cases, offer more efficient means of conducting payments that reduce transaction costs and enable new business models (White, 2022). In particular, they have the potential to provide greater access, capabilities and efficiency to users than traditional financial products (McLellan et al., 2022). Potential benefits of CAs include a wider range of investment opportunities for consumers with different risk profiles, fostering competition and financial inclusion by providing easy and safer access to money for unbanked and underbanked populations. Innovations that have given rise to the crypto ecosystem, including their underlying technologies, could create potential benefits through greater competition and efficiency in some financial services, such as remittance, trade financing and cross-border payments (Bains et al., 2022). CA can be a facilitator of entrepreneurship, but it needs a regulatory framework that will protect investors and consumers alike, while not discouraging needed innovation. Concerning risks of crypto currencies are: their high price volatility, information asymmetry, lack of transparency, exposure to market manipulations, the fact that they don't have any underlying intrinsic value and that they are mostly unregulated.

Consumer protection risks arise when consumers and investors are unaware or do not fully comprehend the risks associated with CAs (IMF, 2023). Growing interlinkages within the market and with regulated financial institutions have been increasing the danger of negative spillover effects and financial stability risks. The electronic form of crypto assets amplifies the full range of technology-related risks, predominantly cyber and operational risks (e.g. hacking, scam operations or accidental loss of control, access or records). The stolen cryptocurrency can then be converted to real currency or other encrypted cryptocurrencies. Cryptocurrency hacks increase both the volatility of the hacked currency and cross-cryptocurrency correlations (Corbet et al. 2018). Those weaknesses make them unsuitable for most retail consumers and limit their wider use as means of payment. The fact that they are fully digital, easily transferable, pseudonymous assets that operate on a decentralized basis, makes them particularly suitable for financial crime and other illicit activities. Most often it is about the buying and selling of illegal goods or services (such as weapons, drugs and counterfeit documents) online in darknet marketplaces, ML, evasion of capital controls, payments in ransomware attacks and thefts, illegal pornography and murder-for-hire (Houben and Snyers, 2020; Corbet et al. 2018). The research of Foley et al. (2018) shows that almost half of all yearly transactions in BTC can be linked to illegal activity. The widely use of social media has led to innovative methods of identity theft. It is, unfortunately, extremely simple for hackers to obtain information such as email addresses, mobile phone numbers and personal details such as family and pet names and dates of birth, which are commonly used passwords by online users. Exchanges that unfortunately rely on the traditional two factor identification will thus be vulnerable to hackers seeking to transfer cryptocurrency held in investors' wallets (Cumming et al. 2019). The use of digital assets has raised environmental concerns, because crypto mining, which uses a proof-of-work (PoW) model, is particularly energy intensive. ETH successfully made transitions to a new system of processing transactions. Following the Merge, the term for a recent update, the second-largest blockchain network ETH has moved to a more eco-friendly, efficient and secure proof-of-stake (PoS) model which requires significantly less power.

### **3. CRYPTO MARKET TURMOIL 2022**

There were 22,705 cryptocurrencies in circulation on 552 platforms on 28 February 2023 (Coinmarketcap, 2023). The figure 1. shows global cryptocurrency market capitalization was \$1.07 trillion, including stablecoins and tokens. The largest proportion of this market by capitalization is unbacked CAs.

*Figure following on the next page*



*Figure 1: Total Cryptocurrency Market Cap*  
 (Source: Coin Market Cap (accessed: 28 February 2023))

A large portion of cryptocurrencies on crypto market might not be that significant. The figure 3 illustrates BTC's dominance of 42% of total market capitalization (Coinmarketcap, 2023). It reached an annual growth rate of 60% in 2021, touched all-time-high of \$69,044 in November (figure 3). In early 2022, as rising inflation and a central banks' intent on raising rates to curb it, BTC bounced around the \$40,000, but as the Fed started to aggressively raise interest rates in March, it began to sink. From November 2021 prices started to slide down and major crypto players and altcoins lost almost 70% of their value by the June 2022 (figure3). Most other cryptocurrencies follow BTC and ETH larger price swings.



*Figure 2: Major Cryptoassets By Percentage of Total Market Capitalization (Bitcoin Dominance Chart)*  
 (Source: Coin MarketCap; accessed: 28 February, 2023)



*Figure 3: Bitcoin and Ethereum to USD Chart*  
 (Source: Coin MarketCap (accessed: 6 February, 2023))

It can be concluded from the figure 1 that cumulative market capitalization of cryptocurrencies went down dramatically between May and June 2021, which could be attributed to Terra/LunaUST collabs and China's effort to stem mining and the expansion of cryptocurrencies within the country. A stablecoin called TerraUSD, or UST, which was one of the biggest stablecoins, initially designed to be pegged to \$1. It saw a significant rise in late 2021 through early 2022 thanks mainly to the fact that Anchor Protocol, a lending platform on Terra, provided almost 20% yield on UST lending. Terra's UST coin maintained a \$1 peg for years until it all came crashing down in early May of 2022. Contrary to most stablecoins, UST was not fully collateralized, but it relied on an algorithmic mechanism<sup>2</sup>. Due to the pressure of sharply falling BTC and ETH prices, at that period, the algorithmic stablecoin UST lost its peg to its \$1 target, causing borrowers that had been using the stablecoin as a crypto version of dollars to panic sell their holdings, applying even more downward pressure on the token's price and causing a 'platform run'. TerraUSD lost its one-to-one peg with the USD and took down its sister coin, LUNA (Sandor and Genc, 2022). The system let users mint new UST tokens by burning an equivalent amount of Terra's volatile LUNA coin, or redeem UST for new LUNA coins (Williams, 2022). As market participants were attracted to UST because of the high yield, they increasingly burned LUNA, sending its price higher. UST holders rushed to redeem their tokens against LUNA coins, greatly expanding the supply of LUNA and depreciating the coin's value, which in turn led even more UST holders to redeem (Ibidem). By May 12, UST was trading for \$0.36, while LUNA's price had crashed to fractions of a cent (Ibidem), creating fear, uncertainty and the panic in the market. The price of BTC fell down 60% from its November 2021 peak, while ETH lost 30% of its value. Coinbase, one of the largest cryptocurrency exchanges, reported a loss of \$430 million in the first quarter (Ibidem). Lawmakers from around the world decried the risks posed by stable coins, especially algorithmic ones.

<sup>2</sup> While other popular stablecoins use their reserve cash and various assets to manage a 1-on-1 ratio against the dollar to present stability and avoid volatility, UST used an algorithm of burning and minting its sibling token Luna, and it enables UST to adjust its supply and manage a price close to \$1.

Terra's collapse caused an acute liquidity crisis, hitting major players like Celsius, Three Arrows Capital (3AC), Genesis Trading and Alameda Research (Lala, 2022). On June 12, Celsius Network, a centralized platform offering, used deposits as collateral to borrow other cryptocurrencies, placed withdrawals on hold as it took on too much leverage and could not cover its loans. It had invested in Terra and had loaned money on decentralized platforms like Maker and Compound, but also loaned heavily to centralized entities like crypto brokerage Genesis, Galaxy Digital, and crypto hedge fund 3AC, which were turning around and loaning it back out again, and so on. Within a few days of Celsius's announcement 3AC's crypto hedge fund became insolvent and bankrupt was declared. This suggested that these firms might have just been passing the same money around over and over again (Williams, 2022). This puts the interconnected nature of the industry on display. The June liquidity crisis served as a terrible reminder of the dangers of centralized exchanges and the degree to which these so-called "custodians" actually custody customer funds. These business developments have highlighted the lack of regulatory oversight to prevent excessive risk-taking in a volatile environment. The prices of BTC and other altcoins have plummeted, amid a broader selloff in financial markets, especially among riskier assets. As of 14 June, BTC had fallen to \$22.123 (CoinMarketCap, 2023).



*Figure 4: Terra Classic USD to USD  
(Source: Coin MarketCa , accesed: 6 February, 2023)*

Despite the market downturn, illicit transaction volume rose for the second consecutive year, hitting an all-time high of \$20.6 billion, according to Chinanalys crime report (Grauer et al., 2023). It should be emphasized that 43% of 2022's illicit transaction volume comes from activity associated with sanctioned entities. Office of Foreign Assets Control (OFAC) of the U.S. Department of the Treasury sanctioned individuals and different types of entities in 2022, citing activity such as cybercrime, ransomware, darknet market (Hydra), drug trafficking, money laundering (Garantex, Blender.io, Tornado Cash), financing terrorism and participation in Russia's invasion of Ukraine (the case of Task Force Rusich - Russian paramilitary group in Ukraine). Money laundering (ML) is crucial to all financially motivated crime. The goal of ML in cryptocurrency is to move funds to addresses where its original criminal source can't be detected, and eventually to a service that allows cryptocurrency to be exchanged for cash — usually this means exchanges (Ibidem). In March 2022 the extremely popular blockchain NFT game called Axie Infinity— the Ronin Network fell victim to one of the largest DeFi hacks. The attackers were able to steal and get away with approximately 173,600 ETH and 25.5 million



USDC, amounting totally USD 624 million (CoinDCX Blog, 2022). A group of attackers was later identified by U.S. law enforcement as the North Korean state-sponsored Lazarus Group. The Ronin hack was the beginning of a series of Lazarus Group attacks against the crypto space. Although the majority of these funds are still missing, around \$36 million has been returned with the help of blockchain analytics firm Chainalysis and crypto exchange Binance (Williams, 2022).

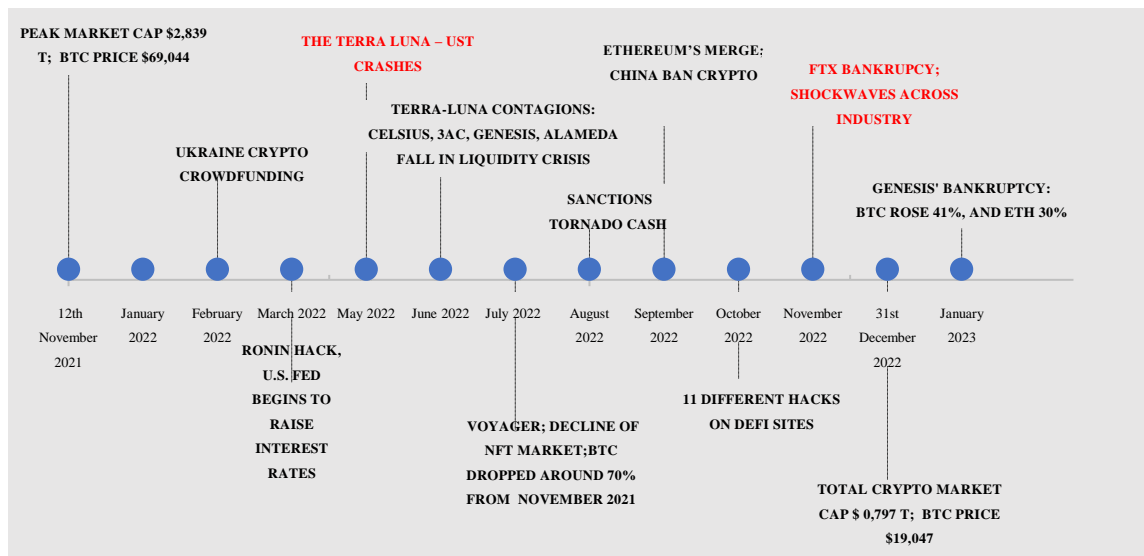


Figure 5: Crypto's turbulent 2022 timeline  
 (Source: author's systematization)

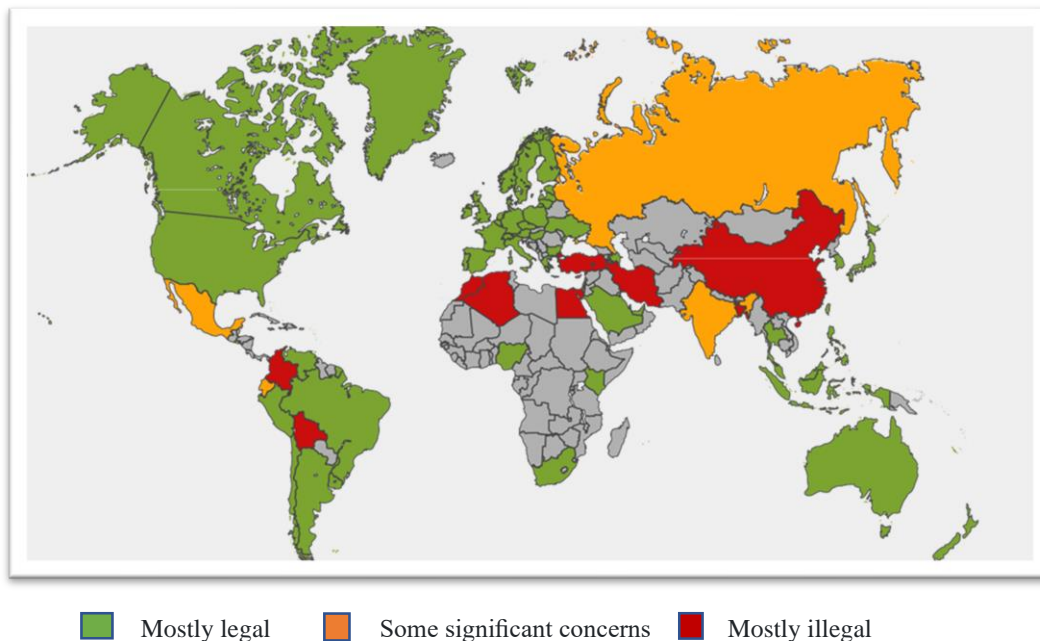
Another shock ensued. On 11 November 2022, FTX, the third largest crypto exchange by trading volumes (valued at over \$32 billion) filed for bankruptcy, starting a domino effect. That revealed risky investments, inadequate governance and opaque corporate interlinkages. Directly as a result of the FTX collapse, the overall crypto market – led by the king coin, BTC touched a new two year low (around \$15,500). Some companies (eg. Genesis, Galaxy Digital, Sequoia capital, Crypto.com, BlockFi, Amber group) have been directly affected due to their exposure to FTX assets, which highlights the importance of considering a “contagion risk”, which crypto-asset companies cause on the market and the broader financial system. FTX lent more than half of its customer funds to fund risky investments by its trading arm, Alameda Research, which in turn held a significant value in claims on FTX through its holdings of the unbacked self-issued token, FTT. Financial interconnectedness on such scale points to severe governance and risk management failures, as well as consumer protection concerns (IMF, 2023). Before its failure, FTX was known to use high-profile celebrities (eg. Larry David, Gisele Bundchen) and sports celebrities (eg. Tom Brady, Shaquille O’Neal, Stephen Curry, Naomi Osaka) to promote its products. It used their positive reputation to convince consumers that FTX was a safe place to buy and sell cryptocurrency. Now they are all accused of engaging in deceptive practices and misleading customers. Former FTX CEO, Sam Bankman-Fried contributed more than \$80 million to political groups in 2022, of which liberal groups received the majority at 63% (Coingecko, 2023). Nonetheless, 2022 was also marked by several positive developments. Crypto’s role in the Russia-Ukraine war showed the power of borderless money. In the initial days of the Russian invasion of Ukraine, cryptocurrency became a tool for rapidly collecting financial support to help the people of Ukraine. On 26 February, Twitter accounts belonging to the Ukrainian government, posted pleas for crypto asset donations. Over \$100 million was raised in crypto in just three weeks. Cryptocurrency has also provided a means for Ukrainian refugees, whose banks were inaccessible, to carry their

money across borders, but at the same time, regulators have been worrying that it will be used by Russian oligarchs to evade sanctions (Chow, 2022). Citizens who fled Russia turned to BTC to preserve their money as the ruble shed its value, which influenced sharp appreciation in BTC price when the war broke out. Major exchanges faced with demands to block Russian citizens following global sanctions.

#### **4. KEY REGULATORY CONCERNS AND APPROACHES RELATING TO CRYPTO-ASSETS**

The ongoing intensive development in the crypto system has resulted in creation of new crypto-assets, new types of crypto-related services and new service providers. A lack of clear regulation is as a major hurdle for development and adoption of CAs. Its ambiguous nature and the lack of standardized definitions are the main challenges for regulators. Debate even continues regarding the categorization of crypto assets as currency, as they were initially intended, as a security, or a commodity (Agrawal 2018; Clements 2019) and there are significant variations within existing regulatory frameworks. In the US different authorities treat crypto asset differently. Securities and Exchange Commission (SEC) considers most cryptocurrencies are securities, so there is no need for new, crypto specific regulations. Treasury's the Financial Crimes Enforcement Network (FinCEN) defines cryptocurrencies as currencies; the Federal Reserve Board and the Commodity Futures Trading Commission (CFTC) considers BTC as commodity and The Internal Revenue Service (IRS) classifies cryptocurrency as property. This imposes the question which of the many regulators in the US holds the power and authority to govern digital assets. Consequently, in March 2022, the White House released an Executive Order, directing the agencies to coordinate their regulatory efforts to address risks stemming from the growth of digital assets and blockchain technology while supporting responsible innovation. The treatment of cryptocurrencies across the world currently lacks uniformity (figure 6). National authorities have taken very different approaches to regulate them and have been debating whether to apply existing financial regulatory frameworks to CA or develop new, specific ones. At one extreme, authorities have prohibited cryptocurrencies, or some of actions elated to them such as: the issuance, holding, ability to transact in them or use them for certain purposes. Complete restrictions are rare (Algeria, Bangladesh, Bolivia, China, Columbia, Egypt, Ghana, India, Indonesia, Iraq, Kosovo, Mexico, Nepal, North Macedonia, Qatar, Russia, Saudi Arabia Turkey and Vietnam) and difficult to enforce because of cross-border nature of cryptocurrencies. Many crypto asset service providers (CASP) operate offshore, and users can use virtual private networks (VPNs) to obscure locations and to log on to a foreign crypto exchange, making enforcement of bans on CAs extremely difficult (Bains et al., 2022; White 2022). Customers can hold, but not transfer crypto regardless of a government ban, through a cold-storage or offline wallet (White, 2022). For example, despite strict domestic restrictions, roughly 2 million Egyptians reportedly hold CAs. Likewise, peer-to-peer transactions in CAs have grown in Nigeria despite tight restrictions. Data also suggest that significant mining operations exist in China despite a blanket ban on CA activities (Bains et al., 2022). In China ownership and mining operations were perceived as threats to national strategies for its CBDC's (e-CNY's) development. Chinese authorities have banned crypto currencies, although possession of crypto is not a crime in China, but trading is. In majority of extreme banning cases, financial stability risks have been used to justify the prohibition. Broad bans on crypto assets are likely to be disproportionate and ineffective in the long run, but targeted restrictions could help address immediate challenges while regulatory capacity is being built (Bains et al., 2022). European Union and Japan have introduced legislation with a stablecoin focus, resulting in an effective ban of non-asset-backed pegs. Ukraine's central bank has banned the purchase of cryptocurrency using the country's local currency and individuals may only purchase crypto using foreign currency.

Crypto advertising is banned in Singapore, Spain and United Kingdom (UK). The UK and Spain have restricted the use of derivatives linked to CAs, explicitly referenced consumer protection as the reason, while Dutch regulators restrict their use to wholesale trade. The reasons are lack of transparency, market manipulation and other forms of criminal activity. At the other extreme, some countries have been much more welcoming and supporting of the development of crypto asset, such as Bahamas, Bahrain, Cayman Islands, Estonia, France, Germany, Gibraltar, Hong Kong, Japan, Malaysia, Mauritius, Portugal, Singapore, Spain, South Korea, Switzerland, United Arab Emirates (UAE) and UK). Some countries, such as Japan and Switzerland, have amended or introduced new legislation covering CAs and their service providers, while others (including the EU, UAE, UK, and USA) are at the drafting stage (Narain and Moretti, 2022). In the UAE, Dubai authorities are setting up the world's first authority solely focusing on virtual assets (Blumenfeld et al., 2022).



*Figure 6: Cryptocurrency regulations by country*  
(Source: Hammond and Ehret, 2022)

Due to the frequent turbulences the regulatory framework is evolving, but lagging behind very fast innovative developments (Cumming et al, 2019). The already volatile world of crypto had been shaken anew in 2022 by market failures of stablecoins, crypto exchanges and crypto-focused hedge funds, highlighted the lack of basic protection and regulation, revealed the legal uncertainties and serious concern about financial stability, market integrity, investor and consumer protection, cybersecurity and illicit financing (IF). As cryptocurrencies are inherently international, capable of being traded 24/7 across the globe because of their internet-based, borderless nature, it is important that regulators shift toward a global approach to achieve a consistent and comprehensive regulatory framework (Cumming et al. 2019; Chan and Milne 2019). The global standard-setters (GSSs), including the Financial Stability Board (FSB), Basel Committee on Banking Supervision (BCBS), Financial Action Task Force (FATF), International Organisation of Securities Commissions (IOSCO) and International monetary fund (IMF)<sup>3</sup> have been highlighting the importance of cross-sectoral, domestic and international cooperation and coordination in setting robust international standards.

<sup>3</sup> Many GSS have specific committees that are focused on the risks of CA (for example, IOSCO - Fintech Task Force, FSB - Financial Innovation Network, FSB - Regulatory Issues of Stablecoins, BCBS - Financial Technology expert group).

FSB is well placed to take a leading role in coordinating the establishment of global standards to guide the national implementation of regulation of CAs while considering sector-specific standards developed by other SSBs (Bains et al., 2022). Global harmonization and cooperation will enable easier, less costly and more robust compliance. Space limitations of this paper force the review of such an extensive financial field to be limited to an overview of the major highlights of recent GSSs' work, summarized in table 1.

Key regulatory concerns	Risks and transmission channels	Crypto Specific Regulatory Responses
<b>Financial Stability</b>	Interlinkage with traditional regulated financial markets	FSB global framework for international regulation CAs (2020, 2022)
<b>Monetary sovereignty</b>	Growth of CAs and CASPs	Prudential requirements on banks' CA exposures (BCBS' rules, 2022)
	Growing adoption: <ul style="list-style-type: none"> <li>- Currency substitution (lower income countries) and</li> <li>- institutional investors' exposure (advanced economies)</li> </ul>	Classification of CA: lower and higher risk (1250% risk weight)
	Stablecoins risks	Basel III rules on banking and liquidity requirements-draft (EU Parliament, 2023)
	CASPs carrying out multiple activities	CPMI-IOSCO (2022)
		FSB(2022) higher obligations for stablecoins and CASP
		IOSCO principles (2020, 2022)
		EU MICAR (expected in April 2023)
<b>Consumer/Investors Protection</b>	Volatility Use of leverage Operational failures Cybersecurity: AML/CFT	Education and warnings (ESA's warning, 2022) FATF (R15) and "travel rule" AMLD5 BCBS Principles on Operational Resilience and the Sound Management of Operational Risk FSB practices on cyber incident response and recovery CPMI-IOSCO guidance on cyber resilience

*Table 1: Key regulatory concerns and approaches relating to crypto-assets*  
 Source: author's systematization

Although the size of the crypto market itself is not yet a serious systemic and financial stability risk, growing and deepening interlinkages with traditional regulated financial markets, growing adoption, especially in developing countries and the lack of regulation might be (IMF 2022, 2023); FSB, 2022; BCBS, 2022). Stablecoins in particular may have the potential to be systemic in the future (FSB, 2022 and IOSCO, 2022). Exposure to CAs in the banking system and other nonbank sectors is growing. The Basel Committee on Banking Supervision (BCBS) (2022) shared the view that the growth of CAs and related services has the potential to raise financial stability concerns and to increase risks faced by banks (Bains et al.2022). BCBS published its final rules on the prudential treatment of CA exposures in December 2022 and has obliged to

implement the standards by 1 January 2025. Unbacked CAs and stablecoins with ineffective stabilization mechanisms will be subject to a conservative prudential treatment. According to the final standard, banks are required to classify CAs on an ongoing basis into two groups: lower-risk anchored crypto assets (tokenized assets and stablecoins) and higher-risk 'traditional' crypto assets like BTC. Credit and market risk capital requirements for tokenized assets would be similar to those for traditional assets, whereas for stablecoins, the proposal considered a possible lower risk weight based on certain conditions. For the second group, the BCBS proposed a conservative prudential treatment based on a 1250% risk weight, which means a dollar of capital has to be set aside for every dollar of exposure. Other elements of the standard include descriptions of how the operational risk, liquidity, leverage ratio and large exposures requirements should be applied to banks' CA exposures (BCBS, 2022). On 9 February 2023, the European Parliament's Economics and Monetary Affairs Committee approved a draft law to implement the Basel III rules on banking capital and liquidity requirements. It confirms that banks are expected to treat CAS with a 1250% risk weighting as an interim measure until 30 December 2024 (BIS, 2022; European Parliament, 2023). Significant developments across crypto markets in recent years and the proliferation of new product offerings among a widening pool of retail investors have created additional channels that threaten financial stability. Chainalysis' report "The 2022 Global Crypto Adoption Index," shows that lower-middle-income countries like Vietnam, Philippines, Ukraine, India, Pakistan, Nigeria (despite tight restrictions), Morocco, Nepal, Kenya and Indonesia hold positions in the top 20 countries in terms of overall index score. Large retail holdings of crypto assets in developing economies could be result of currency substitution, primarily through dollar-denominated stable coins. Some developing countries are experiencing cryptoization (substitution of domestic currency with crypto assets) and circumvent exchange and capital control restrictions. El Salvador became the first country to make BTC a legal currency in September 2021, followed by the Central African Republic in April 2022. Such substitution has the potential to cause a loss of monetary sovereignty and threats to financial stability. Advanced economies are also susceptible to financial stability risks from crypto, given that institutional investors have increased stablecoin holdings, attracted by higher rates of return in the previously low interest rate environment. Therefore, it's important for regulatory authorities to quickly manage risks from crypto, while not stifling innovation (Li and Sugimoto, 2023). IMF (2023) has laid out action plan for how countries should treat CAs, with point number one - not to give cryptocurrencies such as BTC legal tender status, in order to safeguard monetary sovereignty and stability. In October 2020, the FSB published a proposed global framework and recommendations for the international regulation of CAs and global stablecoin arrangement, revisited them in October 2022 and they should be finalized by July 2023. The FSB expects national authorities to implement regulatory frameworks for digital assets comparable to those already in place for traditional finance (Blumenfeld, 2022). Given their potential systemic importance, recognized also in the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions' (CPMI-IOSCO) report (2022), the FSB insists that global stablecoin arrangements (SAs) should have higher trust and transparency obligations, including redemption rights, stabilization mechanisms and requirements around the composition and quality of reserve assets. FSB also addresses the risks and conflicts of interest when a single CASP carrying out multiple activities (eg. exchange of CAs, storing client's CAs, providing lending and leverage services to the users, transfer services, clearing and settlement) and insists on greater prudential requirements for them. For example, FTX had close financial interlinkages with its affiliates and offered a wide range of services, resulting in conflicts of interest. In February 2020, IOSCO published report on issues, risks, and regulatory considerations relating to CA exchanges, which suggests authorities to consider the following elements: (i) governance requirements for platform operators, including prudential

requirements; (ii) requirements regarding access to the platform; (iii) requirements for the robustness, resiliency, and integrity of operating systems; (iv) market integrity requirements; (v) transparency requirements; (vi) AML/CFT requirements; and (vii) criteria to accept products to be offered in the platforms (IMF, 2023). IOSCO's Application of the Principles for Financial Market Infrastructures (2022) guidance on exchanges address issues related to transfer, governance and risk management of the infrastructure and networks. Cybersecurity has become a major issue in the field of CAs. Stolen CAs are typically used to finance illicit activities. Criminals often ask victims of ransomware attacks to pay the ransom in cryptocurrencies, such as BTC (Houben and Snyers, 2022). In response to these risks, the Financial Action Task Force (FATF) adopted changes to its Recommendation 15 (R 15) in October 2018, to clarify that they apply to financial activities involving virtual assets (VA) and virtual assets' service providers (VASP). It is intended to help regulators to develop regulatory and supervisory directives for VA activities and to help VASPs to understand and execute their AML/FT obligations. Activities covered by the FATF standards include exchange (between a fiat currency and a cryptocurrency or between cryptocurrencies), transfer, administration and safekeeping, and participation in and provision of financial services related to an issuer's offer and/or sale of virtual assets (Schwartz, 2021). In June 2019, the FATF had adopted an Interpretative Note to Recommendation 15 (INR 15) and new Guidance on the application of the risk-based approach to VA and VASP, which updated in October 2021. Countries are expected to ensure that VASPs are regulated for AML/CFT purposes and licensed or registered. The G-7 Finance Ministers and Central Bank Governors met in Petersberg, Germany, on 18-20 May 2022 with the Heads of IMF, World Bank Group, OECD and FSB and called for the rapid implementation of FATF's "Travel Rule", which recommends VASPs (exchanges, banks, over-the-counter desks, hosted wallets, and other financial institutions) to share certain personally identifying information about the recipient and sender for crypto transactions over USD / EUR 1,000 globally (Blumenfeld, 2022). Its objective is to protect financial systems and the broader economy from threats of ML/FT, thereby strengthening financial sector integrity and contributing to safety and security. In July 2022, the FATF reported that jurisdictions have made only limited progress in introducing the travel rule and the vast majority have not passed legislation or started enforcement and supervisory measures (Ibidem). Comparison of the latest FATF standards on VAs with the EU's Anti-Money Laundering Directive 5 (AMLD5) for VAs shows that AMLD5 already lags behind the current crypto development and the FATF international AML/CFT-standards. Compared to AMLD4, AMLD5 expands the scope of the „obliged entites" (OE) definition to: virtual currency exchange platforms (VCEPs) and custodian wallet providers (CWPs), but does not include developers and issuers of tokens. Therefore, they are not subject to the EU's AML regime, but Markets in Financial Instruments Directive (MiFID II). AMLD5 imposes the same compliance obligations on VCEPs and CWPs as on any other OE. They will need to undertake the due diligence and know your customer (KYC) procedures (customer's identification, continued monitoring and due diligence), which should be the same in crypto as at other financial institutions. AMLD5 offers possibility of allowing cryptocurrency users to voluntarily self-declare themselves to their regulator through specific forms. It states proposals that each member state create a central database to register users and wallet addresses, to which EU regulators would be authorized to access. The new EU regulation, Markets in Crypto-Assets Regulation (MiCA(R) is the first cross-jurisdictional regulatory and supervisory framework for CAs, originally introduced in 2020 as a response to a global stablecoin initiative. It is expected to enter into force in 2024, subject to its ratification by the European Parliament, which is expected to be in April 2023). It provides uniform rules for crypto markets, which is important for investors in CAs and for the stability and integrity of the crypto ecosystem. It could impose considerable compliance restrictions, including an effective ban of PoW mining by 2025 and algorithmic stablecoins, like Tera/Luna was.

NFTs fall outside its scope. MiCAR regulates certain crypto services: operating a trading platform for CAs, exchange services for CAs (crypto for crypto or regular currency) and CA custody services, professional provision of advice and portfolio management services. According to MiCAR, providers of crypto services (PCS) must obtain a licence from a financial supervisor and comply with consumer protection and disclosure requirements, which allows MiCAR-regulated activities to be undertaken in all countries in the European Economic Area (Bird and Bird, 2022). PCS pass checks on their governance and marketing, ensuring that they don't mislead potential investors or misuse client funds (e.g. FTX). Their governance structures and information security systems must be in order, they must detect and respond appropriately to conflicts of interest, have a complaints procedure in place and provisions on outsourcing. CA issuers must publish a white paper for investors containing specific information about the crypto to be issued. Transaction service providers must also put in place effective systems and procedures to detect market manipulation. Consumer protection risks arise when consumers and investors are unaware of or misinformed about the potential risks associated with cryptocurrencies. Worried about growing consumer activity and interest in CAs, and aggressive promotion of those assets and related products to the public, including through social media, the European Supervisory Authorities (ESAs)<sup>4</sup> issued warning to consumers that many CAs were highly risky and speculative (17 March 2022). In their warning, the ESAs highlight that these assets are not suited for most retail consumers as an investment, a means of payment nor exchange. The warning emphasizes the risks of misleading advertisements, via social media and influencers, promising fast and high returns. The ESAs also warn consumers that they should be aware of the lack of recourse or protection, as CAs and services fall outside legal protection under current EU financial services rules.

## 5. CONCLUSION

During the last few years CAs have grown in popularity and become an important part of the global financial system. They may significantly alter existing financial structures and transform financial future. However, these changes come with significant concerns around CAs for their potential negative impacts on markets, investors, users and the environment. Governments around the world are looking to create regulations to prevent these harms while encouraging the innovative capabilities of cryptocurrencies. In the decentralized and borderless financial system, comprehensive regulation of numerous participants, instruments and transactions is a very challenging task. The paper reviews the CAs' recent development and market turmoil in 2022, summarizes the progress of international regulatory trends and brings to the conclusion that the crypto ecosystem is undergoing a rapid change and influencing changes in traditional financial regulated system, while national regulations and effective enforcements often lag behind innovation and development. The national regulations and effective enforcements often lag behind innovation and development. Authorities all over the world are aware that the future of finance is digital and that more interlinkages between traditional financial and crypto-native firms could be expected, so they need to keep the pace with the innovation developments. The treatment of cryptocurrencies across the world currently lacks uniformity. There is considerable disagreement over classification and regulation of CAs and national authorities have taken very different approaches to regulatory policy for CAs. Some jurisdictions have imposed bans on crypto, while others are their devoted advocates. There has been an ongoing debate among regulators all around the world whether to apply existing regulatory frameworks to CAs, or to develop specific ones. It is a challenging decision because crypto world is evolving rapidly. The cross-sector and cross-border nature of crypto limits the effectiveness of uncoordinated national approaches.

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<sup>4</sup> The European Supervisory Authorities (ESAs) are: the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA))



Although the cryptocurrencies may have been originally created to operate free from control, the lack of a robust global regulatory framework for CAs is harmful for the sector, innovation and future development. Achieving financial stability, consumer and investor protection and preventing financial crime without degrading the efficiencies and privacy features that digital assets can offer is an immense challenge for regulators. Comprehensive, consistent and internationally coordinated regulatory framework is preferred to the bans. Prohibitions can be ineffective and increase the incentives for circumvention, they be costly to enforce, they may stifle innovation, drive illicit activities and increase the exposure to the financial integrity risks. Targeted restrictions could help to address immediate challenges while regulatory capacity is being built. At the other end of the spectrum, making crypto legal tender cannot be considered under current circumstances. Market failures of stablecoins, crypto exchanges, hedge funds and consequently extreme price volatility in crypto winter of 2022 have raised serious concerns about market integrity, customer protection. Since interlinkages with the core financial system are deepening, there is more concern for systemic risk and financial stability. Many of these concerns can be addressed by strengthening financial regulation and developing global standards that can be adopted consistently by national regulatory authorities. The GSSs are accelerating the push for international cooperation. The European Union is at an advanced stage of the implementing the first cross-jurisdictional regulatory and supervisory regulation for CAs (MiCAR). Authorities should cooperate and coordinate with each other, domestically and internationally, to bring comprehensive and risk-based regulations and to encourage consistency and knowledge-sharing. They should ensure that any short-term approach is flexible enough to be timely adjusted to the future market developments and international standards. Many international organizations and GSSs have already been supporting the cross-sectoral and international cooperation and harmonization in order to develop robust international standards, which should be the pillars of robust, comprehensive, globally consistent crypto regulation and supervision of CA. This is a major turning point for cryptocurrencies with high hopes turning into regulated and shattered system. Evolving regulations will define the future shape of the crypto ecosystem over the next two years.

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## EVALUATION OF SELECTED FACTORS IMPACT ON SLOVAK POPULATION ENVIRONMENTAL FEELING THROUGH LOGISTIC REGRESSION

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### ABSTRACT

*The issue of environmental protection is very actual topic and the popularity of ECO (environmentally friendly) products is increasing. Various associations and protest meetings are known around the world to protect the planet. It is true that nature is in real danger. However, we perceive that this topic is only really accepted by a certain group of people, and in order to make more radical solutions it is necessary to identify real promoters and a second group of people who are not familiar with this idea. There are many studies on this topic. We focused on data of the Slovak population. We examined what are the demographic and geographical factors that significantly characterize the ecological feeling of people. It is still a current statement that the preference of environmentally friendly products is only a matter of money. The data for the research were obtained from a partner of the University of Economics - GroupM Slovakia. We used Live Panel, GroupM yearly study which runs in selected countries around the world. In Slovakia, 3.300 respondents participated in this study. This is a quota sample, representative of age, sex and region. We have chosen the method of logistic regression to determine significant characteristics. With it we proved the significance / insignificance of individual factors, but also differences in relevant categories. The results of our research will provide a better understanding of the characteristics of Slovak citizens who are willing to live healthier and pay more for environmentally friendly products.*

**Keywords:** *Ecological feeling, Environmental, Logistic regression, Marginal means*

### 1. INTRODUCTION

Countries around the world are changing. Climate and living conditions are changing due to global warming. People are progressively adapting their consumer behaviour towards greater environmental protection. This adaptability depends on the country's maturity, economic level, education but also on a number of other factors. The Slovak population is making slower progress in adopting more vehement measures for environmental protection than other developed European countries. Within the population of each country, there are groups of people who can and want to live in healthier way and responsibly behave in relation towards the environment. The European Commission's Agenda 2030 also includes The European Green Deal of November 2019. The Environmental Convention is an integral part of the European Commission's strategy to meet the Sustainable Development Goals formulated by OSN

(DSDG, 2015) as well as other priorities announced in policy guidelines of President of the European Commission - Ursula von der Leyen (Von der Leyen, 2018). One of the important part of the convention is also the part of Mobilizing research and fostering innovation, which inspired us to pay more attention to research in this area. (European Commission, 2019).

In our study, we focused on the analysis of demographic and geographical factors that significantly impact the ecological feeling of people in Slovakia. We used the Live panel study, which is carried out annually by GroupM in several countries around the world. In Slovakia, 3,300 respondents aged 18-64 participated in this study in 2018. This is an online survey and the sample is selected by quota sampling. Sample quotas are set in terms of age, sex and region, taking into account the weights for the whole Slovak online population aged 18-64.

## 2. DATA STRUCTURE AND METHODOLOGY

As a dependent variable, we used the respondents' answers to the question: „*How much do you agree or disagree with...: I would be prepared to pay more for environmentally friendly products*“. If the respondents completely or somewhat agreed with this statement, we assigned the value 1 (*ECO\_friendly* = 1) to the target variable. If the respondents completely or somewhat disagreed or neither agree nor disagree with this statement, we assigned the value 0 (*ECO\_friendly* = 0) to the target variable.

Available examined demographic and geographical factors – independent variables:

<i>Gender</i>	<i>Living arrangements</i>
<i>Age category</i>	<i>Children in HH (Children in household)</i>
<i>Type of community</i>	<i>Working status</i>
<i>Region</i>	<i>HH Income (Household net monthly income)</i>
<i>Size of residence</i>	<i>Education (Highest level of education)</i>
<i>Marital status</i>	

We used the method of logistic regression to analyze the factors that significantly impact environmental feelings of people.

## 3. PERCEPTION OF ECO FEELING IN THE WORLD AND IN SLOVAKIA

According to a large study conducted by BCG / Lightspeed in October 2007 and October 2008, which was attended by around 9,000 respondents aged 18-65 in 9 countries (Canada, France, Germany, Italy, Japan, Spain, the United Kingdom and the United States), already in those years it has shown the positive potential of consumers in choosing healthy and sustainable food. While in 2007 20% of respondents were willing to pay extra for ECO products, in 2008 it was already 24% (Manget et al., 2009, p. 7). We can perceive as positive the fact that in Slovakia we have seen in recent years an increased interest and willingness of people to pay extra for environmentally friendly products (Fig. 1). In 2017, 41.4% of the population would pay extra for ECO products (answer: completely or somewhat agree). In 2018, the number of such people increased by 6.8 percentage points, to 48.2%. We consider the value recorded in Slovakia in 2018 (< 50%) to be too low. Therefore, we decided to explore more the factors that significantly characterize people who are ECO-friendly.

*Figure following on the next page*

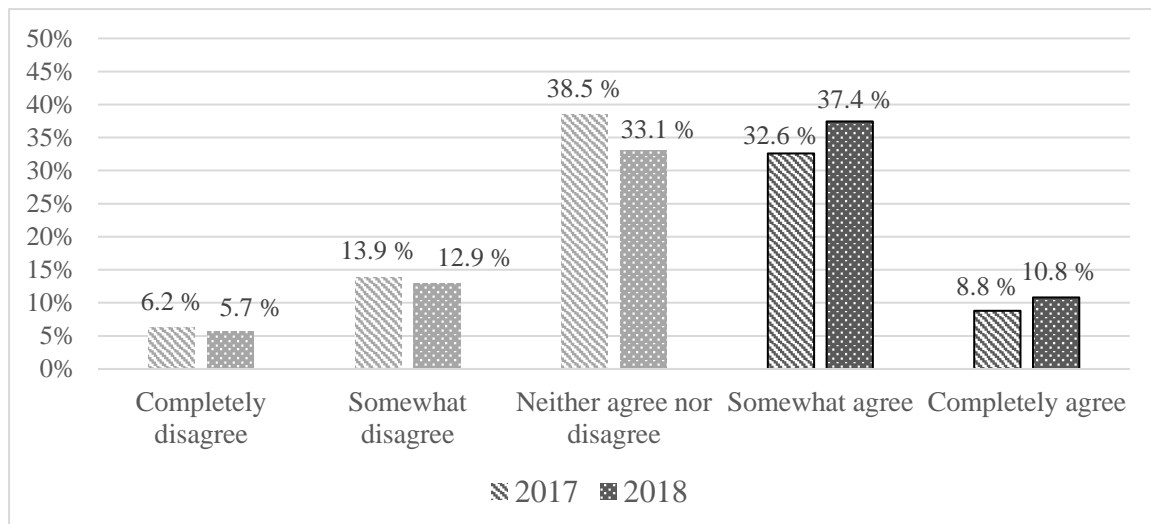


Figure 1: Willingness to pay extra for ECO products recorded in Slovakia in 2017 and 2018  
 (Source: GroupM Live panel 2017 and 2018, self-processed in MS Excel)

#### 4. ANALYSIS OF SIGNIFICANT VARIABLES INFLUENCING THE ENVIRONMENTAL FEELING OF PEOPLE

In our research, we used logistic regression using SAS Enterprise Guide software to analyse the impact of selected factors (Allison, 2012). Verification of the influence of the analysed factors on the target binomial variable is given in Table 1. We created dummy variables (1/0) from the questions in which the respondent could choose more than one answer (multiple choice). Those questions are about *Living arrangements* and *Working status*. We used stepwise selection method with the restriction  $\alpha = 0.05$  to enter the model and also to stay in the model. The final regression model is represented by the area under the ROC curve 59.77% (see Kapašný and Řezáč, 2013; Šoltés et al., 2020). We sorted the table of analysis of effects by Wald's Chi-square characteristic (Šoltés and Vojtková, 2018) in descending order – from the most significant variable to the least significant one (we do not state insignificant ones in the output).

Type 3 Analysis of Effects Effect	DF	Wald Chi-Square	Pr > ChiSq
Education	4	18.74	0.0009
Gender	1	12.46	0.0004
Working status: In full time education	1	10.57	0.0011

Table 1: Reduced model of logistic regression for the dependent variable *ECO\_friendly*  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

We consider the variables *Education*, *Gender* and the dummy variable *Working status: In full time education* to be statistically significant on the level of significance  $\alpha = 0.05$  and impact the ecological feeling of people and at the same time the willingness to pay extra for environmentally friendly products *ECO\_friendly*. Statistically non significant independent variables included *Living arrangements*, *Working status*, *Children in HH*, *Marital status*, *Region*, *HH Income*, *Type of community*, *Size of residence*, *Age*. For these variables, the *p*-value reached a value higher than the level of significance  $\alpha = 0.05$ . In the following output from the SAS Enterprise Guide software (Table 2) are displayed the Odds Ratio Estimates between the pairs of categories of statistically significant independent variables.

Odds Ratio Estimates Effect	Point Estimate	95% Wald Confidence Limits	
<b>Working_status: In full time education</b> Yes vs No	2.123	1.349	3.342
<b>Education: Bachelors_degree</b> vs University_degree	1.049	0.624	1.761
<b>Education: Full_secondary</b> vs University_degree	0.712	0.561	0.904
<b>Education: Basic_education</b> vs University_degree	0.667	0.306	1.454
<b>Gender: Male</b> vs. Female	0.627	0.484	0.812
<b>Education: Apprenticeship/secondary_vocational without_maturity</b> vs University_degree	0.467	0.315	0.694

Table 2: Odds Ratio for reduced model of logistic regression for variable *ECO\_friendly*  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

A very interesting finding is the fact that students are significantly more willing to pay extra for environmentally friendly products. The odds ratio for being *ECO\_friendly* person is approximately 2.12 times higher if he is a full-time student (*Working\_status: In full time education*). Environmental consciousness is verifiably related to the level of education of the population. If a person has the highest possible university education (*Education: University degree*), there is 2.14 higher odds ratio of *ECO\_friendly* attitude than when he has completed an apprenticeship or secondary vocational without maturity, 1.50 higher odds ratio of *ECO\_friendly* attitude in comparison with full secondary with maturity and 1.40 higher odds ratio of *ECO\_friendly* attitude than when he has basic education. From the data from 2018, we also found a verifiable difference in attitude to the willingness to pay extra for ECO friendly products in the female population. On average, women are 1.59 times more likely to pay extra for ECO products than men. Since the factors Gender and Working status: In full time education are binomial, it is already clear from Table 2 that between men and women, as well as between whether the respondent was a full-time student (Working status: In full time education = Yes) or not (Working status: In full time education = No) is a statistically significant difference in ecological consciousness, with women and full-time students having a stronger ecological consciousness. To determine between which levels of education there are significant differences, we estimated the logistic regression model as a generalized linear model (Searle and Gruber, 2017), using the PROC GENMOD procedure in SAS software. This procedure allow to test equality of the marginal means of target variable (more details in Cai, 2014; Lee and Lee, 2018; Lenth, 2016). For better orientation, we present in the following table (Table 3) and graph (Fig. 2) a simplified designation of the variations of the variable Education in the form (Code / Type of Education):

- 1 / No studies
- 2 / Basic education
- 3 / Apprenticeship or secondary vocational without maturity
- 4 / Full secondary with maturity
- 5 / Bachelor's degree
- 6 / University degree

Differences of Education Least Squares Means								
Education	_Education	Estimate	StdError	z Value	Pr >  z	Alpha	Lower	Upper
3	4	-0.4221	0.2001	-2.11	<b>0.0349</b>	0.05	-0.8142	-0.0300
3	5	-0.8088	0.3075	-2.63	<b>0.0085</b>	0.05	-1.4115	-0.2061
3	6	-0.7613	0.2017	-3.77	<b>0.0002</b>	0.05	-1.1566	-0.3660
4	5	-0.3867	0.2597	-1.49	0.1366	0.05	-0.8957	0.1224
4	6	-0.3392	0.1215	-2.79	<b>0.0052</b>	0.05	-0.5772	-0.1011
5	6	0.0475	0.2645	0.18	0.8575	0.05	-0.4710	0.5659

Table 3: Test of statistical significance of marginal means within the variable Education.  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

In the Table 3 we don't present tests of differences for the 2nd level of education (*Basic Education*) for which we had a small number of observations and all differences (2-3, 2-4, 2-5 a 2-6) were statistically insignificant ( $p = 0.4043$ ,  $p = 0.8665$ ,  $p = 0.3088$  and  $p = 0.3081$  respectively). Based on the estimated differences of the marginal means of the logit (Table 3, column *Estimate*) and the test of the statistical significance of these differences ( $p$ -values in Table 3, column  $Pr > |z|$ ), it is clear that persons with Education 6 and 5 have the strongest ecological perception. On the contrary, people with education 3 (Apprenticeship or secondary vocational without maturity) have the lowest ecological perception. The largest differences (-0.8088 and -0.7613, respectively), which are also significant, are between the 3rd and 5th/6th level of education. Since there is no statistically significant difference between the 5th and 6th level of education, let us calculate the difference between the 3rd level of education and higher education across both levels of education (5 / Bachelor's and 6 / University degree). We will use the CONTRAST statement (more details Chen, 2008) within PROC LOGISTIC (more details Lewis, 2007).

Since we want to test the hypothesis  $H_0: \mu_3 = \frac{\mu_5 + \mu_6}{2}$  into a linear combination  $H_0: \mu_3 - 0.5\mu_5 - 0.5\mu_6 = 0$  whose coefficients we use in the syntax of the CONTRAST statement (Šoltés et al., 2019).

CONTRAST 'Education 3 vs 5-6' Education 0 1 0 -0.5 -0.5 /estimate=both;

While the difference of the marginal means of the logit between 3 and 5/ 6 levels of education was estimated at -0.8088, respectively. -0.7613, so between the 3rd level of education and the combined 5th and 6th level of education was estimated at -0.7848, which is shown in Table 4. If we transform this value  $\ln\left(\frac{\hat{\pi}_3}{1 - \hat{\pi}_3}\right) - \ln\left(\frac{\hat{\pi}_{5-6}}{1 - \hat{\pi}_{5-6}}\right) = \ln\left(\frac{\overline{odds}_3}{\overline{odds}_{5-6}}\right) = -0.7848$ , we get the odds ratio,:

$$Odds\ Ratio_{3\ vs\ 5-6} = \frac{\overline{odds}_3}{\overline{odds}_{5-6}} = e^{-0.7848} = 0.4562 \text{ (see Estimate of EXP in Table 4).}$$

Contrast Estimation and Testing Results by Row									
Contrast EDUCATION	Type	Row	Estimate	StdError	Alpha	Confidence Limits		Wald Chi-Sq	Pr > ChiSq
3 vs 5-6	PARM	1	-0.7848	0.2239	0.05	-1.2236	-0.3460	12.29	0.0005
3 vs 5-6	EXP	1	0.4562	0.1021	0.05	0.2942	0.7075	12.29	0.0005

Table 4: Contrast Estimation for variable Education  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

This means that people with the level 3 of education have, on average, a 54.38% lower environmental perception than people with a university degree (regardless of whether they are a bachelor or master degree university student). With a 90% probability, persons with the level 3 of education have a minimum of 29.25% and a maximum of 70.58% lower ecological perception than persons with a university degree. We emphasize that the above interpretation applies under fixing other factors (*Gender*, *Working\_status*) included in the model. The estimated logistics model can also be used to predict the probability that a person will have an ecological feeling. In Fig. 2 is an estimate of this probability as a function of gender and education, assuming that the person is not a full-time student (*Working\_status: In full time education = NO*).



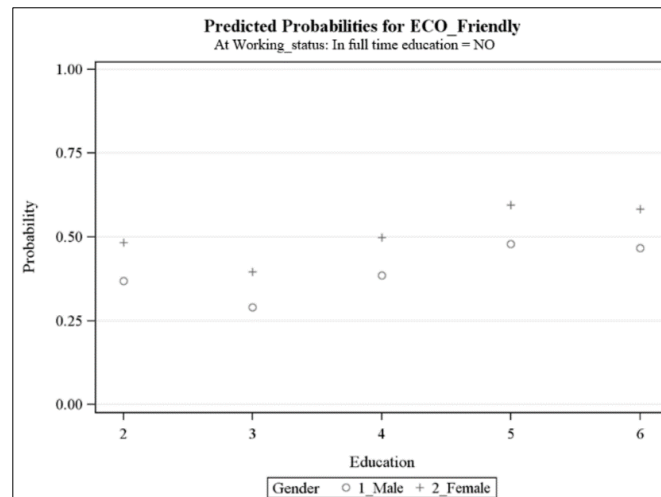


Figure 2: Probability of willingness to pay extra for ECO products according to cat. of education.  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

It is clear from the graph that men with the 3rd level of education have the lowest ecological perception, where the probability of ecological perception is slightly above 25%. On the contrary, women with a university degree have the strongest ecological perception, with a probability of ecological perception of more than 50%. Our analysis has shown that university-educated women have the strongest ecological perception. To estimate the probability of ecological perception in this group of people, we use the ESTIMATE statement (Šoltés et al. 2019). After running the command `estimate 'most ECO-friendly' intercept 1 Gender 0 "Working_status: In full time education"n 1 Education 0 0 0 0.5 0.5 /cl alpha=0.05;` within PROC LOGISTIC we get the output in Table 5.

Estimate							
Label	Estimate	Std Error	z Value	Pr >  z	Alpha	Lower	Upper
most ECO-friendly	1.1127	0.2614	4.26	<.0001	0.05	0.6003	1.6252

Table 5: Estimation of the natural logarithm of the odds and odds to be ECO\_friendly for women with university education or In full time education.  
 (Source: GroupM Live panel 2018, self-processed in SAS EG)

From the point and interval estimate of logit  $Estimated = \ln\left(\frac{\hat{\pi}_i}{1 - \hat{\pi}_i}\right)$  we can easily obtain an estimate of particular probability  $\hat{\pi}_i = \frac{e^{Estimated}}{1 + e^{Estimated}}$ . In our case, the above transformation gives a point estimate:  $\hat{\pi}_i = \frac{3.0427}{1 + 3.0427} = 0.7526$  and confidence interval:  $P(0.6457 < \pi_i < 0.8355) = 0.95$ . With 95 % reliability, the probability of ecological perception in women with a university degree or full-time student is higher than 64.57 % and at the same time lower than 83.55 %.

## 5. CONCLUSION

In our paper we point out that the attitude to environmental consciousness, in our case - willingness to pay extra for environmentally friendly products, is not necessarily a question of finance, region or urban layout of the place of residence. The society in which a person exists certainly influences his behaviour, but as we can see from our results, it does not necessarily change his inner attitude to the environment.

The fact that someone sacrifices their comfort and is willing to pay extra for ECO products is mainly related to their education. If a person is sufficiently educated, and thus has a general overview of global issues, it affects him the most. Therefore, we want to focus on our findings and appeal to a greater emphasis on all forms of education if we, as a society, want to learn to behave more responsibly towards the environment. As men are more practical, in some cases indifferent, they do not see the question of willingness to pay extra for ECO friendly products as too important. On the other hand, women are more emotionally based, they think more about their future, but especially about the future of their children. They really want to live healthier and they are also more willing to pay extra for such products. Even on the basis of basic demographic and geographical characteristics, we were able to reveal very interesting findings using logistic regression. We believe that they will be an inspiration for the general and professional public. In further research, we will focus on a broader base of factors that could compile an even more detailed profile of an ecologically sensitive person and point out more significant differences with the greatest possible degree of explained variability.

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## QUALITY OF LIFE IN TERMS OF EMPLOYMENT IN EU COUNTRIES

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### ABSTRACT

*Productivity or productive and other main activity includes both paid and unpaid work. Work affects the quality of people's lives, not only through income, but also provides us with a certain work identity. The time spent at work represents a significant part of our life and therefore significantly affects the overall happiness and sense of meaning in life for a person. In this paper, we therefore decided to focus on one of the nine dimensions of quality of life, namely the dimension of employment or productivity and other main activities of employment in the countries of the European Union. The result of our effort is a comparison of the quality of life in groups of European Union countries that achieve similar values of indicators of the employment dimension in 2019 and 2020 using Ward's clustering method, while we will use the statistical analysis tool SAS Enterprise Guide 5.1 and SAS JMP 14.*

**Keywords:** *Cluster analysis, Employment, European Union, Quality of live*

### 1. INTRODUCTION

The level of quality of life affects the way a person lives his life and it is in the interest of every individual or state to achieve the highest possible level. Quality of life is primarily used as a target value for the economic and social development of society. According to Eurostat's publication: Quality of life indicators – measuring quality of life (2019), quality of life is a broad concept that includes several dimensions, while measuring it takes into account both objective factors and the subjective perception of these factors by individuals. We can therefore say that the term quality of life consists of two perspectives on several aspects of a person's life (Felce, Perry, 1995). On the one hand, we consider the objective factors of life, such as material security, wealth, health status, employment, education, social status, freedom or the environment in which a person lives, and on the other hand, we must take into account the subjective perception of these factors by individuals. Based on the recommendations of the group for measuring progress, well-being and sustainable development, an expert group was commissioned in 2012 to create a complete list of indicators for measuring the quality of life and determine the appropriate data source for these indicators. The result is a list of indicators for nine dimensions of quality of life, published by the Expert Group on Quality of Life Indicators in its final report in 2017 (Eurostat, 2017). Since the concept of quality of life is relatively broad and includes various areas of human life, it is appropriate to analyze the quality of life also at the level of its sub-areas, which include: material conditions of life; area of productivity - employment; health; education; leisure activities and social relations; physical and economic security; governance and human rights; natural conditions for life and, last but not least, it's important to take into account that not every individual perceives the impact of individual areas of quality of life on it's life in the same way, and therefore the subjective perception of life satisfaction must also be considered (SO SR, 2021).

The time spent at work represents a significant part of our lives and therefore significantly affects the overall happiness and sense of meaning in each person's life. It is therefore important to realize that work affects the quality of people's lives not only through the income derived from it, but also provides people with a certain work identity, represents space for socializing with others, space for education and self-improvement. In this paper, we decided to focus on one of the nine dimensions of the quality of life, namely the dimension of employment or productivity and other main activities in the countries of the European Union. Our effort will be to compare the quality of life in groups of European Union countries that achieve similar results in terms of the employment dimension in 2019 and 2020. An additional goal will be to examine the possible impact of the Covid-19 pandemic on the mentioned dimension.

## **2. EMPLOYMENT DIMENSION**

The term employment primarily includes productive or other main activity, which may be paid or unpaid. In the case of paid work, we mainly focus on two aspects, namely job opportunities and quality of employments, whereas sufficient amount of job opportunities influence mainly the unemployed part of the population, while changes in the quality of employment mainly influence the employed part of the population. Since data related to unpaid work is insufficiently monitored or is completely absent in some EU countries, we will only focus on it marginally. The productivity or other main activity dimension follows three aspects (Eurostat, 2017):

### **2.1. Quantity of employment**

The main indicator of the number of job opportunities is the employment rate, which is used by economists to create a picture of the labor market. The employment is associated with many positive effects on a person's quality of life, whether it is income, a sense of satisfaction with work or the development of new skills and relationships, on the other hand, unemployment, especially over a longer period, is associated with many negative aspects such as reduced life satisfaction, psychological problems and various social ills. We distinguish between two cases of insufficient job opportunities: unemployment and underemployment. However, the employment rate alone cannot provide us with a comprehensive picture of employment, as it does not take into account the number of hours worked, work on the black market, the quality of employment or the quality of the working environment.

The full list of indicators for this aspect is:

- *Employment rate (X1)* – the share of the employed in the total population aged 15 to 74. An employed person is considered to be someone who worked at least one hour in the reference week for the purpose of payment or profit, or someone who temporarily did not work in the given week for various reasons but is an employee or runs a business.
- *Unemployment rate (X2)* - the share of the unemployed in the total population between the ages of 15 and 74. An unemployed person is someone who was out of work during the reference week and he is able to work and he either applied for a job in the last four weeks or found a job and plans to start in the next three months.
- *Long-term unemployment rate (X3)* - the share of long-term unemployed persons in the total number of economically active population, while long-term unemployed is considered to be a person who is looking for a job for more than twelve months or who has had twelve months since the last job. The economically active population is defined as people aged 15 to 74 who are either employed or unemployed.
- *People living in a household with very low work intensity (X4)* - the share of people living in a household whose members, on average, did not exceed the specified limit of work intensity, which is determined as the proportion of months worked in a year to the months

in a year that a person could theoretically work, while they take into account household members aged 18 to 59, with the exception of students under 25. A household with very low work intensity is considered to be one where the ratio does not exceed 0.2.

- *Involuntary part-time employment – underemployment in terms of quantity of work (X5)* - represents the percentage of people from the total active population aged 15-74 who work involuntarily for reduced working hours. Underemployed or involuntarily working part-time are those who could and want to work longer, while the difference between full-time and part-time work depends on the perception of the respondent himself.

## 2.2. Quality of employment

In addition to the availability of work, an important aspect of the quality of life is also the quality of employment, which is described in several subcategories, while the following selected indicators will be the subject of the analysis (these are the indicators available for the current period):

- *Involuntary temporary contracts (X6)* - represents the share of the temporarily employed who are employed temporarily due to the fact that they could not find a permanent job.
- *Average number hours spent in main job during the week (X7)* - includes the average usual time that the employee spends during the week at work, including overtime without a lunch break and time spent traveling to and from work.
- *Long working hours (X8)* - represents the share of employees who usually work more than 48 hours a week, either in one or several jobs.
- *Night work (X9)* - represents the share of those employees who work at night for more than half of the working time.

## 2.3. Other main activity

In order to complete the picture of society in the area of employment, it is necessary to describe the economically inactive population in addition to the economically active population. Many people also do unpaid work that has an impact on society, but there is currently a lack of up-to-date data describing unpaid work. Within this aspect, we decided to monitor the following indicator:

- *Economically inactive persons (X10)* - represents the share of economically inactive persons who are not looking for employment due to education, pension, illness or disability, child care or family care as a percentage of the total population aged 15-74.

## 3. USED METHODS AND METHODOLOGY

The main goal of this paper is to group the EU countries in such a way that in individual clusters there are countries that achieve similar results in the dimension of employment as one of the areas of quality of life. In the past, the use of clustering methods was significantly limited by the high computational complexity, but this has recently been changed by the development of computing technology and the emergence of a number of statistical programs capable of implementing various methods of cluster analysis. In this paper, we will use the statistical analysis tool SAS Enterprise Guide 5.1 and SAS JMP 14 for this purpose. The primary task of cluster analysis can be mathematically formulated as follows (Hair et al., 2018, Meloun, Militký, Hill, 2017): it is a grouping of objects  $X_i$  ( $i=1,2, \dots, n$ ) into clusters  $C_1, C_2, \dots, C_q$  ( $2 \leq q \leq n$ ) so that objects belonging to the same cluster are close, similar, and objects belonging to different clusters were distant, different. Compared to other methods, it should be noted that the objects (statistical units, observations) are primarily the subject of cluster analysis, while it is possible to use clustering methods for variables as well (Khattri, R. and Naik, D. N., 2000). In general, we will measure similarity between objects based on their distance, while high values of distance characterize dissimilar objects.

A distance measure that is easy to calculate, but assumes an orthogonal coordinate system (uncorrelation of variables) is the Euclidean distance:

$$d_{ij} = \sqrt{\sum_{k=1}^n (X_{ik} - X_{jk})^2} , \quad (1)$$

where  $X_{ik}$  is the value of the  $k$ -th variable for the  $i$ -th object,  
 $X_{jk}$  is the value of the  $k$ -th variable for the  $j$ -th object.

Since the relations between the indicators of the employment dimension are interrelated - dependent, we will use the method of principal components in the transformation of the original variables, which results in independent principal components (Duda, Hart, 2006, Vidal et al., 2016).

A complete and detailed analysis of the structure of the investigated input indicators is subsequently made possible by the application of the hierarchical clustering procedure, within which Ward's method is the most widely used in practice. In this method, clusters are formed by maximizing intra-cluster homogeneity. The measure of homogeneity is the within-cluster sum of squares of deviations from the cluster mean (ESS = error sums of squares):

$$ESS = \sum_{i=1}^{n_h} \sum_{h=1}^q (X_{hi} - \bar{X}_{C_h})^2 , \quad (2)$$

where  $n_h$  is the number of objects in the cluster  $C_h$ ,  
 $X_{hi}$  - vector of character values of the  $i$ -th object in the cluster  $C_h$ ,  
 $\bar{X}_{C_h}$  - vector of averages of character values in the cluster  $C_h$ .

The algorithm ensures that a minimum increment of ESS is achieved at each step of merging. This method results in the formation of clusters of relatively uniform size and shape, so it tends to remove small clusters.

#### 4. ANALYSIS OF EMPLOYMENT AS A DIMENSION OF THE QUALITY OF LIFE IN THE EU COUNTRIES

We will get a picture of employment as a dimension of quality of life by comparing groups of European Union countries in 2019 and 2020 based on indicators that were determined by the Eurostat expert group using the selected clustering method. We obtained all data on individual indicators from the Eurostat database. By applying correlation analysis, we found the need to transform the data, as a significant part of the indicators were correlated with each other (Šoltés, 2019). We transformed the data using the principal components method. Our goal was to create independent principal components that capture the maximum amount of information about the original set of indicators. In Tables 1 and 2 there are eigenvalues according to which we can consider the number of statistically significant principal components. Based on Kaiser's rule, the first three principal components have an eigenvalue greater than 1, but they explain only less than 80% of the variability of the original variables in both years. Since the share of variability explained by the 4th principal component in both years is also relatively high, we decided, in the interest of explaining the largest % of variability, to consider up to 4 principal components, which explain 85.12% in 2019 and 84.21% in 2020 % of total variability.

Eigenvalues of the Correlation Matrix: Total = 10 Average = 1			
	Eigenvalue	Proportion	Cumulative
1	4,6576	0,4658	0,4658
2	1,8784	0,1878	0,6536
3	1,1322	0,1132	0,7668
4	0,8438	0,0844	0,8512
5	0,6519	0,0652	0,9164
6	0,4325	0,0433	0,9596
7	0,2319	0,0232	0,9828
8	0,1324	0,0132	0,9961
9	0,0393	0,0039	1,0000
10	0,0001	0,0000	1,0000

Table 1: Eigenvalues of employment indicators in 2019  
 (Source: Eurostat database, own processing in SAS EG)

Eigenvalues of the Correlation Matrix: Total = 10 Average = 1			
	Eigenvalue	Proportion	Cumulative
1	4,4434	0,4443	0,4443
2	1,8649	0,1865	0,6308
3	1,2159	0,1216	0,7524
4	0,8969	0,0897	0,8421
5	0,7412	0,0741	0,9162
6	0,4248	0,0425	0,9587
7	0,2706	0,0271	0,9858
8	0,0994	0,0099	0,9957
9	0,0423	0,0042	0,9999
10	0,0006	0,0001	1,0000

Table 2: Eigenvalues of employment indicators in 2020  
 (Source: Eurostat database, own processing in SAS EG)

We also confirmed the determination of the number of principal components (factors) using the Anderson test. We verified that only the first four eigenvalues are determined uniquely and the rest are the same (Anderson, T.W., 2003). *P*-value higher than the commonly used significance level in Fig. 1 and 2 proves the validity of the null hypothesis, that is, the use of the first 4 principal components is enough, and the part of the variance explained by the 6 remaining components can be attributed to the action of various secondary and random influences.

Test	DF	ChiSquare	Prob>ChiSq
H0: no common factors.	45,000	339,890	<,0001*
HA: at least one common factor.			
Test	DF	ChiSquare	Prob>ChiSq
H0: 4 factors are sufficient.	11,000	16,329	0,1293
HA: more factors are needed.			

Figure 1: Significance test of 4 principal components in 2019  
 (Source: Eurostat database, own processing in SAS EG)



Test	DF	ChiSquare	Prob>ChiSq
H0: no common factors.	45,000	286,514	<,0001*
HA: at least one common factor.			

Test	DF	ChiSquare	Prob>ChiSq
H0: 4 factors are sufficient.	11,000	13,661	0,2523
HA: more factors are needed.			

*Figure Error! No text of specified style in document.: : Significance test of 4 principal components in 2020*  
 (Source: Eurostat database, own processing in SAS EG)

Applying the method of principal components, we obtained component scores for individual EU countries and four principal components. It is a linear combination of the input indicators of the employment dimension, while they meet the condition of independence, so we can further use them in the classification of EU countries using the Euclidean similarity measure (SAS Institute Inc., 2018). By comparing the results of several clustering methods, Ward's hierarchical clustering method proved to be the best. A graphical representation of the clustering of individual EU countries at individual levels provides a clear and detailed hierarchical tree (Figure 5 and 6). The individual EU countries are on the y-axis, while the values of the individual indicators of the employment dimension are shown graphically from X1 to X10 using color maps centered with respect to the values of the variation range of the indicator. If we translate an imaginary line parallel to the vertical axis, we can observe countries belonging to individual clusters according to different levels of clustering. Considering the size of the set and also the development of clustering quality characteristics (Figure 3 and 4), we decided to determine 5 significant clusters.



*Figure 3: Development of clustering quality characteristics depending on the number of clusters in 2019*  
 (Source: Eurostat database, own processing in SAS EG)

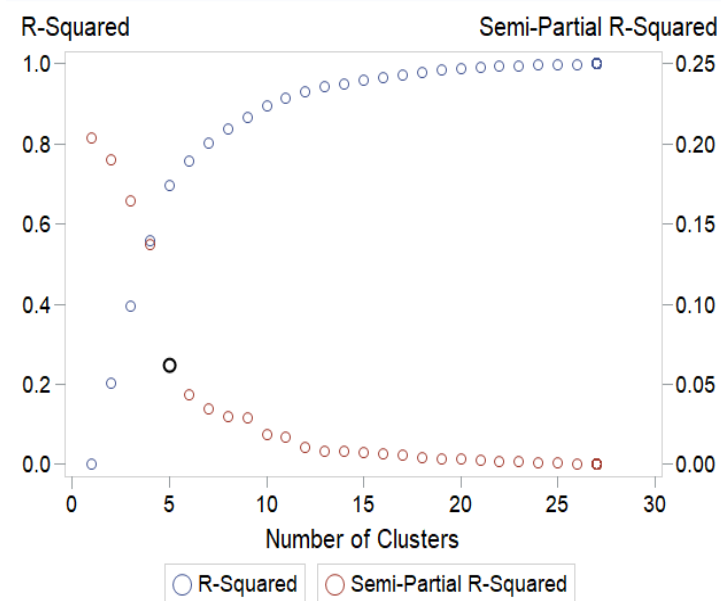


Figure 4: Development of clustering quality characteristics depending on the number of clusters in 2020  
 (Source: Eurostat database, own processing in SAS EG)

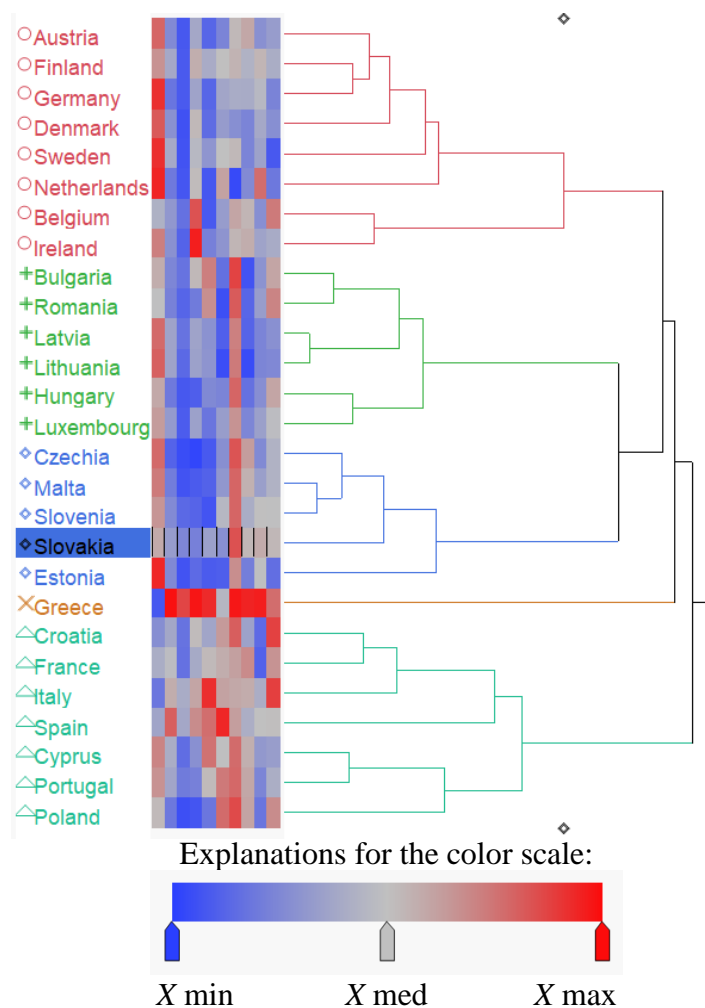


Figure 5: Dendrogram of clustering of EU countries based on employment indicators in 2019

(Source: Eurostat database, own processing in SAS JMP)

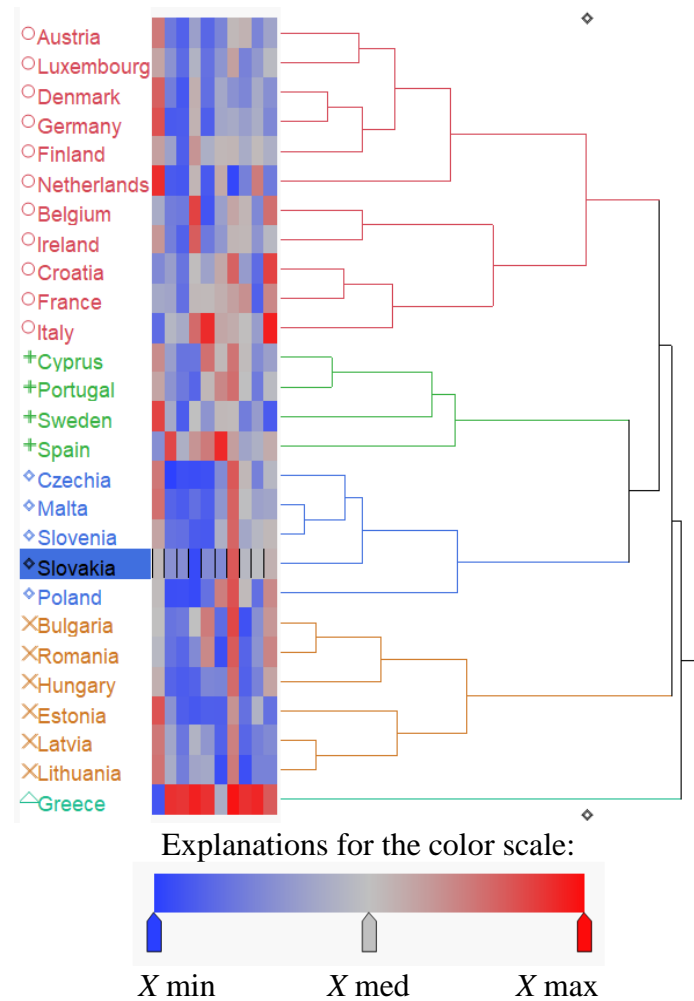


Figure 6: Dendrogram of clustering of EU countries based on employment indicators in 2020

(Source: Eurostat database, own processing in SAS JMP)

The last step is focused on the interpretation of statistically significant clusters. Although the cluster analysis itself was carried out using hypothetical independent principal components, the interpretation of the created clusters must be focused on the original indicators of the employment dimension. Individual groups of EU countries in 2019 and 2020 can be interpreted on the basis of cluster centroids, while in order to simplify their interpretation, the order from the smallest to the largest is indicated after each average value (tables 3 and 4).

Variable	CLUSTER									
	1	Rank	2	Rank	3	Rank	4	Rank	5	Rank
X1	61,98	5	61,76	4	60,51	2	61,20	3	49,00	1
X2	6,30	3	4,36	1	6,29	2	9,58	4	16,30	5
X3	1,80	3	1,48	1	1,76	2	2,63	4	10,90	5
X4	6,62	2	4,64	1	9,41	4	7,28	3	12,60	5
X5	28,58	3	9,18	1	19,86	2	40,78	4	64,20	5
X6	2,82	1	9,74	2	10,93	4	16,85	5	10,10	3
X7	39,13	3	39,80	4	36,03	1	38,00	2	41,80	5
X8	1,83	1	8,36	4	7,25	3	6,95	2	16,10	5
X9	11,12	1	13,32	3	13,56	4	12,00	2	37,70	5
X10	33,67	2	35,42	4	35,41	3	32,40	1	41,40	5

*Table 3: Cluster centroids of employment indicators in 2020*  
 (Source: Eurostat database, own processing in SAS EG)

Variable	CLUSTER									
	1	Rank	2	Rank	3	Rank	4	Rank	5	Rank
X1	62,02	3	64,10	4	64,96	5	57,53	2	49,20	1
X2	4,95	2	4,06	1	4,99	3	8,00	4	17,30	5
X3	1,80	3	1,54	2	1,26	1	3,03	4	12,20	5
X4	7,15	2	5,18	1	9,78	4	7,94	3	13,80	5
X5	28,12	3	9,72	1	12,89	2	40,53	4	65,40	5
X6	4,23	1	7,78	2	10,91	3	18,74	5	12,40	4
X7	39,18	3	39,44	4	35,20	1	38,67	2	41,70	5
X8	2,20	1	8,20	3	7,13	2	9,49	4	16,60	5
X9	11,47	2	17,38	4	17,14	3	10,79	1	38,40	5
X10	34,72	3	33,18	2	31,60	1	37,46	4	40,40	5

*Table 4: Cluster centroids of employment indicators in 2019*  
 (Source: Eurostat database, own processing in SAS EG)

#### 4.1. Comparison of EU country groups and discussion

##### 4.1.1. Cluster 1

From a geographical point of view, in both years it is a cluster of six Baltic countries, two Balkan countries and Hungary, to which Luxembourg joined in 2019. In 2019, this group of countries had mostly average values of almost all employment indicators, with the exception of the indicator *Involuntary temporary employment* (X6) and *Long working hours* (X8), where the average value of these indicators in the cluster reached the lowest value. In 2020, the *Work during the night* (X9) indicator was added to these indicators with the lowest average value. The average share of involuntarily temporarily employed in this cluster reached 4.23% in 2019, which is 6.7 percentage points less than the EU average. The average value of the X6 indicator in 2020 even reached a value of 2.82%, while Lithuania reached the minimum values of this indicator of all monitored countries (1.2% in 2019 and 1.1% in 2020). The lowest share of employees who usually work more than 48 hours per week was recorded again in Lithuania by 0.7% in 2019 (average value in the EU 6.53%) and 0.9% (average value in the EU 7.19%) in 2020. Even though overall the average employment rate decreased by 0.9 percentage points to 60.74% in 2019 for all monitored EU countries during the stated period in 2020 compared to 2019, the value of this indicator reached the highest average value in the cluster, namely 61.98%. This is a group of countries that achieve the lowest average values of indicators focused on the negative aspects of measuring the quality of work. Temporary contracts have a great impact on the stability of employment and economic security of the employee, similarly long working hours or working in unusual hours, the low average values of these indicators prove that these are countries that achieve a high quality of employment or high job stability.

##### 4.1.2. Cluster 2

The mentioned cluster consists of five countries, which mainly belong to Central Europe. Stable members of the cluster in both years are the Czech Republic, Slovakia, Slovenia and also Malta, to which in 2019 Estonia was also added in terms of similarity, and in 2020, on the contrary, Poland. This group of EU countries can be characterized in both years by the lowest average indicators: *Unemployment rate* (X2), *People living in households with very low work intensity* (X4) and *Involuntarily employed for reduced working hours* (X5), while in 2020 also the lowest average value rates of *Long-term unemployment* (X3). Other cluster centroids of indicators of the employment dimension mostly reach higher values or average values. Although the average unemployment rate in EU countries rose in 2020 compared to 2019 by 0.75 percentage points to 6.79%, the unemployment rate in the Czech Republic reached 2% in 2019 and 2.6% in 2020,

which represents the lowest values of all monitored EU countries. In this group of countries, Slovakia achieved relatively high unemployment rates of 5.8% in 2019 and 6.7% in 2020. In all countries of this group, except for Poland, the unemployment rate in 2020 increased compared to 2019. Similarly, the rate of long-term unemployment reached only 0.6% in both monitored years in the Czech Republic, while in Slovakia this rate fell from 3.4% to 3.2% in 2019. The average value of the indicator of low work intensity in all monitored EU countries in 2020 compared to 2019 slightly decreased by 0.3 percentage points to 7.71%. The minimum values in the group for this measure were 4.2% in 2019 in the Czech Republic, while Slovakia also fell to a similar minimum value in the given group in 2020, which together with Poland reached a value of 4.3%. The share of involuntarily employed part-time workers in this group of countries reached the lowest average values in both years above 9%, but Slovakia, when monitoring this indicator, reached extremely high values of the given indicator in the group, i.e. 24.3% in 2019 and 18.1% in 2020. Overall, this cluster of countries in the monitored years can be characterized as countries with the lowest average rates of insufficient job opportunities, that is, with a high amount of job opportunities that positively affect a person's quality of life.

#### 4.1.3. Cluster 3

This is the most numerous cluster, which in 2020 consisted of eleven countries, of which 6 were the founding countries of the EU and the countries of Northern Europe, to which Croatia has been assigned in terms of similarity. In 2019, this cluster consisted of eight similar north-western EU countries. In 2019, the countries in this cluster achieved the highest average *Employment Rate* (X1) at 64.96% and the lowest average *Long-Term Unemployment* (X3) at 3.03%. In 2020, the average value of the X1 indicator was the second lowest, but with high variability. Typical for both years in this group of countries is the lowest *Average time spent at work per week* (X7), which reached 35.2 hours in 2019 and 36.03 hours in 2020, which is 1.93 hours less than in the entire monitored period EU. The values of the indicator *Economically inactive persons* (X10) are also interesting, where in 2019 the share of such persons in the monitored group of countries reached the lowest average value of 31.6%, which is 2.83 percentage points less than in all monitored countries in the EU. In 2020, the average value of this indicator moved to 35.41%, which can be attributed to the larger number of countries in the given group and the resulting high variability of this indicator. A typical feature of the countries in this cluster is a high quality of work, which is related to low values of the usual time an employee spends during the week at work, including overtime without a lunch break and time spent traveling to and from work. Low average values of this indicator in the cluster indicate efficient use of time at work.

#### 4.1.4. Cluster 4

The composition of this cluster varies considerably depending on the observed year. While in 2020 it was a group of four countries, in 2019 there were seven. The common geographical feature of both groups is that the countries Cyprus, Spain and Portugal, which are located in both groups, are coastal countries of southern and western Europe. In both monitored years, these are the countries with the highest average rate of *Involuntary temporary employment* (X6), which in this cluster reached a value of 18.74% in 2019 (the average value in the EU was 10.93%) and in 2020 16.85% (the average value in the monitored EU countries was 9.75%). The highest values of this indicator for the entire EU were achieved by Spain (25.9% in 2019 and 23.4% in 2020). Another typical feature of this cluster is the lowest average value of the *Work during the night* (X9) indicator in 2019, namely 10.79%, while in 2020 this value reached the second lowest rank. A comparison of the order of the other cluster centroids in the given cluster proves that it is a very similar grouping of countries in terms of the monitored employment indicators in both years. The exception is the indicator *Economically inactive*

persons (X10), which achieved the lowest average rank in 2020, while in 2019 it achieved the second highest average rank.

The high value of the share of temporarily employed people who are employed temporarily due to the fact that they could not find a permanent job (X6) indicates that this is a grouping of countries with high employment instability or with low quality employment. On the other hand, the low average values of night work (X9) are generally evaluated as favorable for the employee.

#### 4.1.5. Cluster 5

It is a one-element cluster, which in both years consists of Greece. This country is characterized by extremely high values of almost all indicators of the employment dimension, not only within the given cluster, but also in the entire European Union. The exception is the indicator *Employment rate* (X1), where Greece reached the lowest values in both 2019 and 2020 (49.2% and 49%). While the average employment rate in EU countries in 2019 was 61.64% and in 2020 60.74%. If we focus on the *unemployment rate* - indicator X2, its value in Greece was 17.3% in 2019 and 16.3% in 2020 (the average in the EU was 6.04% in 2019 and 6.79 in 2020 %). The extremely high value of the *Work during the night* indicator (X9) is also interesting. The share of employees who work at night more than half of the working time was 38.4% in Greece in 2019, which is 23.34 percentage points more than the EU average. In 2020, the value of this indicator in Greece reached a slightly lower value of 37.7%, but the average value in the EU was 13.4%. This is a country that in the monitored years is characterized by an extremely high rate of insufficient job opportunities and, conversely, by an extremely low quality of employment.

## 5. CONCLUSION

The number of job opportunities and the quality of employment greatly influence the balance between a person's work and private life and have a fundamental impact on their subjective well-being. However, this effect is not linear. Research has shown that subjectively, the quality of the monitored dimension increases, e.g. with the growth of the employment rate or with the average time an individual works per week, but only up to a certain value (Abdallah, Stoll a Eiffe, 2013). The mentioned paper presents a wide range of indicators that can be applied when assessing one of the dimensions of the quality of life - the employment dimension or productivity and other main activities. It identifies groups of countries of the European Union in its various aspects and compares their maturity with regard to the achieved level of employment indicators for the latest current data of 2019 and 2020. The analysis confirmed that within the European Union, it is possible to observe different geographical groupings of countries in terms of employment. For example the countries of the Baltic States and the Balkans are characterized by a high quality of employment characterized by a small average number of temporary contracts, while the countries of Central Europe, on the other hand, are characterized by a larger average number of job opportunities. For the founding countries of the EU and the Nordic countries, efficiency with the use of working time is typical. Conversely, the coastal countries of southern and western Europe are characterized by instability or low quality of employment. As a single-element cluster, Greece showed itself in both monitored years with extremely negative measures of the number of job opportunities as well as extremely low quality of work. In further research, it is necessary to take into account the fact that many aspects due to the ongoing Corona virus pandemic and also due to other economic changes caused by the war in Ukraine or energy crisis in the coming years can significantly change.

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## THE BANK LENDING CHANNEL IN THE EUROPEAN ECONOMIC AND MONETARY UNION (EMU) AND CROATIA

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### ABSTRACT

*The bank lending channel mechanism represents the monetary policy transmission channel used by central banks in implementing monetary policy along the interest rate channel, asset price channels and credit view-based channels. The purpose of the bank lending channel arises from the changes in the central bank's policy, i.e. when the bank increases reserves and deposits it raises the amount of bank loans granted for investment and spending purposes, thus affecting investments and consumption as a part of the real economy alignments. Therefore, the aim of this study is to explore the impact of the bank lending channel on the behavior of main economic variables such as real GDP and prices, as well as to identify possible differences in monetary transmission mechanisms between the EMU and Croatia. For that manner, the subset vector autoregressive (VAR) model is applied. The results indicate that the impact of loans/domestic credit on money M1, prices and real GDP is quite similar in the EMU and Croatia, which is not surprising considering that Croatia has been a member of the EU for many years, therein actively preparing for the introduction of the euro and membership in the EMU.*

**Keywords:** Bank lending channel, Croatia, EMU, Monetary transmission, Subset VAR model

### 1. INTRODUCTION

The monetary transmission mechanism represents the group of monetary defined channels through which nominal money stock and/or interest rate affect real economic variables such as national output or employment, as well as monetary variable, for example prices. Mishkin (1995) depicted three main monetary transmission channels, namely traditional interest rate channels, common asset price channels (with special emphasis on the exchange rate channel and equity price channels) and credit channels (regarding bank lending channel and balance-sheet channels), suggesting that the success of national central banks in achieving monetary objectives relies on a well-functioning of the monetary policy transmission mechanism. Since monetary policy always reacts within the condition of uncertainty about inflation dynamics and reliability/effectiveness of monetary instruments and also depends on the time lag effect of distinct policy, it means that transmission could be slower/weaker and/or faster/stronger than expected, hence it represents the (success of) process by which monetary policy decisions are



transmitted to the economic activity. A central bank needs a properly functioning financial system to successfully transmit monetary policy impulses into the economy and influence price trends as changes in policy rates normally affect money market conditions and then spread to other segments of financial markets, affecting interest rates, economic agents' consumption and investment decisions, and consequently prices. If the money market or other segments of the financial system are impaired and policy impulses are not properly transmitted to some sectors or jurisdictions of an economy, then the ability to achieve the price stability objective is put into question (Cardoso da Costa and Gomes, 2021). On the first of January 2023, Croatia became the 20<sup>th</sup> country to join the Eurozone with expectation of benefiting from using the EU's common currency. The monetary mechanism is therefore set, for a change. In addition, in 2019 (before the COVID-19 pandemic) the share of domestic credit to private sector in gross domestic product (GDP) for the European Monetary Union (EMU) was 85.9% while for Croatia it was 53% (World Bank, 2023), suggesting significant importance of the credit channel, especially bank lending channel, within the monetary mechanism. The main role of the bank lending channel in the transmission process arises from the changes in the central bank's policy, i.e. when the bank increases reserves and deposits it raises the amount of bank loans granted for investment and spending purposes, thus affecting investments and consumption as a part of the real economy alignments. Therefore, the aim of this study is to explore the impact of the bank lending channel on the behavior of main economic variables such as real GDP and prices, as well as to identify possible differences in monetary transmission mechanisms between the EMU and Croatia. For that manner, the subset vector autoregressive (VAR) model is applied. The results indicate that the impact of loans/domestic credit on money M1, prices and real GDP is quite similar in the EMU and Croatia, which is not surprising considering that Croatia has been a member of the European Union (EU) for many years, therein actively preparing for the introduction of the euro and membership in the EMU. The study is organized as follows. Section 2 surveys the theoretical and empirical literature. Section 3 gives a full perspective to the analytical part by describing used methodology and evaluating the results, whereas Section 4 provides some concluding remarks.

## **2. THEORY AND EMPIRICS**

### **2.1. Bank lending channel**

The transmission of monetary policy reactions to the real economy comprises various channels and measures taken by economic agents. One of the most popular channels that appear in modern monetary policy studies on industrial countries is an interest rate channel, mostly because central banks today guide monetary policy by using interest rate targets (Sun, Gan and Hu, 2010). Changes in the interest rates affect banks and money-market interest rates, savings and investment decisions, supply of credits, changes in aggregate demand and supply as well as expectations. Namely, expectations of future official interest-rate changes affect medium and long-term interest rates. In addition to the interest rate channel, monetary policy choices may be conveyed through several asset price channels, such as the exchange rate, equity and real estate prices (Altunbaş, Fazylov and Molyneux, 2002). For example, changes in the exchange rate can provoke inflation, for instance, if imported commodities are used in consumption directly. On the other side, the credit channel can be divided into two distinct approaches i.e. the balance sheet channel or broad credit channel and the bank lending channel or narrow credit channel. Balance sheet channel suggests that in the presence of financial market imperfections, a company's cost of borrowing, whether from banks or any other external source, increases when its balance sheet strength deteriorates (see Bernanke and Gertler, 2005). A direct influence of monetary policy on the company's balance sheet occurs when a rise in interest rates causes the firm's payments to service its floating rate debt. The same increase in interest rates also has an indirect impact on the capitalized value of a company's durable assets (Ireland,

2006). On the other side, since monetary policy can influence economic activity through changes in the supply of bank loans, the bank lending channel will work if, due to imperfect information between banks and their providers of funds, banks cannot without any costs compensate the reduction of deposits caused from a monetary policy tightening with alternative sources of funds, so that a decrease of deposits could also translate into a diminution of loan supply. Due to the fact that the lending channel functions via adjustments in loan supply schedules, revealing the credit channel implies distinguishing changes in loan supply from changes in loan demand schedules brought about by monetary policy shocks (Farinha and Robalo Marques, 2001). To elaborate, while the money channel in monetary transmission evaluates the effects on the liabilities of the credit system or the money supply, the credit approach depicts alterations on the assets side. According to Hernando (1998), a monetary policy tightening that result in a diminution in deposits must be followed by a contraction of the banking institutions' balance sheets. Finally, this reduction in bank assets will have an impact on the real economy, additional to the impact of the money channel, if two conditions are met, hence (a) the monetary authority is able to affect the supply of intermediated credit (there must be no other bank asset that could act as a perfect substitute for loans to companies); and (b) there no other source of corporate financing that is a perfect substitute for bank lending (Hernando, 1998). In addition, there must be some forms of imperfect price adjustment that prevents any monetary policy shock from being neutral because, if any of two requirements fail to hold, bonds and loans effectively become perfect substitutes, and then the bank lending perspective reverts to the pure money view (Sun, Gan and Hu, 2010). Yet, a solid link between monetary aggregates and economic stability must exist in order for the bank lending channel to function effectively within a monetary framework.

## **2.2. What do empirical findings suggest?**

There is a bulk of literature dealing with topics related to the monetary transmission mechanism, as past few decades have witnessed fundamental changes in the monetary domains of monetary policy frameworks, financial systems, conditions of monetary transmission mechanisms, the consequences of global economic crisis, inflation targeting and etc. This is especially true for the politically, economically and socially turbulent European area, hence the EMU. Interesting study on the transmission mechanism for monetary policy in emerging market economies was provided Bank for International Settlements (2008) with over 20 papers dealing with the experiences of many developing countries, EU countries included. Focusing on the title of our research, we can deduce that the majority of empirical studies of the credit channel have primarily examined the existence of the bank lending channel in the monetary transmission process. For example, Altunbaş, Fazylov and Molyneux (2002) evaluated bank balance sheets to estimate the response of bank lending to changes in monetary policy stance between 1991 and 1999, using a panel data approach as they found that across the EMU systems, undercapitalised banks tend to respond more to change in policy. They also found little evidence to suggest that only small undercapitalised banks are the main conduit of the bank lending channel. Ganev et al. (2002) reviewed the existing literature on the transmission mechanism in CEE and put it in a broader context of the problems related to research on monetary policy and conducted empirical analysis for 10 transition economies. The authors found easily identifiable and fully applicable interest rate channel and exchange rate channel for all countries in the panel, whereas for credit channel it was hard to find comparable data to make cross-country inferences. However, we have to incline that the findings are related to the period before greater expansion of the Euro Area. Farinha and Robalo Marques (2001) investigated the existence of the bank-lending channel in the transmission of monetary policy using Portuguese micro bank data as they concluded that there is evidence of the existence of a bank-lending channel in Portugal, and that the importance of the bank lending-channel is larger for less capitalised

banks. Hernando (1998) provided evidence for Spain, regarding the existence of the credit channel in the transmission of monetary disturbances as he concluded that in the event of direct controls on the growth of credit, the impact of changes in the intervention rate on the differential between lending and commercial paper rates is maintained, but its influence on the composition of corporate liabilities is more moderate, so that these findings partially weaken the evidence for the existence of the credit channel for Spain within this distinct time domain. Regarding Croatia, we depicted two relevant studies on the monetary mechanism, however they elaborate on the period before EU accession of Croatia. Lang and Krznar (2004) found the evidence of bank lending channel of monetary policy in Croatia by using VAR model, suggesting that it operated through the ownership structure. Although banks' credit activity reacted to monetary policy i.e. interest rates, the results showed that foreign owned banks, having easy access to foreign financing, responded less to monetary tightening than domestic banks. Benazić (2009) analyzed the first and second levels of monetary transmission, as GETS model was used for the analysis of the first level, while the VAR model was used for the analysis of the second stage. The analysis of the first stage of monetary transmission indicated that it existed, and that it was significantly weaker than the one in the EU. The analysis of the second stage indicated a relatively significant role of the exchange rate in transmission, which is a characteristic of other transition countries. The analysis of other channels of monetary transmission in Croatia showed that they did not play a significant role in transmitting the impulse of monetary policy to the economy.

### **3. DATA, METHODOLOGY AND EMPIRICAL RESULTS**

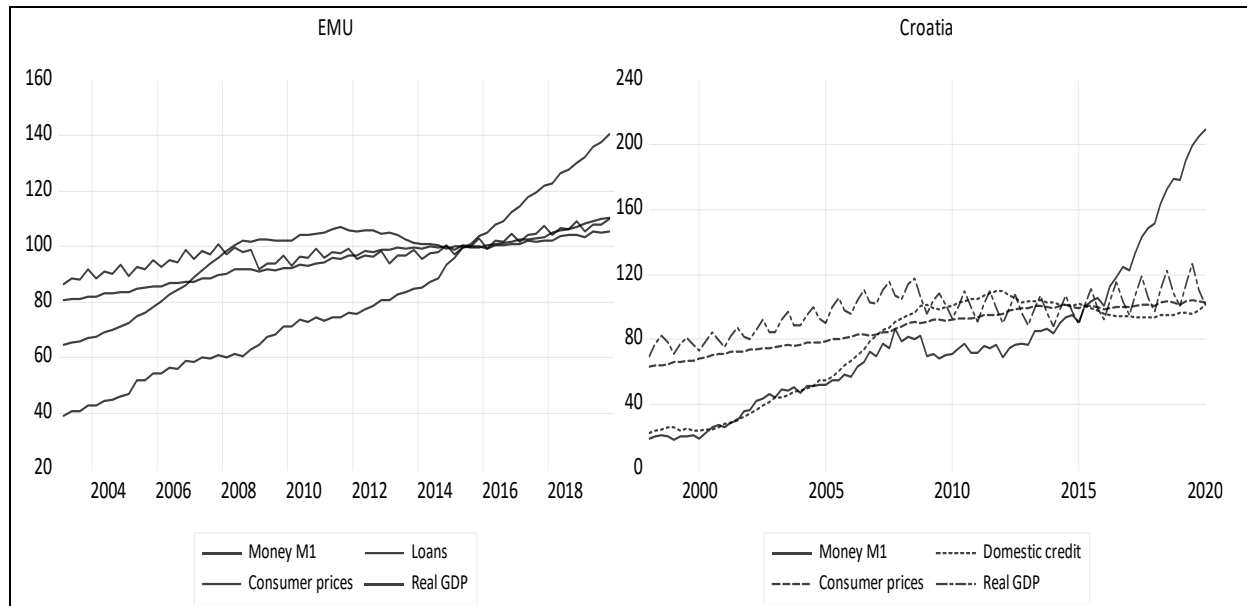
#### **3.1. Data**

The main goal of this paper is to analyze the impact of the bank lending channel on the behavior of main economic variables and to identify possible differences in monetary transmission mechanisms between the EMU and Croatia. For this purpose, two subset vector autoregressive (VAR) models are estimated. The data on money (*MI*), loans/domestic credit (*CRED*), harmonized consumer price index (*HICP*) and real GDP (*RGDP*) are analyzed on a quarterly basis. Data for EMU cover the period from March 2003 till December 2019 whereby data for Croatia cover the period from March 1998 till March 2020<sup>1</sup>. Their movements are shown on Figure 1.

*Figure following on the next page*

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<sup>1</sup> Data cover the period until the beginning of 2020 in order to avoid the effect of the COVID-19 pandemic.



*Figure 1: Money M1, loans/domestic credit, harmonized consumer price index and real GDP (indices 2015=100)*

*(Source: European Central Bank (2020), International Financial Statistics (2020), Federal Reserve Bank of St. Louis (2020) and Croatian National Bank (2020))*

During the observed period it is visible that all series indicated very similar rising trends. After the growth of all series until 2008, it is possible to notice a decline or stagnation caused by the spillover effect of global crisis on both economies. After 2008, the growth of money M1 becomes evident and is caused by the expansionary monetary policies of central banks in order to stimulate economic growth after the global crises.

### 3.2. Methodological framework

The VAR methodology used in this paper consists of the forecast error variance decomposition and impulse response functions analysis, but before defining the VAR models, the properties of time series are analysed since models with nonstationary data can lead to wrong conclusions and accompanying problems (Österholm, 2005). Therefore, the extended Dickey-Fuller ADF test (Dickey and Fuller, 1979), Phillips and Perron PP test (Phillips and Perron, 1988), and Kwiatkowski, Phillips, Schmidt and Shin KPSS test (Kwiatkowski et al., 1992) are considered and presented in Table 1. To eliminate the influence of seasonal factors all series were seasonally adjusted using the ARIMA X-12 method<sup>2</sup> and for the purposes of stabilization of variance all series are expressed in logarithms. Obtained results refer that all series are integrated of order  $I(1)$  meaning that they become stationary after differencing.

*Table following on the next page*

<sup>2</sup> In the analysis, JMulTi (Lütkepohl and Krätzig, 2004) and EViews (S&P Global Inc., 2022) econometric software are used.

Variables and test	EMU				CROATIA			
	Level		First difference		Level		First difference	
	Intc.	Intc. and trend	Intc.	Intc. and trend	Intc.	Intc. and trend	Intc.	Intc. and trend
<b>ADF test</b>	t-Statistic							
LM1	0,8566	0,3979	0,0001	0,0009	0,8307	0,6266	0,0020	0,0119
LCRED	0,0332	0,0634	0,6204	0,7978	0,4855	0,9247	0,0849	0,1820
LHICP	0,1751	0,7275	0,0003	0,0004	0,0207	0,9787	0,0051	0,0000
LRGDP	0,7029	0,4780	0,0001	0,0005	0,5906	0,8545	0,0001	0,0009
<b>PP test</b>	Adjusted t-Statistic							
LM1	0,8331	0,5058	0,0001	0,0007	0,9159	0,8375	0,0000	0,0000
LCRED	0,0341	0,6997	0,2416	0,1970	0,0949	0,9825	0,0000	0,0000
LHICP	0,2576	0,9067	0,0002	0,0004	0,0061	0,9766	0,0000	0,0000
LRGDP	0,7910	0,6415	0,0001	0,0005	0,3512	0,7942	0,0000	0,0000
<b>KPSS test</b>	LM-Statistic							
LM1	1,068496	0,113876	0,123444	0,110476	1,110478	0,168362	0,137406	0,139862
LCRED	0,755328	0,239749	0,512782	0,164082	0,984240	0,299367	0,697635	0,116859
LHICP	1,052874	0,243120	0,376389	0,062792	1,178947	0,283503	0,737099	0,057812
LRGDP	0,912345	0,128528	0,099464	0,100172	0,851967	0,215094	0,311226	0,160735

Table 1: Unit root tests

(Source: Research results. Note: "L" indicates logarithm of the variable. For the implementation of ADF and PP test, the Schwarz information criterion has been implemented. Probabilities for ADF and PP tests are taken from MacKinnon (1996). KPSS test asymptotic critical values are taken from Kwiatkowski, Phillips, Schmidt and Shin (1992) (intercept: 1% level (0,739), 5% level (0,463), 10% level (0,347); intercept and trend: 1% level (0,216), 5% level (0,146), 10% level (0,119).)

According to the assumptions, the unrestricted VAR models are estimated in the following form:

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + \dots + CD_t + u_t, \quad (1)$$

where  $y_t = (y_{1t}, \dots, y_{Kt})$  is a vector of  $K$  endogenous variables,  $D_t$  is a vector of deterministic variables including constant and specified dummy variables,  $u_t$  is  $K$ -dimensional vector of residuals, while  $A$  and  $C$  are matrices of parameters of the model. The vectors of endogenous variables include four lags of each variable included in the models, i.e., the money M1, loans/domestic credit, harmonized consumer price index and real GDP, while the vectors of deterministic variables includes constant and several dummy variables for the breaks mainly cause by the global crisis spill over effects. The VAR models with subset restrictions are estimated using a Sequential Elimination of Regressors (SER) strategy (SER/Testing Procedure) (Brüggemann and Lütkepohl (2001)), i.e. a procedure which sequentially eliminates regressors which lead to the largest reduction of the selected criterion (for this purposes the AIC (Akaike information criterion) is used) until no further reduction is possible. Hence, this strategy sequentially eliminates regressors with the smallest absolute values of  $t$ -ratios until all  $t$ -ratios are greater than some threshold value. It is important to stress that in each step just one regressor is eliminated and after that new  $t$ -ratios are computed for the reduced model until no further reduction is possible.

### 3.3. The results

The diagnostic tests of the estimated VAR models with subset restrictions are shown in Table 2 and suggesting that both models are adequately estimated.

EMU	<b>Serial correlation (lags=4)</b>
	<b>Portmanteau test</b> test statistic: 43,7703, p-value: 0,5661, adjusted test statistic: 45,8707, p-value: 0,4776, df: 46
	<b>LM type test</b> LM statistic: 57.8573, p-value: 0,6921, df: 64
	<b>Normality (lags=4)</b>
	<b>Doornik &amp; Hansen test</b> joint test statistic: 9,0262, p-value: 0,3401, df: 8, skewness only: 4,9417, p-value: 0,2933, kurtosis only: 4,0845, p-value: 0,3947
	<b>Lütkepohl test</b> joint test statistic: 7,6525, p-value: 0,4681, df: 8, skewness only: 3,4798, p-value: 0,4809, kurtosis only: 4,1727, p-value: 0,3831
	<b>Jarque Bera test</b> u1: teststat: 6,1703, p-Value(Chi <sup>2</sup> ): 0,0457, skewness: 0,4843, kurtosis: 4,1884 u2: teststat: 0,1481, p-Value(Chi <sup>2</sup> ): 0,9286, skewness: -0,0659, kurtosis: 3,1975 u3: teststat: 0,2399, p-Value(Chi <sup>2</sup> ): 0,8869, skewness: -0,0154, kurtosis: 2,6992 u4: teststat: 2,6820, p-Value(Chi <sup>2</sup> ): 0,2616, skewness: -0,5047, kurtosis: 3,0534
	<b>ARCH (lags=4)</b>
	<b>ARCH-LM test</b> u1: teststat: 1,5954, p-Value(Chi <sup>2</sup> ): 0,8096, F stat: 0,4099, p-Value(F): 0,8007 u2: teststat: 1,8170, p-Value(Chi <sup>2</sup> ): 0,7694, F stat: 0,4687, p-Value(F): 0,7584 u3: teststat: 4,0119, p-Value(Chi <sup>2</sup> ): 0,4044, F stat: 1,0762, p-Value(F): 0,3774 u4: teststat: 1,9893, p-Value(Chi <sup>2</sup> ): 0,7377, F stat: 0,5147, p-Value(F): 0,7252
	<b>VARCHLM test</b> test statistic: 395,9219, p-value(chi <sup>2</sup> ): 0,5482, df: 400
CRO	<b>Serial correlation (lags=4)</b>
	<b>Portmanteau test</b> test statistic: 46,3475, p-value: 0,1951, adjusted test statistic: 47,6889, p-value: 0,1603, df: 39
	<b>LM type test</b> LM statistic: 70,0490, p-value: 0,2819, df: 64
	<b>Normality (lags=4)</b>
	<b>Doornik &amp; Hansen test</b> joint test statistic: 9,1436, p-value: 0,3303, df: 8, skewness only: 0,5704, p-value: 0,9663, kurtosis only: 8,5732, p-value: 0,0727
	<b>Lütkepohl test</b> joint test statistic: 7,4910, p-value: 0,4847, df: 8, skewness only: 0,3802, p-value: 0,9841, kurtosis only: 7,1108, p-value: 0,1301
	<b>Jarque Bera test</b> u1: teststat: 5,4399, p-Value(Chi <sup>2</sup> ): 0,0659, skewness: 0,0418, kurtosis: 4,2439 u2: teststat: 0,3024, p-Value(Chi <sup>2</sup> ): 0,8597, skewness: -0,1460, kurtosis: 3,0328 u3: teststat: 0,8468, p-Value(Chi <sup>2</sup> ): 0,6548, skewness: 0,0067, kurtosis: 3,4917 u4: teststat: 2,1320, p-Value(Chi <sup>2</sup> ): 0,3444, skewness: -0,1311, kurtosis: 3,7351
	<b>ARCH (lags=4)</b>
	<b>ARCH-LM test</b> u1: teststat: 1,2219, p-Value(Chi <sup>2</sup> ): 0,8745, F stat: 0,3102, p-Value(F): 0,8703 u2: teststat: 4,3855, p-Value(Chi <sup>2</sup> ): 0,3563, F stat: 1,1600, p-Value(F): 0,3353 u3: teststat: 0,7492, p-Value(Chi <sup>2</sup> ): 0,9451, F stat: 0,1891, p-Value(F): 0,9434 u4: teststat: 3,5511, p-Value(Chi <sup>2</sup> ): 0,4702, F stat: 0,9290, p-Value(F): 0,4518
	<b>VARCHLM test</b> test statistic: 425,5668, p-value(chi <sup>2</sup> ): 0,1817, df: 400

Table 2: VAR models with subset restrictions diagnostic tests (joint and individual tests)  
 (Source: Research results)

The dynamic interdependences among variables in the models are analyzed through the variance decomposition presented in the Table 3. Since the primary goal of this paper is to analyse the functioning of the bank lending channels in EMU and Croatia, the primarily focus will be on the impact of loans/domestic credit on the variability of other conomic variables.

EMU					CROATIA			
Decomposition of variance for DLM1					Decomposition of variance for DLM1			
Period	DLM1	DLCRED	DLHICP	DLRGDP	DLM1	DLCRED	DLHICP	DLRGDP
4	88	2	9	1	94	1	3	2
8	86	3	9	1	89	4	5	2
12	85	4	9	1	88	4	5	3
16	85	4	10	1	88	4	5	3
20	85	4	10	1	88	4	5	3
24	85	4	10	1	88	4	5	3
Decomposition of variance for DLCRED					Decomposition of variance for DLCRED			
Period	DLM1	DLCRED	DLHICP	DLRGDP	DLM1	DLCRED	DLHICP	DLRGDP
4	10	80	5	5	15	74	5	5
8	21	61	13	5	17	70	9	5
12	28	50	17	5	17	68	10	5
16	31	46	18	5	17	68	11	5
20	32	45	18	5	17	67	11	5
24	32	45	18	5	17	67	11	5
Decomposition of variance for DLHICP					Decomposition of variance for DLHICP			
Period	DLM1	DLCRED	DLHICP	DLRGDP	DLM1	DLCRED	DLHICP	DLRGDP
4	17	12	71	0	0	2	97	1
8	16	16	67	1	0	3	95	2
12	17	17	65	1	0	4	94	2
16	19	16	63	1	0	4	94	2
20	20	16	63	1	1	4	94	2
24	20	16	63	1	1	4	94	2
Decomposition of variance for DLRGDP					Decomposition of variance for DLRGDP			
Period	DLM1	DLCRED	DLHICP	DLRGDP	DLM1	DLCRED	DLHICP	DLRGDP
4	9	4	11	76	13	1	0	85
8	13	4	14	69	13	5	6	76
12	13	5	14	68	13	6	6	75
16	13	5	14	68	13	6	6	75
20	13	5	14	68	13	6	6	75
24	14	5	14	67	13	6	6	75

Table 3: Orthogonal forecast error variance decomposition (in %)

(Source: Research results. Note: "D" indicates first difference, "L" indicates logarithm of the variable)

Variance decomposition results indicate that the impact of loans/domestic credit on the variability of money M1 and real GDP was very similar for both economies. However, a significant difference can be noticed when observing the decomposition of variance for prices. The impact of loans/domestic credit on the variability of prices was four times larger for EMU compared to Croatia. Also, it can be observed that the impact of loans/domestic credit on the variability of selected economic variables for both economies was not excessively significant. The analysis proceeds with the cumulated orthogonalized impulse response functions orthogonalized using a Cholesky decomposition, which are used to investigate the dynamic interactions among the endogenous variables in individual models.

Again, since the primary goal of this paper is to analyse the functioning of the bank landing channels in EMU and Croatia, impulse response function analysis will primarily focus on the impact of loans/domestic credit on selected variables.

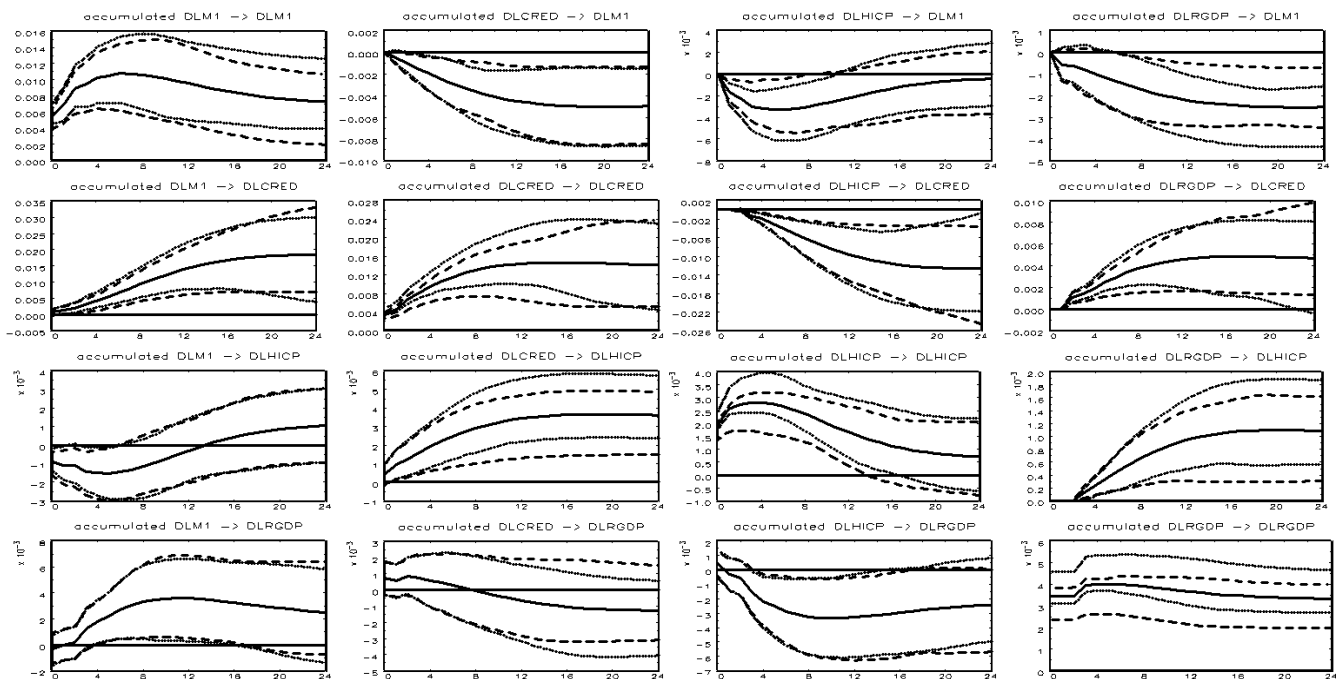


Figure 2: VAR model with the subset restrictions cumulated orthogonal impulse responses with Efron (---) and Hall (•••) with 95% confidence intervals for EMU  
 (Source: Research results. Note: “D” indicates first difference, “L” indicates logarithm of the variable.)

For the EMU it is evident that an increase in loans cumulatively decreases money M1, increases consumer prices and initially increases real GDP. However, an increase in loans on real GDP is not permanent since after eight quarters this impact diminishes and becomes negative. On the other side, an increase in money M1 and real GDP cumulatively increases loans whereby an increase in consumer prices cumulatively decreases loans.

Figure following on the next page



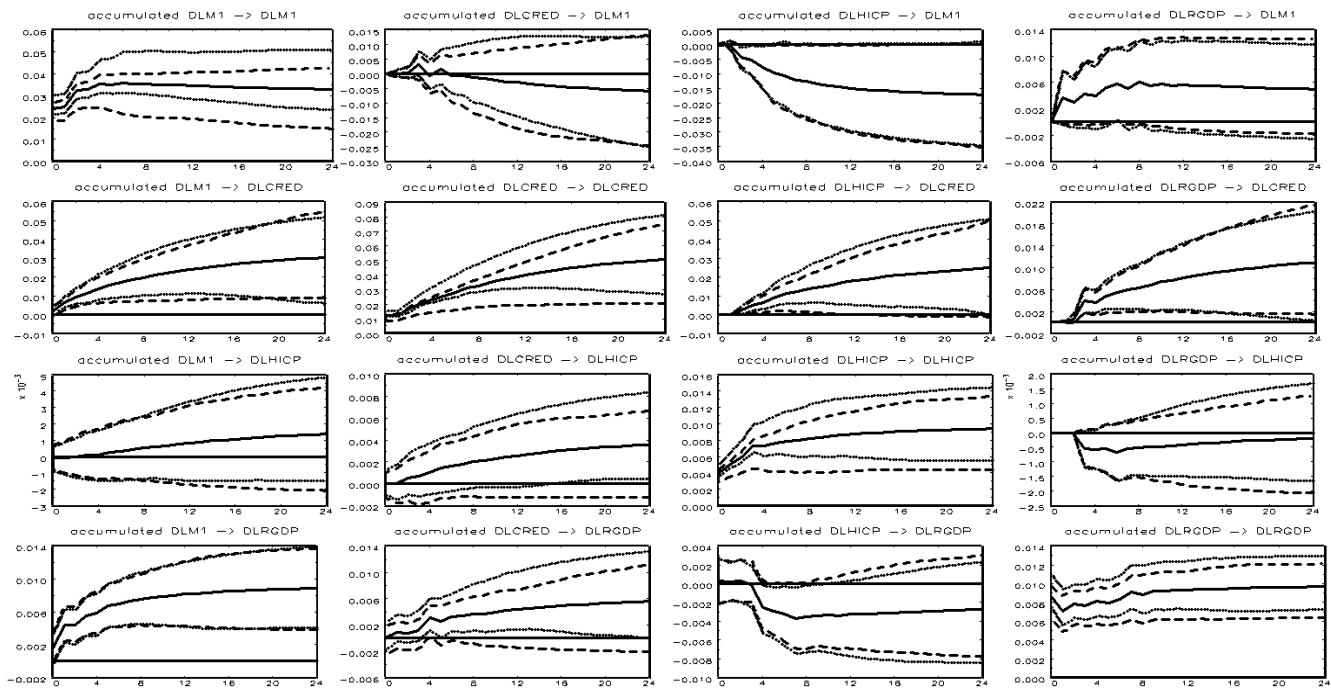


Figure 3: VAR model with the subset restrictions cumulated orthogonal impulse responses with Efron (---) and Hall (•••) with 95% confidence intervals for Croatia (Source: Research results. Note: "D" indicates first difference, "L" indicates logarithm of the variable.)

For Croatia, it is visible that an increase in domestic credit cumulatively decreases money M1, increases consumer prices and real GDP. On the other side, an increase in money M1, consumer prices and real GDP cumulatively increases domestic credit. Generally, it is possible to conclude that the impulse response functions are very similar between EMU and Croatia indicating that the bank lending channels function rather uniformly. All the results obtained so far are not surprising considering that Croatia has been a member of the EU for many years, therein actively preparing for the introduction of the euro, membership in the EMU and for the common monetary policy. However, what should be paid attention to is the greater degree of connection of loans/domestic credit to price variability in the EMU countries compared to Croatia. This means that the European Central Bank can achieve a greater influence on price movements with a smaller influence on the size of loans. Does this mean for the Republic of Croatia, now that it has joined the EMU, that fine moves in the monetary policy of the ECB will not result in the expected effect? Although this result was obtained only through variance decomposition, it certainly represents an area that requires further research work, especially at the level of each EMU country. In any case, this is a recommendation for some future research.

#### 4. CONCLUSION

The aim of this study was to explore the functioning of the bank lending channels, i.e., the influence of the bank lending channel on the main economic variables and to identify possible differences in monetary transmission mechanisms between the EMU and Croatia. In order to do so, for both economies two subset vector autoregressive (VAR) models were estimated and analysed. The results of the variance decompositions indicate that the influence of loans/domestic credit on the variability of other variables in the models was very similar for both economies but a significant difference can be noticed when comparing the decompositions for prices. The impact of loans/domestic credit on the variability of prices was four times larger for EMU than for Croatia. Results obtained from the impulse response function analysis lead to conclusion that the bank lending channels in both economies function rather uniformly.

All the results obtained in the analysis are not uncommon because Croatia is a member of the EU for many years and during all those years Croatia was actively preparing for the membership in the EMU, the introduction of the euro as the national currency and implementation of a common monetary policy. At the end, it is necessary to emphasize the limitations of the analysis. For example, the analysis does not include all the variables that describe the functioning of the bank lending channel in some economy. After all, Croatia has been a member of the EU only since 2013 and has adopted the euro in 2023 and this is a relatively short comparable period of time. However, this does not mean that Croatia did not adapt its mechanisms even before joining the EU. Nevertheless, obtained results contribute to the existing literature on the comparison of the functioning of the bank credit channels and monetary transmission mechanisms between the EMU and Croatia.

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## HOW DO BUSINESS INCUBATORS FOSTER STARTUPS IN CROATIA – ECOSYSTEM IN ZAGREB INNOVATION CENTRE

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### **ABSTRACT**

*Business incubators are one category of entrepreneurial support institutions in Croatia, which are defined by the Entrepreneurship Infrastructure Improvement Act (2021). Entrepreneurial support institutions are divided in several categories and most of them has specific roles in development of innovative firms with scalable business models and fast growth potential – startups. Business incubators can foster startup development in many different ways like providing working space on favorable terms, equipment and laboratories, (pre)acceleration programs, specific financing initiatives, education and knowledge sharing, benefits of working within ecosystem of complementary businesses etc. Zagreb Innovation Centre (ZICER) is one of the flagship business incubators in fostering startup development in Croatia and provide many services and benefits for its tenants (and wider stakeholders). The purpose of this paper is to enlighten the main services which ZICER offer and to present most important benefits for startups in the perspective from tenants. Data was collected by desk analysis and qualitative data obtained from tenants of ZICER where we conducted structured interviews with data set questions in order to gather relevant information of different areas of startups development support which tenants are taking advantage from.*

**Keywords:** *new business models, business incubator, startups*

### **1. INTRODUCTION**

In the time of highly adopted digital transformation and the introduction of many new business models where technology and innovations play an increasingly important role in modern business, we can say that a special focus is placed on startups which are seen as drivers of development in the field of technological innovations. There is lack of official definition of startups, and there are many perplexities in decision on the final definition (Skala, 2019), but we can use wider statement that startups are companies based on technology, they are innovative and have repeatable and scalable business models with fast global growth potential (Startup Estonia, 2021; Čenan, 2022). As a one of key predictors of further development of European Union, European Commission made important statements under their New European innovation Agenda (Mamatova, Chykarenko and Chykarenko, 2023) and they emphasized that market, strong industrial base, talents, stable institutions and democratic societies will drive deep tech innovation in Europe and deliver on the opportunities offered by the twin transition and the need for future strategic autonomy. Deep tech innovation is rooted in cutting edge science, technology and engineering, often combining advances in the physical, biological and digital spheres and with the potential to deliver transformative solutions in the face of global challenges. The deep tech innovations that are emerging from a growing cohort of innovative startups in the EU have the potential to drive innovation across the economy (EU Commission - New European Innovation Agenda, 2022). So, it can be assumed that fostering startups is one of the important topics in the field of development of whole innovation ecosystem all over European Union and Croatia as well. Modern way of fostering startups is through entrepreneurial support institutions especially if we are highlight institutions which target startups like accelerators, business incubators, science-technology parks and other (Lukes, Longo and Zouhar, 2019).

## **2. BUSINESS INCUBATORS AND ENTREPRENEURIAL SUPPORT INSTITUTIONS**

Almost every firm in the beginning of their development need specific kind of support in their different phases of growth. When considering startups, that support can be provided in many different ways like working space, equipment and laboratories, programs for acceleration of development of business ideas, specific financing initiatives and instruments, knowledge sharing etc. All that, and even beyond, can be granted from different kind of institutions which support development of startups (Paoloni and Modaffari 2022). In Croatia they are they are institutionalized through Entrepreneurship Infrastructure Improvement Act (Narodne novine, 93/13, 114/13, 41/14, 57/18 and 138/21). Regarding that Act, entrepreneurial support institutions are defined as entities aimed at creating a high-quality, user-oriented entrepreneurial environment in the Republic of Croatia that implement entrepreneurship development programs and are focused on providing operational support to entrepreneurs, including providing support on a non-commercial basis. These entities are divided in several categories which are systematized and briefly explained below with special emphasize on business incubators.

### **2.1. Entrepreneurial support institutions**

Main categories of entrepreneurial infrastructure support institutions are:

- a) Development agencies - registered legal entities responsible for the operational implementation of measures for the development of the economy and entrepreneurship at the local (regional) and national level, encouraging and attracting investments, and initiating and implementing projects to encourage economic development and entrepreneurship, unifying the work of economic entities, local and regional entrepreneurial institutions, and higher education institutions and knowledge centers. They are sub-divided to: Local development agencies - established by the local administration unit; County development agencies - established by a unit of regional administration unit and Development agencies of certain activities - e.g. Energy Development Agency, etc., established by a local and/or regional administration unit.
- b) Entrepreneurship centers - registered legal entities in charge of the operational implementation of measures for the development and encouragement of entrepreneurship in the local and/or wider area (county, region), which represent centers of professional and educational assistance to entrepreneurs for the development of entrepreneurship in the environments in which they are established. They are sub-divided to Digital innovation centers which provide support to entrepreneurs in the process of digitalization of business, digital transformation and development of digital skills, as well as mediation between service providers in the field of new technologies and users.
- c) Business incubators - registered legal entities that provide professional, technical and educational assistance for starting entrepreneurial ventures and companies and their rapid and sustainable development, including business (work) spaces on more favorable conditions for beginning entrepreneurs up to the third year of operation. They are sub-divided to: Entrepreneurial incubators which provide support for the successful development of entrepreneurship through business services and resources for entrepreneurs, including business (work) spaces on more favorable terms for beginning entrepreneurs, and the second sub division are Incubators for new technologies, which represent specialized business entities with a thematic focus and focus on areas of new (high) technology that support start and growth of innovative entrepreneurship through incubation programs and that provide resources and professional services necessary for growth and development to innovative companies of a similar profile and interest.

- d) Business accelerators - registered legal entities, which are specialized business entities responsible for providing support services to entrepreneurs in the post-incubation phase, that are in the phase of development and expansion of business on the domestic and foreign markets.
- e) Business parks - registered legal entities with physical premises, land and resources for the accommodation of small, medium and large entrepreneurs on a commercial basis with a special focus on attracting domestic and foreign investments.
- f) Science and technology parks - registered legal entities that are established for the purpose of commercializing scientific results, encouraging cooperation between scientists and businessmen, and in accordance with the provisions of the law regulating scientific activity and higher education.
- g) Centers of competence - represent specialized business entities that carry out research projects of a developmental or production nature and develop competencies in certain areas, and with which other business entities can contract research and development services for the purpose of strengthening certain industrial branches. They are aimed for applied research and their commercialization, as well as the support and strengthening of intellectual property within specific thematic areas and branches of competence.

## **2.2. Business incubators**

Business incubator refers to an institution which assists startups with lack of networks, experience, and resources, to develop through the process of incubation. An incubator provides various services for its tenants, such as shared office space under favorable conditions, and other support services, such as use of equipment, public relations and visibility, advanced legal and intellectual protection rights advice, accounting etc. (Phan, Siegel and Wright, 2005), which help startups to reduce overhead costs. Further, incubators may provide access to financial resources and entrepreneurial startup support in the form of training, coaching, or mentoring, as well as access to internal and external networks (Rothschild and Darr, 2005) in order to help them to make it easier to scale their business (Alpenidze, Pauceanu, and Sanyal, 2019). There are plenty of reasons why business incubators should be of help to innovative startups. Most incubators accept firms whose ideas are in the initial stages and help them develop into companies that will survive in the market, and ideally grow further (Bergek and Norrman, 2008). The focus of incubators in the has been shifting from the provision of traditional office space and administrative services towards business support services that are less tangible but with higher added value (Schillaci, Romano, and Longo 2009). Social and business networks are the key resources for business incubators for the purpose of discovering opportunities and improve effectiveness for entrepreneurs, especially in the case of scarce resources. The social networks give special privileges to business incubators and their clients by shortcutting the way and saving valuable time regarding decision making factors and expediting processes (Alpenidze, Pauceanu, and Sanyal, 2019). It is important to acknowledge that firms undergo multiple stages of selection in order to enter incubation tenancy and this may have an effect on how effective business incubation appears to be. Only some startups self-select to apply for a place in an incubator and only some of them are accepted (Autio and Rannikko, 2016). Many new ventures, especially high-tech startups, may need substantial investment prior to revenue generation, as well as business advice, contacts, and skills development, and thus they compete to become incubated (Lukes, Longo and Zouhar, 2019). Looking at the broader picture, incubators have become an intrinsic part of the framework for developing industries, especially small enterprises and governments as well as private sector companies have been actively involved in devising policies and frameworks to start, support and sustain business incubators (Alpenidze, Pauceanu, and Sanyal, 2019).

### **3. ZAGREB INNOVATION CENTRE**

Most of above mentioned and described entrepreneurial support institutions have some specific role in fostering startups and innovative firms in different stages of their development. Focus of this paper is to show the services, activities and effects of supporting startups in ZICER, which is entrepreneurial support institution registered in few categories above mentioned, but it is most known as business incubator which mission is to transform ideas into globally competitive products (ZICER, 2023).

#### **3.1. History development of ZICER**

ZICER is one of the most well-known business incubators in Croatia for developing startups. Roots of ZICER were embedded in 1994., when concern Končar established hi-tech business incubator which was first technology park of that kind in Croatia and the region. Many of the top Croatian engineers and entrepreneurs were attracted to work together in the Technology Park on the development of innovative products in the field of high technologies. Then in the 1997., City of Zagreb introduces the Program for supporting the development of small businesses, and next year the City of Zagreb becomes the new owner of the KONČAR-Technological Park and also drops KONČAR from its name and becomes the Zagreb Technology Park. In 2008, Technology Park Zagreb expanded its area of activity and changed its name to Development Agency Zagreb - Technology Park Zagreb (TPZ), within which high-tech entrepreneurs continue to develop their products, patent innovations and export to more than 48 countries. Development Agency Zagreb - TPZ d.o.o. in 2015., opened a new organizational unit called the Plavi ured, Zagreb first entrepreneurship centre. Plavi ured provides free individual consulting and small group workshops for all types of entrepreneurs. Then in 2017., Development Agency Zagreb - TPZ d.o.o. moved to a new location, at the Zagreb Fair (Velesajam), in Pavilion 12, and since then they have a new space of 7300 m<sup>2</sup> at their disposal. A year later, in 2018., TPZ d.o.o. changes name to Zagrebački Inovacijski Centar d.o.o., i.e. ZICER. Today, ZICER operate under a unique name, and its activities continue to contribute to the successful realization and sustainability of entrepreneurship as the basis of general economic stability. Within its operative space, ZICER has more than 100 modular office spaces, collaborative spaces and 6 technology centers, which were financed by the European Fund for Regional Development (ZICER 2023).

#### **3.2. ZICER main scope of work and activities**

ZICER provides equipped working spaces, conference rooms, co-working spaces, state-of-the-art laboratories and other infrastructure. Programs and services are available to its members and entrepreneurs, and also to the general public in the form of various educations, meetups, hackathons, seminars, conferences and different networking opportunities. There are also other benefits which ZICER provide like mentoring, targeted acceleration programs, diverse instruments and initiatives for scaling up businesses, access to funding and investment and various training programs and workshops. ZICER supports startups and entrepreneurs across a variety of industries, including information and communication technology, engineering, biotechnology, creative industries etc. It has helped launch many successful startups, which scale up and become leaders in their market segments in Croatia and abroad.

Main activities which are noted in are (ZICER - business plan for 2022):

- Participation in the achievement of the goals of the Program for Encouraging the Development of Crafts, Small and Medium Enterprises in the City of Zagreb
- Expanding the production and technological capabilities of the City of Zagreb
- Attraction of new, modern, high, clean and profitable technologies
- Encouragement of entrepreneurship and establishment of startups in the field of product development

- Attracting enterprising and capable experts, enabling them to realize their entrepreneurial ideas
- Assistance to young professionals who, after completing their education, intend to do business independently or in cooperation with existing entrepreneurs
- Helping innovators to become entrepreneurs
- Realizing the connection between science, innovation, business and the market
- Knowledge transfer from development institutions to industry, i.e. information necessary for development and entrepreneurship
- Providing business, technical, educational and other services to small entrepreneurs.

### **3.3. Incubation vs acceleration - Startup Factory acceleration program**

Beside incubation, ZICER also offer acceleration programs, and it is also registered as an business accelerator. Some researchers consider accelerators as a special form of incubators (Gliedt, Hoicka and Jackson, 2018), others recognize them as a different organizational form characterized by a distinct set of features depending on the services, they provide to their startup users. The basic differences between accelerators and incubators can be divided in 8 categories namely: duration, existence of cohorts, different business models, frequency of selection of new companies, stage of development of companies, provided education by the institution, the intensity of the mentoring and the venue of the program (Cohen, 2013). Acceleration programs are a relatively new form of helping startups in their development that appeared in Croatia in the last few years, and the functioning of accelerators is relatively new even on across the world (Crişan, Salanţa, Beleiu and Bordean, 2021), and accordingly, the concepts of acceleration and incubation are often misinterpreted. Standard definition of accelerators is that they are programs of limited duration, which last about 8-12 weeks and help groups of startups in the process of a boosting their ideas. They usually allocate a small amount of initial capital, and also provide workspace. Moreover, they offer plenty of networking opportunities, with other startups and mentors, who are usually successful entrepreneurs, program graduates, venture capitalists, angel investors or corporate executives. ZICER also introduced their acceleration program which started in 2016 (when ZICER was still TPZ) under the name Startup Factory, including different benefits for participants as 8 weeks of intensive mentoring, demo days, opportunity to meet investors and financial support for the best teams without taking equity in return (ZICER, 2022). Program is designed to give support for development of teams which contribute for improvement of ecosystem in City of Zagreb, in particular with focus to smart specialization priority areas (S3) which include following thematic areas: health and quality of life, Energy and sustainable environment, Transport and mobility, Security, Food and bioeconomy (Croatia Smart specialization Strategy 2016-2020). Due to ZICER yearly plan for activities (2022), one of the main goals of the program is empowerment of the ecosystem which foster development of startups. Main activities in the program are application, (pre)selection, mentoring, trainings implementation and final event with pitching, assessment and the announcement of the winners. Target groups are development teams and micro/small entrepreneurs which are registered maximum 12 months without any prior investment. Expected results are providing optimal services created according to real needs of startups, which in the end, will result in acceleration of development and growth of different startups and the innovative environment in general.

## **4. DISCUSSION**

Beside already mentioned benefits and possibilities which tenant startups benefit from business incubators, there are also some other very important benefits of empowering whole ecosystem and innovative environment. One of those benefits is belonging to “agglomeration economies” (Lukes, Longo and Zouhar, 2019), when numerous innovative firms are clustered in a small area (Colombo and Delmastro, 2002).



Agglomeration supports the initiation and development of inter-firm relationships due to the increased possibility of casual meetings and conversations, allowing the identification of shared interests, and the reduction of uncertainty and transaction costs (Vásquez-Urriago, Barge-Gil and Rico, 2016). Business incubator with a higher number of tenant startups may provide broader opportunities for networking, knowledge transfer, and experience sharing (Bergek and Norrman, 2008). Thus, the larger the size of an incubator, the more valuable should be the tenancy (Phan, Siegel and Wright, 2005). That is our premise in this paper, where tenants do not profit just from “tangible” benefits, but also from ecosystem and whole network inside and outside of the business incubator. We conducted several interviews with ZICER tenants (startup founders/co-founders which are operating in ZICER) with aim to get feedback how do they perceive benefits which do they get from the ZICER ecosystem. From answers of all interviewed tenants, ZICER have important role in startup ecosystem, as it attracts very creative startups with innovative ideas and enthusiastic teams which probably would not be able to start the business without initial boost and benefits which startups gain in such business incubator. These benefits are not only in material way (as working spaces – equipped modules on discounted price, usage of superbly equipped laboratories and the opportunity to use very sophisticated equipment for free or reasonable fee etc.), but also even more important in the light of possibility to attend many educations on diverse topics, to have possibility to get mentorship from wide mentors’ network, to be included PR activities from ZICER and other stakeholders etc. Moreover, one of the main benefits, which is also not so tangible, but it is emphasized from all interviewed tenants is “belonging to ZICER ecosystem” which means that every tenant has the opportunity to share ideas, visions and experience with other approximately 300 people which are working inside the premises of ZICER and circulate around the working area every day. This is huge social capital where people of similar interest are having opportunity to collaborate on the daily basis, share complementary knowledge, arrange partnerships etc. Tenants gave the opinion that ecosystem provide that next added value to all other benefits in the way that you can talk with enthusiastic colleagues from different industries with their own view and knowledge on different topics which often can be eye-opener in some project ideas, or when you need some complementary knowledge or experience which you do not have. That “brainstormings” happened through social events and conferences (which are happening almost every day in the conference halls), during small talks, business over breakfast or even socializing in the shared kitchen. All that bring us to the conclusion that business incubation is not just opportunity to spare some money and get place to work, but to be in the vibrant community, meet many interesting people with different expert knowledge and benefit from being part of the whole ecosystem of ZICER and beyond.

## 5. CONCLUSION

Taking into consideration all what was aforementioned it can be concluded that business incubators like ZICER, and other entrepreneurial support institutions are big booster for Croatian startups and whole ecosystem which is still in the initial phase of its development and faces to many challenges. Primarily funding is an issue as there is not enough possibilities (bank loans, venture capital funds, business angels, etc.), to finance startups in their seed/pre-seed phase when it is almost impossible to run a business without help of such institutions. Also, Croatia is a relatively small market, which is limiting growth potential of most startups so programs for internationalization are very helpful for any startup to expand their business on the international market which is prerequisite for business success. But it is evident that startup ecosystem in Croatia is developing, with a growing number of startups and support organizations emerging. The presence of a highly skilled and educated workforce, a supportive business environment, and a range of business incubators and entrepreneurial support institutions which provide valuable resources, expertise and other services to entrepreneurs and startups are driving this

growth, but it has to be even more intensive with a clear direction of Government, state institutions and local authorities to make stimulative environment for startup development. ZICER plays an important role in the development of Croatia's startup ecosystem and helps in promoting innovation and entrepreneurship in the region. One of the most important things which is highlighted from its customers-tenants is that ZICER beside usual services as work place and equipment have helped to connect entrepreneurs and startups with investors, partners, and customers, and through its ecosystem has facilitated the development of networks and communities that supported startups in their development and scaling up. While there are still challenges to be addressed, it is obvious that there is a need for new business incubators and other types of entrepreneurial support institutions like ZICER and also the necessity of expanding the capacities of existing ones (including ZICER), which will made impact on the vibrant startup scene in the future period and hopefully contribute to growth of the whole economy.

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## PERCEIVED MOBILE BANKING SERVICE QUALITY BY USERS IN CROATIA

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### ABSTRACT

*Due to changes in banking consumer behavior, development of technology and impact of competition, especially from digital banks, mobile banking services are gaining importance for commercial banks. Accordingly, it is essential that commercial banks deliver the appropriate mobile banking service quality level to meet customer expectations. Service quality affects customer satisfaction and loyalty and reduces consumer-perceived risks. To ensure the appropriate level of mobile banking service quality, quality should first be defined and measured. In scientific literature there is no generally accepted model i.e. scale to measure the service quality offered by mobile banking services. Based on the results of the empirical research conducted on a sample of mobile banking users in Croatia, this paper tested the adapted and extended E-S-QUAL service quality model. The findings of this study showed that perceived quality of m-banking service can be determined using seven dimensions of service quality, namely Application Visual Attractiveness, Availability, Fulfillment/Reliability, Privacy and Security, Information Quality and Interactivity. Furthermore, the research findings and the model's quality indices indicated that it is better to define perceived quality of m-banking service as a first-order factor model. The research results can help managers to better manage consumer-perceived quality of their mobile banking service through more investment in key aspects of the service. Finally, this study provides a basis for further development and adaptation of perceived service quality model and for development of a scale to measure perceived service quality.*

**Keywords:** *mobile banking services, service quality, E-S-QUAL model*

### 1. INTRODUCTION

Over the last years, significant changes have occurred in consumer behavior and in delivery of a large number of services by businesses due to the accelerated development of ICT technologies and smartphones. Today, service users can very quickly search for information, compare different service offerings, book flights and hotel accommodation, purchase rent-a-car services and tickets, pay bills, use navigation systems and many other services by using their smartphones and various applications. These trends have been recognized by commercial banks that are increasingly starting to use mobile channels for the delivery of banking services. Mobile banking is defined as performance of financial and non-financial transactions using a smartphone or tablet (Shaikih and Karjaluoto, 2015). Mobile banking services offer many benefits to their users, allowing them to make payments of bills, get information on bank accounts and services, apply for certain types of loans, purchase insurances etc. independent of time and location of the customer (Tam and Oliveira 2016, Arcand et al. 2017). Moreover, the price of the service paid by customers is relatively lower than the price of traditional banking services thanks to the contribution of new technologies (Abdullah et al. 2019). Provision of mobile banking services allows commercial banks to reduce their operating costs and attract new customers (Malaquias and Huang 2019). Accordingly, a rise in the use of mobile banking is expected in the future in most countries. For instance, according to the research conducted by the Croatian National Bank (2020), approximately 46% of Croatian citizens used mobile

banking in 2019, while the average in the EU is about 58%, with the percentage in some countries, such as Denmark and the Netherlands, rising to 90%. Moreover, the acquisition of mobile banking habits and the rise in the number of mobile banking users were impacted by the COVID-19 pandemic, when many people worked from home and started using mobile channels to get different services because of restrictions on movement (Egala, Boateng and Mensah, 2021). In order for commercial banks to increase the number of mobile banking users and also to retain the current ones, one of the possible strategies is to invest and ensure a high mobile banking service quality level. The need to ensure a high mobile banking service quality level arises partly from increasingly more competition coming from digital and fintech banks (e.g. Revolut) (Statista 2021) as well as from still high consumer-perceived risk, especially regarding security of services provided to users (Kamboj, Sharmah and Sharma 2020) and technical issues related to the service (Sampaio, Ladeira and De Oliveira Santini, 2016). To this end, in order for commercial banks to be able to properly manage the quality of mobile banking services, the need imposes itself to define the concept and the relevant dimensions of consumer perceived quality of mobile banking services. Due to specific characteristics of mobile banking with respect to context and time of the service provision and to the level of interaction with the user, the research conducted so far has not provided an integrated model of perceived service quality. For these reasons, the objective of this study was to identify, based on a comprehensive critical analysis of current scientific literature in the field of marketing and service quality and on the empirical research conducted on mobile banking users in Croatia, the dimensions of perceived quality of mobile banking services in the context of the Croatian market as an emerging market. The results of this study will also provide a basis for future research and for development of a scale to measure the quality of mobile banking services. The introduction is followed by a review of scientific literature in the field of service quality. The next sections provide a description of the research methodology and the used sample, as well as of the research findings. In the final part of the paper, the discussion section outlines the implications of the survey for commercial bank marketing management, the proposals for future scientific research, and the limitations of the research conducted for this paper.

## **2. LITERATURE REVIEW ON MOBILE BANKING SERVICE QUALITY**

In general, perceived service quality from the perspective of consumers means the degree of satisfaction of customer needs in terms of service delivery with respect to customer expectations from the service (Parasuraman, Zeithaml and Berry, 1988). More specifically, in the context of mobile banking, Arcand et al. (2017) defined service quality as the overall evaluation and judgment by mobile banking users of the excellence of performance and the characteristics of delivery of mobile banking content. When it comes to mobile banking service quality, it basically means a permanent review by mobile banking users of the overall level of service performance. Most research shows that service quality positively impacts customer satisfaction and loyalty, leads to higher profitability and better image of the business, reduces the perceived risk and creates customer trust (Bruhn, Meffert and Hadwich, 2019). To this end, it is essential to clearly define and measure the service quality concept and to identify the role of customer expectations from the service within the definition of service quality itself. Despite the efforts of many authors, owing to the unique characteristics of services such as heterogeneity, intangibility, perishability and level of interaction with users, there is no generally accepted service quality model and therefore there is no model for mobile banking services. Mobile banking services are both delivered and used via tablets and smartphones where interaction between user and mobile banking application takes place. In this sense, the overall service performance depends not only on the mobile banking app, but also on the environment in terms of time and location of the user. That means that the overall perceived service quality may depend on the quality of the telecommunication network and/or the performance of the device

used to access the application. For these reasons, the concept of mobile banking service quality should partially include perceptions of the above mentioned environmental factors. As there is no integrated measurement scale for perceived quality of mobile banking services, researchers have adapted the existing generic scales for the measurement of service quality, such as SERVQUAL (Zeithaml, Parasuraman and Berry, 1988), SERVPERF (Cronin and Taylor, 1992) and E-S-QUAL model (Parasuraman, Zeithaml and Malhotra, 2005). E-S-QUAL was developed for e-commerce services, which are relatively close to mobile services since they too are provided via computers with monitors. Therefore, this model is somewhat easier to adapt to measure mobile banking service quality. According to the E-S-QUAL scale which consists of 22 items, perceived quality of online services delivered through websites comprises the following dimensions: Efficiency (refers to the ease and speed of accessing and using a website), Fulfillment (the extent to which the promises about order delivery and item availability are fulfilled), System Availability (the technical functionality of a website), and Privacy (the degree to which a website protects customer information). The same authors extended the model to include the quality of recovery services provided by a website (E-RecS-QUAL) by including three additional dimensions of quality: Responsiveness (the effectiveness of handling problems and product returns through the site), Compensation (the degree to which the site compensates customers for problems), and Contact (the availability of assistance through customer service representatives and their helpfulness in problem solving). The above models were, in general, a starting point to design service quality models for mobile banking services. For instance, Lu et al. (2009) designed a service quality model for mobile brokerage services, taking into account the specificities of the service, as a hierarchic model consisting of three primary dimensions: Interaction Quality, Environment Quality and Outcome Quality. The dimension Interaction Quality comprised, according to the authors, the following sub-dimensions: attitude, expertise, problem solving, and information. The second dimension Environment Quality comprised equipment, design and situation, while the third dimension Outcome Quality comprised punctuality, tangibles and valence. Malhotra and Kubowicz-Malhotra (2013) found that there are five service quality dimensions influencing changes in mobile banking service providers, namely Technical Reliability, In-Store Responsiveness, On-Phone Responsiveness, Online Service Facilitation and Service Flexibility. However, they also observed the quality of mobile banking services in the environment of in-store and online channels for service delivery. Jun and Palacios (2015) conducted a qualitative analysis of 830 cases of data collected by critical incident technique and based on 100 selected incidents, they identified the existence of two mobile banking quality dimensions, namely Mobile Banking Application Quality which comprised 8 sub-dimensions (content, accuracy, ease of use, speed, aesthetics, security, diverse mobile application features and mobile convenience) and Customer Service Quality which comprised the remaining 9 sub-dimensions of quality (reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding the customer, and continuous improvement). Although the above research encompassed different facets of the concept of service quality, it lacked a more fine-grained development of measurement scales and their validation through an empirical quantitative research. Searching for a universal concept of mobile banking quality, Heo, Lim and Kim (2017) analyzed 45 studies conducted in the period from 1999 through 2015. The authors found that different studies on the same dimension of mobile banking quality had a different interpretation depending on the study. Furthermore, they established that the analyzed studies had not covered all mobile services; for example, mobile banking services were the subject of research in only three studies. The authors further discovered that there is no general standard approach to further development of the existing measurement scales for mobile banking quality, that most authors designed a mobile service quality model using a first-order reflective model. Finally, based on their analyses, the authors proposed the concept of mobile services quality consisting

of the following dimensions: Contextual Quality, Connection Quality, Reliability, Interaction Quality, Content Quality, Interface Quality and Security. This makes their model a further developed version of the E-S-QUAL model. Using the framework of the self-determination theory and the dimensions Perceived Competence, Autonomy and Relatedness to explain the role of service quality in the mobile banking service post-adoption stage in terms of impact on satisfaction, perceived usefulness and continuance intention, Inan et al. (2021) defined service quality by using the one-dimensional model developed by Lu et al. (2009), which comprised the following aspects: Environment, Interaction and Outcome Quality. Mostafa (2020), partly on the basis of TAM model, defined service quality using the dimensions Perceived ease of use, Perceived usefulness, Perceived security/privacy and the specifically added hedonic aspect of the mobile banking service and identified a positive impact of quality on the attitude toward using m-banking and the customer value co-creation intention. Shankar, Datta and Jabarajakirthy (2019) tried to determine through empirical research the appropriateness of three generic scales for measuring the quality of mobile banking services, namely SERVQUAL, SERVPERF and E-S-QUAL. The authors established that none of these models is entirely appropriate to measure the quality of mobile banking services, yet they believed that the service quality dimensions Reliability, Assurance, Empathy, Efficiency, Fulfillment and Privacy are crucial in the explanation of the overall service quality and they suggested that future research should confirm their results in other markets other than India. With regards to the Croatian market, two studies were found which investigated the mobile banking service quality. Pejić Bach et al. (2020) argued that the quality of mobile banking services is influenced by the dimensions Safety, Simplicity and Variability which subsequently impact the bank reputation. The other research, Orehovački, Blašković and Kurevija (2021), studied the quality of mobile banking services through the dimensions Ease of Use, Efficiency, Feedback Quality, Responsiveness, Security and Personal Data and Usefulness. The authors identified a positive impact of individual dimensions of mobile banking service quality on user satisfaction and behavior intentions. Based on the review of the existing sources of scientific literature and taking into account the characteristics of the mobile banking service and the non-existence of a generally accepted model i.e. scale to measure the service quality, the current study will define and empirically test the perceived quality of mobile banking services by users in Croatia on the basis of an extended and adapted E-S-QUAL model and the research conducted by Heo, Lim and Kim (2017) using the following 7 dimensions: App Visual Appearance, Fulfillment/Reliability, App Availability, Privacy and Security, Information Quality and Interactivity. Said dimensions cover all stages of the process of using mobile banking services, from user's judgment of the visual aspects of the service, availability of the service, ease of use of the service and saving user resources, quality of the information provided, as well as the important aspects of digital safety of the service and interaction with the commercial bank.

### **3. DATA COLLECTION METHODOLOGY, RESEARCH SAMPLE AND MEASUREMENT SCALES**

The research on mobile banking service quality was conducted through a structured questionnaire in the period from January through February 2023. The first section of the questionnaire included introductory questions about experience with mobile banking, frequency and types of mobile banking services used as well as questions about the bank whose services the respondents mainly use. The second section of the questionnaire included questions about the single elements of mobile banking quality, while the third section of the questionnaire included demographic questions. Since mobile banking services are mostly used by young and middle-aged people, a part of the respondents was selected from the student database of the home faculty, while the other part of the respondents was contacted through the social network LinkedIn, either directly or indirectly through the posted survey link and the request to fill out

the questionnaire. The directly-contacted respondents were sent an email containing a link with the questionnaire. They were asked to fill out the questionnaire, explained the purpose of the survey and guaranteed anonymity of their responses. A total of 270 fully completed questionnaires were returned. 41.11% of the respondents were 18 to 25 years of age, 43.7% were 26 to 41 years old, 14.81% of the respondents were 42 to 57 years of age, and 0.3% of the respondents were older than 58. There were 63.33% female respondents and 36.67% male respondents. In terms of educational background, 14.81% of the respondents had a high school diploma, 31.11% had a bachelor's or junior college degree, 40.74% of the respondents had a master's degree, while 13.3% of the respondents held a Master of Science or doctorate degree. About 65.56% of the respondents used mobile banking services via smartphone with Android operating system, while the remaining 34.44% used the Apple iOS operating system. In terms of experience with mobile banking services, most respondents (75.93%) have been using m-banking services for more than 3 years, 16.67% of the respondents 1 to 3 years, and only 7.3% less than one year. About 27.78% of the respondents used the mobile banking services of Zagrebačka banka, 21.11% of Privredna banka Zagreb, 19.62% of OTP banka, 16.29% of Erste banka, while the remaining 15.2% of the respondents used mobile banking services of other banks. The measurement scale for the perceived quality of mobile banking was developed based on a comprehensive review of scientific literature and it included 7 quality dimensions and 28 items. The mobile banking quality dimensions Efficiency (8 items), Application Availability (4 items), Fulfillment/Reliability (3 items), Privacy/Security (3 items) were adapted from the E-S-QUAL scale by Parasuramann, A., Zeithaml, V.A. and Malhotra, A. (2005), the dimensions Information Quality (4 items) and Interactivity (3 items) were taken and adapted from Tam and Oliveira's scale (2016) and App Visual appearance (3 items) was adapted from Cyr et al. (2006). All items were measured with the 7-point Likert-type scale (1-strongly disagree to 7-strongly agree).

## **4. RESEARCH FINDINGS**

### **4.1. Perceived mobile banking quality**

The objective of the present research on m-banking service quality was to identify the Croatian users' judgment of overall quality of mobile banking service and their perception of individual elements of mobile banking quality. The results of descriptive statistics are shown in Table 1. According to the results of descriptive statistical analysis, the respondents rated particularly high the following 5 mobile banking service quality variables: 1) My bank's mobile banking app completes transactions when promised - FR1 ( $\bar{X} = 6.69$ ), 2) My bank's mobile banking app completes transactions accurately - FR2 ( $\bar{X} = 6.54$ ), 3) My bank's mobile banking app makes transactions within a suitable time frame - FR3 ( $\bar{X} = 6.49$ ), 4) My bank's mobile banking app enables me to complete a transaction quickly - EF2 ( $\bar{X} = 6.44$ ), and 5) My bank's mobile banking services are safe (e.g. access to the app, confirmation of transactions etc.) - PRIV1 ( $\bar{X} = 6.39$ ). Therefore, the respondents rated particularly high the aspects of mobile banking service quality related to fulfillment, speed and security of the service provided.

*Table following on the next page*



Item	Name	Mean	St. Dev.	Rang
Design (e.g. colors, animations, backgrounds etc.) of my bank's mobile banking app is creative	VAPP1	5.09	1.46	28
Design (e.g. colors, animations, graphics, font size etc.) of my bank's mobile banking app looks professional	VAPP2	5.76	1.24	17
My bank's mobile banking app overall appearance is visually appealing	VAPP3	5.49	1.39	23
My bank's mobile banking app is always available for transactions	AV1	6.03	1.19	12
My bank's mobile banking app launches and runs right away	AV2	6.12	1.11	8
My bank's mobile banking app does not crash or stop working	AV3	5.26	2.06	27
My bank's mobile banking app does not freeze when I want to make a transaction	AV4	5.42	2.10	26
My bank's mobile banking app makes it easy to find the banking service or information that I need	EF1	5.82	1.16	16
My bank's mobile banking app enables me to complete a transaction quickly	EF2	6.44	0.83	4
Information provided in my bank's mobile banking app is well organized	EF3	5.75	1.26	18
Pages in my bank's mobile banking app load fast	EF4	6.06	1.11	11
My bank's mobile banking app is simple to use	EF5	6.14	0.99	7
My bank's mobile banking app is easy to navigate	EF6	5.73	1.26	19
My bank's mobile banking app is user-intuitive	EF7	5.56	1.27	22
My bank's mobile banking app is regularly enhanced with upgrades or new versions	EF8	5.58	1.48	20
Information provided on my bank's mobile banking app is up-to-date	INFQ1	6.10	0.98	10
Information provided on my bank's mobile banking app is easy to understand	INFQ2	6.03	1.08	13
Information provided on my bank's mobile banking app is complete	INFQ3	5.91	1.09	15
Information provided on my bank's mobile banking app is accurate	INFQ4	6.19	0.98	6
My bank's mobile banking app completes transactions when promised	FR1	6.69	0.73	1
My bank's mobile banking app completes transactions accurately	FR2	6.54	0.87	2
My bank's mobile banking app makes transactions within a suitable time frame	FR3	6.49	0.95	3
My bank's personal banker/call center always helps me and provides assistance with the mobile banking service	INT1	5.47	1.42	24
My bank's personal banker/call center always gives personal attention to my issues with the mobile banking service	INT2	5.44	1.34	25
My bank's personal banker/call center has the necessary knowledge and skills to answer all my questions about the mobile banking service	INT3	5.57	1.40	21
My bank's mobile banking services are safe (e.g. access to the app, confirmation of transactions etc.)	PRIV1	6.39	0.86	5
My bank's mobile banking app does not share my personal information and information about my financial transactions with other individuals/companies	PRIV2	5.96	1.35	14
My bank's mobile banking app protects information about my financial transactions and credit cards	PRIV3	6.10	1.19	9

*Table 1: Descriptive statistics*  
 (Source: Author's calculation, n=270)

The lowest mean ratings were received by the following 5 mobile banking service quality variables: 1) Design (e.g. colors, animations, backgrounds etc.) of my bank's mobile banking app is creative – VAPP1 ( $\bar{X} = 5.09$ ), 2) My bank's mobile banking app does not crash or stop working – AV3 ( $\bar{X} = 5.26$ ), 3) Analysis of the measurement and structural model for mobile banking service quality – AV4 ( $\bar{X} = 5.42$ ), 4) My bank's personal banker/call center always gives personal attention to my issues with the mobile banking service - INT2 ( $\bar{X} = 5.47$ ), and 5) My bank's personal banker/call center always helps me and provides assistance with the mobile banking service – INT3 ( $\bar{X} = 5.44$ ).

According to the research findings, the respondents perceived somewhat lower the service quality variables related to availability of mobile banking application, visual attractiveness and support services. In general, the overall quality of mobile banking service was rated relatively high ( $\bar{X} = 5.44$ ) and the value is statistically significant compared to the mean scale value of 4 ( $t=44.4$ ;  $p<0.05$ ). The proposed model for mobile banking service quality was tested using the confirmatory factor analysis and the results are presented in the section below.

#### **4.2. Analysis of the measurement model for mobile banking service quality**

To validate the original model and scale for measurement of mobile banking service quality, the covariance based SEM (CB-SEM) method was used to analyze the obtained data. The CB-SEM method was used for data analysis, because the aim of the proposed theory is to confirm the theory of the mobile banking service quality model. Because the data for all variables were obtained from the same source, there was a probability of occurrence of common method bias that could distort the results of the study by deflating or inflating correlations, thus influencing the relationships between latent variables (Reio, 2010). In this sense, several procedural methods were used to reduce the occurrence of common method bias (Podsakoff et al. 2003). The respondents were guaranteed anonymity to reduce socially desirable responding and each dimension of service quality was intentionally visually (bold and uppercase letter) separated from the others. In addition, the Harman's Single-Factor Test was used to assess common method bias, by including all of the 28 mobile banking service quality variables in a factor analysis. Seven factors/quality dimensions emerged and it was established that one factor accounted for 35.11% of the variance in all variables. Therefore, the impact of common method bias was not considered a significant concern. Moreover, the obtained data was tested for outliers (variable values that are greater than 3 standard deviations from the arithmetic mean) and univariate and multivariate normal distribution of variables. No significant outliers were revealed, whereas the Kurtosis and Skewness analysis showed a significant deviation of some variables of the dimensions Reliability, Availability, Efficiency and Information Quality. Furthermore, the Doornik-Hansen test for multivariate normal distribution of all variables indicated the distribution of the variables was significantly different to the normal distribution (Chi-square =1683.27,  $p<0.05$ ). In this sense, due to the failure of meeting the assumption of normal distribution of variables, the Satorra-Bentler (1994) parameter correction was used in the confirmatory factor analysis. Before the confirmatory factor analysis, an exploratory factor analysis was conducted to purify the measurement scale for mobile banking service quality, by using the principal component factor extraction with varimax rotation. A total of 7 factors were extracted, whose eigenvalues were greater than 1 and cumulatively accounted for 71.65% of the variance in all variables. The Kaiser – Meyer- Olkin measurement of sampling adequacy was 0.88, i.e. greater than the recommended value of 0.5, while the Bartlett's test of Sphericity was statistically significant (Chi-square = 4802.11;  $p<0.05$ ), thus confirming the adequacy for application of exploratory factor analysis for the used data set. Based on the results of the exploratory factor analysis, the variables EF7, EF8, AV3 and AV44 were excluded due to similar factor loading values in several factors. The remaining variables were included in the confirmatory factor analysis. Based on the results of the initial confirmatory factor analysis, the variable EF2 was also excluded because of a low standardized factor loading of 0.55, in order to ensure the discriminant validity of the scale by increasing the AVE values. The results of the confirmatory factor analysis are reported in Table 2.

*Table following on the next page*

Item	Standardized factor loadings**	Z value	C.R.	AVE
<b>App Visual Appearance</b>				
VAPP1	0.780*	21.41	0.87	0.69
VAPP2	0.793*	23.34		
VAPP3	0.917*	43.94		
<b>Efficiency</b>				
EF1	0.637*	16.21	0.86	0.55
EF3	0.798*	23.99		
EF4	0.625*	13.79		
EF5	0.809*	27.15		
EF6	0.808*	30.55		
<b>App Availability</b>				
AV1	0.693*	11.64	0.74	0.74
AV2	0.830*	23.93		
<b>Fulfillment/Reliability</b>				
FR1	0.849*	24.40	0.90	0.75
FR2	0.841*	20.79		
FR3	0.899*	34.76		
<b>Privacy/Security</b>				
PRIV1	0.562*	10.03	0.80	0.59
PRIV2	0.823*	15.51		
PRIV3	0.873*	15.84		
<b>Information quality</b>				
INFQ1	0.717*	20.38	0.86	0.61
INFQ2	0.770*	28.60		
INFQ3	0.864*	41.87		
INFQ4	0.756*	23.26		
<b>Interactivity</b>				
INT1	0.908*	41.12	0.93	0.82
INT2	0.906*	44.76		
INT3	0.909	52.11		
*p<0.05				
** Sattora – Bentler parameter correction				

*Table 2: Results of the confirmatory factor analysis  
 (Source: Author's calculation, n=270)*

As it results from the presented results of the confirmatory factor analysis, all measurement scales demonstrated a satisfactory level of internal consistency reliability and convergent validity. In fact, most standardized factor loadings are statistically significant as they were greater than the recommended threshold of 0.7. The remaining smaller part of standardized factor loadings below 0.7 was kept, because their removal would not significantly increase the quality of the model, but could threaten the content validity of the scale. CR values ranged between 0.74 and 0.93 and were greater than the recommended value of 0.7, while AVE values ranged between 0.55 and 0.82 and were greater than 0.5 (Hair et al., 2010). Discriminant validity was tested using the Fornell-Larcker criterion (1981). As all squared correlations among latent variables were lower than the AVE values of the respective latent variables, the presence of a satisfactory level of discriminant validity was confirmed. Finally, the mobile banking service quality model demonstrated a satisfactory level of quality of the model according to the goodness-of-fit indices after Sattorra-Bentler correction (Hu and Bentler, 1999). The Chi-square/df indicator was 1.65 i.e. lower than the recommended value of 3.5, while TLI and CLI indices exceeded 0.9, i.e. they were 0.94 and 0.95 respectively.

The RMSEA indicator was 0.049, i.e. lower than 0.05, while the SRMR indicator was 0.066 i.e. lower than the recommended value of 0.08. Subsequently, the proposed quality model was tested as a second-order factor model. Yet, said model showed poorer goodness-of-fit indices (Chi-Square/df=2.13, CFI=0.89, TLI=0.88, RMSEA=0.06, SRMR=0.171). In this sense, it can be concluded following the analysis of respondent perceptions that mobile banking service quality can be developed as a first-order model comprising the following dimensions: App Visual Appearance, Efficiency, Availability, Fulfillment, Information Quality and Interaction Quality. The conclusions of the research, proposals for bank marketing management and future studies on mobile banking service quality, as well as the research limitations are presented more in detail in the discussion section below.

## 5. DISCUSSION AND CONCLUSION

Mobile banking will be increasingly used in the future because of changes in consumer behavior and their proven advantages, such as 24/7 availability independent of location of the user, ease and speed of use. For these reasons, provision of high-quality services is becoming a vital factor for successful performance of commercial banks, particularly under highly competitive conditions. To this end, it is previously essential to clearly define and measure the mobile banking service quality. At the time being there is no generally accepted model i.e. scale to measure the mobile banking service quality. Most existing studies have used adapted generic scales, such as SERVQUAL, SERVPERF and E-S-QUAL service quality models, in their empirical research. The findings of the conducted research showed that Croatian users of mobile banking services rate particularly high the speed, security and reliability of the mobile banking service, whereas they rated somewhat lower specific technical aspects of their mobile banking application and the interaction with their commercial bank. Moreover, the research findings revealed that Croatian users of mobile banking services perceive the quality of mobile banking services through the dimensions App Visual Appearance, Efficiency, Availability, Fulfillment, Privacy and Security, Information Quality and Interactivity. The final model i.e. empirically proposed service quality measurement scale comprised 23 items and according to the model quality indicators, it showed a satisfactory level of validity and reliability. According to the research findings, the perceived quality of mobile banking services was defined as a first-order reflective factor model. In addition to scientific implications, the reported findings also provide practical implications. To improve mobile banking service quality and meet customer expectations, commercial banks should further invest in the above mentioned service quality dimensions, namely in the improvement of the mobile banking app design and visual attractiveness, the application security and protection of users' personal data and financial transactions. Likewise, an appropriate level of support services should be ensured and call centers and personal bankers should be provided with the necessary skills and competencies to be able to provide their customers with adequate and useful information related to mobile banking. Furthermore, when developing a mobile banking app and its updates, special attention should be placed on the ease of use, navigation, load speed etc. Finally, commercial banks can use the proposed model/scale to measure the quality of their mobile banking services and to develop a quality index that will enable them to monitor the service performance and to react in case of a downward movement of the indicator. The current research also had some limitations that could serve as a basis for future research. The research sample consisted of almost 80% of the respondents younger than 41 years of age who mostly used mobile banking services of the four major banks in Croatia. Accordingly, for a better generalization of the model, a greater number of older respondents should be included in the sample as well as respondents who used mobile banking services of minor and/or new digital banks, because their perceptions, particularly the ones related to the dimensions Security and Efficiency, might differ from the perceptions of other age groups.

Moreover, the proposed model included mobile banking service quality dimensions related primarily to functional aspects of the service, which impact the perceived utility value. Some recent research has included the so-called hedonic m-banking features, such as service dimensions related to entertainment, gamification or enjoyment (Mostafa, 2021, Ciunova-Shuleska, Palamidovska-Sterjadovska and Prodanova, 2022), which can influence users' enjoyment when using the service and, consequently, perceived quality. For further validation of the proposed service quality model, future research should investigate the interrelationship between specific dimensions of perceived service quality and customer satisfaction and loyalty, image, trust and perceived service value. In addition, future research should establish the importance of each dimension of mobile banking service quality for each segment of users taking into account demographic and psychographic characteristics of respondents.

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## MODELLING PROFITABILITY FOR STOCKS ON ZAGREB STOCK EXCHANGE

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### ABSTRACT

*In a market economy, one of main goals for every company is to maximize the wealth of the shareholders, which is a result of maximizing the market value of the company. There are various profitability measures for company, but from ownership perspective most used measure of profitability is Return on equity (ROE) ratio. This ratio relates to the earnings left over for equity investors after debt service costs for company has been deducted from total capital invested in the asset. Numerous studies have been conducted with numerous factors examined to determine factors that have impact on business performance. In this paper, the authors intention was to explore studies so far done on profitability of companies and to find an area that hadn't been yet examined, and to give substantiation of profitability determinants grounded on dynamic panel data. For this purpose, this paper explored variables that have impact on profitability of companies whose shares were most traded on Zagreb stock exchange (one of criteria for share to be included in market index). Variables included in research are: Net Financial Debt (NFD)/ EBITDA ratio, yearly revenue percent change, Enterprise Value (EV)/ EBITDA ratio, dividend yield, operating margin ratio, debt to equity ratio and current liquidity ratio. Analysis was done on data of companies included in the official stock index of the Zagreb stock exchange, Crobex from 2010 to 2019 (before Covid-19 pandemic). The data was taken from the Thomson Reuters database where all data for selected companies necessary for this paper were collected.*

**Keywords:** *profitability, ROE, stock, ZSE*

### 1. INTRODUCTION

From conventional corporate financial theory point of view, main goal for the company is to maximize the value of the business or a company according to Damodaran (2014). So any decision (investment, financial, or dividend) that increases the value of a firm is viewed as a good decision from shareholders perspective. One of most widely used measures how efficiently management of company uses its own capital from shareholders perspective is return on equity (hereinafter ROE) ratio. It is calculated by dividing the company's net (after-tax) income by the shareholders' equity. Question is, if there is statistically significant relationship between specific financial ratios and their impact on ROE of the company. When researching this topic, the literature has so far focused on macroeconomic factors and different factors inside the company that impact profitability, measured with various measures of profitability ROE, return on assets (hereinafter ROA) and TobinQ. All this papers explored different timeframes, countries, regions, size or industry of a company. This section, looked inside papers that were closest in terms selected factors that affect profitability, to this paper. Kharatyan et al (2017)

found that the most relevant ratios that have impact on ROE are tax burden, interest burden, operating margin, assets turnover and financial leverage. Sapiro Vaz Josue (2015) found that debt to equity, assets turnover, net profit margin, assets to equity, standard deviation of ROE had statistic positive significance with ROE for the non-financial firms. Xu and Banchuenvijit (2015) showed a positive and significant relationship between assets utilization and firm performance and a negative and significant relationship between leverage and firm performance. Tousek et al (2021) found that capital intensity, labor cost ratio, historical profitability and macroeconomic variables impact ROE and ROA. There are papers that explored only one segment of financial policy as determinant of firms profitability, capital structure (Gill et al., 2011; Addae et al. 2013; Habibniya et al., 2022), dividend payout (Khan et al., 2015; Nguyen et al., 2021; Reddy & Santosh, 2021) and operating working capital or trade credit (Orsag et al., 2022, Brealy et al. 2016; Jaworski & Czerwonka, 2022). The subject of this paper was to explore how financial decisions such as capital structure policy measured with net financial debt/ EBITDA and debt to equity ratio), working capital policy (current ratio) and dividend policy (dividend yield in percent) impact ROE. These variables have been subject of other authors examination, but not for nonfinancial companies listed on Zagreb stock exchange (ZSE). Outside mentioned ratios authors explored revenue growth (yearly revenue percent change, as a new factor, which wasn't examined in previous papers), efficiency of management (operating margin, which was examined in previous papers, but not for listed companies) and how is stock valued on the stock market (financial ratio Enterprise Value (EV) to EBITDA, as a new factor) as variables that could impact ROE. This paper will improve findings of financial and managerial decisions measured with financial ratios and stock valuation ratio have impact on profitability from equity ownership perspective of large companies listed on ZSE.

## 2. LITERATURE OVERVIEW

This part of the paper presents review of the previus papers that investigated the factors that have impact on profitability. First, papers that explore variables outside the company (macroeconomic factors) and variables inside the company. Tousek et al. (2021) explored firm specific factors like current ratio, labor cost ratio, working capital financing ratio, long term financing ratio, return on sales, age of firm, industry specific and other macroeconomic effects and their impact on profitability of a company measured by ROE or by ROA. Authors showed discrepancy between equity investors interest and other stakeholder interest. They researched data sample composed of companies in Czech Republic from 2008 to 2018 This paper found that the leverage, both in terms of working capital and long term financing negatively impacts ROA, while positively impacts ROE in Wholesale and Retail industry. Other factors that impact operating performance have impact on ROE and ROA. Cheong and Haang (2021) examined non financial companies in Singapore and Hong Kong in the period from 1998 to 2018 and this period was divided in three periods pre crisis (1998-2006), crisis (2007-2009) and post-crisis (2010-2018). Authors analyzed firm related factors (frim size, leverage, liquidity, sales growth and previus year`s profitability) and macroeconomic factors (inflation rate and real GDP growth). Their study showed that past profitability, firm size and leverage had a strong relationship with firm performance. Also, firm size was a significant predictor of firm performance in three observed periods. Pervan et al. (2019) examined 9359 firms in the Croatian manufacturing industry from 2006 to 2015 period, company specific, industry-specific and macroeconomic factors that impact profitability measured by ROA. This paper found that a firm`s age, labour cost and industry concentration, GDP growth and inflation, had a significant impact on ROA. Jaworski (2021) explored relationship between measures of working capital management and ROA of 326 companies listed from 1998 to 2016 listed on Warsaw Stock Exchange.



Authors used GDP as control variable together with financial leverage and firm's size. This paper showed significant non-linear relationship between working capital, financial liquidity and ROA. When working capital and financial liquidity values grow, ROA improves but at a slower pace. On the other hand, there was a linear negative relationship between cash conversion cycle and ROA. All calculated results were influenced by company's industry and the GDP growth. From numerous papers that examined only company specific factors that impact profitability authors emphasize following ones. Kharatyan et al (2017) examined 90 largest nonfinancial companies which were components of NASDAQ-100 index, company related factors and their impact on ROE for the year 2015. This paper showed that tax burden, interest burden, operating margin, assets turnover and financial leverage were the most relevant factors that impact ROE. Xu and Banchuenvijit (2015) explored data of 28 non financial firms listed on Shanghai Stock Exchange for period from 2008 to 2012, to find factors inside company that have impact on ROE and ROA. Authors examined following financial ratios, current ratio, total asset turnover ratio, debt ratio and a dummy variable was size of the firm. Attained results showed a positive and significant relationship between assets turnover and profitability and a negative and significant relationship between debt ratio and profitability. Sapiro Vaz Josue (2015) examined 5000 Portuguese Public Limited Companies between 2009 and 2013 to find if debt to equity, current ratio, asset turnover, net profit margin, assets to equity, standard deviation of ROE, ROE of previous year, have statistically significant impact on ROE. Research found that for non financial firms all mentioned factors except current ratio had positive statistically significant on ROE. Then, the paper will review the majority of recent works that have examined only one segment of financial policy and its impact on profitability. Habibniya et al. (2022) investigated 72 firms in Telecom industry in United States from 2012 to 2020 to see if capital structure of firms has impact on ROE and ROA. Study showed that total liabilities to total assets ratio and total equity to total assets ratio had significant impact on ROA, while these ratios hadn't impact on ROE. Orsag et al. (2022) explored if short-term financing and trade credit policy had impact on ROA. Observed data was on 276 Croatian small and medium enterprises (hereinafter SME) from 2011 to 2015. This study showed that SME's in Croatia can increase ROA if they don't use trade credit as the most important source of finance. Hence, it is more profitable for this subjects to pay obligations early to use discounts of early payments. Finally, Reddy & Santosh (2021) examined the effect of dividend payout on profitability in five information technology industry firms in India for period 2015-2020. Authors in their study found that dividend payout and firm profitability is relevant with dividend policy.

### 3. EMPIRICAL RESEARCH

#### 3.1. Variable and sample description

The data was taken for 10 years period, from 2010 and 2019 (we didn't consider data for 2020 and 2021 because of Covid-19 pandemic and its impact on ROE), from the Thomson Reuters database for 19 large companies from Crobex (as of 31<sup>st</sup> December 2021). From the Thomson Reuters database authors collected financial information of companies for NFD/ EBITDA ratio, changes in revenue, price/earnings; Enterprise value / EBITDA ratio, dividend yield, operating margin ratio and return on equity ratio. In paper, authors researched all the collected data and tried to find if there was a statistically significant factors that impacted ROE for observed period. For the purpose of econometric data analysis, dynamic panel data analysis was employed in research in software Stata. The dynamic panel data was estimated using Arellano-Bond model. Arellano and Bond estimator of the dynamic model with independent variables is shown by the following equation:

$$y_{it} = \mu + \gamma y_{i,t-1} + x'_{it}\beta + \alpha_i + \varepsilon_{it}, \quad 1, \dots, N, t = 1, \dots, T \quad (1)$$

where  $y_{it}$  is the dependent variable presented ROE ratio,  $y_{i,t-1}$  is the lagged dependent variable,  $x'_{it}$  is matrix of type  $1 \times K$  independent variables.  $\alpha_i$  is an unobserved individual effect and  $\varepsilon_{it}$  is an unobserved white noise disturbance.  $\gamma$  and  $\beta$  are regression coefficients.

$X_{it}$  are  $k$  independent variables for each year from 2010. to 2019.:

- 1) Financial ratio Net financial debt (NFD) to Earnings before interests, taxes, depreciation and amortization (EBITDA)
- 2) Yearly revenue percent change
- 3) Financial ratio Enterprise Value (EV) to Earnings before interests, taxes, depreciation and amortization (EBITDA)
- 4) Dividend yield in percent
- 5) Operating margin
- 6) Debt to equity ratio
- 7) Current ratio

### 3.2. Results

Descriptive statistics for all variables employed in research is provided in Table 1. Descriptive statistic is computed based on maximum of 167 observation for all variables.

Variable	Obs	Mean	Std.Dev	Min	Max
ROE	159	-0.1926164	2.816819	-31.048	8.681
NFD/EBITDA	147	6.512517	23.72618	0	266.31
$\Delta$ revenue	166	0.0374277	0.2281477	-0.753	1
EV/EBITDA	145	12.66228	27.11028	2.1	298.81
DY	167	0.070018	0.4435897	0	5.24
OPM	167	.0070599	0.2236684	-1.653	0.497
DE	160	2.228462	5.245815	0	40.4
CR	164	1.379537	0.9715228	.01	5.55

*Table 1: Descriptive statistics  
 (Source: author's calculation )*

First step in research was to check the problem of multicollinearity between independent variables. The matrix of Pearson correlation coefficients was implemented to test the problem of multicollinearity. Correlation matrix for independent variables is shown with table 2. An absolute value of the Pearson coefficient higher than 0.7 indicates a strong correlation between independent variables.

	NFD/ EBITDA	$\Delta$ revenue	EV/ EBITDA	DY	OPM	DE	CR
NFD/ EBITDA	1.00						
$\Delta$ revenue	-0.1760	1.00					
EV/EBITDA	0.9834	-0.1724	1.00				
DY	-0.0071	0.3016	0.0212	1.00			
OPM	-0.3781	0.2559	-0.3895	0.0465	1.00		
DE	0.0751	-0.1096	0.0351	-0.0386	-0.1678	1.00	
CR	-0.1943	0.0764	-0.1680	-0.0410	0.3036	-0.2986	1.00

*Table 2: Correlation matrix  
 (Source: author's calculation )*

After examine the multicollinearity problem and we omitted variable EV/EBITDA from analysis because multicollinearity problem between NFD/EBITDA and EV/EBITDA. Arellano and Bond estimator of the dynamic model was used in research. Table 3 shows the result of dynamic panel data analysis. In same table results of Sargan test and Arellano-Bond test for autocorrelation are shown. Based on the p value of Sargan's test, which is 0.3951, it can be concluded that the instruments are not correlated with the residuals and that there is no endogeneity problem in the model. Based on the p value of the m2 test (Arellano-Bond test for autocorrelation of the second order), which is 0.3336, the null hypothesis of no correlation is not rejected. Therefore, it can be concluded that there is no autocorrelation problem in the model.

Variables	ROE
ROE L1	0.9541468*** (0.1193575)
NFD/EBITDA	0.001666*** (0.0005949)
Δ REVENUE	0.0933297 (0.147079)
DIVYIELD	-0.0223254 (0.0920015)
OP. MARGIN	1.448005*** (0.4601632)
D/E	0.038402*** (0.0099634)
CR	-0.0650188 (0.0440934)
cons	0.0114509 (0.105139)
Number of instruments	14
Number of groups	19
Sargan test	p value = 0.3951
Arellano-Bond test for autocorrelation - order 2	p value = 0.3336

*Table 3: parameter estimates of dynamic panel  
 (Source: author's calculation )*

*\*, \*\*, \*\*\* Statistically significant at the; 10%, 5%, 1% level, respectively. Robust standard errors are between parentheses.*

Table 3 summarizes the final results of empirical analysis and shows that variable NFD/EBITDA had positive and statistically significant influence on ROE [coeff. 0.001666], operating margin had positive and statistically significant influence on ROE [0.4601632], debt to equity ratio had positive and statistically significant influence on ROE [0.0099634]. Finally ROE from previous year also has positive and statistically significant influence on ROE [0.1193575]. All variables were statistically significant with 1% level. Obtained results are in line with results of previous papers especially for debt to equity and operating margin in different countries (Kharatyan et al, 2017; Xu and Banchuenvijit, 2015; Sapiro Vaz Josue, 2015; Tousek et. al, 2021). Results for variable ROE of previous year are also in line with earlier papers (Sapiro Vaz Josue, 2015), while variable NFD/EBITDA as we know, wasn't examined in all observed papers from this paper.

#### 4. CONCLUSION

This paper researched variables that have impact on profitability (measured by ROE ratio) of nonfinancial companies from official stock index, Crobex of the Zagreb Stock Exchange for the period from 2010 to 2019 year. Variables included in research were: (NFD)/ EBITDA ratio, yearly revenue percent change, dividend yield percent, operating margin ratio, debt to equity ratio and current ratio. Paper found that variables NFD/EBITDA, operating margin, debt to equity ratio and ROE from previous year have positive and statistically significant influence on ROE. Variables NFD/EBITDA and debt to equity both showed that their increase had positive impact of ROE of firm. This is related to findings from literature review where debt to equity ratio was examined. Main reason for this is benefit of interest rate cost, that is tax deductible, this stimulates firms to use financial leverage. If company has higher operating margin it will have higher ROE, which is also in line with findings of previous papers. Finally, ROE from previous year had impact on ROE of current year. Contribution of this paper is in examination of variables that have impact on ROE in Croatian nonfinancial companies for 10 years, previous papers were focused on ROA as a measure of profitability (Pervan et al., 2019; Orsag et al., 2022), and were focused on small and medium enterprises (Orsag et al., 2022) or just manufacturing firms ((Pervan et al., 2019). Limitations of this paper is the small sample of large nonfinancial firms in Croatia, but this can be seen as an opportunity for future research.

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## BEHAVIORAL SCIENCE AND CORPORATE DECISION-MAKING

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### **ABSTRACT**

*This study will demonstrate how behavioral economics influences business decisions. With the evolution of behavioral economics and behavioral science in general, we have access to a brand-new instrument for making business choices. The rational corporation's neoclassical origins provide the foundation for the current environment and decision-making processes. Classic economic theories, such as agency theory, the theory of economic transaction costs, and the theory of participation, serve as the foundation for decision-making, while the use of more recent ideas, such as behavioral science and economics, might strengthen this foundation. The practical consequences of this article are that firms may become more efficient and accountable by using behavioral economics developments. This may include using behavioral science insights to support improved decision-making, as well as utilizing expertise in the private sector for marketing and investing objectives. Also, corporate decision-making should be based on these developments so that businesses may reap their prospective advantages.*

**Keywords:** *Corporate decision-making, behavioral economics, neoclassical theories*

### **1. INTRODUCTION**

Diverse public and commercial players, including government regulators and non-profit organizations, focus their attention on consumer decision-making processes. The decision-making process of customers is of special interest to economics. The majority of current economics research and law are founded on neoclassical principles. In current times, the neoclassical foundations of economics exhibit fundamental flaws and difficulties that mislead the consumer decision-making process. It is exactly because of this that revisions or prospective enhancements to the present economic rules are essential. Behavioral economics is a sort of improvement that does not require altering the rules of classical economics, but rather seeks to update them. Behavioral science is used to promote improved decision-making in fields ranging from food selection to financial planning and organ donation. In the private sector, knowledge of end-user behavior is used in marketing and the assessment of investment conditions in financial and non-financial assets, respectively. The realm of business decision-making is mainly untouched by behavioral economics' attempts to enhance classical economics. Changing this may help businesses become more responsible and efficient. Behavioral economics is a relatively new scientific field, which is exactly why it is attracting an increasing number of authors and scholars. It was founded and formed as a psychology discipline, which is why it has the most applicability in the area of decision-making. In economics, it is mostly used to determine the wants, desires, and preferences of customers, i.e. the decision-making process. In behavioral economics, the effect of numerous psychological factors on customers is investigated. The method that this scientific field attempts to describe is the basis for consumer decisions. The neoclassical economic theory depicts the decision-making behavior of people as automated or robotic, which is led purely by costs and benefits and pursues just its purpose. Despite this, new models of economic decision-making demonstrate the immense significance of non-financial variables, such as emotions, which is the foundation of behavioral economics study. Behavioral economics is a modeling approach, a school of thinking relevant to a wide range of topics including consumer choices, risks, finances, the public sector, etc. It is a mix of economics and other social sciences that serves as an overarching framework for classical

economics. By merging approaches from many social disciplines, the value of a classical economic theory is enhanced, and as a result, behavioral economics emerges as the final product. The goal of behavioral economics is to create a model of bounded rationality, willpower, and self-interest that can be successfully applied to the consumer decision-making process in economics. Behavioral economics studies self-interest, willpower, organization, the market, and the lack of human rationality, among other forms of human behavior. Corporate decision-making is a crucial part of organizational success since it influences the plans, operations, and results of businesses. Yet, decision-making may be complicated and prone to a variety of biases and mistakes that might result in unsatisfactory decisions. By applying behavioral science insights, firms may better their decision-making processes, minimize mistakes, and increase their overall performance. The purpose of this study is to examine how behavioral science might inform and enhance business decision-making. Particularly, we will investigate the most prevalent biases and heuristics in decision-making, as well as ways for reducing their consequences. In addition, we will investigate how the incorporation of behavioral science ideas into business decision-making might result in improved results for both the firm and its people. Finally, this article will illustrate the utility of behavioral science as a tool for enhancing decision-making in the complicated and fast-paced commercial world of today. Several classical ideas, including agency theory, participation theory, and transaction cost economics, inform the connections between players in corporate enterprise. But, just as the old perspective of consumer behavior in the economy is evolving, so too is the perception of corporate connections among company actors. Yet, because of the immense impact of neoclassical theory, the foundations for understanding and researching business interactions were developed within the context of the conventional economy. As a result, the neoclassical understanding of rationality leads to a person who is opportunistic and whose only priority is to attain the most advantageous outcome for himself. In such an environment, the decision-making process is simplified to an individual evaluation of potential options. It is exactly this theoretical foundation that underlies the calculated, logical conduct advised by classical economics and that we most often assign to high-profile business decision-makers.

## **2. LITERATURE REVIEW**

On the issue of business decision-making and its relationship to some of the domains covered by behavioral science, a vast number of scientific works have been written. In Lindemann's (2019) work, the author demonstrates how to effectively utilize behavioral science in a business context. This article describes the process of behavioral science's entry into the business sector and demonstrates how to recognize a behavioral issue and a behavioral solution. Gordon (2016) discusses the behavioral approach in corporate management in his book, in which he examines neoclassical theories in corporate management, the behavioral approach to management, and the benefits and drawbacks of both methods. In addition to this study, we have other publications that address the behavioral elements of corporate governance, such as Marnet's work (2004). Shefrin (2002), in one of the articles dealing with behavioral decision-making, attempts to determine to what degree and if the literature from behavioral science impacts how individuals respond to conflict situations. In addition to publications that address the overall theme of the application of behavioral sciences to corporate decision-making, we also have papers that examine distinct models or specific decision-making models. Hence, Nwogugu (2007) examines independently the bankruptcy prediction model and the bankruptcy recovery model. In his work, he demonstrates the flaws of the cited model and critically examines and analyzes the model's methodological flaws. As a distinct subfield of behavioral science, behavioral finance is also researched, with substantial implications for business management. Using the lens of behavioral science, Lobao (2016) addressed the pros and drawbacks of behavioral finance in his book and differentiated between human judgments and financial

decisions in the business. Several articles examine corporate decision-making or private and public sector decision-making in situations of risk. Tamura (2008), one of the writers addressing this issue, examines in his work how behavioral models impact decision-making in situations of risk and uncertainty. In addition to several publications on the same topic of risk in behavioral science, we also have books on the subject. In his book, Okoye (2015) examines behavioral risk in corporate decision-making and evaluates the influence of risk management methods on behavior in the corporate context. This study addresses corporate governance from the viewpoint of an agency and discusses the elements that call into question the efficacy of certain methods of monitoring the actions of top decision-makers in large corporations. Conflicts in corporate management are often cited as one of the greatest obstacles to the organization's performance and to the business as a whole in the majority of publications and analyses. In their book, Carneiro et al. (2014) investigate conflict resolution strategies and the organizational environment in which disputes arise. Their book is based on an investigation of the behavioral patterns that contribute to effective decision-making. In this book, they examine the causes of the creation of conflicts, the settings under which they occur, the variety of disputes in the online environment, and they provide behavioral science-based strategies for resolving each conflict individually. When discussing the many behavioral models employed in management decision-making, the Goldfarb et al. (2012) work must be discussed first. In this study, the authors organize the relevant literature on behavioral models in management decision-making. The utility function and non-equilibrium models are highlighted. The effect of behavioral science on business decision-making is quite extensive. One of the studies demonstrates the size-dependent peculiarity of the decision-making dynamics of corporate boards. Battiston et al. (2002) explain in their study how the size of the board itself influences the board's decision-making. They demonstrate that, according to the tenets of classical economics, the position of board members may influence the board's attitude even before decisions are made, the bigger the board and the greater the number of board members. In addition to the size of the board of directors, behavioral science also investigates other scenarios in which a company may find itself. So, we have the work by Nwogugu (2006), in which the author illustrates the hazards of corporate governance while making choices in hypothetical bankruptcy circumstances. This study examines novel dynamic models and algorithms used to anticipate the possible bankruptcy of a firm, which may result from a variety of corporate choices.

### **3. DISCUSSION**

The most significant issue with corporate governance today is that firms have become so huge and now represent institutions that make a large number of crucial choices every day. These choices are made by linked people inside the business, and the fundamental flaw of classical economics is that it assumes an individual to be rational. In classical economics, all people are assumed to be rational and to make choices that are always in the corporation's and their employer's best interests. But, the reality is quite different: each manager is an irrational, unique person whose judgments might have terrible effects for the organization. Behavioral economics is the study of human decision-making and may give a solution to avoid erroneous choices or at least examine the process of making erroneous judgments and explain why they were made. The vast majority of erroneous judgments are based on biases, with managers whose biases or ignorance of a certain fact resulting in erroneous conclusions. Behavioral economics may influence managers via incentives and familiarization with the issue, which will eventually lead to a new style of thinking that is devoid of bias and better and better judgments. Behavioral economics provides a solution by introducing and training managers to detect biases and to think differently and more rationally in certain circumstances, resulting in improved outcomes. The dilemma is whether eliminating biases alone is sufficient for successful decision-making, or if the decision-making process itself must be altered.



The correct answer is no; in addition to the conscious thinking influenced by biases, it is also required to impact the unconscious thinking of the decision-making manager, i.e., his or her instinctive thoughts and behaviors. Automatic thought may be triggered by a variety of external variables that traditional economics can not account for. Thus, the objective of behavioral economics is to increase the manager's awareness of automatic thought so that he or she can detect the decision-making factors to which he or she is susceptible. Ideally, the manager would be able to understand the flaws and impacts of automatic decision-making and rectify all of these flaws via conscious thought. Behavioral economics aims to present ways for controlling preconceptions that alter the context or setting in which persons who make choices behave, as opposed to directly altering views, which is far more challenging. Behavioral economics does not seek to alter our intuitive or instinctive thought processes; rather, it seeks to automate decision-making processes in order to prevent or deflect the issue of bias. In addition, the goal of the behavioral one is to use the prejudices that exist among competitors, if they exist, and another goal is to use the mistakes that have already been made to learn from them; the only solution is to accurately determine the causes and analyze why the error occurred in the first place. History and accessible literature have shown a number of themes relating to decision-making in corporate management and the possibilities of enhancing choices via behavioral science. Poor risk management is often mentioned as the first problem. Every firm has a degree of inherent risk, and business failure is always a possibility. The responsibility of every manager in a business is to manage the trade-offs between profitability and possible risk in accordance with the organization's strategic objectives and its actual strategic opportunities. Even though this is the manager's primary responsibility, this balance is not always attained in reality. The finest instances in business history are banks and insurance firms from the recent great economic crisis that overlooked or purposefully disguised credit risks, deceived credit users, and organized mortgages so as to lower the hidden credit risk. They modified and manipulated the financial accounts in such a manner that their directors generated a substantial profit at the cost of the end customer. This demonstrates that although poor risk management by managers is a genuine issue, fraud and abuse by them are also feasible. Under the condition of maximizing the corporation's wealth, classical economics does not discuss the potential of abuse, since it is assumed that the management would always make reasonable judgments based on all available facts. The next issue to be examined in corporate decision-making is the function of finance inside the organization as seen through the lens of behavioral economics. If we consider the preceding issue and risk management, there is a strong relationship between finance and risk management. The manner in which managers choose the kind of financing in the business and the degree of borrowing that the firm will attain are strongly tied to the type and level of risk that the company's risk management plan encompasses. The company's most typical financial breakdowns and scandals occur in two areas. One is excessive debt, which may lead to the collapse of the firm, and the other is manipulation of stock prices that are portrayed in an exaggerated manner. These two corporate failures are often intertwined, and by using either one or debt, the share price may be fictitiously inflated, financial statements manipulated, and unlawful gains generated. Several historical instances demonstrate that numerous organizations shortly before to insolvency and failure had an apparent intentionally created very high development rate. These were the corporations in the dot-com crisis of the 1990s that seemed to be at the height of their strength and growth just before to their market collapse. The goal of behavioral science in finance in corporate management is to avoid the manipulation of financial statements for the purpose of boosting remuneration for management staff, and to choose the most appropriate and efficient method of financing and capital structure within the organization. The following subject is macroeconomic cycles. The influence of macroeconomic cycles on the corporate performance of enterprises is substantial, and even well-managed companies might collapse during recessions.

Behavioral economics examines the indirect impact that economic circumstances have on management choices and shareholder attitudes on risk, company strategy, and corporate policy, which may lead to issues in a corporation's business plan. In addition to macroeconomic cycles, corporations are also impacted by the industries in which they operate. Each industry has its own unique challenges that must be watched and considered before joining a certain firm. The presence of charismatic leaders represents the sole subject and specificity that impacts corporate governance that is not recognized by classical economics. There are a great number of historical situations in which enterprises that were originally created as family businesses ceased to exist as a result, or in which a charismatic director held the company hostage, which ultimately failed owing to his crazy actions. Neoclassical economics and its underlying assumptions in corporate governance are the foundation of effective management. Yet, they have been heavily attacked in academic circles from the time of their inception to the present, with the academic community pointing out the flaws that behavioral economics seeks to investigate and rectify. The necessity to reevaluate the foundations of neoclassical economics in company governance is directly attributable to the multiple financial crises that have happened throughout history and the rapid development of behavioral science. One of the most impacted sectors was financial regulation, where the highest criminality was also found. The scandals and troubles of companies like as Enron, UBS, Lehman Brothers, Volkswagen, etc., necessitated a shift away from market processes that were thought to maintain efficiency and toward a greater need for public control. Just this demonstrates the extent to which behavioral science is required to rectify the flaws of classical economics in company governance. The following issue is the impact of behavior on business decision-making. Several current studies on corporate management link to various behavioral and cognitive disciplines; hence, the majority of these studies are examined using behavioral science. Understanding decision-making biases is crucial for major multinational organizations and financial institutions, whose organizational complexity makes information collecting and processing especially challenging. Many heuristics and biases are often explored in the context of business decision making. Overoptimism is one of the most well-known heuristics of prejudice. Overoptimism is believed to have a significant impact on a company due to the recruiting inclination and decision-making advantage of optimistic people. Optimism and confidence are generally advantageous to enterprises and foster an efficient and energizing work environment. Yet, excessive optimism and self-assurance may result in excessive risk-taking with potentially catastrophic outcomes. CEOs and senior management of large financial institutions may have taken excessive risks in the run-up to the 2008 financial crisis due to their excessive optimism. Escalation of commitment is another influential aspect that might affect a company's resource allocation. It represents a pattern of behavior in which, when confronted with a bad result of a prior action, a person prefers to downplay the negative effects and increase risk-taking in order to prevent loss. In a business setting, this bias leads in a high level of commitment to a selected route that does not waver in the face of adversity. People participating in the decision-making process will have a tendency to perceive unfavorable information favorably, jeopardizing the company's internal communication and information processing. In recent years, the importance of behavioral science in business decision-making has been more apparent. Behavioral science is concerned with the study of human behavior and the variables that impact it. This knowledge may be used to different fields, including business, in order to better comprehend how individuals make choices and how companies can utilize this knowledge to make better judgments. Corporate decision-making entails making decisions that will affect the company and its constituents. These choices might vary from basic operational judgments to complicated strategic decisions that influence the organization's future. Historically, corporate decision-making has been based on rational analysis, with the idea that decision-makers would choose the alternative that maximizes their utility or benefits.

Yet, behavioral science research has shown that people do not always act logically and are susceptible to a variety of cognitive biases. Confirmation bias is one of the most well-known cognitive biases, in which individuals seek out information that supports their previous ideas while ignoring information that contradicts them. This bias may have an effect on business decision-making, as decision-makers may only analyze evidence that supports their original assumptions and disregard information that indicates alternate courses of action. The sunk cost fallacy is another cognitive bias that may influence business decision-making. This is the inclination to continue investing resources into a project or decision, despite the fact that it is no longer sensible to do so because to the resources that have already been committed. This may lead to judgments that are not in the organization's best interest, as decision-makers may emphasize buried costs above future gains. These and other cognitive biases that might influence decision-making are explained by behavioral science. By recognizing these biases, decision-makers may limit their consequences and make better informed choices. For instance, decision-makers might guarantee that they evaluate a variety of alternatives and seek evidence that contradicts their original assumptions. In order to ensure that choices stay aligned with the organization's objectives, they might also design systems that provide periodic review and assessment. The study of organizational culture is another another manner in which behavioral science may influence business decision-making. The common ideas, beliefs, and practices that characterize an organization constitute its culture. Behavioral science research has shown that organizational culture may influence decision-making because it influences the attitudes and actions of decision-makers. For instance, if a company's culture values innovation and risk-taking, decision-makers may be more ready to undertake high-risk initiatives. Yet, if the firm has a risk-averse culture, the decision-makers may be more cautious in their decisions. By comprehending the importance of corporate culture in decision-making, companies may develop cultures that support their aims and beliefs.

#### **4. CONCLUSION**

Behavioral science provides useful insights into human behavior and decision-making that may be used to business decisions. By recognizing the cognitive biases that might influence decision-making and the role of organizational culture in molding attitudes and behaviors, decision-makers can make more informed, organization-al goals-aligned decisions. As the discipline of behavioral science continues to develop, it is expected that it will play a greater role in business decision-making during the next decades. In conclusion, behavioral science has a substantial influence on business decision-making. By understanding the cognitive biases and heuristics that impact human decision-making, businesses may make better judgments, eliminate mistakes, and increase overall performance. Behavioral science research has found various prevalent biases in business decision-making, including as confirmation bias, overconfidence bias, and anchoring bias, as well as strategies to limit their impact. Additionally, the introduction of behavioral science into business decision-making processes may enhance the wellbeing and contentment of employees. Understanding the psychological principles underpinning employee motivation, engagement, and productivity may assist employers in creating a more pleasant and gratifying work environment. Incorporating behavioral science into business decision-making may improve results for both the firm and its personnel. Incorporating behavioral science ideas into decision-making processes may give a significant competitive edge for businesses with more complex difficulties in today's fast-paced corporate world.

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## TREND OF NET VALUE ADDED AT CROATIAN HOTEL COMPANIES 2019. – 2021.

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### ABSTRACT

*The aim of this paper is to critically review the concept of net value added and then review the generation of net value added in Croatian hotel companies in the period from 2019 to 2021. The concepts of value added can be divided into three basic concepts: the concept based on the values stated in the profit and loss account, the concept of economic value added and the concept of market value added. The concept based on the values stated in the profit and loss account is divided into gross value added and net value added. The difference is that depreciation is included in the calculation of generated gross value added, while depreciation is not included in the calculated amount when calculating generated net value added. Shareholders are not the only stakeholders of the company. Net value added statement reports the increase in wealth generated by company and then reports the distribution of that wealth to employees (salaries, bonuses, etc.), creditors (interest), owners (dividends), the state (taxes) and company (retained earnings). In Croatia, the publication of the value added statement is not mandatory, so the publication depends on the management's decision. In the practice of Croatian companies, the value added statement is not published. Research for the purposes of this paper was conducted on a sample of 12 hotel companies whose shares were listed on the Zagreb Stock Exchange in the period from 2019 to 2021. The difference between the three observed years was determined by the Friedman test and then by the Kruskal Wallis test. The obtained results indicate that a statistically significant difference was recorded in the generated amounts of net value added in the observed years.*

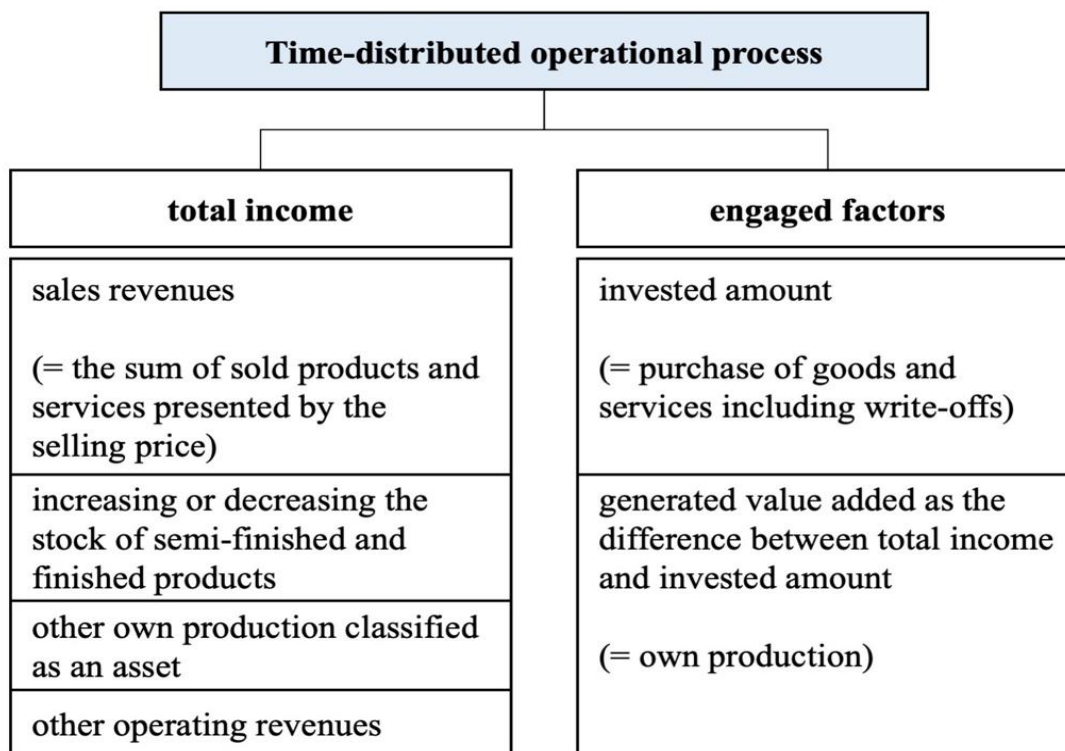
**Keywords:** *business performance, net value added, value added, value added statement*

### 1. INTRODUCTION

In order for the capital market to exist and function, listed companies must disclose information about their business. In this way, current and potential investors reduce the investment risk to an acceptable level. In addition to them, other interested stakeholders such as creditors, business partners etc. can get the needed information. Bilić (2022: 218) states that mandatory reporting in Croatia is regulated by the Act on the Croatian Financial Services Supervisory Agency (Official Gazette 140/05, 154/11, 12/12), the Capital Market Act (Official Gazette 65/18, 17/20, 83/21) and the Accounting Act (Official Gazette 78/15, 134/15, 120/16, 16/18, 42/20, 47/20, 114/22). In addition to the reports prescribed by law, managers, depending on their assessment, voluntarily disclose other reports, business analyses, business plans, etc. In this way, managers get the needed capital under more favorable conditions, increase the liquidity of securities and promote the company. At the same time, they are careful not to put company in a disadvantageous position by disclosing confidential information about the business. One of the reports that is not required by law to be published in Croatia and additionally clarifies the company's business is the value added statement (VAS).

## 2. VALUE ADDED

One of the ways to measure business performance is to measure value added. The concept of value added is used as a measure of wealth and has a wide use. There are several definitions and ways of measuring value added. Value added is the value that company adds from its own capacities (Belak 1995: 89). According to Ziegenbein (2008:114), value added refers to the process of creating value (dynamic concept of creating value added) and the result of that process (static concept of value added). At the same time, generated value added does not only refer to the generation of some new value, but also to the increase of some already existing value. Figure 1 shows the generation of value added.



*Figure 1: Generation of value added*  
 (Source: Ziegenbein (2008: 114))

Bilić (2018: 5) states that value added has different purposes. It ensures the measurement of achievements in the business of the company, the industrial sector or the entire country. To measure achievements in the company's business, value added can be used as an indicator of productivity, where value added and the number of employees are put into a ratio. This indicator can be used to compare achievements between companies in the same industry (Belak 2003:18). In addition, value added can be used for other purposes: put into a ratio to equity it measures the productivity of equity, data on value added is used to calculate gross domestic product according to the production method etc. According to Bilić (2018: 5), in most companies the majority of the value added is given to employees. The state receives a profit tax and thus receives part of the value added. The part related to interest and profit after taxation (regardless of whether it is paid out to shareholders or retained as retained earnings) belongs to those who provided the funds and thus enabled the business process to take place. There are several concepts of value added. Given that it is a comprehensive measure of wealth creation, value added as an indicator of business performance can be used by various groups of interested stakeholders.

From the point of view of the market, and thus of the clients (buyers), processes in company (Ziegenbein 2008: 115):

- directly or indirectly create value added if the product or services are worked on. Reactive (apparent) services are exempt from this. Own production that is realized for or using electronic networks and media is called digital value added.
- indirectly create value added if they are a precondition for activities that directly create value added. Process management should limit those intermediate activities (such as reconstruction, transportation, education and training of employees, management accounting or controlling) to an appropriate measure.
- do not create value added if they do not create any measurable benefit for clients and thus represent a waste, such as any unwanted result, unnecessary activities, slowdowns (lying or waiting phases) and additional work. Such activities that do not create value added should be removed.

Belak (2003: 18) states that benefits of value added disclosure are divided into four categories:

- to measure output: to measure the output of the economy, to measure business performance, to measure the productivity of employees and equity
- for communication: presents kind of work, presents accounting information, basis for employee participation
- for rewarding employees: the basis for salary policy, the basis for determining managerial bonuses
- for business policy: marketing strategy, capital policy, defining relations in doing business.

## 2.1. Value added concepts

Aljinović Barać and Bilić (2018) state three basic concepts of value added:

- the basic concept of value added based on the elements of the profit and loss account
- the concept of economic value added (EVA)
- the concept of market value added (MVA)

The basic definition of value added is: value added is the difference between income and purchased goods and services (Belak 2003: 19). There are two types of value added calculations based on the elements of the profit and loss account: gross value added and net value added. If depreciation is included in value added then it is gross value added, and if depreciation is not included in value added then it is net value added. According to Riahi-Belkaoui (1992: 6), gross and net value added are calculated as follows:

$$GVA = S - B = W + I + DP + DD + T + R \quad (1)$$

$$NVA = S - B - DP = W + I + DD + T + R \quad (2)$$

where

GVA = gross value added

NVA = net value added

S = sales revenue

B = bought-in materials and services

DP = depreciation

W = wages

I = interest

DD = dividends

T = taxes

R = retained earnings

Both methods of calculation, gross value added and net value added, have their advantages and it depends on the users which method of calculation they need. According to Morley (1979), "The Corporate Report" (ASSC 1975) suggests the calculation and use of gross value added because of the following advantages:

- the value added will be expressed more objectively because the calculation based on the principle of gross value added will exclude the possibility of manipulations when calculating depreciation. Such a method of calculation will convince employees of the correctness of determining the base for calculating the bonuses, because the gross value added is considered less suitable for possible manipulations
- by calculating the gross value added, it is easy to determine the total amount available for reinvestment (the sum of depreciation and retained earnings), i.e. the gross value added gives a more complete insight into the company's financial condition
- gross value added is more suitable for economists who deal with calculations at the state level.

However, the same author (Morley 1979) also mentions the advantages of the concept of net value added:

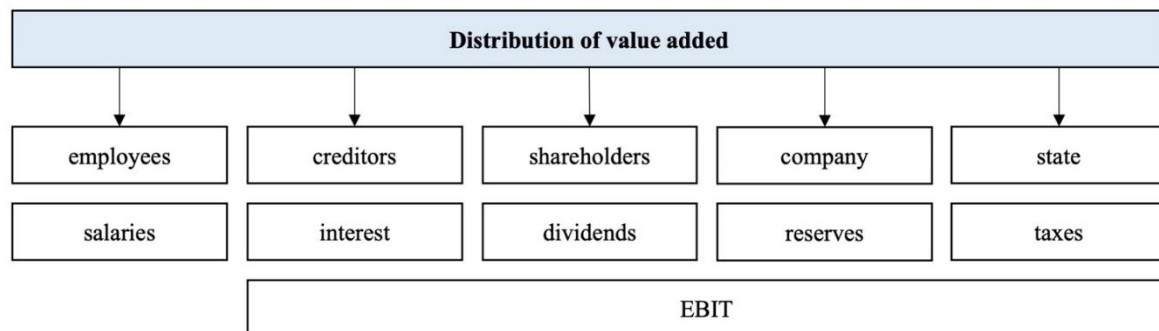
- net value added more clearly expresses the amount of created value added that is ready for distribution. The gross value added is increased by depreciation and as such does not clearly presents the amount that can be distributed
- although there is a possibility of manipulation when calculating depreciation, the net value added more clearly expresses the basis for calculating bonuses to employees
- eliminates possible double bookings of depreciation if there is an exchange of fixed assets between companies and if these assets are undervalued
- more clearly presents the distribution between creditors, employees, owners and the state.

## 2.2. Importance of value added for stakeholders

Bilić (2018: 67) states that disclosing on value added presents the increase in wealth created by company using all its resources, and then presents the distribution of that wealth to stakeholders:

- employees: salaries, awards, bonuses, management premiums
- creditors: they are the owners of debt capital and receive interest
- owners (shareholders): they own the share capital and receive dividends
- state: taxes
- company: retained profit, and if depreciation is added, it presents the amount that can be reinvested in the business process.

Figure 2 presents the distribution of value added.



*Figure 2: Distribution of value added  
 (Source: Ziegenbein (2008: 115))*



The concept of value added is also used to measure national wealth. Riahi-Belkaoui (1999: 7) states that the value added of a company is created by the activity of the company and its employees and can be measured as the difference between the market value of sold products and services and the cost of goods, materials and services which were purchased from other companies. This method of calculation excludes the contribution of other producers from the total value of sold products and services, so the result is the market effect produced or performed by the company. If the business results of all companies in the country are calculated in this way, the market value produced by the entire economy of the country is measured. Riahi-Belkaoui (2010: 17) lists some specific examples that should be paid attention to: the performance of the public sector (eg Ministry of Defense etc.) should be added to the calculation of value added. Then, depending on what is calculated, the performance of foreign subsidiaries is excluded or included etc. The calculation and disclosure of the generated value added makes a sense of joint responsibility among stakeholders as well as a sense of belonging to company. Also, the fair distribution of value added further strengthens the responsibility of all stakeholders. In addition to the above, reporting on added value strengthens the position of management. Riahi-Belkaoui (1999: 9) cites other reasons for disclosing the calculation of value added:

- introduction of changes, i.e. transfer of part of the management from the owner to other stakeholders
- informing about the introduction of changes in business
- managerial encouragement of owners to make reasonable and acceptable decisions.

### 2.3. Value added statement (VAS)

Bilić (2018: 68) states that the business success of a company, apart from management, is also due to other stakeholders: owners, employees, creditors and the state. In order to satisfy their needs for information about the business, the profit and loss account is not enough because it is not clear from it how much is earned by whom. For this reason, the value added statement (VAS) is from the perspective of socially responsible reporting, more acceptable. The main reason for making a VAS is that it clearly presents how much value added was generated and how it was distributed. According to van Staden (2000: 2), the first value added statements were used in the United Kingdom and in this way the management explained business results to the employees. Such an approach was important in the period after World War II, but such practice left in the fifties and sixties of the last century. After that, VAS began to be disclosed again in the seventies of the last century. According to Gray and Maunders (1980), the interest in the VAS began with the publication of "The Corporate Report" (ASSC 1975). "The Corporate Report" was issued by The Institute of Chartered Accountants in England and Wales for the purpose of comprehensibility and reliability of financial statements, and they recommended the preparation and disclosure of VAS. In 1977, the English government issued the report "The Future of Company Reports" in which they also recommended the publication of the same document, along with the balance sheet and the profit and loss account. Then companies from other countries, primarily the Netherlands, France and Germany, started disclosing VAS. Apart from them, the same report was also accepted in Denmark, Switzerland and Italy, and especially in the countries that are former English colonies. Mandal and Goswami (2008: 103) state that although disclosure is not legally required, 63% of Australian companies disclose a VAS. In South Africa in 1997 (van Staden 2000: 1), more than 200 out of a total of 400 industrial companies listed on the Johannesburg Stock Exchange disclosed a VAS in their annual reports. In the USA, VAS has never been particularly accepted (Markota 2012: 74).

Mandal and Goswami (2008: 104) state the objectives to be achieved by making a VAS:

- express the value added that the company has generated in a certain period of time
- measure the company's earnings for the purpose of evaluating business units
- present the distribution of value added to all stakeholders – employees, creditors, owners and the state
- use VAS as a basis for analysis, for setting goals and planning, for improving productivity etc.

VAS consists of two parts. The first part presents income and expenses, and the second part presents the distribution of value added. It is made in vertical or horizontal form, according to the principle of gross value added or net value added. Bilić (2018: 70) states that VAS should be done on a gross and net principles, if it is predicted that it will be used for various purposes by a large number of stakeholders. In the case of high inflation, adjustments must be made, otherwise the preparation of VAS would be meaningless. If the VAS is prepared by a company that has subsidiaries, it is preferable to do segmentation in order to determine what has been achieved by whom.

### **3. LITERATURE REVIEW**

Barać and Bilić (2018) state that scientific research on the concept of value added mainly includes a comparison of the quality of indicators of value added with other indicators in the process of assessing the value of a company. When talking about scientific research on the concept of value added based on the profit and loss account, in addition to the above, emphasis is placed on socially responsible behavior, i.e. on transparency. Disclosure of VAS contributes to better information for all interested stakeholders. Deegan and Hallam (1991) proved that voluntary disclosure of VAS is positively related to the company size and industry sector. Riahi-Belkaoui and Picur (1994) proved that the change in net value added is related to the return on securities. Evraert and Riahi-Belkaoui (1998) suggest that the publication of VAS in the USA should be mandatory because it is useful for capital market forecasts. Pong and Mitchell (2005) reviewed the history of publishing VAS in the UK and proved that companies are reluctant to publish VAS. Ianniello (2010) determined that listed companies rarely voluntarily disclose VAS. Perera Aldama and Zicari (2012) determined that VAS contains useful information and that there is great potential in this type of reporting. Yogesha and Mahadevappa (2014) determined that productivity and efficiency can be measured using value added indicators. Haller and van Staden (2014) determined that VAS is a useful and complementary way of reporting. Kijewska et al. (2015) determined that VAS in a proper way presents how companies from the same industrial sector distribute value added to a stakeholders. Maji (2016) proved that the best listed companies do not want to publish VAS in their annual reports. Sahoo and Pramanik (2017) proved that reporting on value added is useful for assessing the performance of companies as well as for comparing business performance of different companies. Zicari and Aldama (2017) determined that VAS improves the informativeness of all stakeholders and thereby improves decision-making. Jangir and Gupta (2019) determined that value added is a better indicator of business performance than earnings per share.

### **4. SAMPLE SELECTION, RESEARCH METHODOLOGY AND RESULTS**

On 31.12.2022. 22 hotel companies were listed on the Zagreb Stock Exchange. Those hotel companies that were listed on the stock exchange for the entire observed period (2019 – 2021) and that published all the necessary information to be able to conduct the research were selected as a sample. In accordance with the set criteria, 10 hotel companies were excluded from the sample and 12 hotel companies were included in the sample. It is important to emphasize that due to the differences in the size of the companies selected for the research sample, the net

value added is not expressed in an absolute amount, but is expressed per employee (the generated net value added of a hotel company in a certain year is divided by the number of employees in that year). In this way, more transparent amounts were used in the research. Given that it is a numerically small sample, non-parametric methods were chosen for testing. First, the sample was tested using the Friedman test and then the Kruskal Wallis test. Table 1 presents the descriptive data. The mean presents that in 2020 there was a major disruption in business. The net value added is very rarely negative, and in 2020 the mean is negative. In addition, in 2020 the difference between the minimum and maximum is the largest. Also, in 2020 the maximum value is significantly lower than the values achieved in 2019 and 2021. Figure 3 also presents descriptive statistics.

		Net value added: 2019.	Net value added: 2020.	Net value added: 2021.
N	Valid	12	12	12
	Missing	0	0	0
Mean		253786,38	-53512,32	218419,50
Std. Deviation		96631,11	138201,65	99727,66
Minimum		127038,55	-295207,24	29884,39
Maximum		428513,67	138530,47	363495,13
Percentiles	25	161842,39	-158167,77	135558,35
	50	272114,70	-38904,11	236742,17
	75	319497,70	42036,95	287546,81

*Table 1: Descriptive statistics  
 (Source: Author's work)*



*Figure 3: Graphical presentation of descriptive statistics  
 (Source: Author's work)*

Table 2 presents the average value of the ranks. The value for 2020 is significantly lower compared to 2019 and 2021.

	Mean Rank
Net value added: 2019.	2,58
Net value added: 2020.	1,00
Net value added: 2021.	2,42

*Table 2: Mean Rank  
 (Source: Author's work)*

Table 3 presents the results of the Friedman test. The significance of the test is less than 0.05, which means that with a confidence level of 95% it can be concluded that a statistically significant difference was recorded for the observed years.

N	12
Chi-Square	18,167
df	2
Asymp. Sig.	,000
Exact Sig.	<b>,000</b>
Point Probability	,000

*Table 3: Friedman Test  
 (Source: Author's work)*

After the Friedman test, the Kruskal Wallis test was also performed. In this test, all values are ranked from 1 to 36, and then the ranks are divided by observed years. Table 4 presents the average value of the ranks. It can be seen that the value of the ranks for 2020 is significantly the lowest.

	Year	N	Mean Rank
Net value added	2019	12	25,58
	2020	12	7,08
	2021	12	22,83
	Total	36	

*Table 4: Ranks  
 (Source: Author's work)*

Table 5 presents the results of the Kruskal Wallis test. The significance is less than 0.05, which means that with a confidence level of 95% it can be determined that there is a significant difference between the observed years, with the value of the ranks being the lowest in 2020.

	Net value added
Kruskal-Wallis H	21,545
df	2
Asymp. Sig.	,000

*Table 5: Kruskal Wallis Test (Grouping Variable: Year)  
 (Source: Author's work)*

## 5. CONCLUSION

There is no ideal indicator of business performance. Value added has different concepts such as gross value added, net value added, economic value added, market value added. Each of the mentioned concepts has its advantages and disadvantages, and it is up to the report users and analysts to assess what information they need.

The aim of this paper is to present that net value added is a comprehensive indicator of business performance, useful for all stakeholder groups, although the VAS was not published by any of the hotel companies that were selected as a sample. From the calculation of the net value added for hotel companies that were listed on the Zagreb Stock Exchange in the period 2019-2021, it is evident that in 2020 there was a significant disruption in business and that in 2021 there was a recovery in business.

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## DEFINITION AND EVOLUTION OF THE ACADEMIC TOURISM AND ITS IMPLICATION IN REPUBLIC OF CROATIA

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### ABSTRACT

*During the period of Humanism and the Renaissance, European youth and the elite (especially the English nobility) began to travel throughout Europe to exchange experiences and acquire new knowledge in the final phase of their education. Such an event is called a Grand Tour and is considered the starting point of the history of tourism development. More recently, the term academic tourism has emerged, which refers to all trips aimed at acquiring an academic degree and academic knowledge, with main motive being education. Under the influence of globalization and the increasing availability of exchange programs, academic tourism as one of the research-related forms of tourism has experienced exponential growth in recent years. However, analysis of published works in this field of tourism shows that terms such as scientific tourism, research tourism, and academic tourism are often used interchangeably as they lack a clear conceptual framework. The aim of this paper is to provide a clear definition of academic tourism based on an extensive literature review. This paper will not only define the concept of academic tourism, but will also analyze this form of tourism in relation to educational tourism and its different subcategories. A clear analysis of academic tourism will give tourism stakeholders a better insight into the possibilities of managing and expanding the existing tourism offer by developing and promoting this form of tourism. After identifying the theoretical determinants of academic tourism, this paper will analyze the current offer of educational programs at the level of universities, colleges and business schools offering programs in the field of tourism in Croatia. This analysis will provide insight into the current situation as well as the development potential of academic tourism in the Republic of Croatia.*

**Keywords:** *Academic Tourism, Academic Tourism Destinanton, Educatin, Research-related Tourism*

### 1. INTRODUCTION

With the development of society as a whole and the general increase in social welfare, the standard of the individual also grew. Through the improvement of the quality of life, when, in addition to the satisfaction of existential and primary needs, a certain amount of free time and free material resources were realized, the basis for the satisfaction of certain secondary needs was created. Man's desire to spend his free time actively and qualitatively in nature, to travel, to get to know other countries and cultures, to have fun, to practice sports or recreation and to enjoy many other activities has created the phenomenon of tourism. Tourism appeared and exists to satisfy peoples needs and desires (Gračan et al, 2011:3). Tourism (Croatian encyclopedia, online edition) implies the totality of relations and events resulting from the travel and stay of visitors in a place, when such travel is undertaken for the purpose of recreation and pleasure and no permanent residence is established and no economic activity is carried out, which includes tourist movements and all relations resulting from such movements. Today, the general conceptual definition of tourism of the World Tourism Organization is accepted in most countries (Department of Economic and Social Affairs, United Nations, 2010) according to which "Tourism is a social, cultural and economic phenomenon related to the movement of people to places outside their usual place of residence, pleasure being the usual motivation".

Tourism is conditioned by the development of the economy and the living standard of the population. From all this derive the bases of tourism, which are presented below (Gračan et al., 2011):

- Tourism was created by the movement of people (tourist travel) and their stay at the chosen destination,
- A tourist trip includes the journey to the destination and the stay at the chosen destination,
- A tourist travels and stays outside his permanent residence,
- The stay in the chosen destination is temporary,
- During the stay in the chosen destination, the tourist spends the funds earned at the permanent residence,
- The stay in the chosen destination satisfies personal needs arising from various motives, except those related to establishing permanent residence and earning income.

It can be concluded that tourism is an interdisciplinary activity that includes hospitality, hotel management, tourist office, transport and other tourist activities.

## **2. TOURISM AS A DRIVING FORCE**

Tourism is an important sector of global economies, but also of many national economies. It provides economic growth, creates infrastructure and jobs and improves people's standard of living and quality of life. In 2019, the tourism sector generated 10.4% of global GDP (\$9.2 trillion), 10.6% of all jobs (334 million), of which 54% were women. Tourism was responsible for creating one in four new jobs in the world, and employed a higher proportion of young people than in the economy as a whole (World Travel & Tourism Council, 2021). Tourism is one of the most important growth engines of the world economy, especially in the economies of developing countries (Perić and Šverko Grdić, 2017:41). Among the most important benefits that tourism brings to the economy is the increase in public revenues (Čavlek, Bartoluci, Prebežac, Kesar et. al., 2011:237; Perić and Šverko Grdić, 2017:41). Tourism can contribute to the creation of new quality jobs, generate self-employment and encourage inclusive growth. It is the most important economic sector in the Republic of Croatia, which has significantly determined both economic and social processes in the past period. The share of tourism in Croatia's gross domestic product is growing year by year, which proves the extremely high dependence of the Croatian economy on the development of tourism in the country (Croatian Parliament, 2023). According The Croatian Bureau of Statistics (2022), in 219 the share of direct gross domestic product of tourism in the total gross domestic product is 11.8%. For the comparison with competing countries, the data of the World Travel & Tourism Council (WTTC) was analysed, which, using a unique methodology, published data for 2019 for 28 European countries, of which Croatia has the highest share of tourism in GDP (direct and indirect) of 25% (Croatian Parliament, 2023). A long-standing main characteristic of Croatian tourism is its pronounced seasonality, which is the most pronounced compared to the European Mediterranean countries and is directly related to the main product of sun and sea and the structure of accommodation capacity. The tourism model, in which 92.5% of all accommodation facilities are located in the area of the Croatian Adriatic and the development of tourism takes place mainly on the coast, which increases the pressure on the above-mentioned areas of Croatia, is neither socially nor environmentally sustainable. In contrast to the cities on the coast, the cities in Pannonia and northern Croatia are less known and interpreted as tourist centers (Croatian Parliament, 2023). The analysis of the above leads to the conclusion that the Republic of Croatia is highly dependent on tourism. However, the fact that the sun and the sea are the main reason for tourist arrivals puts a strain on the Adriatic coast and leads to an even greater difference between coastal and mainland Croatia in terms of visitor numbers and tourism development.



Turning towards a more balanced tourism development requires turning towards specific forms of tourism whose main motives are not sun and sea. It is precisely from this point of view that the development of academic tourism should be seen as one of the specific forms for the Croatia tourism.

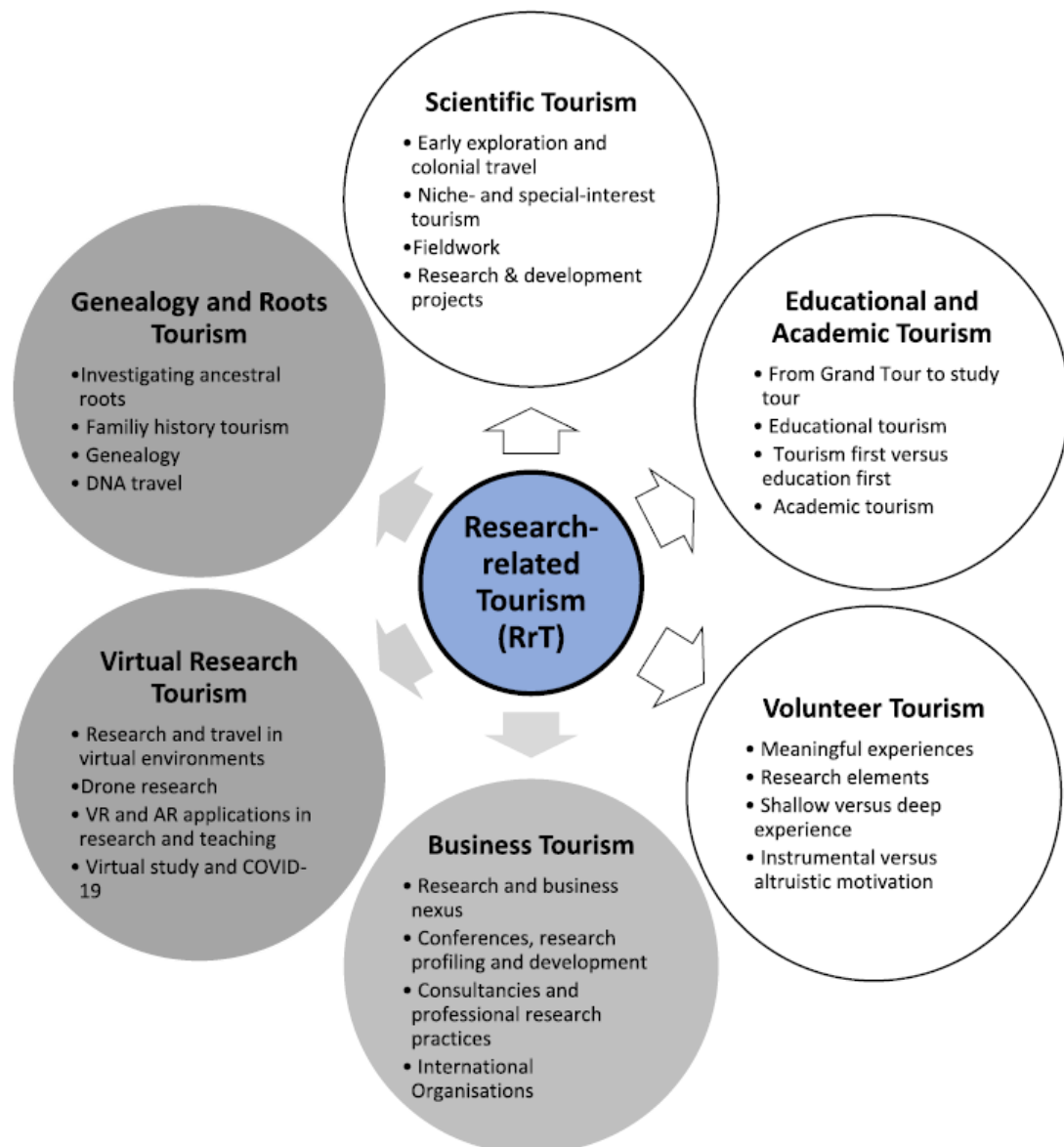
### **2.1. From mass to special interest tourism**

Since the mass and spread of tourism in the world is very large, even with the tendency of further growth (Kušen, 2001), recently the concept of mass tourism has been abandoned and responsible development based on selected forms of tourism has been supported, which as a result leads to a new differentiation and quality in the increasingly demanding tourism market, with the current restructuring of tourism towards a balanced and polycentric development. Quantity is being replaced by the development of quality factors, i.e. identity, ambience and ecological cleanliness. The forms of mass tourism are replaced by new forms called specific forms of tourism, which by its nature is tourism with sustainable or reasonable management (Relja and Alfirević, 2012). In developed markets, specific forms of tourism are confirmed by the increase in individual travel, the increased demand for greater choice and more flexible supply, the widespread use of information technology and, in general, the selective and thoughtful use of natural and cultural resources in destinations (Jadrešić, 2010). The existing tourist offer is being refined and revitalized by organizing new content, programs, services, and types and forms of tourism and tourist offer based on authentic sources (Jadrešić, 1993). When a destination moves from a mass strategy (simple and cheap product, large physical traffic) to a diversification of supply (focus on the motives that drive people to travel, tourism targeted to the specific needs of a narrow market segment) in the planning and development of tourism, these are specific forms of tourism, i.e., tourist movements conditioned by a specific (predominantly tourist) motive that leads tourists to travel to a destination where the tourist offer is adapted (content, products, price) to achieve the desired experience (specific interest of tourists) (Croatian encyclopedia, online edition). Such specific interest of tourists can be identified by the desire to acquire new knowledge or participate in educational activities outside the place of residence, which is the most common description of educational tourism. The details of this concept are explained in continuation .

### **2.2. Academic tourism as part of educational tourism**

According to UNWTO, educational tourism includes all types of tourism that emphasise the tourist's engagement and experience in learning, self-improvement, intellectual growth, and skill development. Educational tourism encompasses a wide range of products and services related to academic studies, skills improvement vacations, school trips, sports training, professional development courses, and language courses, to name a few (UNWTO, 2019). Shah et al. (2022) states that educational tourism is a part of research tourism (RrT), which means research-related tourism, and defines it as any tourism activity that serves learning, exploration, or knowledge acquisition. The authors claim that the RrT typology consists of six main types or sub-types: (1) Scientific Tourism, (2) Education and Academic Tourism, (3) Volunteer Tourism, (4) Business Tourism, (5) Virtual Research Tourism, and (6) Genealogy and Roots Tourism.

*Figure following on the next page*



*Figure 1: Typology of RrT*  
 (Source: Shah et al. (2022))

Globalization opens up many opportunities, and when it comes to studying, we are seeing a growing number of student exchange opportunities through The Erasmus+ programme, Central European Exchange Programme for University Studies (CEEPUS) or the Bilateral Programme of Mobility in Higher Education (Bilateral Scholarships). Cavagnaro et al. (2018) they state that by signing agreements between higher education institutions, both private and state, as part of Erasmus mobility, they encourage international cooperation. The international cooperation thus defined can be considered from the perspective of tourism as a type of tourist activity, which is also a specific form of tourism called academic tourism or youth tourism. Individuals who leave their residence to attend academic courses with a duration of less than one year in the other destination are defined as academic tourists (García-Rodríguez and Jiménez, 2015; Quintela et al. 2022). According to Ritchie (2003) and Shah et al. (2022), there are two types of educational tourism: travel with the purpose of participating in educational programmes falls under the term 'education first' while participation in organised guided and interactive tours of an informal or formal nature fits the term 'tourism first'." Based on the 'interest' component, academic tourism falls under the 'education first' classification.

Students take university courses that include selected elements of the research process while studying abroad: presenting seminar topics, writing literature reviews, and practicing methods (in methodology-based courses). The logical connection is reflected in the fact that many authors (Chen and Kerstetter, 1999; Ritchie, Carr and Cooper, 2003; Weaver, 2003; Llewellyn-Smith and McCabe, 2008; García-Rodríguez and Jiménez, 2015; Quintela et al. 2022) have recognised that links can be established between destinations and universities in the form of educational tourism with academic tourism as a subtype (Pawlowska and Roget, 2009; García-Rodríguez and Jiménez, 2015; Quintela et al. 2022).

### 3. WHEN A STUDENT BECOMES A TOURIST?

Some scholars prefer to use the general term 'educational tourism,' although academic tourism is very specific (Abubakar et al., 2014). Since there is no consensus on what constitutes educational tourism (Pitman et al., 2010), Shah et al. (2022) suggest that the terms "educational tourism" and "academic tourism" can be used interchangeably, as the boundaries between the two terms seem to be relatively blurred. According to the World Tourism Organization (WTO), mobile higher education students can be considered tourists (Department of Economic and Social Affairs, United Nations, 2010) if they stay for less than one year. On the other hand, Weaver (2003) asserts that while the World Tourism Organization clearly does not classify students who are on a long-term stay at a university or boarding school as tourists, they are not perceived as such by destination managers. The difference between tourists and travelers can be seen in the figure below.

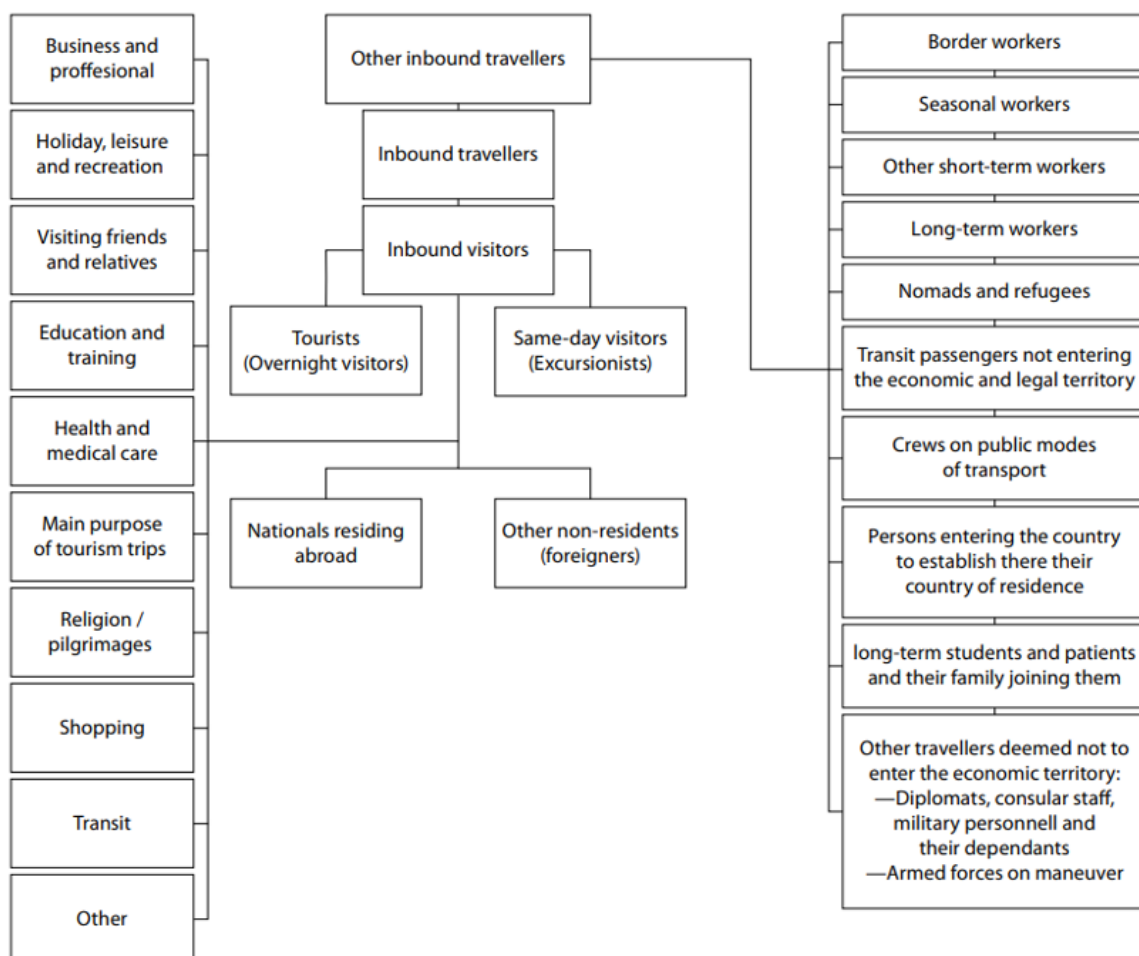
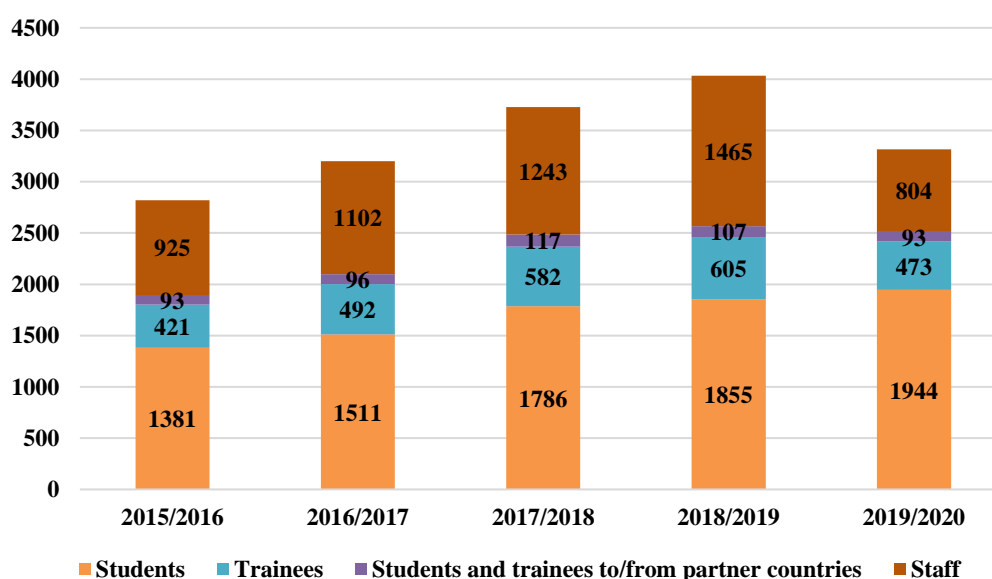


Figure 2: Classification of inbound travellers  
 (Source: Department of Economic and Social Affairs, United Nations (2010))

According to the above classification, a student is considered a tourist only if he stays less than one year in the place where he studies. If his stay lasts longer than one year, he is not considered a tourist.

#### 4. STUDENT MOBILITY AS AN ADDITIONAL MODEL OF TOURISM IN THE REPUBLIC OF CROATIA

As one of several side effects of globalisation, recent decades have witnessed a significant increase in the mobility of students for study purposes in different countries. In this sense, the increasing mobility of students in higher education is of particular importance. The ERASMUS (European Region Action Scheme for the Mobility of University Students) programme is a good example of this dynamic (Rodríguez et al. 2012). Since 1987, Erasmus+ remains one of the EU flagship programmes and in 2018 reached 10 million participants supported in their life-changing learning experience. After 33 years of implementation, Erasmus+ remains resilient in 2020, with 11.7 million participants supported at the end of the year (European Commission 2021). The analysis of incoming mobility to the Republic of Croatia through the Erasmus+ program in the period from the academic year 2015/2015 to 2019/2020 shows a growth trend in arrivals of students, teaching and non-teaching staff. The decrease was recorded due to the pandemic COVID 19. According to the same source, top 3 receiving countries are: Spain, Portugal and Italy.



*Graph 1: Incoming students, trainees and staff in the Republic of Croatia in 2020  
 (Source: Author according European Commission (2020))*

Considering that tourism is a significant lever for economic development in the Republic of Croatia, it is necessary to make efforts to minimize the negative impact of tourism on the environment, to preserve resources for tourism development and to ensure the quality of life of future generations. Turning to specific forms of tourism, such as academic tourism, can contribute to sustainability on the territory of the Republic of Croatia. In order to gain insight into the development possibilities of this form of tourism, it is necessary to analyze the system of higher education in the Republic of Croatia. In accordance with the Bologna system, higher education in the Republic of Croatia has a three-stage study model, which includes undergraduate, postgraduate and postgraduate studies. Like several other European higher education systems, the Croatian system has a binary structure that includes the professional and university profiles of study programmes and institutions. In contrast to higher education

institutions that offer university degree programmes up to the doctoral level, vocational degree programmes are offered mainly at the undergraduate and postgraduate levels at universities of applied sciences and as vocational short degree programmes. Career-related degree programmes are primarily geared to the labour market and direct participation in the workforce and lead to the acquisition of predominantly vocational skills. University degree programmes qualify students for the development and application of scientific, artistic and professional achievements and lead to a continuation of academic education (Agency for science and higher education, 2023). Pursuant to the Act on Higher Education and Scientific Activity (Croatian Parliament, 2022), higher education institutions (HEIs) are universities, faculties, art academies and polytechnics.



Figure 3: Analysis of the tourism-related higher education programs in the Republic of Croatia

(Source: Author according Agency for science and higher education (2023))

There is no question that international student travelers are a lucrative segment of the leisure travel market (Chen & Kerstetter, 1999), to this end, the supply of tourism-related higher education programs (THEP) is analyzed (Şanlıöz-Özgen and Ebru Günlü, 2023). In the Republic of Croatia, there are a total of 54 programmes in the field of tourism. Of these, most are at the level of Graduate university studies (16) and Professional undergraduate studies (15).

These are followed by Undergraduate university studies (9) and Professional graduate studies (8). Postgraduate specialised studies are offered in 4 programmes, while the highest level, Postgraduate university doctoral studies, is represented in two programmes. Ova analiza ukazuje na ravnomjernu rasprostranjenost obrazovnih institucija koje pružaju obrazovanje u području turizma. Upravo ovakva distribucija omogućava razvoj turizma i kontinentalnim, turistički manje istaknutijim destinacijama.

## 5. CONCLUSION

Modern tourism is the most massive socio-economic phenomenon. The basic characteristics of mass tourism derive from the economy of scale, which aims to maximize the number of tourists - consumers at the destination, which helps to maximize investment, income, revenue, but also maximum profit. From an economic point of view, this is a very desirable concept, but practice has shown that such an approach also brings many negative long-term consequences. As a recognized destination for sun and sea tourism, Croatia is highly dependent on tourism, and the number of tourists is expected to increase in the future. In order to preserve the natural beauty of the coastal area and reduce its highly pronounced seasonality, destination management must focus on the development of specific forms of tourism geared towards sustainability. So far, little attention has been paid to the development of academic tourism in Croatia, so this work analyzes the offer of tourism-related higher education programs in the Republic of Croatia. The analysis shows an even distribution of educational institutions that provide training in the field of tourism. This type of distribution allows the development of tourism even in continental, less known tourist destinations, but more importantly, it has the effect of reducing seasonality, considering that students stay on exchange during the lecture period, which is between September and June. The limitation of this research is the narrowing of the analysis to educational programs in the field of tourism, and at the same time a broader analysis is proposed for future research.

**ACKNOWLEDGEMENT:** *This work has been fully supported by the University of Rijeka project UNIRI-MLADI-DRUSTV-22-21 "Academic tourism from perspective of generational cohorts: education first or tourism first?"*

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## ROLE AND COMMUNICATION POTENTIAL OF SOCIAL NETWORKS IN THE PERSONAL BRANDING OF LEADERS IN HEALTH SECTOR

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### ABSTRACT

*The topic of the paper is the role and communication potential of social networks in the personal branding of leaders in the health sector (medical doctors) in the Republic of Croatia. The change in the communication paradigm due to digitization has enabled an individual to turn from an object that the media writes about into a subject that creates content, as well as the medium that distributes that content. Hence, the importance of analysing the impact of communication skills of individuals is growing, as well as relations with the media in general. The research was conducted through a quantitative survey among medical doctors of different specialisations who work in different institutions in the Republic of Croatia. The main goal of the research was to investigate the role of social networks in the personal branding of medical doctors through the attitudes, opinions and experiences of medical doctors in the Republic of Croatia. Four secondary objectives emerged from the main objective: (1) to determine how important media relations and communication skills are in their professional career, (2) to determine if doctors have profiles on social networks and on which the most; (3) to identify who manages the profiles of medical doctors on social networks and the frequency in which the respondents update their profiles, and (4) to determine the purpose of using social networks, by identifying the ways in which social networks have so far helped the respondents, namely in their work and in personal branding. The results show that leaders in the health sector in the Republic of Croatia consider LinkedIn to be the most useful social network and that they are aware of the importance of using social networks, but in practice, they rarely update them, they are not educated for it, and they mostly do not use the help of communication experts.*

**Keywords:** *health sector, communication, medical doctors, personal branding, social networks*

### 1. INTRODUCTION

The paper delves into social networks' role and communication potential in the personal branding of leaders in the health sector, specifically medical doctors, in the Republic of Croatia. With digitization and the proliferation of social media platforms, the communication paradigm has significantly shifted. It has empowered individuals to become active content creators and distributors, thus transforming them from passive objects to active subjects of media attention. Considering this transformation, the relevance of analysing the impact of communication skills and media relations on individuals has become increasingly crucial. The ability to effectively communicate and build a personal brand has become a valuable asset for leaders in the health sector. In the theoretical framework, the paper delves into the importance of developing strong communication skills and building a robust online presence on social networks, specifically in

the context of personal branding. The main goal of the research was to investigate the role of social networks in the personal branding of medical doctors through their attitudes, opinions and experiences in the Republic of Croatia. In conclusion, it brings a synergy of theoretical starting points and research results related to the importance of developing communication skills and building an online presence on social networks for personal branding in a business context.

## 2. THEORETICAL FRAMEWORK

Since the late 1990s, self-marketing and personal branding have gained increasing popularity, particularly in the United States, with numerous self-improvement books, websites, and consultancy services devoted to this subject. Peters (1997) laid the foundation for personal branding in his article "The Brand Called You"<sup>1</sup>. In accordance with the development of digital technology and the convergence of media, personal branding has become one of the key tools in successful business. Therefore, personal branding nowadays involves creating a professional profile highlighting individual characteristics, which are then strategically communicated to a target audience through various social media platforms. The relationship between personal branding and social media has been the focus of many professional and scientific articles in recent years (Karaduman, 2013; Campbell, 2010; Madden & Smith, 2010; Qualman, 2009; Labrecque et al., 2011; Peters, 1997), especially with the focus on the concept of personal branding (Labrecque, Markos, and Milne, 2011). With the rise of social media and their endless possibilities, the business world is now recognising the significance of managing personal brands and providing strategic guidance on how to project a desired personal brand identity through various social media platforms (Labrecque, Markos and Milne, 2011). The article further starts from the fact that today the concept of self-branding is so widespread due to the parallel growth of digital technology (especially social media) embedded in the current social climate, which encourages the subjectivisation of business activities to gain the trust of the audience and potential clients. Accordingly, the communication potential offered by social media platforms such as LinkedIn, Instagram, Twitter or Facebook enables the creation of virtual user environments (VCE) from the position of an expert employed in a particular sector, whereby the image is created in parallel on elements from private and business life. Connecting with different audiences on platforms, social media enable interaction with others with the expectation of receiving something in return (IBM, 2012, cf. Karaduman, 2013), which at the same time enables the strengthening of, for example, business or professional identity. In Croatia, personal branding has also become increasingly relevant for leaders in the health sector, particularly medical doctors. Social media platforms provide a unique opportunity for medical doctors to build and promote their personal brand, which can have significant implications for their professional success. Previous research (Čulo, Mustapić, Milas, 2023<sup>2</sup>) shows that, despite the fact that public relations are perceived as important in the health sector, organised practice in health care institutions is rather an exception than a rule, especially when it comes to personal public relations. The practice of personal public relations is very rare in health care institutions, although most medical doctors believe that there is an impact of their personal image on the public perception of the institution where they are employed, and most often on the general image of the institution and its recognisability. At the same time, few medical doctors have a specific practice of personal relations with the public, and even fewer use the help of professionals. It is therefore important to study the role and communication potential of social networks in the personal branding of medical doctors in Croatia.

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<sup>1</sup> <https://www.fastcompany.com/28905/brand-called-you>

<sup>2</sup> Article „Role of Personal Branding in Contemporary Health Sector“ (Čulo, I.; Mustapić, M.; Milas, I.) has been accepted for publishing in the Proceedings from the 4th International Scientific Conference MIC – Vis, 2022. The Proceedings are currently under proofreading process and the planned publishing time is May 2023.

The purpose of the study is to describe and encourage further understanding of the specific communication tools and strategies that medical doctors may use for effective utilisation of social media for personal branding, as well as the potential challenges they may face in doing so.

### **3. EMPIRICAL RESEARCH**

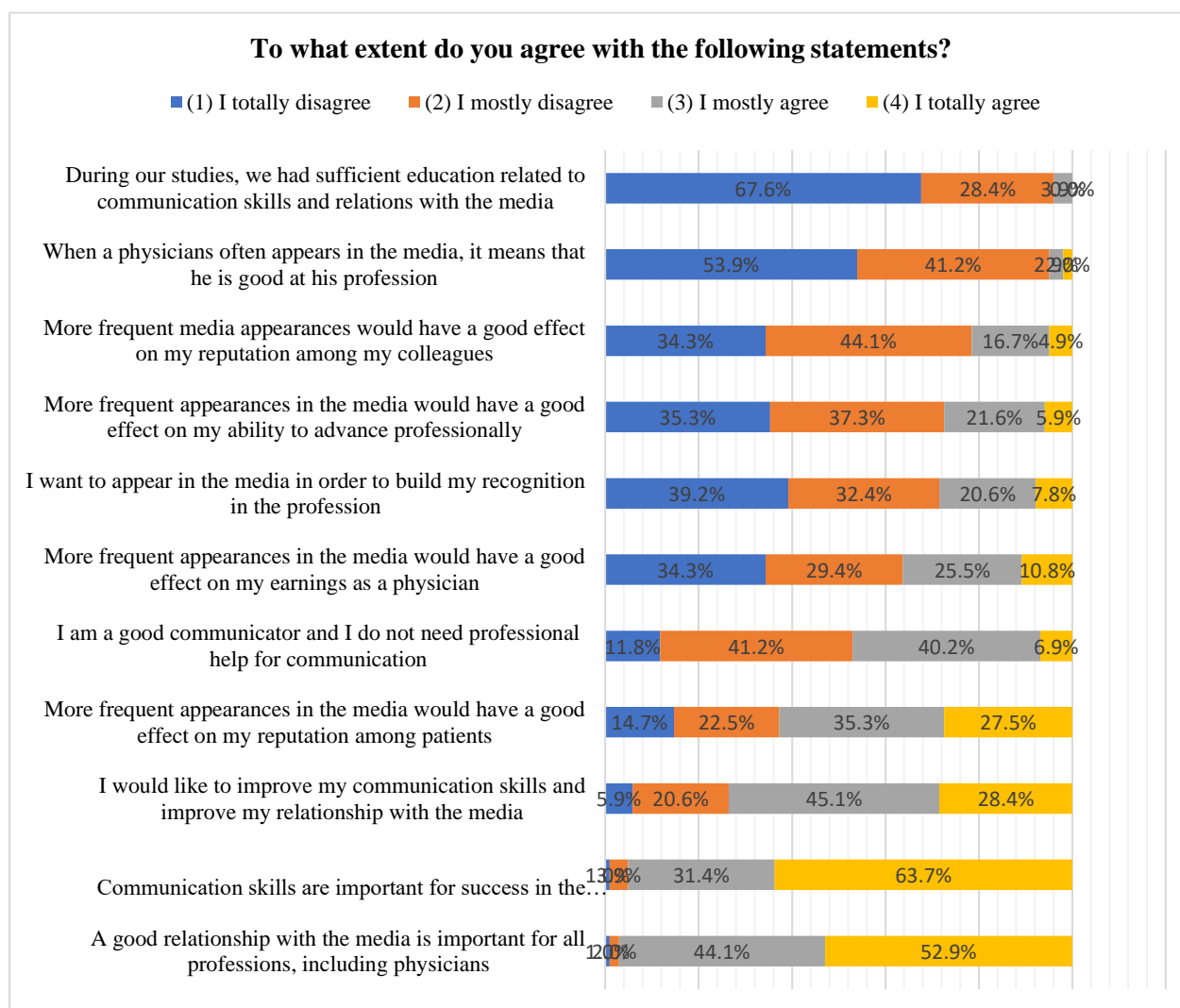
The paper focuses on the analysis of the use of social networks in content creation for the purpose of personal branding. The research is based on the quantitative method of conducting a survey among the medical doctors of different specialisations who work in different institutions in Croatia. The main objective of the research was to investigate the role of social networks in the personal branding of medical doctors through their attitudes, opinions and experiences in Croatia. From the main objective of the research, the following secondary objectives emerged: (1) to determine how important media relations and communication skills are in their professional career, (2) to determine if doctors have profiles on social networks and on which the most, (3) to identify who manages the profiles of medical doctors on social networks and the frequency in which the respondents update their profiles, and (4) to determine the purpose of using social networks, by identifying the ways in which social networks have helped the respondents so far, namely in their work and in personal branding. Empirical data for the purpose of the analysis were collected in the period from 14 July to 29 August 2022. Data collection was carried out using the CAWI („Computer-Assisted Web Interviewing“) method, that is, an online interviewing technique where the respondent independently fills out a questionnaire in written form using a computer, via the web platform Google Forms. The answers of the respondents were analysed at the level of the total sample, using an anonymised database, whereby the obtained survey results cannot be linked to the identity of the respondents. The survey was conducted on a convenience sample of 102 medical doctors, who were employed in health care institutions on the territory of the Republic of Croatia at the time when the survey was conducted. With regard to the method of conducting the survey, that is, the sampling design and the method of selecting respondents, it is a non-probability sample, while in terms of the type of the sample, it is a convenience sample. At the time of conducting the survey, the age structure of the respondents was as follows: 11% of the respondents were under the age of 35, a third of the respondents (33%) were between 35 and 44 years old, 38% of the respondents were between 45 and 54 years old, 17% were between the ages of 55 and 64, while one respondent (1%) was over 65 years old. The highest share of the respondents (28%) had between 21 and 25 years of work experience, and more than half of the respondents (68%) had more than 15 years of medical work experience at the time of conducting the survey. The majority of the respondents (73%) were employed in the hospital system, mostly in university hospital centres, and 28% of the respondents were employed outside the hospital system, mostly in institutes. As many as 91% of them were employed in the public health sector, while only 9% were employed in the private health sector. Furthermore, the largest share of the respondents (63%) were employed in Zagreb and its surrounding areas, 29% of the respondents were employed in Dalmatia, 5% in North-western Croatia, 2% in Istria, Primorje and Gorski kotar, and one was employed in Slavonia.

#### **3.1. Research results**

##### *3.1.1. Attitudes towards the media and communication skills*

The attitude towards the media was measured using a multi-item measuring tool, which consisted of 11 items assessed by an ordinal Likert-type assessment scale with four points at which a lower score indicates a less positive attitude, while a higher score indicates a more

positive attitude towards the media. The level of agreement with each item of the measuring tool intended to measure the attitude towards the media is shown in Chart 1.<sup>3</sup>

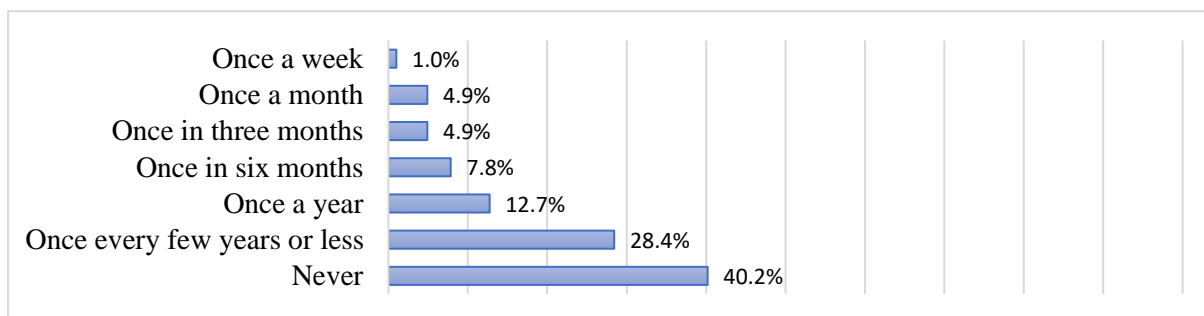


*Chart 1: Level of agreement with each item of the measuring tool intended to measure the attitude towards the media*

Based on the level of agreement with individual indicators of the measuring tool intended to measure the attitude towards the media and communication skills, it can be concluded that the surveyed doctors in the Republic of Croatia generally agree with the statement that communication skills are important for success in the health profession, with the statement that a good relationship with the media is important for all professions, including doctors, with the statement that they would like to improve their communication skills as well as their relationship with the media, and with the statement that more frequent appearances in the media would have a good effect on their reputation among patients. They are divided over the statement that they consider themselves good communicators and that they do not need professional help for communication and relations with the media. They mostly disagree with the statement that more frequent appearances in the media would have a good effect on their earnings as doctors, with the statement that more frequent appearances in the media would have a good effect on their ability to advance professionally, with the statement that they want to appear in the media in order to build their recognition in the profession, with the statement that

<sup>3</sup> The chart shows the percentage values, that is, the percentage shares of respondents' answers.

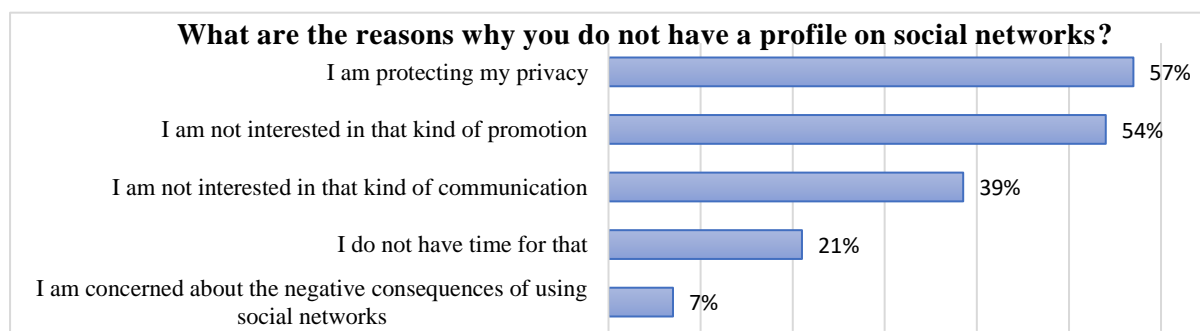
more frequent appearances in the media would have a good effect on their reputation among colleagues, with the statement that, when a doctor often appears in the media, it means that he/she is good at his/her profession, and with the statement that they had sufficient education during their studies related to communication skills and relations with the media. Despite the fact that most of them agree with the statement that appearing more often in the media would have numerous benefits for them, when it comes to the frequency in which the respondents appear in the media, the largest share of the respondents, 40%, never appear in the media, while 60% of the respondents at least sometimes appear in the media. At the same time, 28% of the respondents appear in the media once every few years or less, 13% of the respondents appear in the media once a year, while less than 10% of the respondents appear in the media more often. The frequency in which the respondents appear in the media is shown in Chart 2.



*Chart 2: Frequency in which the respondents appear in the media*

### *3.1.2. Characteristics of the use of social networks by the respondents*

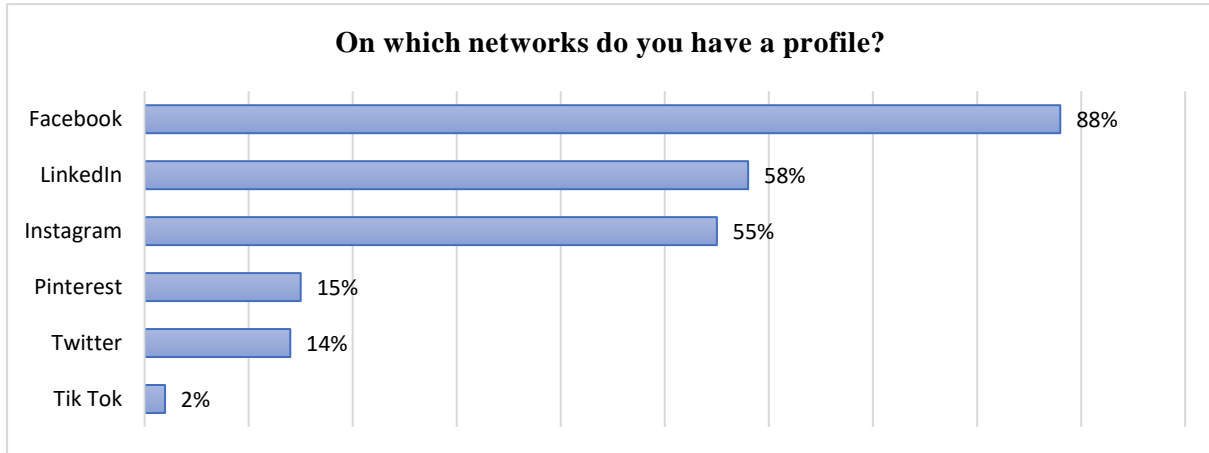
Characteristics of the use of social networks by the respondents were measured through 10 indicators: having a profile on social networks, identifying the reasons why some doctors do not have a profile on social networks, identifying social networks on which the surveyed doctors have their own profiles, identifying who manages the profiles of doctors who have profiles on social networks, the frequency in which the respondents update their profiles on social networks, the purpose of using social networks, identifying the ways in which social networks have specifically helped the respondents in their work so far, attending and defining trainings related to the use of social networks and identifying the social networks that the respondents consider the most useful for business image. The survey shows that the majority of the respondents (73%) have a profile on social networks, while 28% of the respondents do not have a profile on social networks. The doctors who stated that they do not have a profile on social networks were asked to state the reasons for not having a profile on social networks, which are shown in Chart 3<sup>4</sup>.



*Chart 3: Reasons for not having a profile on social networks*

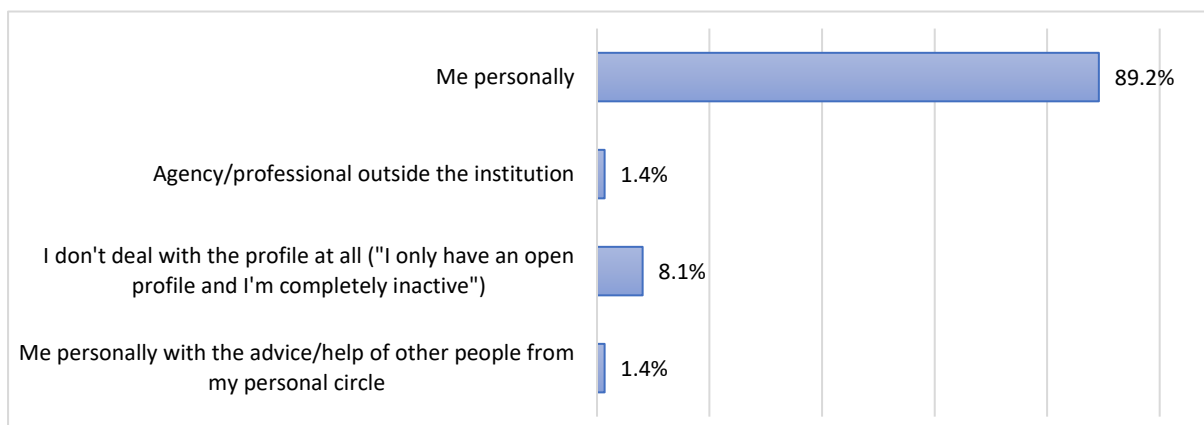
<sup>4</sup> The question had the option of choosing several potential answers, and the sum of the percentages is greater than 100.

Among the doctors who have profiles on social networks, the largest share (88%) have a profile on Facebook, more than half of them have a profile on LinkedIn (58%) and Instagram (55%), 15% of the respondents have a profile on Pinterest, 14% of the respondents have a profile on Twitter, while 2% of the respondents have a profile on TikTok. The social networks on which the respondents have a profile are shown in Chart 4<sup>5</sup>.



*Chart 4: Social networks on which the respondents have a profile*

Furthermore, the doctors who have profiles on social networks were asked to name the person/entity who manages their profiles. Among the doctors who have profiles on social networks, the largest share (89%) manage their profiles on social networks by themselves, 8% of them do not manage their profile at all ("they only have an open profile and are completely inactive"), while only 1% of them stated that their profile is managed by an external agency/professional, and 1% that they personally manage their profile with the advice/help of other people from their personal circle. The entities/persons who manage the profiles of the respondents on social networks are shown in Chart 5<sup>6</sup>.

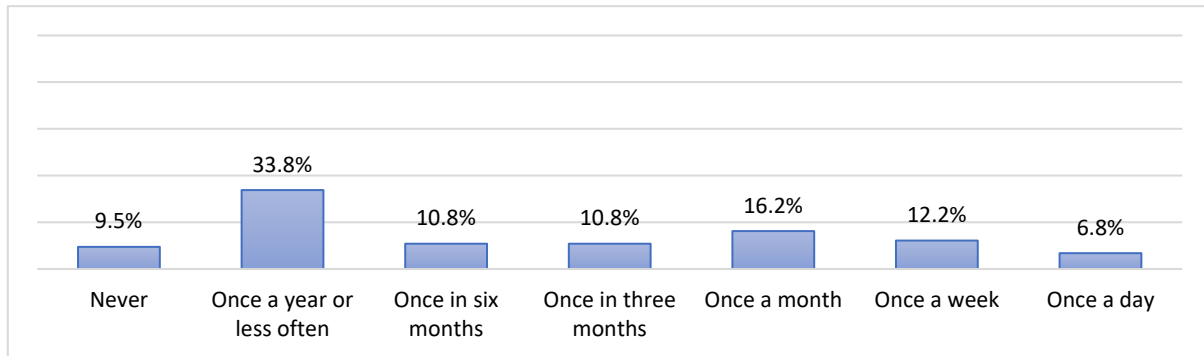


*Chart 5: Entities/persons who manage the profiles of the respondents on social networks*

With regard to the frequency in which the respondents who have profiles on social networks update their profiles, the largest share of the respondents, 34%, update their profiles on social networks once a year or less. The frequency in which the respondents who have profiles on social networks update their profiles is shown in Chart 6.

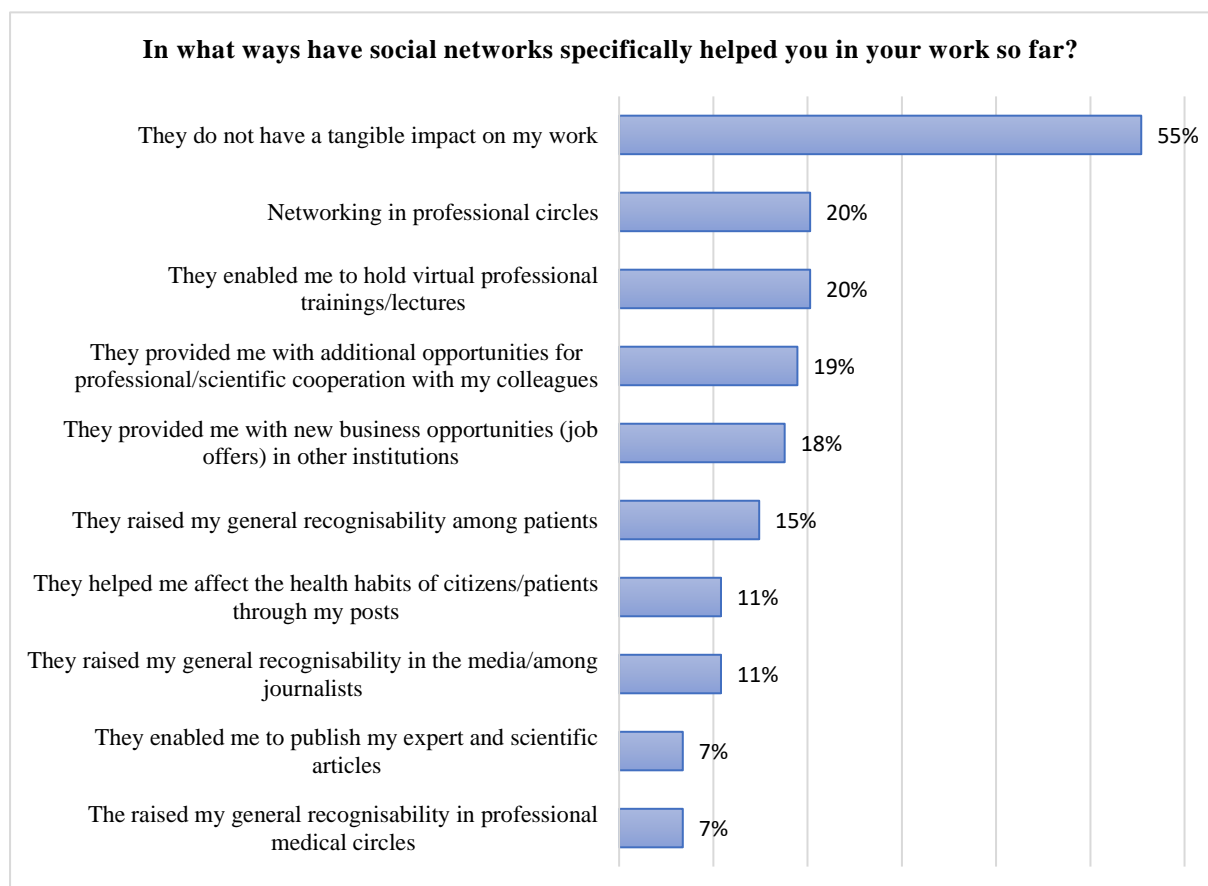
<sup>5</sup> The question had the option of choosing several potential answers, and the sum of the percentages is greater than 100.

<sup>6</sup> The question had the option of choosing several potential answers, and the sum of the percentages is greater than 100.



*Chart 6: Frequency in which the respondents who have profiles on social networks update their profiles*

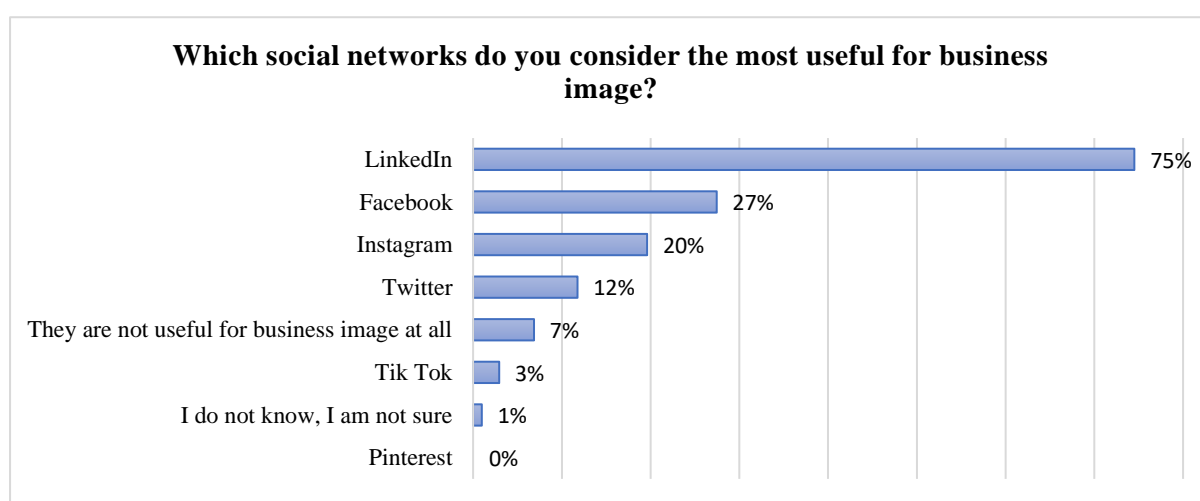
The majority of the respondents use social networks for private purposes (68%), 32% of the respondents use social networks for private and business purposes, and not a single respondent uses social networks exclusively for business purposes. As regards the question on how social networks have specifically helped the respondents in their work so far, 55% of the respondents who use social networks believe that social networks have no tangible impact on their work at all, while 45% of them stated that here are benefits of using social networks. The ways in which social networks have specifically helped the respondents in their work so far are shown in Chart 7<sup>7</sup>.



*Chart 7: Ways in which social networks have specifically helped the respondents in their work so far*

<sup>7</sup> The question had the option of choosing several potential answers, and the sum of the percentages is greater than 100.

Although they point out the numerous benefits of using social networks, out of 102 surveyed doctors, only one (1%) attended a training related to the use of social networks, namely a training in communication. When asked which social network they consider the most useful for business image, the largest share of the respondents (75%) believe that LinkedIn is the most useful social network for business image, followed by 27% who consider Facebook to be the most useful social network for business image and 20% who believe that Instagram is the most useful social network for business image. Furthermore, 12% of them consider Twitter to be the most useful social network and 3% believe that TikTok is the most useful social network. On the other hand, 7% of the respondents believe that social networks are not useful at all for business image, one survey participant (1%) could not assess which social networks are the most useful for business image, while not a single survey participant stated Pinterest as the social network that is most useful for business image. The social networks that are the most useful for business image, in the opinion of the respondents, are shown in Chart 8<sup>8</sup>.



*Chart 8: Social networks that are the most useful for business image, in the opinion of the respondents*

Despite the fact that they consider LinkedIn the most useful network, the largest number of the respondents use Facebook, mainly for private purposes, while a very negligible number use, for example, TikTok, although a recent global survey<sup>9</sup> showed that 33% of generation Z and 26% of millennials (compared to 5% of baby boomers) use social media for discussion about health and illnesses. For generation Z, the best platform is TikTok, followed by Instagram and Twitter. Older generations turn to Facebook first. This is precisely why greater awareness and education of health care professionals about the use of the media in general, and social networks in particular, is absolutely necessary in the Republic of Croatia, especially in the context of younger generations with inherent digital use and consumption of information.

#### 4. CONCLUSION

The purpose and aim of the paper were to offer a theoretical framework in conjunction with the analysis of the role and communication potential of social networks in the personal branding of leaders in the health sector, especially medical doctors, in the Republic of Croatia. Following the theoretical framework, the paper presents the results of the research conducted on a convenience sample of 102 medical doctors, employed in health institutions on the territory of the Republic of Croatia.

<sup>8</sup> The question had the option of choosing several potential answers, and the sum of the percentages is greater than 100.

<sup>9</sup> <https://the-media-leader.com/dr-tiktok-why-younger-audiences-are-turning-to-influencers-for-healthcare-information/>



The aim of the research was to point out previous experiences and encourage additional understanding of communication tools and strategies using social media that can serve doctors for the purpose of personal branding. The results of the research indicate the need for individuals to develop strong communication skills and build a robust online presence on social media platforms in order to effectively take advantage of the benefits of personal branding. It is clear that medical doctors consider communication skills and a good relationship with the media important for success in the health profession. There is also a high level of agreement among doctors when it comes to the importance of a good relationship with the media. Doctors have no doubt about the inadequacy of education during their studies related to communication skills and relations with the media. The percentage of doctors who believe that they had sufficient education related to communication skills and relations with the media during their studies is negligible. The opinion of the majority of doctors is that more frequent appearances in the media would have a positive impact on their reputation among patients, while the majority disagree that more frequent appearances in the media would have a positive impact on their earnings, the possibility of professional advancement, and the reputation among colleagues. Most doctors have profiles on social networks, most often on Facebook, and they mostly manage those profiles themselves. Those who do not use social networks tend to remain anonymous or have no interest in social networks. The share of doctors who use the services of professionals, persons or agencies for the purposes of managing social networks is practically negligible. The majority of doctors use social networks for private purposes, and a smaller part for private and business purposes. There is a relatively strong scepticism towards the business benefits of using social networks, with every second doctor believing that social networks have no tangible impact on their work at all. Those who recognise certain benefits most often point out the possibility of holding virtual professional trainings and lectures, networking in professional circles, opportunities for professional cooperation and opportunities for new business engagement in other institutions or organisations. Therefore, it can be concluded that the conducted research can serve as a platform for encouraging further awareness of the use of social media for personal branding of certain professions on the one hand, and that it provides image elements that can be analyzed in further scientific research on the other hand.

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## FOOD WASTE IN ROMANIA - STATISTICS AND FACTS

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### ABSTRACT

*Food waste is a global concern today. Increasing the level of food security requires a better use of food systems, including reducing food waste and losses. Food crisis and the increase in the price of food, in the context of the climate changes, the Covid pandemic or the war in Ukraine, have sharpened the approach to food waste, including in Romania. National legislation on reducing food waste was adopted relatively late, and data on food waste in Romania are limited. According to international statistics, Romania wastes 2.5 million tons of food annually, with an average of about 70 kilograms/inhabitant, placing it in the middle of the European ranking of food waste. Research has shown that almost half of waste comes from households and a third from industrial food processing. The large commercial food chains in Romania already have programs to combat food waste. Educating the population, starting from primary education, adopting national strategies and applying good practices in reducing food waste from other European countries can represent potential solutions for Romania.*

**Keywords:** food waste, food losses, Romania, strategies

### 1. INTRODUCTION

Food waste represents any loss of food or/and edible parts of food products, removed from the food chain, which can be recovered or used in other technological systems (composting, anaerobic digestion, bio-energy production, incineration, storage or disposal) organic waste water). Food waste can occur at any stage of the agri-food chain, starting with primary production, processing, distribution, transport, marketing and up to the final consumer (Fusion, 2016). According to the Food and Agriculture Organization of the United Nations (FAO), food waste includes food loss and food waste (FAO, 2013). The FAO definition is more complex, delineating two categories of wasted food. Food loss refers to a mass reduction (of the amount of dry matter) or of the nutritional value (loss of valuable components) of food, which was originally intended for human consumption. These losses are mainly caused by inefficiencies in food supply chains (poor infrastructure and logistics, lack of adapted technology, insufficient skills of employees, knowledge and management capacity of supply chain actors and lack of access to markets). Losses due to natural disasters are also included in the food loss category. Food loss: "The decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retailers, food service providers and consumers." Food waste refers to losses of food items suitable for human consumption, but which are thrown away before or after the expiry of the validity period. This is often due to the fact the food has gone bad, but there may be other reasons, such as oversupply due to markets or individual consumer purchasing habits of food commodities. Food waste: "The decrease in the quantity or quality of food resulting from decisions and actions by retailers, food service providers and consumers". As a general term, food waste refers to any food lost through spoilage or waste, so the term food losses encompasses both food waste and food losses (FAO, 2013).

Apart from the economic losses generated by land cultivation, raw material logistics, food processing, distribution and preparation, including public food services, food losses in the agri-food chain generate significant amounts of pollutants, with significant effects on global warming.

## 2. SHORT LITERATURE REVIEW

Globally, it is estimated that around 14% of food production, losses valued at 400 billion dollars, are wasted annually, between the harvesting stage and retail sale to the consumer (FAO, 2019). The United Nations Environment Program UNEP, through the Food Waste Index Report 2021, estimates that 17% of food is wasted at the level of retail sale and in population consumption (UNEP, 2021). From this perspective, reducing food waste at the retail, food service and household levels can provide multiple benefits, both for the population and the environment. The global value of food waste and its impact on the environment have not been properly assessed, so the opportunities offered by food waste reduction have remained largely unexploited and underexploited. This aspect is also highlighted by Goosens, Wegner and Schmidt (2019), who show that frequently complex evaluations, with economic, environmental or social aspects regarding food losses are incomplete or absent, and the effectiveness of some measures to reduce food waste is in few cases calculated. Mediafax (2020) estimates that about 89 million tons of food goes to waste, of which 5 million tons come from Romania, ranked 9th after Macedonia in a ranking of European waste. About 25% of wasted food in Romania is represented by cooked food. According to a study carried out by EPC Consultanța de Mediu / Environmental Consultancy for the local non-profit Association MaiMultVerde / More Green, cited by Mediafax, fruits, vegetables and bread together account for around 60% of the total food waste in Romania. Romania ranks last at European level in the recycling of food waste, with a rate of 13.1%, while the recycling rate of packaging has reached about 54.8% in the last period (Institute for Circular Economy and Environment IRCCEM, 2021). Gheorghescu and Balan (2018) proceeded to an analysis of food losses in Romania, noting that the main sources of food waste are households, followed by restaurant chains. At the consumer level, about 40% of the amount of waste is represented by perishable vegetable products and about 25% by cooked food. Schanes, Dobernig and Gözet (2018) appreciate that food waste occurs at all stages of the food supply chain, but private households have been identified as key actors in the generation of food waste. Research by Gustavsson, Cederberg and Sonesson (2011), correlated with the World Bank analysis (2014), shows that food losses are generated in relatively close proportions both in rich areas of the world and in low-income regions, so waste is not only a problem of the rich population of the planet (Table 1).

Commodity	Range of wastage (Total in chain)		Wastage by region income (1000 tonnes)		
	Minimum	Maximum	Low	High	Total
Cereals	19 % (SSA)	32% (NAf&Oce)	155,800	161,100	316,900
Oil crops and pulses	18% (Ind. Asia)	29 % (NAf,WA& CA)	123,100	121,600	244,700
Roots and tubers	33% (NAf,WA&CA)	60 % (NAf&Oce)	31,500	11,600	43,100
Fruit and vegetables	37% (Ind. Asia)	55% (NAf, WA&CA)	221,600	270,400	492,000
Meat	20% (S&SE Asia)	27% (SSA)	20,000	40,700	60,700
Fish and seafood	30% (LA)	50% (NAf&Oce)	6,700	10,700	17,400
Milk	11% (Ind. Asia)	25% (SSA)	64,700	55,000	119,700
Eggs	12% (SSA)	20% (NAf&Oce)			
Total wastage					1,294,500

*Table 1: Food waste by region and income*

*(Source: Gustavsson, Cederberg and Sonesson, 2011, World Bank, 2014, Stanciu, 2019)*

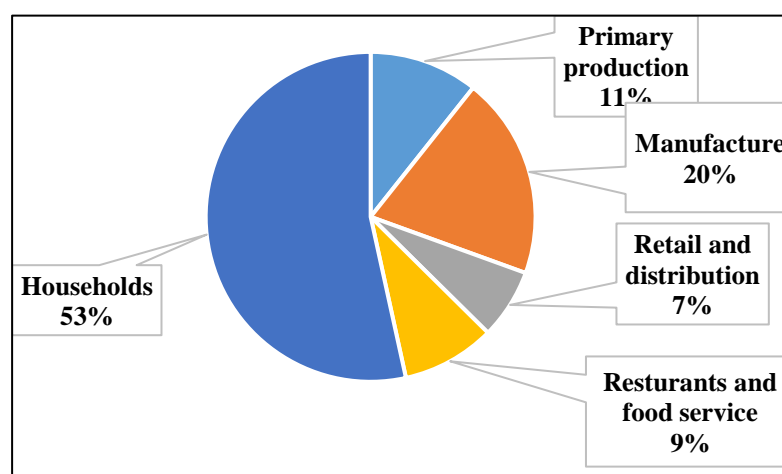
Dumitru, Iorga and Sanmartin (2021), showed that the production of food raw materials, food processing and distribution can have a significant impact on the environment. The contemporary development model of society, based on the stimulation of consumption, has stimulated the development of consumption in economically rich areas and reduced the availability of food or even hunger in poor communities. The world's population is facing food shortages and food insecurity, in the context of a significant amount of wasted food. An estimated 2.5 billion tonnes of food are lost on farms or wasted by retailers or consumers globally, about 40% of production, according to a new report by the World Wildlife Fund and British retailer Tesco Plc. The study states that about 1.2 billion tons of food are lost at the farm level, to which is added over 931 million tons of food wasted at the level of retailers and consumers (Euractiv.ro, 2021). The analysis carried out reveals food waste as a complex and multi-faceted issue, that cannot be attributed to individual variables; which requires a stronger integration of different disciplinary perspectives.

### 3. MATHERIAL AND METHOD

Google Scholar, ResearchGate, Web of Science – Clarivate were used for bibliographic documentation. For the legislative regulations, the information provided by European Commission, Romanian Government, Ministry of Agriculture and Rural Development, National Veterinary Sanitary and Food Safety Authority has been accessed. Food waste data, provided by World Bank, Ministry of Agriculture and Rural Development and European Commission, were collected, processed and analysed. The results obtained were compared with data from the specialized literature, for validation.

### 4. FOOD WASTE IN ROMANIA AND EUROPEAN CONTEXT

According to European regulations, the "Food waste" indicator is defined as the amount of food waste generated per year, in relation with the average population of the country. Food waste is represented by good-for-consumption food items that are lost along the food value chain, including production, processing and manufacturing sites, food distribution and retail, restaurants and food services, as well as households. Reducing food waste in the consumer segment is a challenge at global and European Union level. Sustainable development policies at the European level aim to reduce food losses by half in the next decade (European Commission EC, 2022). At the European level, about 131 kg of food (fresh mass) are wasted annually by each inhabitant. Their share, by sources of generation, is presented in figure 1. Households, food processing and primary production are the main sources of losses.



*Figure 1: Food waste in Europe, by origin  
 (Source: Authors, by using EC (2023))*

European statistics also present a ranking of food waste. On the average, the highest amounts of food waste per capita are registered in Portugal, Greece and Denmark, with Slovenia, Croatia and Slovakia ranking last (table 2).

Country	Waste (kg/ capita )	Country	Waste (kg/ capita )
Portugal	184	Sweden	87
Greece	191	Bulgaria	86
Denmark	221	Slovakia	83
Belgium	250	Croatia	71
Cyprus	397	Slovenia	68

*Table 2: Top food wasting countries in Europe  
 (Source: Authors, by using EC, 2023)*

In the main stages of the food chain, the losses are differentiated by country (table 3). In the stage of primary production, the biggest losses are registered in Cyprus, Greece, Bulgaria, Norway, Lithuania. With the exception of Norway, the other states can be assessed as having a lower level of technology, as a possible explanation for these losses. Cyprus also ranks first in the list of food losses in the industrial processing stage, followed by states with high technological level and high income per capita. In the trade / distribution stage, Cyprus still ranks first, with about 56 kg of food waste/inhabitant. States with a developed tourism sector, such as Malta, Portugal and Austria occupy the first positions in food waste in the area of public food services. At the level of population households, Portugal, Italy and Malta rank first on the list of food losses.

Primary production of food		Manufacture		Retail and distribution		Restaurants and food services		Households	
Country	Waste	Country	Waste	Country	Waste	Country	Waste	Country	Waste
Cyprus	49	Cyprus	190	Cyprus	56	Malta	45	Portugal	124
Greece	35	Belgium	161	Portugal	21	Portugal	36	Italy	107
Bulgaria	33	Denmark	102	Denmark	17	Austria	30	Malta	92
Norway	30	Netherland	59	Estonia	15	Cyprus	2. 3	Luxembourg	91
Lithuania	29	Ireland	44	Greece	14	Portugal	2. 3	Greece	87
.....									
Austria	2	Norway	5	Belgium	6	Italy	3	Croatia	53
Hungary	2	Sweden	5	Hungary	4	Hungary	2	Ireland	48
Germany	2	Slovenia	5	Slovakia	3	Lithuania	2	Slovenia	36
Malta	1	Croatia	2	Bulgaria	2	Bulgaria	2	Spain	30
Slovenia	0	Slovakia	1	Croatia	1	Slovakia	1	Bulgaria	26

*Table 3: Top European food waste, by stage of food chain and countries  
 (Source: Authors, by using EC, 2023)*

In the last section of the ranking, there are states that achieve low rates of losses at different stages of the food chain, various European states are included: primary production of food (Austria, Hungary, Germany, Malta, Slovenia), manufacture (Norway, Sweden, Slovenia, Croatia , Slovakia), retail and distribution (Belgium, Hungary, Slovakia, Bulgaria, Croatia), restaurants and food services (Italy, Hungary, Lithuania, Bulgaria, Slovakia), households (Croatia, Ireland, Slovenia, Spain, Bulgaria). The results of a European-level analysis regarding the causes of food losses would be interesting, considering the fact that the data presented in table 3 are extremely heterogeneous. If in the case of households, factors such as education, population income or consumer education can be considered essential in reducing food losses, in other states where important rates of waste are recorded, it can be appreciated that the

specifics of the economy, the technological endowment or the preponderance of some sectors of food production are important factors in this process. Although Romania is not present in the European food waste statistics of Eurostat, the EC database (EC, 2023), the annual food losses are estimated by the World Bank analysis at around 70 kg/inhabitant, which accumulates over 2.5 million tons of food. Romania adopted the legislative framework for reducing food waste. The normative acts in force that establish the actions to be taken by operators in the food industry, according to a hierarchy of food waste prevention, are represented by "Law no. 217/2016 regarding the reduction of food waste, with subsequent amendments and additions", and the "Government Decision no. 51/2019 for the approval of the Methodological Norms for the application of Law no. 217/2016" (National Veterinary Sanitary and Food Safety Authority A.N.S.V.S.A, 2023). National legislation provides for the development of an annual plan to reduce food waste, which will be presented to the competent authorities in the field of food waste, upon their request; carrying out at least one annual internal communication with employees regarding the objective of reducing food waste; adapting production to market conditions - supply-demand, ensuring traceability - culture plan depending on the market; education and information measures related to the prevention of food waste, the quantification of food waste; measures to redistribute/use surplus food. Statistics of the Ministry of Agriculture and Rural Development MADR (2023) show that 49% of food waste occurs at the level of population individual households; the food industry sector generates 37% of waste; public food 5%, and the agricultural sector about 2%. Stanciu (2019) pointed out that Romania ranks 9th in the European top regarding food waste. The greatest waste of food is registered in the urban environment, while in rural communities' traditional methods of valorising food scraps are used in households. In the urban environment, more than 95% of the municipal waste ends up in the landfill. The costs associated with food waste are of at least two kinds: economic costs and environmental costs. Wasted food also means economic losses for the population, in the context where approximately 50% of Romanians spend approximately 40% of their monthly income on food. These aspects are all the more worrying because in Romania over 46% of children from villages under the age of 6 have a high risk of poverty and malnutrition, 60% of rural families cannot assure their daily food and, at the country level, approximately 5 million Romanians live at risk of poverty. The number of Romanians threatened by poverty in November 2021 was 4.6 million, as an important percentage of the country's population obtains income below the poverty line, lives in households with low work intensity and in conditions of severe material deprivation. The amendment and adaptation of the national legislation on the reduction of food waste stipulates a series of measures:

- Creation of an electronic platform where economic operators will have the obligation to report data on food waste. They will be required to make every effort to conclude master contracts for donating food that due to expire and must train their own employees to implement food waste prevention plans. The budget effort is estimated at around 40,000 euros.
- Creation of electronic applications to highlight food products at the limit of expiration, including a home record of food products, with the help of a table in which the quantities and expiration date are entered.
- Creation of platforms that index all the offers of registered restaurants or stores, which sell products at a reduced price, to be consumed in the following 24 hours, to help consumers in their search for cheaper food.

All the big store chains in Romania already have programs to combat food waste. Some food retail networks also provide transport for some of the partner non-profit associations (which distribute food to the population), or the food is supplied directly to social canteens.

## 5. CONCLUSION

Food waste is a global issue, with crucial economic effects and a significant negative impact on the environment. According to the 2030 Agenda for sustainable development, adopted by the UN, Romania has undertaken to reduce food waste by 50% by 2030 (FAO, 2022). Food waste remains a difficult phenomenon to manage, having effects on several levels: for the consumer, in stores and in restaurants or canteens. Vigorous measures to reduce food losses at individual or global level, based on food policies and strategies linked to consumer education, are needed.

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## THE ROLE OF MARKETING CONCEPT FOR BRAND VALUE

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### ABSTRACT

*In this paper, we examined the role of the marketing concept in building and maintaining brand value. Therefore, the main goal of this paper was to explore the role of marketing concept for brand value. Brand value is a critical factor in the success of any business because it represents the monetary value of a brand based on its perceived value to customers. On the other hand, the basic idea of marketing is to harmonize the company's capabilities with the wishes and needs of potential customers in order to achieve the goals of both - the company and potential clients. So, the marketing concept is a business philosophy that emphasizes the importance of understanding, and satisfying customer needs in order to achieve business goals and it is a key driver of brand value. Based on main goal i.e. estimated role of marketing concept for brand value, it results the purpose of this paper, which is to explore the importance of the marketing concept in creating and enhancing brand value. In addition, some challenges were noticed that businesses might face in the process of implementing the marketing concept for brand value. The paper starts with a literature review of the marketing concept and its impact on brand value. Desk research was used to explore the link between the two concepts and to identify the marketing factors that contribute to the creation of brand value and its increase their brand value. The findings suggest that the marketing concept plays an important role in creating and enhancing brand value by focusing on customer needs and satisfaction, delivering high-quality products and services, and building strong brand image and customer loyalty and those businesses should strive to incorporate this philosophy into their business operations.*

**Keywords:** *Brand value, Marketing, Marketing concept*

### 1. INTRODUCTION

The concept of marketing has undergone significant changes over the past few decades. In the early days of modern marketing, the focus was on selling products rather than understanding customer needs. This approach, known as the production concept, emphasized mass production and low prices, with little regard for customer preferences. However, as competition intensified, businesses began to realize the importance of understanding customer needs and preferences in order to stay ahead of the game. This led to the development of the marketing concept, which emphasizes the importance of customer satisfaction and understanding as the key to achieving business goals. In today's highly competitive business environment, creating and enhancing brand value has become an essential strategic goal for businesses. The marketing concept has been widely recognized as a key driver of brand value.

The marketing concept is a business philosophy that emphasizes the importance of understanding customer needs and wants and delivering superior value to customers through the development and delivery of high-quality products and services. The marketing concept emphasizes the creation of customer value, customer satisfaction, and building strong customer relationships as the key drivers of business success. Brand value, on the other hand, refers to the monetary value of a brand based on its perceived value to customers. Brand value refers to the perception of a brand in the minds of customers and the overall value that the brand represents to its customers and shareholders. Nevertheless, estimation of total brand value also represents the future level of revenues. Building brand value requires a concerted effort by businesses to deliver high-quality products and services that meet customer needs and expectations, and to create a strong and positive brand image that resonates with customers. Brands with high value are those that customers perceive as being of high quality, reliable, and meeting their needs and expectations. Its market share, revenues, customer loyalty and the strength of its reputation often determine the value of a brand.

## **2. LITERATURE REVIEW**

The marketing concept was first introduced by Philip Kotler in the 1960s. Since marketing concept become a dominant business philosophy, has been widely adopted by businesses around the world. The marketing concept has been shown to have a positive impact on brand value. According to Aaker (1991), a brand is a "name, term, design, symbol, or the other feature that identifies one seller's product as distinct from those of other sellers." Aaker (1991) suggests that a brand is more than just a name or symbol, but it is an intangible asset that represents a set of values, beliefs, and associations that customers have with a product or service. In addition, Aaker (1991) suggests that a brand's value is based on the perception that customers have of the brand and the overall value that the brand represents to its customers and shareholders. Building brand value requires a concerted effort by businesses to deliver high-quality products and services that meet customer needs and expectations, and to create a strong and positive brand image that resonates with customers. One of the key factors that contribute to the creation of brand value is product quality. According to Zeithaml et al. (1990), product quality, (i.e. service is intangible form of the product) is one of the most important factors that customers consider when evaluating a brand. Another important factor that contributes to the creation of brand value is the customer experience. According to Pine and Gilmore (1998), the customer experience refers to the total sum of all the interactions that customers have with a brand, from the initial awareness of the brand to the post-purchase experience. The customer experience can have a significant impact on brand value. Brand image is another critical factor that contributes to the creation of brand value. According to Keller (1993), brand image refers to the set of perceptions and beliefs that customers have about a brand. Brand image is influenced by a variety of factors, including the product itself, the brand's marketing and advertising efforts, and the overall customer experience. Brand loyalty is another important factor that contributes to the creation of brand value. According to Reichheld and Sasser (1990), brand loyalty refers to the degree to which customers are committed to a brand and are willing to purchase it repeatedly over time. Brand loyalty is critical to building brand value, as loyal customers are more likely to recommend the brand to others and remain loyal to the brand over time. Cervantes and Martínez (2018) investigates the role of marketing in creating brand value across different cultural contexts. The authors use a quantitative methodology to examine how marketing efforts influence brand value in different countries. The study finds that marketing efforts have a stronger impact on brand value in collectivist cultures than in individualistic cultures, highlighting the importance of considering cultural context in brand value creation. Jiang and Wang (2019) examines the relationship between service quality (intangible product), customer satisfaction and brand value using a quantitative approach.

The authors find that both service quality and customer satisfaction have a positive impact on brand value, highlighting the importance of delivering high-quality services that meet customer needs and expectations. Dost and Karabulut (2020) investigates the impact of corporate social responsibility (CSR) on brand value in the Turkish banking industry. The authors use a quantitative methodology to examine the relationship between CSR and brand value, finding that CSR initiatives have a positive impact on brand value. The study suggests that businesses can enhance brand value by investing in CSR initiatives that align with their values and resonate with their target customers. Ahn, J. et al. (2020) examines the relationship between brand authenticity, brand trust, and brand value using a quantitative approach. The authors find that brand authenticity has a positive impact on brand trust, which in turn has a positive impact on brand value. The study suggests that businesses can enhance brand value by building authentic and trustworthy brand images that resonate with customers. Jang and Namkung (2021) in their study investigates the impact of customer engagement on brand value, with a focus on the moderating role of product involvement. The authors use a quantitative methodology to examine how customer engagement and product involvement influence brand value. The study finds that customer engagement has a positive impact on brand value, and that this relationship is stronger for highly involved products. The study suggests that businesses can enhance brand value by engaging customers through targeted marketing efforts that align with their product preferences and interests. Mentioned studies, as well as not mentioned studies caused of limited space, provide further insight into the role of marketing in creating and enhancing brand value, highlighting the importance of factors such as product quality, customer experience, brand image, brand loyalty, cultural contexts (culture), service quality (intangible product), corporate social responsibility (CSR), brand authenticity and customer engagement.

### **3. METHODOLOGY**

To examine the role of the marketing concept in creating and enhancing brand value, this paper employed a various research methodology. Some of the used general methods of scientific research are as follows: qualitative research, systematic observation, descriptive method, causal method, inductive and deductive method and methods of analysis and synthesis in order to research, analyze, describe and conclude. The paper used case studies to illustrate how successful brands should implement important factors into the marketing concept to create brand value. The case studies were selected based on their reputation for delivering high-quality products and services, creating a positive customer experience, building a strong brand image and cultivating brand loyalty. Data collection for this paper was conducted through a review of existing literature, including academic articles, books, and reports on the selected companies. In addition, implemented data include collected interviews with company representatives and experts in the field of marketing done by others. Data analysis for this paper involved a thematic analysis of the data collected from the literature review and interviews i.e. this secondary data analysis involves analyzing data that has already been collected by others, such as company reports or market research studies. This approach was useful for this paper for evaluation of trends in total brand value over time or across different industries. In choosing a research methodology, was important to consider the specific research approach being addressed, as well as the available resources and time constraints. Each methodology has its own strengths and limitations, and the choice of methodology was depended on the partial research objectives and the nature of the data being collected.

### **4. THE MARKETING CONCEPT AND BRAND VALUE**

#### **4.1. Leveraging the Marketing Concept to Increase Brand Value – challenges for firms**

Businesses can leverage the marketing concept to increase brand value in several ways what make challenges for business entities. Some of the most effective ways include various business

activities, such as conduction of market research, develop of customer-centric products and services, creation of a strong brand identity, building strong customer relationships and investing in marketing.

- Conducting market research is critical to understanding customer needs and preferences. By understanding customer needs and preferences, businesses can develop products and services that meet those needs, which can lead to increased customer satisfaction and loyalty.
- Developing customer-centric products and services: By using market research to understand customer needs and preferences, businesses can develop products and services that are tailored to meet those needs. This can lead to increased customer satisfaction and loyalty, which can help to build brand value.
- Creating a strong brand identity: Creating a strong brand identity is critical to building brand value. A strong brand identity can help to differentiate a business from its competitors and establish a strong position in the market. Businesses can create a strong brand identity by developing a unique brand message and using consistent branding across all marketing efforts.
- Building strong customer relationships is essential to building brand value. Businesses can build strong customer relationships by providing excellent customer service, engaging with customers on social media, and responding to customer feedback in a timely and effective manner.
- Investing in marketing efforts also can help to build brand value by increasing brand awareness and visibility. Businesses can invest in marketing efforts such as market analyses, estimation of the profit potential of the selected market segment, product life cycle analyses, distribution, promotional activities including public relations and social media marketing etc. to increase brand awareness and establish a strong brand presence in the market.

Although all the mentioned marketing efforts are complex, the estimation of the profit potential of the selected market segment requires a careful analysis of various factors and special approach. In order to determine it, it is necessary to consider the determination of the profit potential is a complex procedure. That procedure includes the estimation of the total market potential on the supply side, the estimation of the company's market potential, the estimation of the total market potential on the demand side, the determination of the average gross profit margin of the industry and the estimation of the time attractiveness of the product in question (Novak, 2019). It is obvious that the concept of profit is an important part of the overall marketing concept. Following the derived concept, it is possible to derive the formula for estimating the profit potential of the target market segment  $PPP_{max}$  for a specific company:

$$PPP_{max} = Qd \cdot \left( \frac{Si}{100} \right) \cdot \left( \frac{\bar{P}_{bpm}}{100} \right) \cdot Pt$$

Where is  $Qd$  = total market potential on the demand side,  $Si/100$  = company share on the market,  $\bar{P}_{bpm}/100$  = average gross profit margin of the industry,  $Pt$  = attractiveness weight of the industry in time period  $t$ . The given formula has a useful value, under certain conditions and circumstances (Novak, 2019)

#### 4.2. The Role of the Marketing Concept in Building and Maintaining Brand Value

The marketing concept is a business philosophy that emphasizes the importance of understanding and fulfilling customer wants and needs in order to achieve customer

satisfaction. According to that marketing concept, the key to business success lies in research & development (RD) and delivering superior value to customers, which value is manifesting in high-quality products and services (added value) that will insure that satisfaction. This philosophy is based on the idea that taken focus of customers' needs and wants, are at least on the same level like on their own interests. Even more, such philosophy place the customer at the center of all business activities. Cause of that, business approach like this also has been widely adopted by companies, because it insure and drive growth and profitability. Such marketing concept involves a number of key principles mentioned in previous chapter. The brands, on the other hand are assets from the past, in the present and for the future all along in the processes of their creation, managing, valuation and evaluation, even beyond their live circle (Novak et al., 2018). The concept and construct of the brand, as perceptions in stakeholder's minds (and as an added value that a brand brings either to a consumer or to the organization) is based on a strength, value and equity of the brand (Novak et al., 2022). Superior value refers to the benefits that customers derive from a product or service in relation to its cost. Customers are more likely to purchase and remain loyal to a brand that delivers superior value compared to its competitors. Therefore, the marketing concept, besides marketing business activities, emphasizes the creation of customer value, customer satisfaction, and building strong customer relationships and play an important role in creating and enhancing brand value. By focusing on mentioned factors, businesses can create a positive brand image and build strong customer loyalty, which can enhance brand value over time. So, it is obvious, that marketing concept plays a critical role in building and maintaining brand value. By focusing on marketing activities and customer satisfaction, businesses can create products and services that meet customer expectations and preferences, which can lead to increased loyalty and revenue. Increased loyalty lead to several benefits for a business, including increased market share, reduced marketing costs, and higher profits. Brand value is the monetary value of a brand based on its perceived value to customers. A number of combination of factors often determines brand value. Some of them are mention in this paper. Such as customer loyalty, product quality, customer experience, customer engagement, brand authenticity, a strong brand identity (the strength of the brand's reputation), strong customer relationships, etc. By creating a strong and positive brand, businesses can enhance brand value by increasing customer loyalty (increasing customer retention) and attracting new customers. By building a strong brand with high value, businesses can differentiate themselves from competitors and establish a strong position in the market.

#### *4.2.1. Challenges to Implementing the Marketing Concept*

While the marketing concept can be an effective way to increase brand value, there are several challenges that businesses may face when implementing the marketing concept. Some of the most common challenges include:

- 1) Limited resources: Businesses may have limited resources, including human resource, technology, finance, organizational aspects, marketing research & development and/or marketing efforts.
- 2) Resistance to change: Some businesses may be resistant to change and may be hesitant to adopt new marketing strategies or approaches because lack of knowledge.
- 3) Lack of customer understanding: Businesses may have a limited understanding of customer needs and preferences, which can make it difficult to develop customer-centric products and services with added value.
- 4) Limited brand recognition: Businesses may have limited brand recognition, which can make it difficult to establish a strong brand presence in the market because of various reasons.

#### *4.2.2. Overcoming Challenges to Implementing the Marketing Concept*

Despite these challenges, there are several ways that businesses can overcome them and successfully implement the marketing concept to increase brand value. Some of the most effective ways include:

- 1) **Prioritizing market research:** Businesses should prioritize market research to gain a better understanding of customer needs and preferences. This can help businesses to develop customer-centric products and services that meet customer needs, which can lead to increased customer satisfaction and loyalty.
- 2) **Embracing change:** Businesses should be open to new marketing strategies and approaches, and should be willing to adapt to changes in the market.
- 3) **Building a customer-centric culture:** Businesses should build a customer-centric culture that prioritizes customer satisfaction and understanding. This can help to create a customer-focused mindset among employees, which can lead to increased customer satisfaction and loyalty.
- 4) **Investing in brand recognition:** Businesses should invest in marketing efforts to increase brand recognition and establish a strong brand presence in the market. This can help to differentiate a business from its competitors and establish a strong position in the market. After all, brand has significant value only when it achieves revenue and profits based on recognition (Novak, 2019b)

#### **4.3. Some factors that Build and Maintain Brand Value**

The strategic brand management is achieved by having a multi-disciplinary focus, which is facilitated by a common vocabulary (Wood, 2022) what is also in the line with Novak's propose (2019) of combined model in "integrative marketing management (IMM)" (Novak, 2019) that constitutes the development of an integrated marketing management strategy, based on Marketing Concept (MC). That, measure post-buying products experience of customers and it's very important for a brand value. Build upon its tangible (as identifying symbols such as names, logos, graphics, colors and sounds such as music, jingles, voice etc.) and intangible (specific promise, personality, positioning, emotion etc.) characteristics of a brand, branding concept is powerful in examining and explaining in the era of economic marketing or value-based marketing (Srivastava and Shocker, 1991; Simon and Sullivan, 1992). Showing the undivided synergy between practice and theory, focused on recognizing and describing, by nowadays, some important factors are influential for building and maintaining the brand value. Some of them are more and some less recognized (Novak et al., 2022). For this paper were extract some of studies in order to present those marketing factors recognized as important in building the success of any business. A strong brand can increase a company's stock price by up to 7%. The data comes from a study conducted by Interbrand, a brand consultancy firm. The study examined the financial performance of 100 global brands over a 12-year period (Interbrand, 2017). According to a study by Gallup (2014), fully engaged customers represent a 23% premium in terms of share of wallet, profitability, revenue, and relationship growth compared to the average customer. Data were provided by a Gallup study that looked at the impact of customer engagement on a range of business metrics (Gallup, 2014). The average consumer needs to see a brand message at least seven (7) times before they will consider purchasing from that brand. That claim comes from study provided by Pam Moore, a social media and marketing expert (Moore, 2014). Research that had in focus buying consumer preferences find out that 59% of consumers prefer to buy new products from brands they know and trust. Nielsen, a global information and measurement company, conducted the study (Nielsen, 2015). Companies that use customer-centric marketing strategies see a 23% increase in customer satisfaction and a 22% increase in revenue. The statistic that companies using customer-centric marketing strategies see a 23% increase in customer satisfaction and a 22% increase in revenue

comes from a study (Rigby et al., 2002). Social media marketing can increase brand recognition by up to 80%. The statistic that social media marketing can increase brand recognition by up to 80% comes from MarketingSherpa, a marketing research company (MarketingSherpa, 2017). Brand loyalty is important for businesses, as a 5% increase in customer retention can lead to a 25% increase in profit. The statistic that a 5% increase in customer retention can lead to a 25% increase in profit comes from a study by Bain & Company, a global management consulting firm (Reichheld, 1996). These marketing factors recognized in studies (i.e. statistics) highlight the importance of marketing, building and maintaining a strong brand and its identity to increase customer loyalty, engagement and profitability. By investing in marketing efforts, companies can improve brand recognition, customer satisfaction, and ultimately, the overall value of their brand.

Data Point	Source
<b>Brand awareness</b> is the top priority for 60% of marketers	HubSpot (2021)
Brands with a <b>strong digital presence</b> see a 2.8 times higher revenue growth	Google/Talk Shoppe (2014)
A <b>brand's perceived value</b> can increase by up to 20% when it is associated with a <b>cause or purpose</b>	Cone Communications (2017)
<b>Personalized e-mail campaigns</b> have a 29% higher open rate and a 41% higher click-through rate than non-personalized campaigns	Campaign Monitor (2019)
Companies that prioritize <b>the customer experience</b> see a 60% higher profit growth than their competitors	Deloitte (2019)
73% of <b>consumers point to experience</b> as an important factor in their purchasing decisions	PwC (2018).
80% of <b>consumers</b> are more likely to purchase from a company that offers <b>personalized experiences</b>	Epsilon (2020).
88 % of consumers say that authenticity is a key factor when deciding what brands they like and support.	Stackla (2021)
68% of <b>consumers</b> say they <i>would stop doing business</i> with a <b>company</b> if they perceived it to be <b>unethical</b>	Edelman (2018)
72% of <b>marketers</b> say that <b>content marketing</b> is their <i>most effective SEO tactic</i>	Content Marketing Institute (2020)
<b>companies</b> that provide an <b>exceptional customer experience</b> generate 5.7 times <i>more revenue than their competitors</i>	PwC (2018).

*Table 1: Some recent research figure - evidence of the quantitative marketing impacts on variables that built stronger brand value  
 (Source: Own research)*

These data points provide additional insight into the ways in which marketing can affect brand value, including through building brand awareness, leveraging digital channels, associating a brand with a cause or purpose, and delivering personalized and customer-centric experiences. The data/numbers of the Forbs (2019) report "The world's most valuable brands" is based on an analysis of the brand values of 500 of the world's most valuable companies, as well as their marketing investments and strategies shows that:

- the companies with the highest brand value, such as Apple and Google, also tend to have the highest levels of marketing investment. This suggests that there is a strong positive relationship between marketing investment and brand value, although of course this relationship is likely to be influenced by many other factors as well.

- the companies that prioritize marketing and invest in it consistently over time tend to have higher brand values than those that do not.
- the companies that spent more on marketing saw greater increases in brand value over a five-year period than those that did not prioritize marketing.

It is important to note that this is just one study and there are many factors that can impact brand value beyond marketing. However, it does provide some evidence of the importance of marketing in building strong brands. Forbes (2019).

Some infographic:

- 1) Summarized Branding Statistics found in 2021 and forecasting 2022 (Mohsin, 2022):
  - 88 % of consumers say authenticity is important when deciding what brands they like and support.
  - 46 % of surveyed consumers say they would pay more for brands they trust.
  - Using a signature color can increase brand recognition by 80 % .
  - Consistent presentation of a brand has seen to increase revenue by 33 %.
  - 66 % of consumers think transparency is one of the most attractive qualities in a brand.
  - Two-thirds (64 %) of consumers around the world said that they would buy from a brand or boycott it solely because of its position on a social or political issue.
  - 73 % of consumers cite customer experience as an important factor in their purchasing decisions.
  - 77 % of consumers buy from brands that share the same values as they do.
  - 79 % of people say that user-generated content highly impacts their purchasing decisions.
- 2) Summarizes some key data points related to the influence of branding and design on business success, including the fact that consistent branding can increase revenue by up to 33%. 99designs (2021).
- 3) Visualization of the impact of positive customer experience on brand loyalty and the different factors that contribute to the customer experience. PwC (2021).
- 4) Summarizes some key data points related to the role of social media in building brand value, including the fact that 54% of social browsers use social media to research products. Hootsuite (2021).

## 5. CONCLUSION

As conclusion, it is possible to claim that marketing concept plays a critical role in building and maintaining brand value. By focusing on conduction of market research, develop of customer-centric products and services, creation of a strong brand identity, building strong customer relationships and investing in marketing, on the basis of customer orientation and customer satisfaction, businesses can create products and services that meet customer needs and preferences, which can lead to increased customer satisfaction and loyalty. Estimating the profit potential of the target market segment PPP<sub>max</sub> is a path that lead to success, considering brand value. This conclusion comes from examination of numerous data showed in this paper. In addition, increased customer satisfaction and loyalty can lead to several benefits for a business, including increased market share, reduced marketing costs and higher profits. While there are several challenges to implementing the marketing concept, businesses can overcome them by prioritizing market research, embracing change, building a customer-centric culture and investing in brand recognition. By leveraging the marketing concept, businesses can increase brand value and establish a strong position in the market.



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## RECOGNITION OF THE COUNTRY OF MANUFACTURE AND THE COUNTRY OF BRAND

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### **ABSTRACT**

*As a result of globalization, in recent decades many companies have transferred their production to countries with lower production costs, which led to the breakdown of the term "Country-of-Origin" (COO) into the terms "Country of Manufacture" (COM) and "Country of Brand" (COB). Numerous studies suggest that this has enabled a more complete understanding of how the country-of-origin affects the brand equity and the value of the brand itself. When consumers want to evaluate products and services, they consider factors such as brand name and country-of-origin perception. Researchers assume that consumers know/recognize the brand's origin, which has a significant impact on product quality judgment, brand attitudes and customers behavior. The article presents the results of the preliminary desk research and online survey research, which made it possible to set the framework for further research. The questionnaires that were filled out during the two weeks of research included respondents from the cities of Mostar, Banja Luka and Sarajevo. A final set of 27 brands from six countries and four product categories (cars, household appliances, mobile phones, and sports clothing and footwear) was selected for the research. The goal of this research is to find out whether the Country of Brand (COB) is important to consumers in Bosnia and Herzegovina through the above categories. It was found that consumers show an understanding that the Country of Brand (COB) is different from the Country of Manufacture (COM). Also, the level of knowledge about the Country of Brand was determined by survey research for all the listed countries and categories/brands. Implications and suggestions for future research in this area are given in the concluding remarks.*

**Keywords:** *Country of Brand, Country of Manufacture, Knowledge about the product/brand*

### **1. INTRODUCTION**

The Country-of-Origin (COO) is considered one of the external signs used to influence competitive positioning and success in the global market. Country-of-origin has an influence on consumer perception and behavior, purchase intention, consumer choices and overall product evaluation (Bilkey and Nes, 1982; Han and Terpstra, 1988; Peterson and Jolibert, 1995; Yasin, Noor and Mohamad, 2007.; Lee and Lee, 2011; Shahin, Kazemi, and Mahyari, 2013). International researchers are engaged in examining various factors that could influence the processing of country-of-origin signs, such as brand name, involvement of product categories, knowledge about a particular country-of-origin etc. (Chao, 1993; Chao, Wuher and Werani, 2005; Roth and Romeo, 1992). Among them, the role of product knowledge has been extensively studied (Lee and Lee, 2009). Despite the existence of country-of-origin stereotypes, consumers with different levels of product/brand knowledge tend to use country-of-origin to evaluate them in different ways (Biswas and Sherrell, 1993; Cordell, 1997), implying that country-of-origin exists at the core of brand value, brand equity, consumer judgments and consumer choice process. Studies suggest that breaking down the concept of country-of-origin into its components allows a more complete understanding of how country-of-origin affects brand equity (Ahmed and d'Astous, 2008; Chao, 1993; Fetscherin and Toncar, 2010; Hamzaoui and Merunka, 2007; Thakor and Lavack, 2003). Consumers often know where the brand originates from and where the product is manufactured (Ahmed and d'Astous, 2008). The consumer's perception of the country-of-origin may differ from reality.

Perceptions of a country of brand (COB) or country of manufacture (COM) may differ from consumer to consumer and differ from actual locations. There are assumptions in the country-of-origin literature that consumers have limited knowledge of a brand's origin and that the country of brand is probably not as important to consumers as the literature suggests. As businesses become increasingly global, it is important for researchers to understand how consumers incorporate country-of-origin information with their product knowledge into decision making (Lee and Lee, 2009). This research aims to find out how much importance consumers in Bosnia and Herzegovina attach to the country of brand in relation to the country of manufacture, whether they distinguish the country of brand from the country of manufacture, and how much knowledge they have about the country-of-origin.

## **2. LITERATURE REVIEW**

### **2.1. Country-of-origin and its components**

Ever since 1965 and Schooler's discovery that the country-of-origin image (COI) can influence the consumer's opinion about the product, this concept has been extensively studied. The country-of-origin image effect includes the product in general, product categories, specific product types, and specific brands (Bilkey and Nes, 1982). In the literature, some authors conceptualize country-of-origin image at the country level (macro) (Martin and Eroglu, 1993) and at the product level (micro) (Pappu, Quester and Cooksey, 2006). The macro image of the country-of-origin is defined according to Martin and Eroglu (1993, p. 193) as "the total number of all descriptive, inferential and informational beliefs that exist about a certain country". Nagashima (1970) defined the micro image of a country-of-origin as "the overall belief about the products of a particular country" (p. 68). Nagashima's conceptualization of country-of-origin image was at the product level and has been widely accepted (Han and Terpstra, 1988; Roth and Romeo, 1992). It is generally accepted that external cues such as price, brand name, and country-of-origin information influence the evaluation of consumer products (Bilkey and Nes 1982; Özsomer and Cavusgil 1991). If the consumer has no knowledge about the product/brand and in case other attributes of the product are missing, the country-of-origin or "made in" label is used to evaluate different products/brands depending on the stereotype of the country (Ulgado and Lee, 1993). This reflects the positive or negative perception that consumers have towards a particular country of origin, i.e. its image (Pappu et al., 2007; Yasin et al., 2007; Ahmed et al., 2012). The progress of globalization has given great attention to the country-of-origin as one of the factors influencing international competitiveness (Bamber et al., 2011). In recent years, country-of-origin has been viewed as a multidimensional construct involving multiple factors that abstract the distinction between the country of manufacture (COM) or assembly and the country of brand (COB). The reason for this is the globalization of production, the growth of multinational organizations, large foreign investments in less developed and developing countries and companies that transfer production to countries with lower production costs (Prendergast, Tsang and Chan, 2010; Mostafa, 2015). The product may have a brand developed in country X, and is manufactured in country Y or Z. A country of brand (COB) is "the place, region or country to which target consumers perceive the brand to belong" (Thakor and Kohli, 1996, p. 26), the country from which the brand originates. Country of manufacture (COM) is the country that, according to consumers, produces the branded product. Although the country of brand exists in the memory of the consumer and represents an association with the brand (Keller, 1993), the country of manufacture is factual information that can change over time and space (Shahrokh and Azodi, 2013). With more outsourcing and intensification of globalization, interest in the country-of-origin has shifted to its components. Liu (2012) studied the stereotype effect of China and concluded that its negative effect is transferred to all other categories of products bearing the "made in China" label. Furthermore, Haubl and Elord (1999) and Hui and Zhou (2003) argue that strong brands are negatively

evaluated when they are produced in a less favorable country than their country of brand (COB). However, in the presence of a well-known brand name and specific product attributes, country-of-origin effects were significantly reduced, and consumers based their entire product evaluation on the brand name (Ulgado and Lee, 1993). Ulgado and Lee (1993) and Prendergast et al. (2010) emphasized the significant influence of the country of brand on consumer intention. Meanwhile, Ahmed and d'Astous (1995) and Saeed et al. (2013) emphasized the importance of the country of manufacture for consumers in contrast to other sub-components of the country of origin (eg COB, COA – Country of Assembly, COD – Country of Design). Chao (1993) came to the conclusion that both the country of manufacture and the country of brand are equally important for consumers. Johansson (1989) points out that the hybridization of products due to globalization has reduced the importance of the country-of-origin in the product evaluation process. This may explain why many earlier research findings on how country-of-origin affects product evaluation are largely uncertain (Bilkey and Nes, 1982; Ozsomer and Cavusgil, 1991), as they do not distinguish between a country of brand and country of manufacture. Iyer and Kalita (1997) pointed out that the country of brand and country of manufacture as components of country-of-origin are important. Phau and Prendergast (2000) agree with Iyer and Kalita (1997) and claim that the traditional conceptualization of the country of origin in the trend of globalization is inappropriate, and the country of brand is a more precise and relevant term in this matter. Phau and Prendergast (2000) argued that consumers associate the brand with the country of origin, although they are aware that in most cases the product of a particular brand is not made in the country of brand itself. Because of this, the country of brand is conceptually different from the one in which it is made. The same authors confirmed that consumers get used to the reality that products bearing the same brand are not necessarily produced in the brand's country of origin. The quality of these products is guaranteed under strict supervision and control. For this reason, countries of manufacture may not be as important as they were a few years ago. On the other hand, the countries of brand can become more prominent and influential because they can arouse consumer emotions and associations that are associated with a certain country or culture. As each country has its own resources and economic structure and its own unique social and cultural history, the brands born from it can inevitably be embedded in these traces. Therefore, it is argued that the country of brand will stimulate consumer associations related to the relative advantages and status of a particular country, as well as the social and cultural aspects of the country and the specific lifestyles that consumers desire, which can add value to branded products (Wu and Fu, 2007.). The sub-components of the country-of-origin construct have proven to be an important contribution to the study of its effects on the evaluation of consumer products (Hamzaoui-Essoussi and Merunka, 2006). Wong et al. (2008) found that country-of-origin sub-components did not affect Chinese consumers, but Josiassen (2010) conducted a study on Australian consumers that showed the opposite results. The countries of manufacture where branded products are produced may differ over time (Hamzaoui-Essoussi and Merunka, 2006). Most consumers use the country of brand as an external informational sign when evaluating a product. These consumers have stronger ties to the country of brand.

## **2.2. Customer Based Brand Equity (CBBE)**

Two approaches have evolved from the literature to measure the value that a brand adds to a product, namely the financial and consumer approaches. According to the first approach, financial brand equity (value) is based on the financial value that the brand generates for the company (Simon and Sullivan, 1993), while consumer based brand equity (CBBE) focuses on how consumers perceive brands as a result of marketing activities related to the brand. Brand marketing is largely devoted to increasing brand equity, which is usually considered to include brand awareness and image components (Keller, 1993).

Image consists of the knowledge and beliefs of consumers about various product and non-product attributes of the brand. A country of brand is one such cue that plays a potentially important role in determining brand image (Thakor and Lavack, 2003).

#### *2.2.1. The influence of country-of-origin image on Consumer Based Brand Equity (CBBE)*

Few studies have been conducted on the influence of country of brand image on customer based brand equity. As an example, we can mention the research by Shimp, Samie and Madden from 1993 and Shocker, Srivastava and Ruekert from 1994, and the somewhat more recent one by Pappu et al. (2006, 2007) and Yasin et al. (2007). According to Pappu et al. (2007) and Lin and Kao (2004) the country-of-origin image could influence (positively or negatively) the brand equity of the brand originating from that country. Jaffe and Nebenzahl (2006, p. 63) argue that an extremely positive country-of-origin image will add a positive image to the brand and as a result affect its value and equity. The country-of-origin image is also transferred to certain product categories, in such a way that beliefs about the country of origin extend to product categories (Agarwal and Sikiri, 1996). This type of transfer of the country-of-origin image also reflects on brands, therefore the image the country-of-origin image, in addition to influencing brand associations, can also influence other key dimensions of brand equity, such as quality and brand loyalty. As research by Lim and O'Cass (2001) showed, most consumers can recall and discover the countries of origin of the brand; therefore, it is expected that the country of brand has a stronger effect than the country of manufacture on the formation of customer based brand equity (CBBE). Unfortunately, there are only a few studies that investigate the influence of country-of-origin subcomponents on the formation of customer based brand equity.

#### *2.2.2. The effect of product or brand knowledge on Consumer Based Brand Equity*

Consumer based brand equity can also be defined as the differential effect of brand knowledge on consumer response to brand marketing (Keller, 1993, p.8). Brand knowledge is conceptualized according to the associative network memory model in terms of two components, brand awareness and brand image (ie brand association). Consumer based brand equity appears when the consumer is familiar with the brand and has some strong, positive and unique associations with the brand in his memory (Keller, 1993, p.2). High brand equity leads to competitive advantage, produces more recognition, more knowledge about the brand and better consumer response (Keller, 2004). This leads to better brand performance from a financial and consumer point of view. Research on the strength of associations with consumer memory suggests that the greater typicality of a brand as a representative of the country-of-origin allows consumers to categorize or associate the brand more quickly after exposure to the brand or the category to which the brand/product belongs (Alba et al., 1991; Anderson, 1983; Collins et al. Loftus, 1975; Loken and Ward, 1987). Therefore, the transfer of the country of brand image to the brand equity can be stronger when the brand seems typical of the country of brand and weaker when consumers perceive the brand as atypical for a specific country-of-origin (Hamzaoui and Merunka, 2016).

### **2.3. Knowledge and stereotypes about the product and the brand**

Due to a lack of product knowledge, consumers may base their evaluation of a product on stereotyped information, such as country-of-origin, brand name, model, color, and background music, even though these cues are unrelated to the product's functional performance (Chiou, 2003). Most previous studies suggest that country-of-origin information labeled as "made in" serves several purposes for making purchasing decisions. The label acts as a salient attribute in product evaluation (Johansson, 1989), stimulates consumer interest in the product itself (Hong and Wyer, 1989), influences behavioral intentions through social norms (Fishbein and Ajzen, 1975) and influences consumer behavior through affective processes as in the case of

consumers' ethnocentric feelings towards their own country (Han and Terpstra, 1988). Therefore, the overall product evaluation is influenced by the stereotyping of the country-of-origin, that is, the image that consumers attach to a certain country, which then affects their perception of products from that country (Bilkey and Nes, 1982). Many studies have found that consumers develop stereotypes about countries based on their social and personal experiences (eg Papadopoulos and Heslop 1993; Samiee 1994) and that they prefer products from a particular country-of-origin over another country. For example, Japan has a strong reputation for designing and manufacturing high-end consumer electronics products (Han and Terpstra 1988; Ulgado and Lee 1993; Hulland, 1999). Since consumers' perception of a particular country of origin affects their evaluation of products from that country, it will affect their preference, purchase intention and choice of a particular brand. It is obvious that this affects the brand equity (Yasin et al, 2007). However, despite the stereotypical opinions of consumers, consumers may have more or less knowledge about the country-of-origin. Consumers with different levels of brand/product knowledge tend to use country-of-origin cues in product evaluation in different ways (Biswas and Sherrell, 1993; Cordell, 1997). It is important to understand the relationship between these cues and product knowledge and how this relationship affects consumer decision-making (Alba and Hutchinson, 2000; Biswas and Sherrell, 1993; Cordell, 1997; Lee and Lee, 2009). Some researchers claim that consumers with low product knowledge are either unmotivated or unable to process product information (Lee and Lee, 2009). Researchers try to explain in different ways how consumers with more experience and with high product knowledge use country-of-origin when processing data. Some argue that such consumers base their product evaluation on the product's functional attributes, while others argue that they select products based on country-of-origin (Han, 1989). Han gave the concept of the summary effect, according to which consumers believe that the sign of the country-of-origin is actually the sum of the knowledge that the consumer has about the properties of the product in relation to a certain country (Han, 1989; Lee and Lee, 2009). Thus, a certain image of the country-of-origin indirectly gives indications of the quality of the product and, accordingly, the country-of-origin can be used as a proxy for the evaluation of consumer products (Lee and Lee, 2009).

### **3. RESEARCH**

In the research context of Bosnia and Herzegovina, a preliminary desk research and an online survey research were conducted, which made it possible to set the framework for further research of the mentioned variables and specify additional research variables. The goal of the preliminary desk analysis was to find out how and to what extent the brand's country-of-origin is important to consumers in Bosnia and Herzegovina through the four categories of products used in the research, to determine whether consumers distinguish the country of brand from the country of manufacture and how much knowledge they have about the country-of-origin. Desk research has established a relatively even distribution and availability of brands from the categories of sports shoes and clothing, mobile phones, household electronics/appliances and cars from three countries of origin: USA, Germany, South Korea. Japan has represented brands of cars and household electronics, but mobile phones are not represented, and sportswear of Japanese brands does not exist on the market. Chinese mobile phones are represented, and household appliances (TV, vacuum cleaners) as well as the sports brand Anta Sport have been available on the market for the last 3 years. A final set of 27 brands was selected in the following categories: mobile phones, household appliances/electronics, sports shoes and clothing, and cars. So, the set consists of a total of 27 brands from the mentioned categories and countries as follows: United States of America (6 brands), Germany (7 brands), Japan (4 brands), South Korea (6 brands) and China (4 brands).

These 27 brands are divided into four product categories. Respondents evaluated all items on five-point Likert-type scales ranging from 1 (I consider completely unimportant) to 5 (I consider completely important).

### 3.1. Sample online survey

Empirical data for pre-testing were collected by online survey on a convenient sample that was reached through social networks, according to the so-called snowball principle. The questionnaires were completed during two weeks of research and included 153 respondents from the areas of Mostar, Banja Luka and Sarajevo. The age of the respondents ranged from 15 to 67+ years, with an average age of 41 years. The sample included a slightly higher proportion of men (55.6%) than women (44.4%) compared to the national population. Income distribution, as well as education (68.6% higher vocational education; 8.5% completed high school) shows that it is an urban population. In order to establish a precise research framework that takes into account the criticisms of previous studies that do not take into consideration the real importance of the country-of-origin as well as knowledge about the country-of-origin, certain dimensions of consumer attitudes towards the country-of-origin were pre-tested. The survey research determined: the degree of importance of the country of brand in relation to the country of manufacture, and the degree of knowledge about the country of brand for all mentioned categories/brands and countries.

The online survey revealed the following:

1) The country of brand is important to consumers across all 4 product categories ( $X > 3.5$ , Average importance rate for the country of brand:

- a) mobile phone category  $X = 3.48$
- b) sportswear and footwear category  $X = 3.39$
- c) category cars  $X = 3.99$
- d) household appliances category  $X = 3.736$

2) Consumers show an understanding that the origin of the brand differs from the origin of manufacture; the country of brand is more important to them in 3 out of 4 categories. Comparison of the average rate of familiarity with the country of brand - $X$  and the country of manufacture - $X'$ :

- a) category mobile phones  $X = 3.48 > X' = 3.37$
- b) sportswear and footwear category  $X = 3.39 > X' = 3.35$ ,
- c) category cars  $X = 3.99 > X' = 3.79$ ,

while for the category of household appliances, the country of manufacture is equally important as the country of brand.

3) Consumers show high rates of brand country knowledge in the following categories and the following countries:

- a) mobile phones (USA, Japan, China, South Korea)
- b) sports shoes and clothes (Germany, USA)
- c) cars (Germany, USA, Japan, South Korea)
- d) household appliances (Germany, Japan, South Korea)

*Table following on the next page*



Mobile phones		Sports clothing and footwear		Cars		Household appliances	
Country	Average level of knowledge about the brand origin	Country	Average level of knowledge about the brand origin	Country	Average level of knowledge about the brand origin	Country	Average level of knowledge about the brand origin
Germany	(no German mobile phone brand was listed)	Germany	67,65%	Germany	96,24%	Germany	91,45%
United States	91,50%	United States	53,34%	United States	81,70%	United States	37,91%
Japan	63,40%	Japan	(no Japanese clothing brand was listed)	Japan	77,12%	Japan	76,47%
South Korea	56,86%	South Korea	20,26%	South Korea	66,01%	South Korea	52,61%
China	65,69%	China	9,15%	China	(no Chinese car brand was listed)	China	25,49%

*Table 1: Average rate of knowledge about brand origin by country for each category  
 (Source: creation of the author)*

The brands that received the highest rates of familiarity with the countries of origin of the products/brands used by consumers by category are the following (65%+):

- mobile phones (Apple);
- sports shoes and clothes (Adidas, Nike);
- household appliances (Samsung, Bosch).

#### 4. CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The above suggests that the highest rates of recognition of the country-of-origin were achieved by globally present and well-positioned brands. An insight into the position on the Interbrand ranking of global brands is used to identify the top brands: 6 of them are in the top 10, most in the top 50, only a few in the top 100 of the Interbrand ranking. Therefore, the selected categories and brands within the categories belong to globally highly positioned and recognizable brands. Likewise, these are well-positioned countries according to the Anholt-GMI Nation Brands Index. This Index is the first analytical ranking of the world's national brands that measures the strength and attractiveness of a nation's brand image and shows how consumers around the world perceive the country's character and personality as a brand. Germany, Japan and the USA are among the top 10, while South Korea is among the top 30 of the Anholt-GMI Nation Brands Index. Having knowledge about the countries of brand by consumers in Bosnia and Herzegovina and distinguishing it from the country of manufacture points to the correctness of the concept that breaks down the concept of the country-of-origin into subcomponents in order to be able to more precisely and fully understand the impact on the customer based brand equity and on making consumer decisions. Since there are only a few studies that investigate the influence of subcomponents of the country-of-origin on the formation of brand equity, it is recommended to strengthen this field with new in-depth research that will confirm the importance of the influence of the subcomponents of the country-of-origin on consumer perception and behavior, purchase intention, consumer choices and overall product evaluation. Consumers in Bosnia and Herzegovina consider the country of brand to be important when making decisions about purchasing products and brands within the four investigated product categories, which indicates that research supporting the thesis about the influence of the

country-of-origin on consumer perception and behavior is correct for consumers in Bosnia and Herzegovina. The concept of country-of-origin image is important to business and should therefore be important to academic thought and research. Differences in the conclusions of past studies also result from variations in methodology, including sampling frames, sample selection procedures, sample sizes, data collection and analysis techniques. The obvious limitation of generalization regarding the influence of the country-of-origin on perceptions and evaluations is somewhat to be expected. In addition, the high rates of recognition of the country-of-origin for globally present and highly positioned brands lead to the conclusion that the global consumer culture is also present on the B&H market. Therefore, a proposal for future research would be to investigate the concept of self-identification of consumers from Bosnia and Herzegovina with global consumer culture, in order to, among other things, through preferences towards global brands, especially in certain categories such as fashion products, technology/consumer electronics, and in lack of alternatives and household appliances, examined the impact of global consumer culture on consumers. On the other hand, the specific context of developing countries is often neglected in similar research. It is the degree of economic development of the country where the research is conducted that can influence the effects of the country-of-origin on brand equity and consumer preferences. The effect of a country of brand on brand equity can be influenced by various variables related to global and local influences. Therefore, it is necessary to extend the reach of the model with regard to such types of influences.

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## COLLECTIVE BARGAINING AND SOCIAL DIALOGUE AS TOOLS FOR COMMUNICATION BETWEEN PARTICIPANTS

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### ABSTRACT

*Collective bargaining functions as a form of communication between employers and employees to resolve issues relating to labour relations. The theoretical definition of the individual components of collective bargaining has brought us closer to the way collective bargaining operates, identified the subjects involved in the process and clarified the forms of operation. On the basis of the legal framework, we identified collective labour relations, types of organisations and methods of concluding collective agreements. Social dialogue discusses bilateral and tripartite consultations between social partners and the government. The social partners represent the interests of employees and employers in the field of labour law at different levels.*

**Keywords:** *collective bargaining, collective labour relations, social dialogue, social partners*

### 1. INTRODUCTION

Communication between individuals or groups of individuals plays a very important role both in everyday life when dealing with everyday situations and in the work environment when negotiating pay conditions or working conditions. Each person tries to reach a consensus or compromise between his or her demands, entitlements and rights when communicating with the other party. The same method of communication is applied in collective bargaining processes between employees and employers on their demands. At higher levels of communication we can speak of social dialogue between the social partners. This article provides an insight into the functioning of collective bargaining and social dialogue processes, as well as defining the parties involved in these negotiations (communications) and insight into proposals for resolving communications in the event of consensus between the parties involved, but also in the event of disagreement.

### 2. COLLECTIVE BARGAINING

Collective bargaining is regulated in the conditions of the Slovak Republic by the Act on Collective Bargaining No. 2/1991 Coll. and is a tool for promoting effective social dialogue and achieving social peace based on the bipartisan principle. The aim of collective bargaining between the relevant trade union bodies and employers is to conclude a collective agreement.<sup>1</sup> Collective bargaining plays an important role in the process of establishing and developing relations between the employer and the trade union body representing the employees. The interaction between the parties involved can be seen as a form of democracy in the resolution of relations between labour and capital. The term collective bargaining is credited to Beatrice Webb, who used the term in her 1891 publication *Cooperative Movement in Great Britain*, replacing the original names for bargaining processes such as 'arbitration' or 'conciliation'.<sup>2</sup>

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<sup>1</sup> Collective Bargaining Act No. 2/1991 Coll.

<sup>2</sup> Tkáč V. : Odbory, zamestnávateľia, zamestnanecké rady (Európa, právo, prax)

## 2.1. Theoretical background

Slovak law does not currently have a binding definition of collective bargaining. The Collective Bargaining Act only regulates the function of collective bargaining, thus seeing it as a tool for promoting effective social dialogue and achieving social peace based on the bipartite principle.<sup>3</sup> The law further regulates the conditions for collective bargaining processes between employers and the relevant trade union bodies. Although the concept of collective bargaining is not defined, the main objective of the process, which is the conclusion of a collective agreement, is defined in the legislation. The legal basis for the collective bargaining process is also found in the basic principles of the Labour Code of the Slovak Republic (Article 10), which regulates the right of employees and employers to collective bargaining, as well as the right of employees to strike in the event of a conflict of interests and the right of the employer to lock-out.<sup>4</sup> At the international level, the International Labour Organisation's Promotion of Collective Bargaining Convention, No. 154 of 1981, defines the concept of collective bargaining. For the purposes of this Convention, the term 'collective bargaining' extends to all negotiations between an employer (group of employers or employers' organisations) on the one hand and a workers' organisation (or several organisations) on the other. Under this Convention, the content of collective bargaining is defined on the basis of the objective pursued or the entities involved in the collective bargaining process. According to the Convention, collective bargaining has three main objectives, which are as follows:

- define the terms and conditions of employment
- regulate relations between employers and employees
- regulate relations between employers and their organisations and worker's organizations.<sup>5</sup>

The European Social Charter, signed in Turin in 1961, is of particular importance in labour law matters. The European Social Charter includes the right to collective bargaining, which is provided for in Article 6, which regulates the obligation of the contracting parties to ensure the effective exercise of the right to bargain collectively. The Contracting Parties also undertake to carry out the following activities:

- promote mutual consultation between workers and employers
- promote a system of voluntary bargaining between employers or their organisations, on the one hand, and workers' organisations, on the other, with a view to regulating terms and conditions of employment by means of collective agreements
- promote the establishment and use of an adequate system of conciliation and voluntary arbitration to resolve labour disputes
- grant workers and employers the right to collective action in the event of conflicts of interest, including the right to strike.<sup>6</sup>

The very notion of collective bargaining consists of two elements. The term collective reflects the fact that collective bargaining is carried out not only for the individual but for the entire collective of employees, the employer at which the collective bargaining itself takes place. In practice, this means that it is not a negotiation between one employee and his employer on his individual wage or working conditions, resulting in the conclusion of an employment contract or an amendment to an existing contract. Under the second part of the term bargaining, we can imagine the actual process of negotiation or bargaining between the parties involved in collective bargaining, which is not a process of unilateral decision by one of the subjects.

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<sup>3</sup> Collective Bargaining Act No. 2/1991 Coll.

<sup>4</sup> Labour Code Slovak Republik

<sup>5</sup> Collective Bargaining Convention, No. 154 (1981) International Labor Organisation

<sup>6</sup> Notification of the Ministry of Foreign Affairs of the Slovak Republik on the conclusion of the European Social Charter (revised) No. 273/2009 Coll.

The bargaining process itself should result in a compromise between the demands of the parties, i.e. it should take into account the demands of the employees represented by the trade union and the demands of the employer.<sup>7</sup>

## 2.2. Forms of collective bargaining

Collective bargaining, as a form of social dialogue, is a process of negotiating pay conditions between two parties, where one side is represented by organisations representing employees and the other by organisations representing employers. The aim of the collective bargaining process is to define working conditions, pay and conditions of employment and to regulate the functioning of the relationship between employers (or their organisations) and employees (or their organisations). Individual and collective relations between employers and employees and the rights and obligations of the parties are regulated by collective agreements. Their conclusion is the responsibility of the authorised trade union bodies and the employers or their organisations. Collective agreements may be concluded at different levels. The Act on Collective Bargaining in the Slovak Republic defines the existence of two levels of collective agreements, the enterprise collective agreement and the higher level collective agreement. An enterprise collective agreement is concluded between the relevant trade union body and the employer. A higher-level collective agreement may be concluded between the relevant higher trade union body and the employer, which is the State, or may be concluded for a larger number of employers between the relevant higher trade union body and an employers' organisation. In the latter case, a higher-level collective agreement may be concluded for employers whose remuneration practices are governed by a special regulation and between the relevant higher trade union body, the representatives designated by the Government and the employers' representative representatives.<sup>8</sup>

## 2.3. Collective labour relations

Collective labour relations are part of and a fundamental type of labour relations and form the subject matter of collective labour law.<sup>9</sup> At present, the concept of collective labour law does not have a precise definition. It is defined by various authors as "the totality of legal relations arising between the parties to labour relations, which are, on the one hand, an employer or a collective of employers and, on the other hand, an organised collective of employees. The content of collective labour relations is the rights and obligations determined by labour law provisions, the main aim of which is to improve working and pay conditions for employees".<sup>10</sup> Prof. Barancová considers collective law to be "the totality of legal norms that regulate those legal relations between the subjects of labour law in which one of the subjects is a collective subject. The term collective subject can be understood as a collective of employees represented, for example, by a trade union body or works council on the one hand and an employer on the other (the collective subject in these relations is represented by the employers' union. Collective labour law regulates collective labour relations, the main purpose of which is to improve the working and wage conditions of employees."<sup>11</sup> The above definitions characterize collective labour law corresponding to the definitions of foreign labour relations literature.<sup>12</sup>

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<sup>7</sup> ŠVEC Marek, TOMAN Jozef a kolektív. *Zákonník práce, Zákon o kolektívnom vyjednávaní. Komentár*. Zväzok II. Bratislava : Wolters Kluwer, 2018

<sup>8</sup> Collective Bargaining Act No. 2/1991 Coll.

<sup>9</sup> TKÁČ V. : Odbory, zamestnávateľia, zamestnanecké rady (Európa, právo a prax)

<sup>10</sup> OLISOVSKÁ a kol.: *Kolektívne pracovné právo*

<sup>11</sup> BARANCOVÁ, H. – SCHRÖNK, R. : *Pracovné právo*. Bratislava : Sprint, 2009

<sup>12</sup> MAIR, A. *Arbeitskampf und Arbeitsvertrag. Zum Verhältniss von kollektivem Kampf und individualrechtlicher Bindung*. Wien: Springer-Verlag, 2008



From the above characteristics and definitions, the authors (Olšovská et al.) derive the following characteristics forming the basis of collective labour law:

- it is an employment relationship
- the presence of an entity representing a collective of natural or legal persons as a party to labour relations (trade unions, associations)
- the subject of the negotiations will be, in particular, the regulation of the rights and obligations of the subjects of the employment relationship
- the implementation of collective labour relations by the trade union will be aimed at improving the working conditions of employees and at influencing decisions of the employer by employee representatives which have an impact on employees.<sup>13</sup>

## **2.4. Employee participation in labour relations**

Under the Labour Code, employment relations can be regarded as relations established between an employer on the one hand and a natural person - an employee on the other hand on the basis of concluding an employment contract or an agreement on work performed outside the employment relationship. When concluding an employment contract, the parties agree on the type of work, the place of work, the date of commencement of work and the wage conditions, unless the collective agreement stipulates otherwise.

### *2.4.1. Trade union, works council, employee trustee*

In order to ensure fair working or pay conditions, employees have the right under the applicable legislation to participate in the employer's decision-making in the area of economic and social interests. Employee participation in decision-making processes may be direct or indirect, through the relevant trade union body, works council or employee trustee. Employees may exercise their right to collective bargaining only through the relevant trade union body. The employer is obliged to allow a trade union to operate in the workplace if there are members of the trade union among the employees. A trade union is a civic association under the Labour Code in accordance with a special regulation and is obliged to give written notice to the employer of the commencement of its activities with the employer, together with a list of the members of the trade union organ.<sup>14</sup> Another form of employee representation in the employer's decision-making processes is the works council. The works council is an organ representing all employees in an employer who employs at least 50 employees. In the case that the employer has less than 50 employees and only at least three employees, the employer may have an employee trustee. The two organs representing the employees, the works council and the employee trustee, shall have the right to co-determine the decision-making processes by agreement or by consent.

### *2.4.2. Collective bargaining agreements*

Collective agreements regulate collective and individual relations between employers and employees, their rights and obligations, and can be concluded by the relevant trade union organs and employers (or their organisations). The trade union organ concludes a collective agreement with the employer, which regulates working conditions, wages and conditions of employment. The collective agreement also regulates relations between employees and employers, relations between employers or their organisations and an organisation or several organisations of employees. Claims created under a collective agreement shall be exercised and satisfied by the employee as other claims deriving from the employment relationship. A valid collective agreement shall be in the form of a written agreement and signed by an authorised representative of the relevant trade union and the employer.

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<sup>13</sup> Olšovská a kol. :Kolektívne pracovné právo

<sup>14</sup> Labour Code Slovak Republic, §230

The period for which a collective agreement is concluded is usually determined by a period of time, but if the parties have not agreed on a period of time for the validity of the collective agreement, it is presumed to be negotiated for one year. It takes effect on the first day of the period for which the collective agreement is concluded and ends at the end of that period.<sup>15</sup>

#### *2.4.3. Collective disputes, strike and lockout*

If the collective bargaining or social dialogue between the social partners does not lead to a mutual compromise (conclusion of a collective agreement), the conflict of interests may escalate into a dispute. Collective disputes are disputes over the conclusion of a collective agreement and disputes over the fulfilment of obligations arising between the parties to a collective employment relationship. Thus, they are disputes between an employer and a trade union representing the interests of employees. The subject of collective disputes is the interests and rights of employees and employers or their organisations. Dispute resolution between the parties involved may have two parts, namely proceedings before a mediator and proceedings before an arbitrator. If the parties agree on the person of the mediator, the dispute settlement procedure before the mediator shall be initiated. If the parties have reached a consensus on a proposal for dispute resolution before the mediator, the dispute shall be terminated. The mediation procedure shall be deemed unsuccessful if the dispute is not resolved, in which case it shall proceed to the second stage - the arbitration procedure. As in the previous case, if the parties reach an agreement, a collective agreement is concluded, the dispute ends. Otherwise, a strike may be called as a last resort in a dispute over the conclusion of a collective agreement.<sup>16</sup> A strike means a partial or total interruption of work by employees in an employment relationship. Employees who have both agreed to strike and joined the strike are referred to as strike participants. The right to strike may be exercised by employees in the event that their interests and demands do not coincide with those of the employer. An employee shall not be prevented from taking part in a strike, nor shall he or she be compelled to take part in a strike. The absence of an employee participating in a strike shall be excused by the employer, but the striking employee shall not be entitled to wages or compensation for the duration of the strike.<sup>17</sup> Failure to reach a collective agreement before a mediator or arbitrator may lead the employer to decide to declare a lockout as a last resort to resolve the dispute. A lockout is defined as a partial or total cessation of work by the employer. The employer must give his employees at least three days' written notice of the details of the lock-out, stating the reasons for the lock-out, its scope and the list of names of the employees. Where a lock-out has been imposed on an employee and he has been prevented from carrying out his work, this constitutes an obstacle to work on the part of the employer, i.e. the employee is entitled to wage compensation equal to one half of his average earnings. The employer must give written notice of the termination of the lock-out.<sup>18</sup>

### **3. SOCIAL DIALOGUE AND SOCIAL PARTNERS**

Social dialogue is an fundamental part of the European social model, which has been fully recognised in the Treaty on the Functioning of the European Union. It has emerged as a result of consultations, discussions and negotiations between the social partners of the Member States of the European Union, represented by representatives of enterprises and workers. The concept was coined by Jacques Delors, President of the European Commission, in 1985. Dialogue covers a wide range of labour and social issues and also includes public authorities in certain matters.

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<sup>15</sup> Collective Bargaining Act No. 2/1991 Coll. §11, §13

<sup>16</sup> Collective Bargaining Act No. 2/1991 Coll. §10

<sup>17</sup> Collective Bargaining Act No. 2/1991 Coll. §16

<sup>18</sup> Collective Bargaining Act No. 2/1991 Coll. §27

Defining social dialogue represents a method of action of employees and employers in the economy in negotiating the conditions of their mutual functioning, not only at enterprise level but also at the level of society. The aim of these consultations is to prevent social unrest that disrupts the economy and to achieve 'social reconciliation'. Together with the social partnership, social dialogue forms the fundamental pillars of the European social model, together with the efficient running of the economy and the improvement of social protection.<sup>19</sup> The concept of social dialogue is based on two terms. The term social or societal refers to human society and represents phenomena occurring in human society. The second concept, dialogue, represents a conversation between two people or a continuous, consistent and fluent communication between several persons. The resulting term 'social dialogue' has been created as a definition based on this knowledge and represents any kind of consultation or exchange of information between social partners representing employers, employees and government. This type of discussion or negotiation concerns issues of social interest in the fields of economic development, social development and employment development.

### **3.1. The Bipartite**

The social dialogue of two social partners or bipartite describes the relations and bargaining processes between employee representatives and employer representatives at sectoral or enterprise level. Social dialogue can take place at different levels (enterprise, regional, sectoral, national, transnational) depending on the form or method of dialogue chosen.

#### *3.1.1. The Enterprise level*

The most important form of social dialogue at enterprise level is collective bargaining. Collective bargaining, as we have already had the opportunity to define in previous chapters, is the process of negotiating pay conditions between trade unions representing employees and organisations representing employers.

#### *3.1.2. The Industry level*

At industry level, the most important form of social dialogue is collective bargaining and the conclusion of a higher-level collective agreement. A higher-level collective agreement is concluded for a larger number of employers between the relevant higher-level trade union organ or organs and the employers' organisation or organisations.<sup>20</sup> According to the Labour Code, the competent trade union organ or the competent higher trade union organ is the organ which is authorised to act in legal relations in the name of the trade union organisation concerned. The competent trade union organisation of the employer is the organisation authorised to act in the name of the relevant employer in legal relations.

### **3.2. The Tripartite**

Tripartite consultation or The Tripartite is a consultative organ in which conditions are negotiated between the social partners (employers' representatives, employees' representatives) and the government at regional, national or transnational level.

#### *3.2.1. The Industry level*

Consultations and negotiations take place between trade unions and employers' associations representing a particular sector of the economy. Negotiations at sectoral level result in a higher-level collective agreement.

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<sup>19</sup> TKÁČ V.: Odbory, zamestnávateľia, zamestnanecké rady (Európa, právo a prax).

<sup>20</sup> Collective Bargaining Act No. 2/1991 Coll. §2

A higher-level collective agreement shall be concluded for a sector or part of a sector, and, if agreed by the parties, shall contain an indication of the sector or part of a sector for which it is concluded.<sup>21</sup>

### *3.2.2. The Regional level*

Social dialogue at the regional level can be considered as a new trend in social dialogue, where social dialogue is moving from the national to the regional level. The regional level often better reflects the actual situation and the demands of the social partners, as it is a lower level and at the same time closer to the social and economic problems of the social dialogue actors. This model allows actors to respond more flexibly to changing conditions and creates the conditions for more effective working than at national level.<sup>22</sup>

### *3.2.3. The National level*

Social dialogue at national level has become an important tool of participation between social partners in creating the conditions for economic and social policy. This is demonstrated by the fact that tripartite is regulated by law in the Slovak Republic. This Act provides that the Government is obliged to discuss its proposals for laws affecting the economic and social interests of employees and employers with the representatives of employees and employers' representatives in the Economic and Social Council of the Slovak Republic. The statements of the social partners on the government's law proposals need not be binding on the government.

## **3.3. The Social Partners**

We define the parties acting in a social partnership as social partners. The social partners represent the interests in the field of employment relations of employees and employers. According to the criteria of the International Labour Organisation, we consider workers' organisations (including union, confederation and association groupings) to be social partners. Currently, the Economic and Social Council of the Slovak Republic is the consultative and conciliatory organ of the Government of the Slovak Republic and the social partners at the state level. In order to support effective social dialogue at national level between the State and employers and employees, the Act on tripartite consultations at national level was approved and implemented as a tool for solving economic and social development, employment development and securing the social peace. The subject of regulation of the Tripartite Act is tripartite consultations at the national level between the State and the social partners, who, through their representatives, negotiate and discuss with each other the fundamental issues of economic and social development and employment development with a purpose of reaching agreements on these issues.<sup>23</sup>

### *3.3.1. The Employers*

The social partners representing employers represent associations of employers with similar objectives or interests in the field of labour law. According to the Labour Code, an employer is a private person or legal entity who, in an employment relationship employs employees.<sup>24</sup> According to the legislation, an employers' organisation is a coalition grouping of employers that is registered in the register of employers' organisations of the Ministry of the Interior of the Slovak Republic. The largest employers' organisations in the Slovak Republic are The Association of Employers' Unions and Associations of the Slovak Republic (AZZZ SR) and The National Union of Employers (RÚZ).

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<sup>21</sup> SK-NACE Categorization

<sup>22</sup> Čambalíková M., Uhlerová M. – Regionálny sociálny dialóg. Bratislava 2021. Online: <<https://library.fes.de/pdf-files/bueros/slowakei/18169.pdf>>

<sup>23</sup> Act No. 103/2007 Coll. on tripartite consultations

<sup>24</sup> The Labour Code Slovak Republik

### *3.3.2. The Employees*

According to the legislation of the Slovak Republic, the representatives of employees as a social partner are primarily trade unions and their organs (trade unions). The relevant trade union organs representing the employees participate in the employer's decision-making on economic or social issues. The aim of these trade union organs is to guarantee employees proper and fair conditions for the work performance, mostly in the field of wage conditions. The Labour Code defines a trade union as a civic association which is obliged to inform the employer of the commencement of its activities and to submit a list of the members of the trade union organ to the employer. The role of the trade union organ is to conclude a collective agreement in agreement with the employer. In order to participate in social dialogue processes, a trade union must satisfy the conditions of representativeness. The Confederation of Trade Unions of the Slovak Republic (KOZ SR) and The Common Trade Unions of Slovakia (SOS) currently satisfy these requirements in Slovakia.

### *3.3.3. The Government of the Slovak Republic*

The third participant in the tripartite consultations and negotiation processes is the Government of the Slovak Republic. According to the Tripartite Act, the Government of the Slovak Republic represents the State in the negotiations, but it is not considered a social partner.

### *3.3.4. The other entities*

In praxis, we can find that third sector organisations, which are highly involved in the management of social processes, are also considered as social partners. However, the International Labour Organisation does not consider these organisations to be social partners, but they are participating in the social dialogue anyway. In the Slovak Republic, the most important example of a third sector organisation entering into social dialogue is The Association of Towns and Municipalities of Slovakia (ZMOS).

### *3.3.5. The International Labour Organisation*

The International Labour Organisation is a specialised agency working primarily for permanent and universal peace and secondly for the promotion of accepted human, labour and social rights. It pursues its mission through its primary aims of strengthening social dialogue and social protection, the promotion of dignified employment opportunities and the promotion of rights at the workplace. The ILO represents the one trilateral agency of the The United Nations, and since its foundation it has united governments, employers and workers from 187 member countries. The institution's tripartite structure offers employers, employees and governments equal space to ensure that the views of the social partners are reflected in labour standards and the formulation of policies and programmes. Fundamental to the ILO's work is the importance of functioning cooperation between the social partners in promoting social and economic progress.<sup>25</sup>

## **4. CONCLUSION**

The subject of this paper was to present the method of communication between employer and employees by collective bargaining. On the basis of the Collective Bargaining Act, we analyzed the process of collective bargaining, identified collective labour relations, subjects of collective bargaining, collective agreements as well as disputes between the parties and their solutions. The content of the third chapter was to explain social dialogue and its working at bipartite and tripartite level. Within this chapter we have identified the social partners in the Slovak Republic and their activities at various levels of social dialogue.

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<sup>25</sup> International Labour Organisation. online: <<https://www.ilo.org/global/about-the-ilo/mission-and-objectives/lang-en/index.htm>>

If the participants in collective bargaining and social dialogue select an adequate form of communication and consultation in pursuing their demands and requirements, the decision-making process can result in a successful consensus between the subjects.

**ACKNOWLEDGEMENT:** *This work was supported by the research project VEGA No. 1/0851/21 The social economy a modern tool for building an inclusive society in the context of global change and the challenges of the UN 2030 Agenda for Sustainable Development.*

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## THE ROLE OF NGO SECTOR IN ECONOMIC GROWTH OF BOSNIA AND HERZEGOVINA

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### ABSTRACT

*The NGO sector in Bosnia and Herzegovina (BiH) was initially focused on reconstruction and institution-building after the war. However, as time goes on, the sector is increasingly required to address economic and other societal problems. Although BiH has a large number of registered NGOs, the number of active ones is small, with a limited focus on economic growth, civil society development, and sustainable development. Additionally, NGOs tend to be concentrated in urban centers, neglecting smaller communities and rural areas. The financial data indicates that NGOs have a limited role in the economic and social life of BiH, with only 0.3% of gross value added created by NGOs contributing to the GDP. Financing for NGOs primarily comes from foreign donations and domestic budgets, with large international NGOs from abroad taking over a significant portion of donor funds intended for BiH, and domestic sources of funding being non-transparent and bureaucratic, with a significant level of corruption and inefficiency. The number of permanent employees in the NGO sector is relatively small, with most people engaged on a temporary or volunteer basis. However, the estimated number of 12,600 people is still a significant potential that could increase the influence of the NGO sector with the right financing system. Overall, the NGO sector in BiH faces challenges in terms of its focus, geographic distribution, financing, and staffing. To significantly influence the social, economic, political, cultural, and other trends in the country, the sector requires a more coherent approach to financing, greater domestic funding, and a wider geographic reach to address the needs of smaller communities and rural areas.*

**Keywords:** *NGO sector, economic growth, social development, civil society, financial analysis*

### 1. INTRODUCTION

In this analysis, we are talking about the non-governmental sector in Bosnia and Herzegovina (BiH). After the war, this sector was mainly oriented towards reconstruction, restoration, building of institutions. However, as time goes on, the non-governmental sector is increasingly required to be focused on economic and many other problems that exist in the society. This is especially so in a situation where the public sector is not efficient and does not deliver public services in the best way. In this analysis, we will examine how large the non-governmental sector is, what it does concerning economic growth, what activities it engages in, where it is carried out, how much money is spent, how many people this very important sector employs. The structure of this analysis is such that, after the introduction and the methodology and data description, in the third part we analyze the total number of non-governmental organizations (NGOs) that are registered in BiH, including issues of sector of activity, type of organization, place of registration, etc. In the fourth part, we analyze the financial data of those non-governmental organizations that submit financial reports to the financial institutions in Bosnia and Herzegovina.

In this part we are analyzing how many NGOs are really active, what is the total income, what are the expenses, how many employees are there and so on. At the end of this analysis, we have concluding considerations based on this analysis.

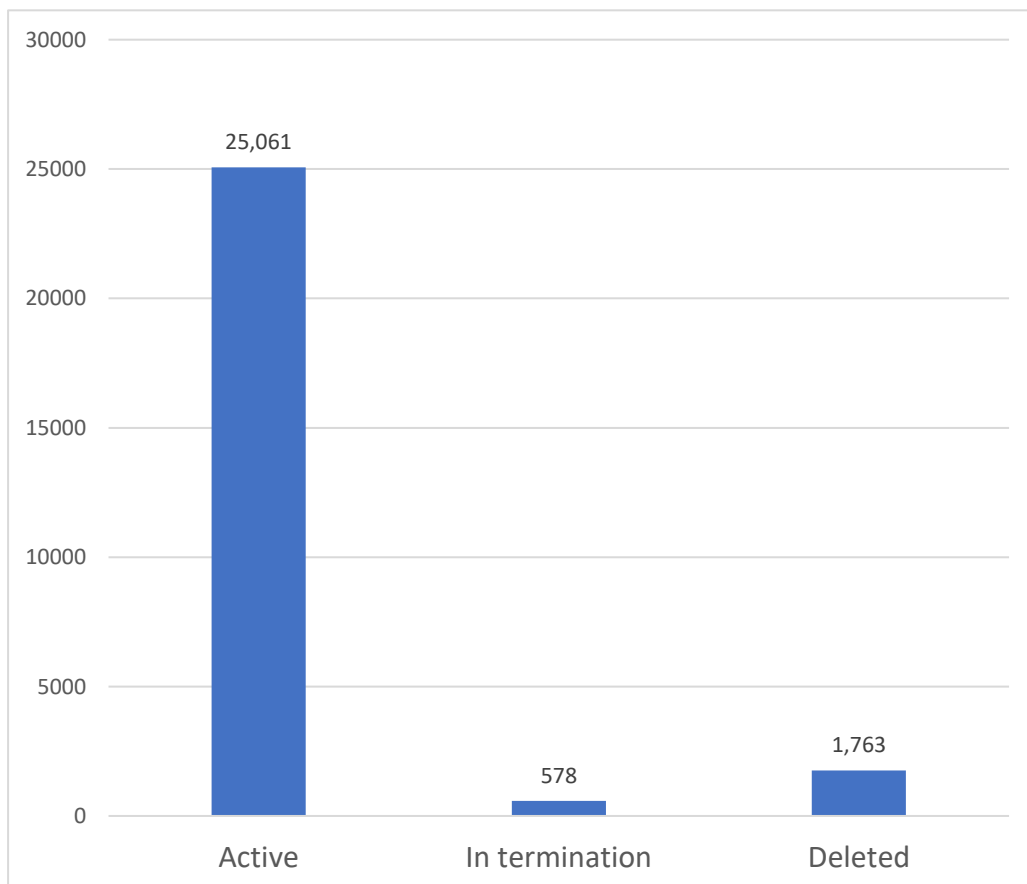
## 2. METHODOLOGY AND DATA

This research and analysis is based on several sources of secondary data. First of all, there is data from the electronic register of non-governmental organizations, which can be found on the following website: <http://zbirniregistri.gov.ba/Home>. However, bearing in mind that this is the total number of registered non-governmental organizations with basic data, with no financial data, another source of secondary data was necessary. We also use data from the agencies APIF from Republika Srpska and FIA from the Federation of Bosnia and Herzegovina. Therefore, the financial data for a significantly smaller number of non-governmental organizations that submit final accounts to financial institutions are analyzed here. The methodology is based on common methods of statistical analysis and data interpretation, including total values, average values, various post-calculated variables and so on.

## 3. ANALYSIS OF REGISTERED NGOS IN BIH

### 3.1. Total number of registered NGOs in BiH

How many registered NGOs are there in Bosnia and Herzegovina? In total, 27.402 non-governmental organizations are registered in BiH. Out of that total number of registered organizations, slightly more than 25,000 are considered active in the register, 578 are currently in termination and 1,763 organizations have already ceased operations and are in the process of being deleted from the register.



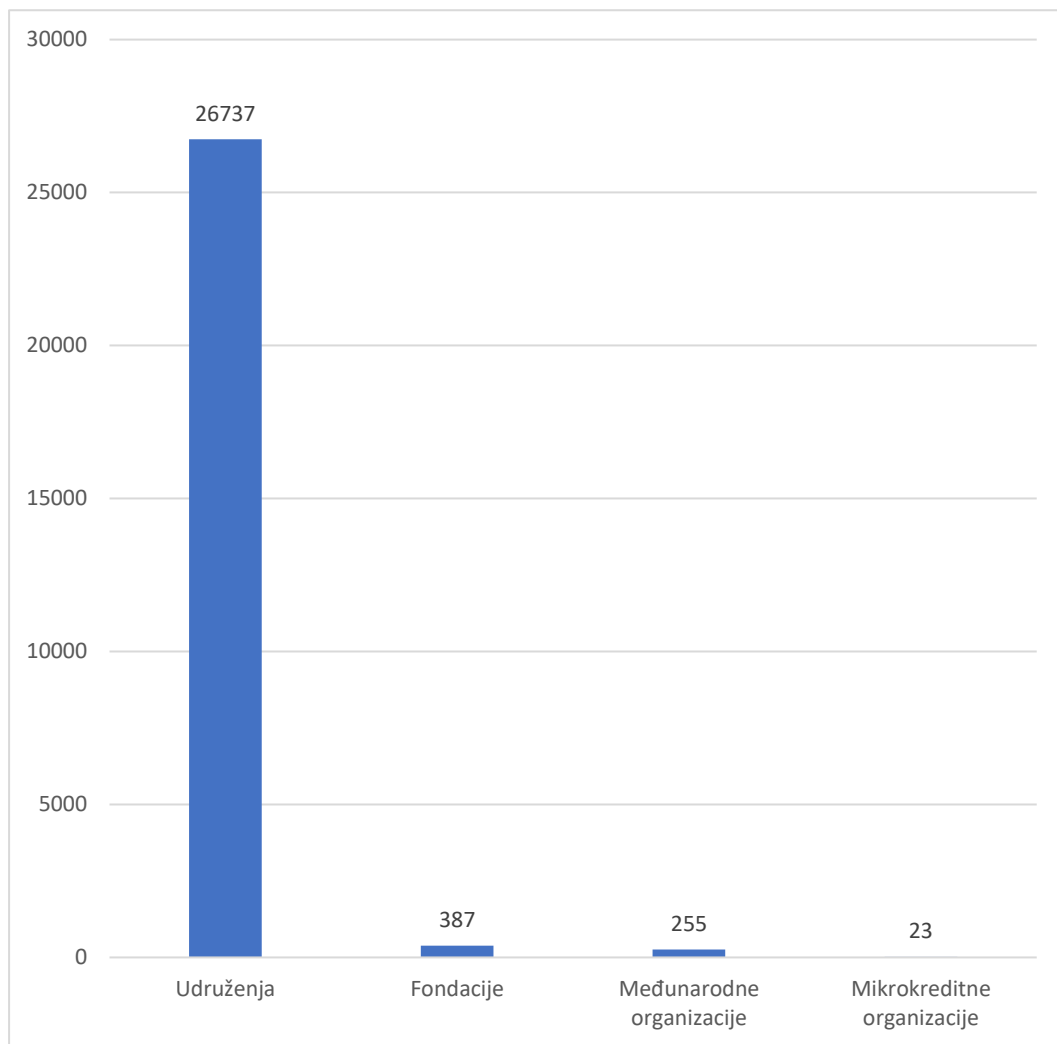
*Chart 1: Registered non-governmental organizations in BiH, by status  
 (Source: <http://zbirniregistri.gov.ba/Home>)*



If we compare this number with neighboring countries where, for example, Serbia (which has a much larger number of inhabitants) has just over 35,000<sup>1</sup> non-governmental organizations, then Bosnia and Herzegovina stands relatively well. However, this would be a wrong conclusion because it is not important how many of these organizations exist on paper, but how many of them are really active in the development and democratization of society, which we will discuss later.

### 3.2. Number of NGOs in BiH by type of organization

All non-governmental organizations in BiH are not registered in the same way. Most of them, 26,737, are registered as citizens' associations. Relatively small numbers are foundations, international organizations and microcredit organizations. We can say that the citizens' association is the main type of organization in the non-governmental sector.

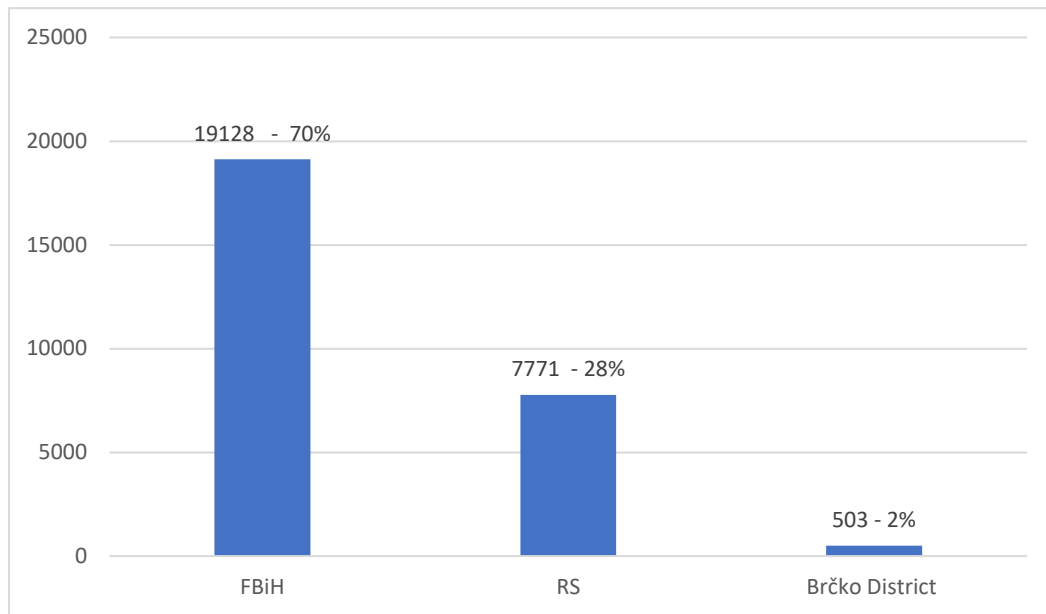


*Chart 2: Number of NGOs in BiH by type of organization*  
 (Source: <http://zbirniregistri.gov.ba/Home>)

### 3.3. Number of NGOs in BiH according to territorial affiliation

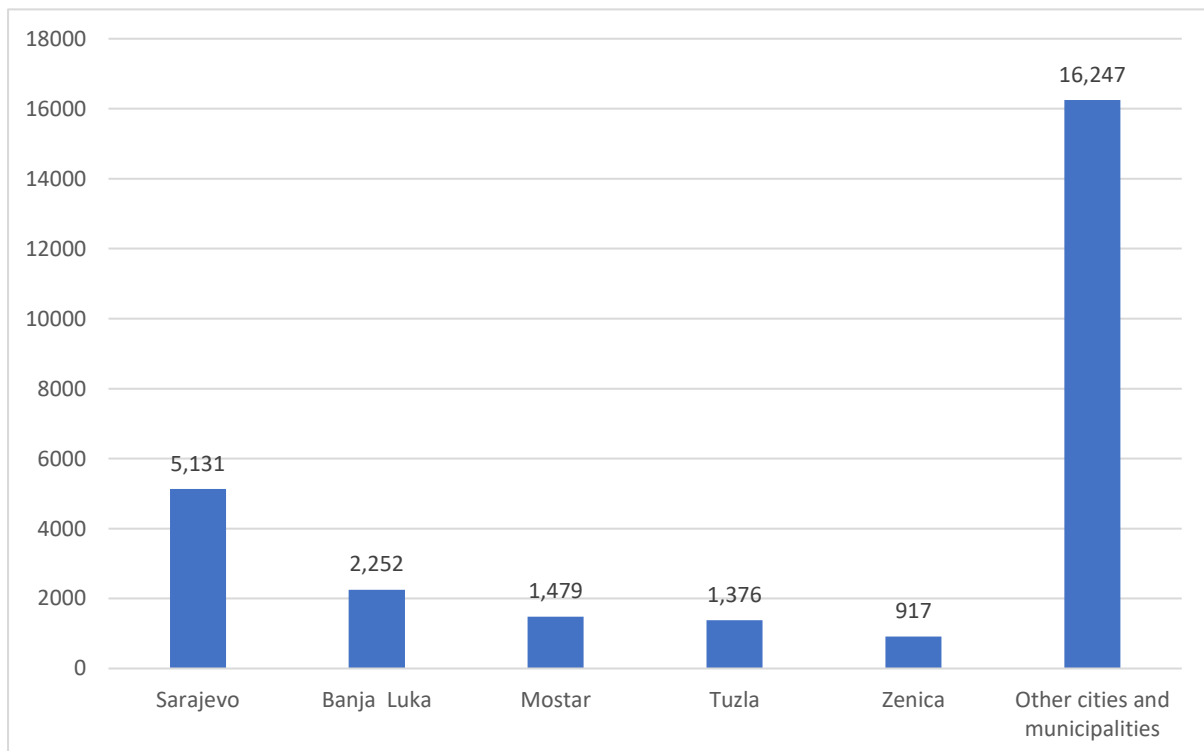
Also, the majority of NGOs are registered in the Federation of Bosnia and Herzegovina. Over 70% of them operate in this entity, about 28% in Republika Srpska and 2% in Brčko District.

<sup>1</sup> Data for Serbia are based on the following register: <https://www.apr.gov.rs/периодичност-25.html>



*Chart 3: Number of NGOs in BiH according to territorial affiliation*  
 (Source: <http://zbirniregistri.gov.ba/Home>)

If we take municipalities and cities into account, we see that the largest cities - Sarajevo, Banja Luka, Mostar, Tuzla and Zenica - have about 40% of all non-governmental organizations. The other 60% are registered in all other municipalities and cities.



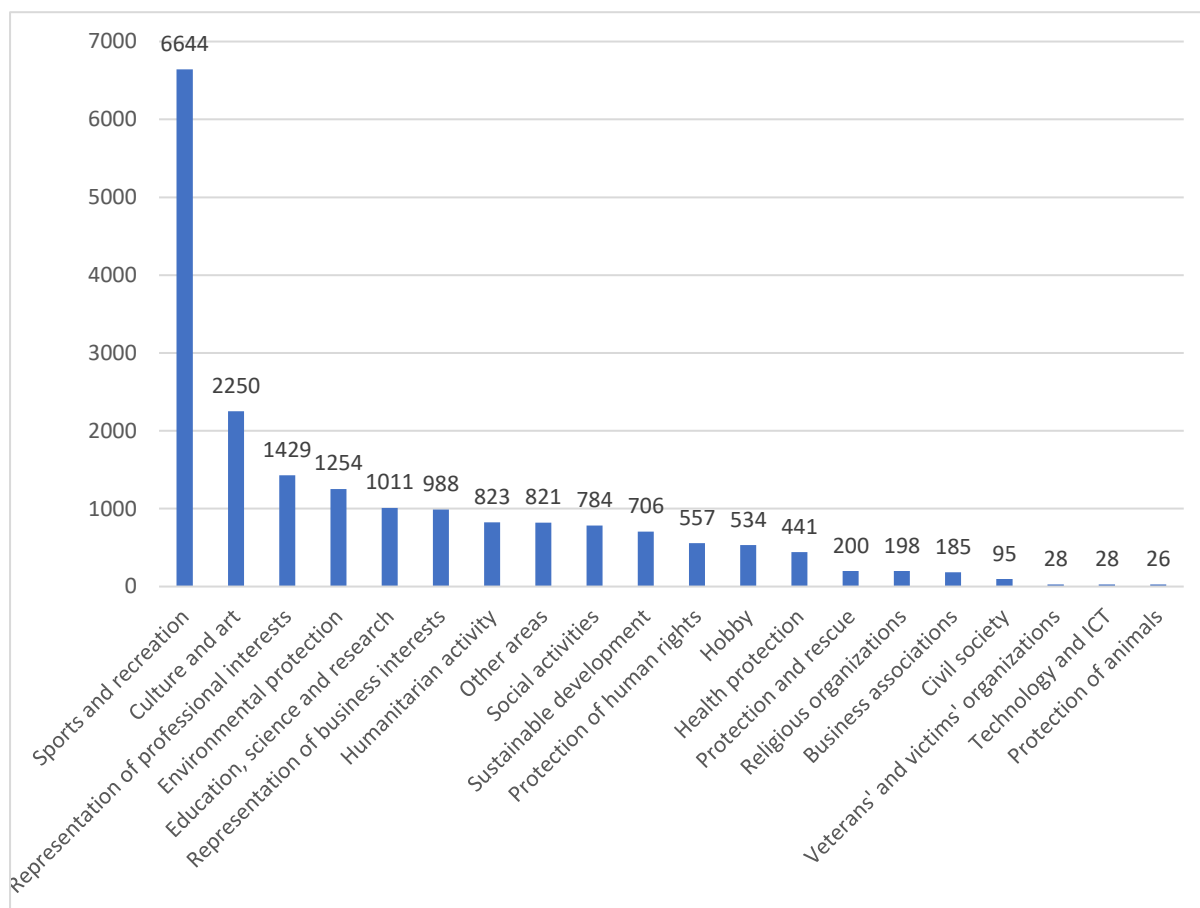
*Chart 4: Number of NGOs in BiH by municipalities and cities*  
 Source: <http://zbirniregistri.gov.ba/Home>

This means that the activities of non-governmental organizations are mainly focused on urban areas of large cities, while smaller areas and rural areas are largely neglected. This is a problem, especially since urban areas in large cities are usually relatively well developed.

However, rural areas in Bosnia and Herzegovina are the ones with the most problems, with the highest level of poverty, the greatest lack of infrastructure and the greatest problem with vulnerable categories of the population.

### 3.4. The number of NGOs in BiH by the area of activity

Although the public usually considers that, in terms of their field of activity, non-governmental organizations have a general social and socio-economic orientation, the reality in Bosnia and Herzegovina is a little different. According to the field of activity, the most non-governmental organizations are in the field of sports and recreation - 6,644.



*Chart 5: The number of NGOs in BiH by the area of activity*  
 (Source: <http://zbirniregistri.gov.ba/Home>)

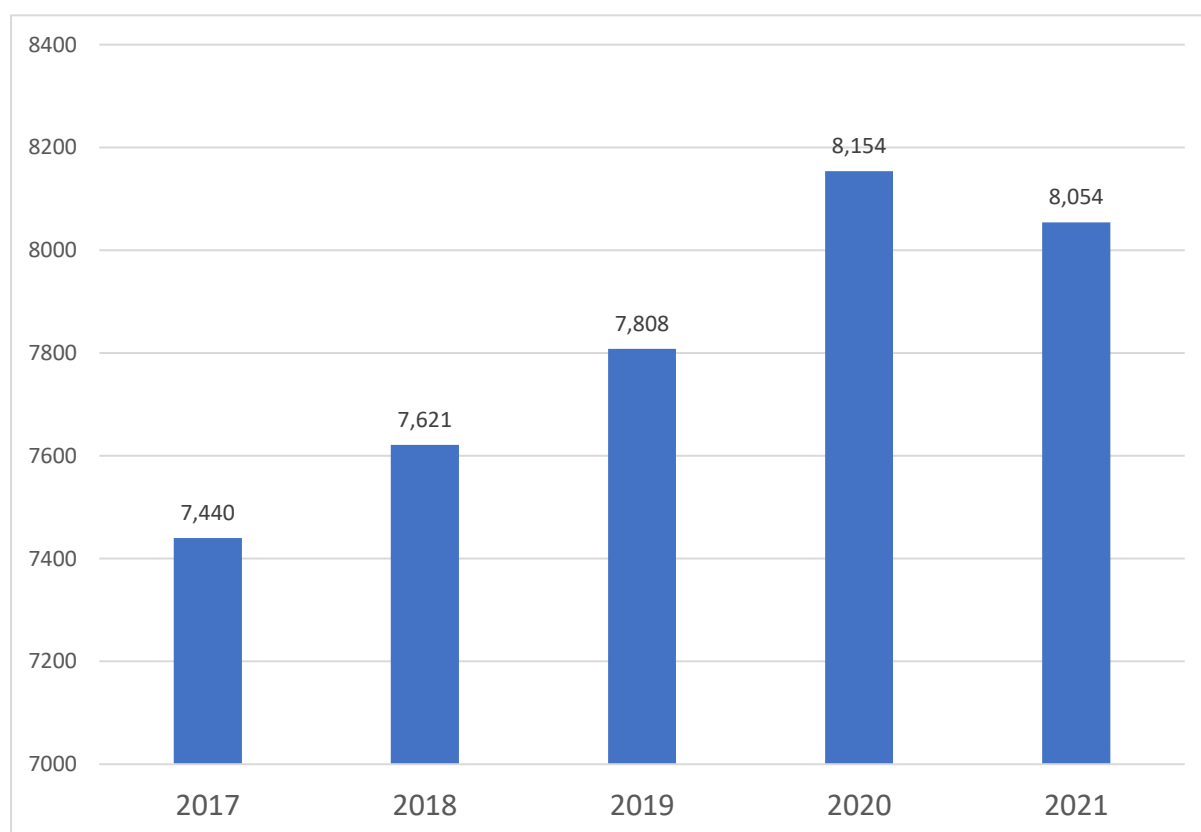
This category includes sports associations such as sports clubs, recreation centers and associations and federations for certain sports, etc. In second place, with almost three times less organizations, is the field of culture and art - 2250 organizations. Therefore, cultural and artistic societies, various associations for nurturing certain types of art (theatre, music, fine art, literature, etc.), associations for the preservation of culture and tradition and other similar organizations are represented here. In the two largest groups, there are no citizens' associations that deal with classic activities in the development of civil society and the overall socio-economic development of the country. This speaks in favor of the fact that the role of the non-governmental sector in the development of civil society and the development of the economy in BiH is still not at the level that would be expected. This structure is still much more similar to the structure of such organizations that existed during socialism. Therefore, there is a dominant role of sports and culture without a sufficient level of social activism.

According to the field of activity, we can freely say that, unlike the economy in BiH, which underwent a transition and where a significant transformation from a socialist economy to a modern market economy was carried out, in the non-governmental sector and non-governmental organizations in BiH, a similar type of transition did not take place to a sufficient extent. The non-governmental sector in Bosnia and Herzegovina is dominated by a "socialist" structure where the key areas are sports and culture, without enough political and civil, social activism. Judging by the data reviewed so far, the non-governmental sector in BiH is still not such that it can significantly influence political, social and economic trends.

#### 4. FINANCIAL ANALYSIS OF THE NGO SECTOR IN BIH

##### 4.1. Comparison of registered NGOs and those with submitted financial reports

Before we go into the analysis of financial data, it is very important to state how many non-governmental organizations actually submit the final account to the competent institutions. According to the data of APIF from Republika Srpska and FIA from the Federation of Bosnia and Herzegovina, in the graph below we see the number of non-governmental organizations in Bosnia and Herzegovina that submit the final account. Although there may be a certain number of organizations that are active and do not submit final accounts, we can still roughly consider this number as the number of NGOs that are really active. So we see that compared to the number of 27,402 registered, we have 8,054 active organizations here.



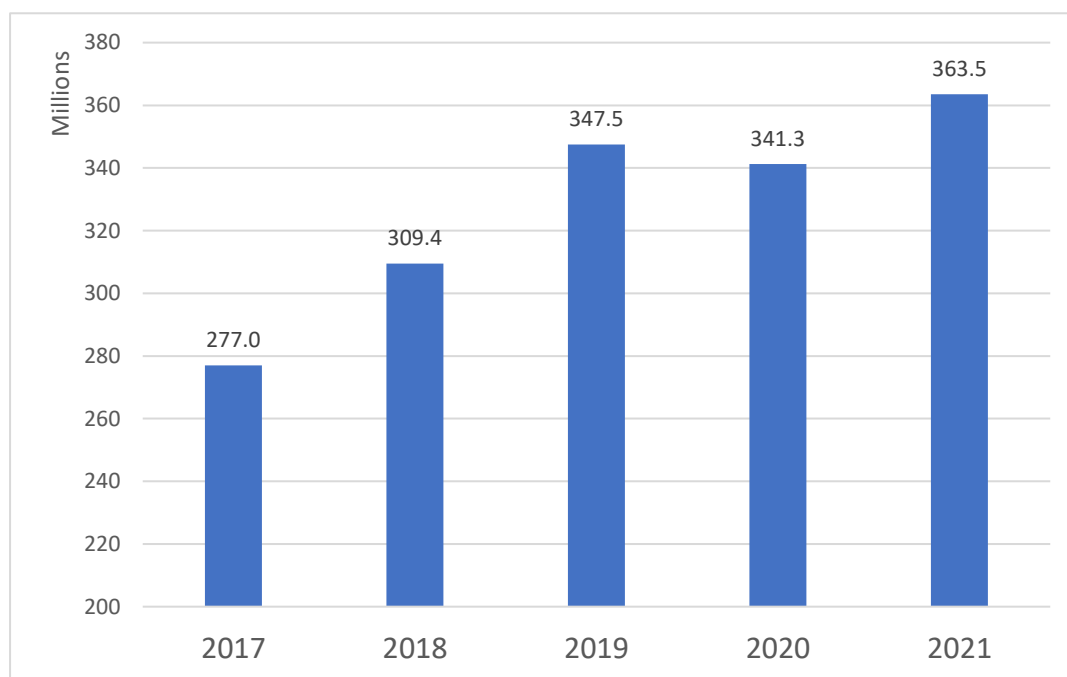
*Chart 6: The number of NGOs with submitted financial reports  
 (Source: APIF, RS and FIA, FBiH)*

In relative terms, only 29.4% of the total number of registered NGOs are active. Since 578 of them have ceased to operate and 1,763 organizations have already ceased to operate and are in the process of being deleted from the register, the rest of some 17,000 organizations actually exist only on paper, so they have no financial flows, neither revenues nor expenditures and in fact they do not perform any socially significant work.

This situation is both a problem and a significant potential. The problem is that apparently there are no favorable conditions for these 17,000 organizations to really start operating, that there are no financial resources for such organizations and that the general social climate is not favorable for them to function. On the other hand, this is a potential because it speaks of a significant degree of interest of individual citizens to organize themselves into such associations and try to do something to improve life in Bosnia and Herzegovina. That is why it is important to take care of this in order to include as many of these organizations as possible in the social and economic life of the country.

#### 4.2. Total income of NGOs in BiH

The total income of non-governmental organizations in Bosnia and Herzegovina, in 2021, is 363.5 million KM, as we can see in the graph below. This refers, therefore, to domestic non-governmental organizations that are registered in Bosnia and Herzegovina. A significant part of donor funds for BiH also goes to international non-governmental organizations, based in other countries. For example, only UNDP and other smaller UN agencies affiliated with it, collects and spends about 100 million dollars a year from donors who direct their donations to Bosnia and Herzegovina<sup>2</sup>.



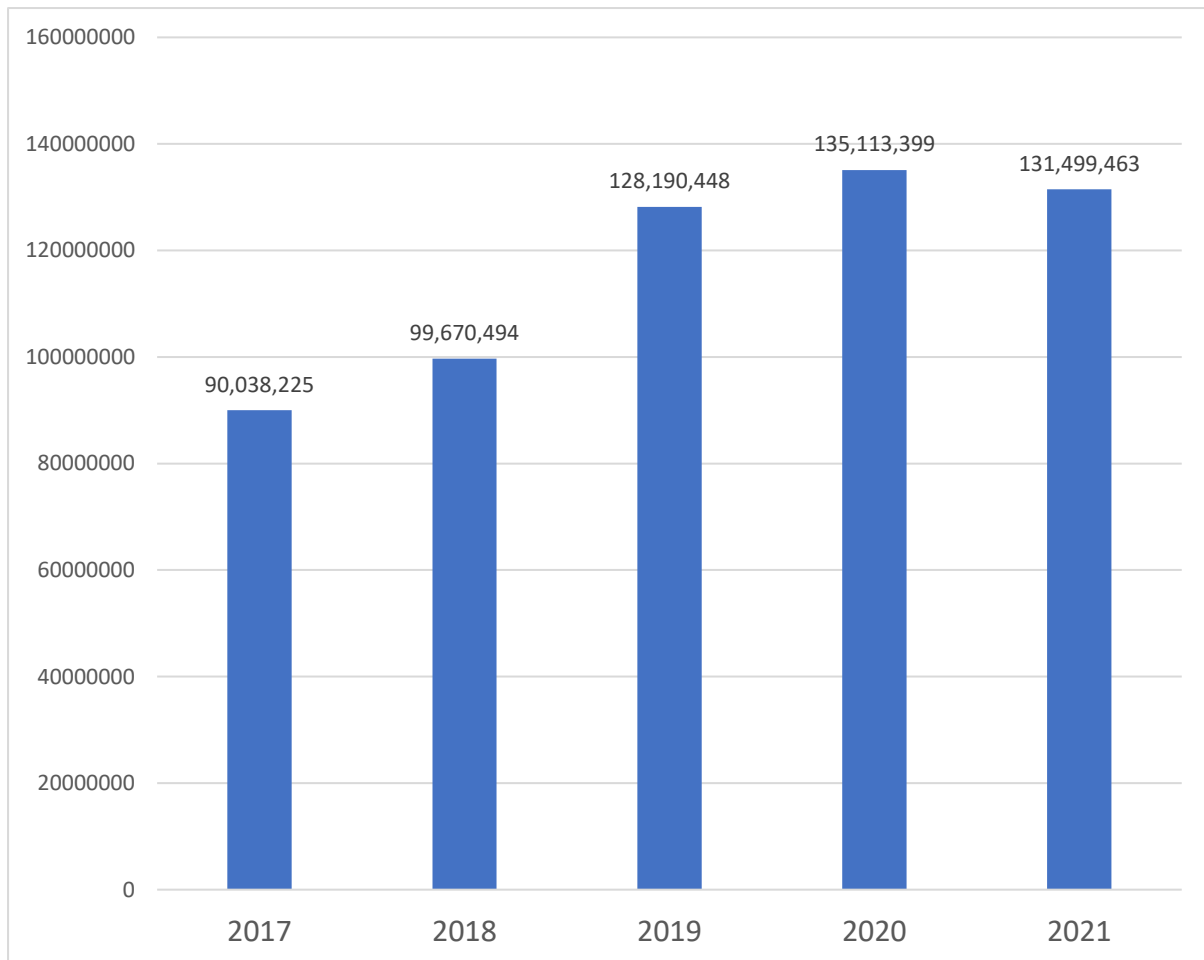
*Chart 7: Total income of NGOs in BiH (in millions KM)  
 (Source: APIF, RS and FIA, FBiH)*

Also, in the above graph, we see a stable growth trend in the income of non-governmental organizations in Bosnia and Herzegovina, so from 2017 to 2021, the total income increased by 31.2%. This indicates that there is a dynamic in the development of the non-governmental sector and that this sector is growing noticeably. However, it is growing insufficiently, especially when we compare its size with other countries. When we compare the total income of the non-governmental sector from 2021 to 39.9 billion KM, which is the size of GDP, we get that the share of income of the non-governmental sector in GDP is 0.9%.

<sup>2</sup> UN BOSNIA AND HERZEGOVINA ANNUAL REPORT 2021, available at [https://bosniaherzegovina.un.org/sites/default/files/2022-07/2021%20United%20Nations%20Bosnia%20and%20Herzegovina%20Results%20Report\\_BHS.pdf](https://bosniaherzegovina.un.org/sites/default/files/2022-07/2021%20United%20Nations%20Bosnia%20and%20Herzegovina%20Results%20Report_BHS.pdf)

#### 4.3. Gross added value created by NGOs in BiH

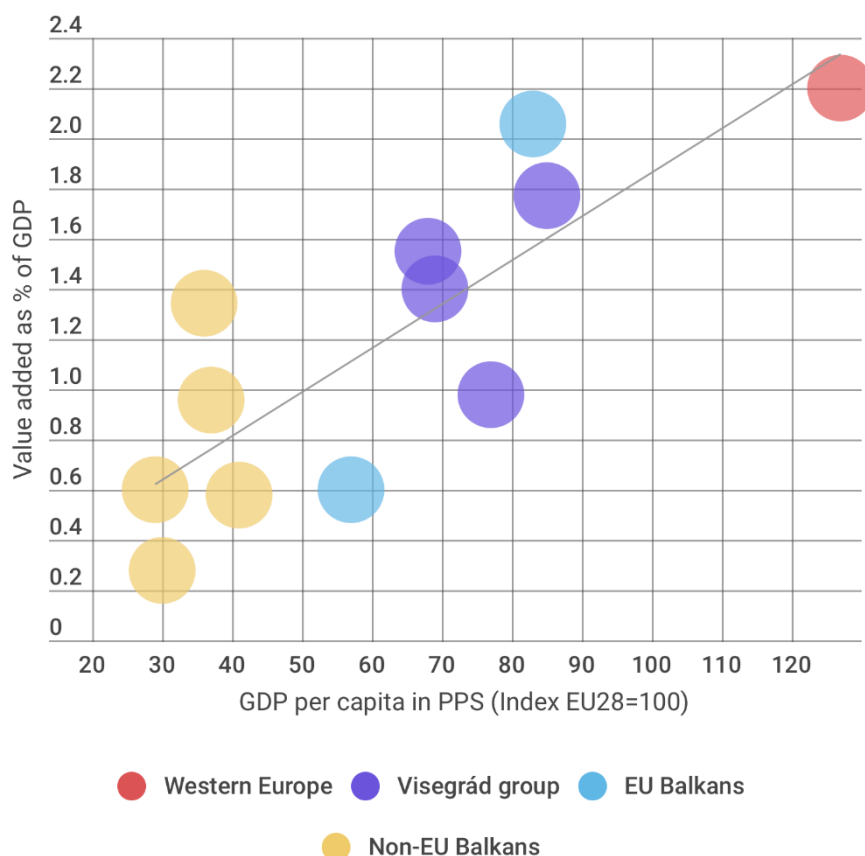
However, in order to be able to properly compare the share of value added created by the non-governmental sector, within the GDP of Bosnia and Herzegovina, we first had to calculate that gross value added.<sup>3</sup> The graph below shows the gross value added created by the non-governmental sector in Bosnia and Herzegovina. When we compare the amount from 2021 with the GDP of 39.9 billion KM, we get that the share of gross value added of the non-governmental sector in GDP is 0.3%.



*Chart 8: Gross added value created by NGOs in BiH  
 (Source: APIF, RS and FIA, FBiH)*

In the next graph, we will compare this share with the share of other countries in their GDP. As we can see, the Balkan countries that are not in the European Union are the worst in terms of the share of value added created by the non-governmental sector in relation to the total GDP. We can see that Bosnia and Herzegovina stands the worst of all these countries. The countries of Central Europe, the so-called Visegrad Group, are already doing much better than the Balkan countries. We see that the level of Western Europe is significantly higher than all these countries. This also supports the claim that the activity of the non-governmental sector in Bosnia and Herzegovina is insufficient and that a lot of work needs to be done to build the domestic non-governmental sector in order for it to produce results and have the kind of influence it has in the countries of Western Europe.

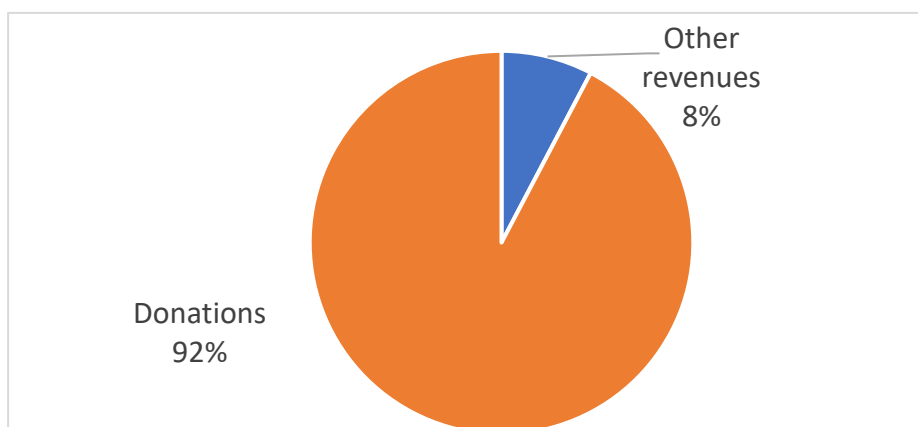
<sup>3</sup> We calculated the gross added value according to the standard methodology as the sum of incomes, so we added the operational profit, total wages and depreciation



*Chart 9: The comparison of value added as % of GDP by groups of countries  
 (Source: Vandro P, Traxler N, Millner R, Meyer M. Civil society in Central and Eastern Europe: Challenges and opportunities. Erste Foundation; 2017)*

#### 4.4. Sources of NGO funding in BiH

The previously analyzed situation indicates that financing the activities of the non-governmental sector is a significant problem. We have already stated that a large number of registered non-governmental organizations in fact do not have access to finances and do not even operate in the areas for which they were founded. That is why it is necessary to build a better system of financing civil society which directs donations from abroad, but also domestic funds from the budgets to organizations that have the ability and capacity to influence social and economic situation in the country.

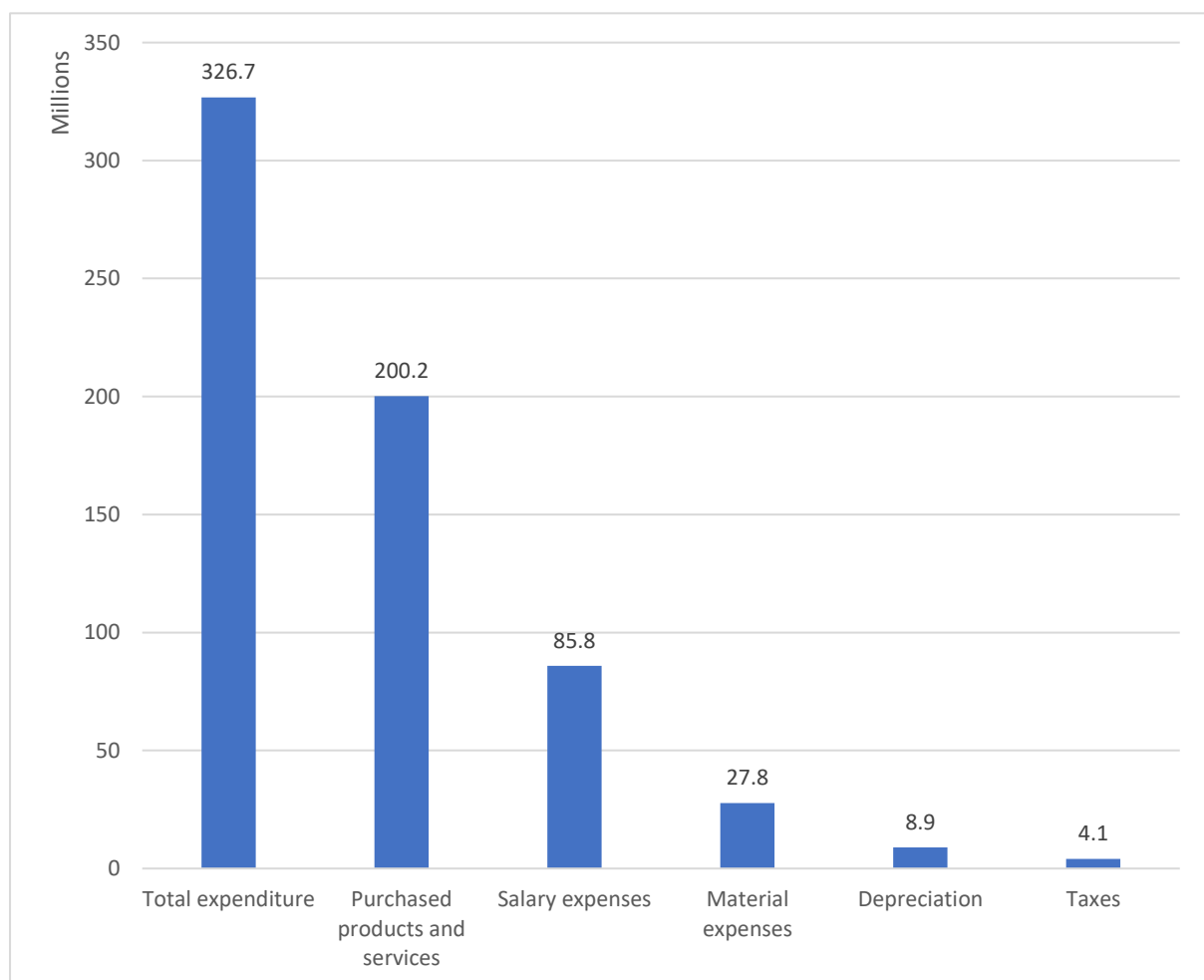


*Chart 10: Sources of NGO funding in BiH  
 (Source: APIF, RS and FIA, FBiH)*

According to the data we analyzed, the majority of the income of domestic NGOs comes from donations - 92%, and other (mostly sales of own products and services) income is about 8%. Donations refer to both foreign sources and domestic budgets of different levels of government, from municipalities, cantons, entities, to the state level. As for some kind of transition in funding sources, it would be natural for there to be a transition in Bosnia and Herzegovina from foreign sources of donations to domestic budget funds. However, financing from domestic sources is still a significant problem because it is characterized by all the weaknesses that the public sector in Bosnia and Herzegovina has, namely non-transparency, a significant degree of corruption, non-compliance, fragmentation and so on. In such a situation, when foreign donor funds are largely taken over by large international non-governmental organizations, and the system of financing with domestic funds is insufficiently organized, it is no wonder that we have lack of development and stagnation in the domestic non-governmental sector in Bosnia and Herzegovina.

#### 4.5. Expenditure structure and taxes of NGOs in BiH

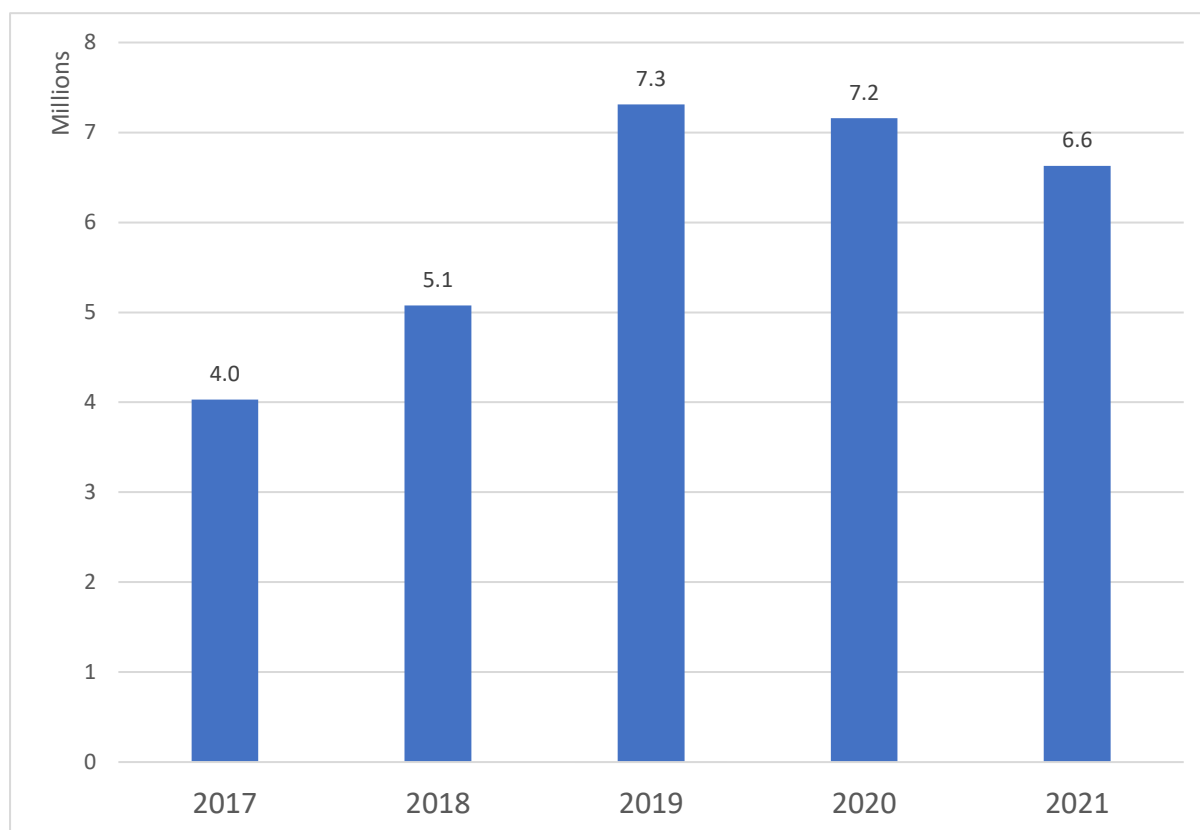
Total expenditures in 2021 are at the level of 327 million KM. Of that total amount, about 200 mil. KM or 61.3% represent products and services procured by NGOs in carrying out their activities. Salary expenses are 86 million KM, which is 26.3%. Material costs amount to about 28 million KM, depreciation about nine million and about four million KM are taxes.



*Chart 11: Expenditures of NGOs in BiH in 2021 (in millions KM)*  
 (Source: APIF, RS and FIA, FBiH)



The taxes that we have shown in the graph below represent the sum of labor income tax and capital income tax that are shown in the financial statements, to which the assessment of the profit tax that is paid after the defined financial result<sup>4</sup> is added. It must be noted that indirect taxes are not included here, i.e. value added tax. According to the data we see in the graph below, there is generally an increasing trend in the last five years in the level of taxes paid, so that from 2017 to 2021, taxes increased from four million to 6.6 million KM, which is an increase of a significant 65% .



*Chart 12: Taxes of NGOs in BiH in 2021 (in millions KM)<sup>5</sup>  
 (Source: APIF, RS and FIA, FBiH)*

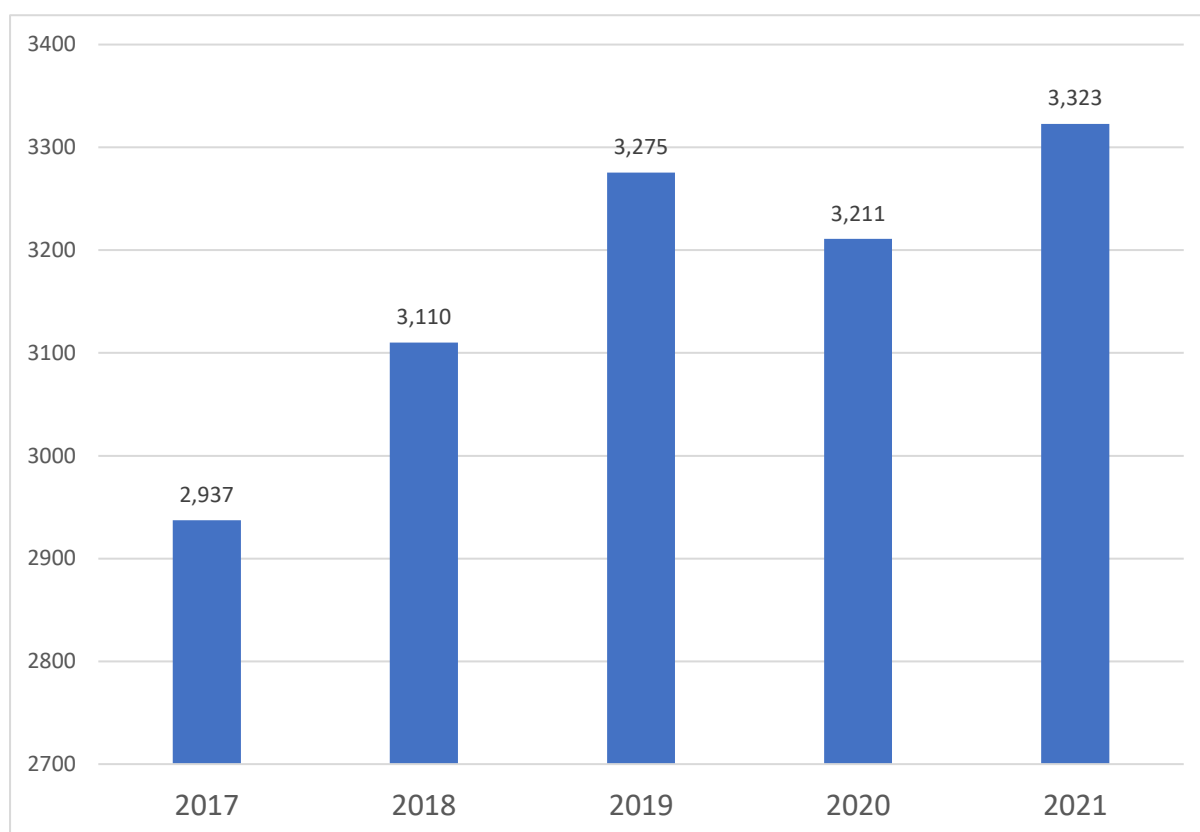
#### 4.6. Number of employees in NGOs in BiH

When we look at the number of workers recorded in the financial reports of non-governmental organizations in BiH, we see a surprisingly small number of employees. The key reason for this is that non-governmental organizations in Bosnia and Herzegovina generally have a relatively small number of permanent employees, and the majority of those who work in non-governmental organizations are employed either temporarily (less than a full-time) or on a volunteer basis. Unfortunately, at the moment we do not have the exact number of employees on a part-time basis or the number of volunteers. Therefore, in this research we will try to estimate the total number of employees currently working in the non-governmental sector. The assumptions for the assessment of part-time employees are as follows: in the IBHI study "Employment, provision of social services and the non-governmental (NGO) sector, status and perspectives for Bosnia and Herzegovina - Analysis and implications for policies (document 4:

<sup>4</sup> Profit tax is not one of the items in the financial statements because it is paid only after the calculated difference between revenue and expenditure. In this case, the profit tax was estimated on the basis of the calculated difference between revenue and expenditure of non-governmental organizations, a profit tax rate of 10% and an estimate of the reduction of the profit tax based on the accumulation of realized losses, subsidies from the public sector and other various reductions.

<sup>5</sup> It must be noted that indirect taxes are not included here, i.e. value added tax.

Report on detailed NGO survey)"<sup>6</sup> based on a detailed survey, the ratio between full-time and part-time employees was defined. This ratio indicates that in the non-governmental sector in BiH, two-thirds of registered workers are employed full-time, and one-third are employed part-time. In our case, we can estimate that if 3,323 employees in the NGO sector are full-time, in 2021, then we have an additional 1,630 part-time workers. The assumptions for estimating the number of volunteers are similar. In the aforementioned IBHI study "Employment, Social Services and the Non-Governmental (NGO) Sector, Status and Prospects for Bosnia and Herzegovina - Analysis and Policy Implications"<sup>7</sup> the ratio between full-time employees and volunteers can be calculated. This ratio indicates that in the non-governmental sector, there are 2.37 volunteers per one full-time employee. In our case, we can estimate that if there are 3,323 full-time employees in the NGO sector, in 2021, then we have an additional 7,660 volunteers.



*Chart 12: Number of employees in NGOs in BiH  
 (Source: APIF, RS and FIA, FBiH)*

In this way, when we add up all three categories, we get that about 12,600 people are engaged in one of these three ways in the non-governmental sector of Bosnia and Herzegovina. Compared to the 1.39 million people who represent the labor force in Bosnia and Herzegovina (or the active population), this represents a modest 0.9%. However, we must not forget that 12,600 people still represent a force that can significantly influence social and economic situation in Bosnia and Herzegovina, if there were a favorable social and financial environment for their work. What we have also already concluded is that this potential exists, but that this potential is poorly and insufficiently used.

<sup>6</sup> Available at: [https://www.ibhi.ba/Documents/Publikacije/2005/QS3%20NGO%20Sector\\_bos.pdf](https://www.ibhi.ba/Documents/Publikacije/2005/QS3%20NGO%20Sector_bos.pdf)

<sup>7</sup> Ibidem

## 5. CONCLUSION

In the public of Bosnia and Herzegovina, there are often attitudes, especially among politicians, that view the non-governmental sector in a negative way and talk about its power and influence on public life in Bosnia and Herzegovina. Most often, these are the views that the non-governmental sector in Bosnia and Herzegovina, under the influence from abroad, significantly influences some aspects of life in the country. According to the data we have seen in this analysis, this is not so. BiH does have a large number of registered non-governmental organizations, but the number of truly active ones is much smaller. If we also consider the fact that the structure of their activities is similar to the one that existed under socialism (sports and culture), then there is very little room left for NGOs dealing with economic growth and development, civil society development, sustainable development, environmental protection and other areas important for modern society. Also, if we look at the place where these non-governmental organizations operate, we see that more than 70% are in the Federation of Bosnia and Herzegovina and that over 40% of them are located in large urban centers. This means that the problems of smaller communities and rural areas are often neglected in the activities of non-governmental organizations, and as we have already said, small communities and rural areas often have more socio-economic problems, poverty, vulnerable population categories and so on. However, an insight into the financial data really shows that non-governmental organizations participate little in the overall social and economic life of Bosnia and Herzegovina. The share of gross value added created by non-governmental organizations in the total gross value added or GDP is only 0.3%. When we compare it with the countries of Central Europe such as the countries of the Visegrad Group and especially with Western Europe, we see to what extent Bosnia and Herzegovina really lags behind in financing the non-governmental sector. The share of those NGOs that submit a financial report to the competent financial institutions is relatively small and amounts to 29.4% of the total registered. This means that, taking everything into account, about 17,000 registered NGOs do not actually have any financial flows. As we have already said, it is a problem on the one hand, and a potential on the other. The problem is that apparently there are no favorable conditions for these NGOs to engage in certain activities, and on the other hand, it is a potential because in this way the will of the people to engage in certain activities is expressed. Financing of the non-governmental sector stands out as a key weakness in Bosnia and Herzegovina. As we emphasized in the text of the analysis, the financing of the domestic non-governmental sector comes from two main sources: foreign donations and domestic budgets. In the situation we are in today, it would be logical to have a certain transition in financing from the dominant role of foreign donations to a greater role of donations from domestic budgets for the non-governmental sector. Unfortunately, there are two negative trends in financing in Bosnia and Herzegovina. One is that large international non-governmental organizations from abroad take over a large part of donor funds intended for Bosnia and Herzegovina, and the other is that domestic sources of funding are still non-transparent, bureaucratized, with a significant level of corruption and inefficiency, with a lack of coherent access to funding between different levels of government. In such a situation, when there are fewer and fewer foreign donor funds and when the domestic public sector is not ready to react, adjust and improve the way of financing the domestic non-governmental sector, it is clear why we have such results as we have, it is clear why the non-governmental sector still has no opportunities and strength to significantly influence social, economic, political, cultural and other trends. The data on the surprisingly small number of permanent employees in the non-governmental sector in Bosnia and Herzegovina speaks in favor of this fact. Non-governmental organizations, faced with relatively small funds at their disposal, opt for a minimum number of permanent employees, and most people are engaged on the basis of temporary or volunteer relationships. Regardless, the number of the estimated number of 12,600 people is still a significant potential that, with the right financing system,

could increase the influence of the non-governmental sector on the political, economic and social life of the country. Improvement of the financing system of the non-governmental sector in Bosnia and Herzegovina requires correcting the current situation in two directions. One is the improvement of the financing system of the non-governmental sector from domestic sources, and the other is directed towards foreign donor funds that come to Bosnia and Herzegovina. Regarding the system of financing from domestic sources, from different levels of government, first of all it is necessary to recognize that the non-governmental sector performs a publicly useful function and, in many respects, complements and even surpasses the activities of the public sector in certain areas. Such a role deserves a much more serious way of financing that is systemically organized in society. Also, all levels within the public sector from municipalities to the state have their own strategic priorities (or at least they should have them), and the non-governmental sector can significantly advance the fulfillment of those strategic goals. That is why it is necessary to provide specific financing models adapted to the non-governmental sector. In addition, it is necessary to significantly improve transparency in domestic budgets, to reduce as much as possible the level of corruption, nepotism, and channeling of funds according to party affiliation. Regarding foreign donations, here we will quote the report on the non-governmental sector from 2020 created within a framework of the EU project called Technical Assistance to Civil Society in the Western Balkans and Turkey (EU TACSO 3), about the situation in BiH in this area:

- "The financial environment deteriorated as funding for CSOs continued to decrease, with international rather than local organizations receiving most of the direct donor funds. International organizations and agencies still receive funds directly from donors and then disburse part of it to local CSOs. Their fees consume a large part of the total funding, and their involvement reduces the sense of ownership among local CSOs."<sup>8</sup>

For this reason, it is necessary, together with the international community that allocates these donor funds, to devise a way to maintain efficiency in the spending of foreign donor funds, but to strengthen and not weaken the domestic non-governmental sector through this process. Increasing and strengthening the capacities of the domestic non-governmental sector, especially in areas that are important for the development of civil society, for overall social development, economic development, sustainable development, environmental protection and many other aspects that are important for the life of a modern society. It also implies, on the one hand, greater awareness of the NGO sector in applying for European funds and funds of other foreign donors in order to increase the level of financing from these sources, and, on the other hand, it is necessary to build awareness and capacities for applying to domestic institutions on all levels of government. It is necessary to stimulate greater activity of non-governmental organizations in areas where there are major economic and social problems. This applies especially to rural areas, but to all areas where there is a pronounced problem of vulnerable categories of the population. At the same time, we should not ignore the role of the non-governmental sector and various citizen initiatives in urban areas, which can initiate some of the important issues of development with their mass influence.

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# SATISFACTION AS A FACTOR IN MARINA SELECTION, YES OR NO?

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## **ABSTRACT**

*Classical tourism research undoubtedly emphasizes the satisfaction of tourists during their stay at the destination as a key factor in returning tourists to the destination. This general opinion has been transferred to nautical tourism, so it is considered that in marinas and nautical tourism ports, as a subarea of nautical tourism, satisfaction undoubtedly leads to the return of boaters to the marina. In accordance with the stated issue, the purpose of this paper is to investigate the relationship between boaters' satisfaction with their stay in the marina and their choice of marina upon arrival at the marina. In this research, in addition to the classical methods of analysis and synthesis, and deduction, desk research methods and a sample method that processes a large representative sample will be used. At the same time, this research uses the method of comparison in order to shed light on the difference between the satisfaction of boaters and tourists during their stay in the marina, as well as the connection of satisfaction with returning to the marina. Although differences are possible according to the categories of marinas, this research will take all marinas as one sample, regardless of category. The results of the research that examines satisfaction and selection through their basic factors show that the classical opinion that boaters' satisfaction functionally affects the selection of marinas cannot be accepted. Therefore, the conclusion is imposed that satisfaction and selection should be observed through their factors, rather than as independent and shaped phenomena in the marina research.*

**Keywords:** *satisfaction, selection, marinas, established opinions, research*

## **1. INTRODUCTION**

Nautical tourism in Croatia is an important selective form of tourism. Through the three basic sub-areas of nautical tourism, nautical tourism ports, charters and *cruising*, nautical tourism significantly supports the economic development of Croatia, both through direct and even more through indirect effects. The development of nautical tourism takes place through small and medium enterprises and is a good example of Croatian entrepreneurship. Nautical tourism ports as an important subarea of nautical tourism and the marinas as the most developed form of nautical tourism ports are spread over all 6,000 km of the Croatian coast, with the indication that the development of marinas is possible and necessary especially in the southern part of the Adriatic. Considering the offer of marinas, it is necessary to distinguish between two types of tourists or boaters: boaters who have their vessels in Croatian marinas or come with their vessels from other marinas, and charterers who use the services of a Croatian charter. It is a widespread opinion in tourism that a satisfied tourist usually returns to the place where he spent his vacation, but often widespread opinions harm the development of the offer. Therefore, it is necessary to constantly research. Research is expensive, but it pays off in the long run. The researches of the Institute of Tourism, Tomas Nautica Yachting, which are recently conducted every 5 years, are financed by the state.

Unfortunately, the Croatian state considers them a cost and not an investment. Considering the fact that research is very necessary and that there is a lack of it due to dynamics and unsolved problems, the research of individual researchers is welcome. The main objective of this research is the valorization of boaters' satisfaction as a factor in selecting a marina, which essentially means returning to the marina. The research hypothesis to be proven or rejected is that the selection of a marina depends significantly on boaters' satisfaction.

## 2. NAUTICAL TOURISM AND MARINAS

As mentioned above, nautical tourism in Croatia consists of nautical tourism ports, with marinas being the highest quality ports for nautical tourism, as well as charter and *cruising* that accommodate both large cruise ships and small domestic cruise ships, known as "Small shippers". Recent research inspired by COVID-19 has shown that there is a high degree of commonality between ports of nautical tourism, particularly marinas, and charters. In other words, marinas are well protected from charter companies in times of crisis, but charter companies would also not exist if there were no marinas. Therefore, the previous classification of nautical tourism has been supplemented by a new one in the form of the supplemented subcategory "*Marina business, operation of nautical tourism ports and in ports of nautical tourism*".<sup>1</sup>

NAUTICAL TOURISM INDUSTRY					
SIDE	BASIC TYPES				SUPPLEMENTARY
<ul style="list-style-type: none"><li>- Diving tourism,</li><li>- Surfing,</li><li>- Rafting,</li><li>- Diving,</li><li>- Rowing,</li><li>- Fishing tourism,</li><li>- Robinson tourism,</li><li>- Lighthouse tourism,</li><li>- and others.</li></ul>	Marina business, operation of nautical tourism ports and in ports of nautical tourism		Business with cruisers		<ul style="list-style-type: none"><li>- Dry dock, keeping the vessel on dry land, much further from the sea</li><li>- Shipbuilding of mega yachts,</li><li>- Production of small vessels,</li><li>- Production of equipment for nautical tourism,</li><li>- Skipper services,</li><li>- Information services,</li><li>- Sailing schools,</li><li>- Research institutes and educational centers,</li><li>- And other services.</li></ul>
	Ports of nautical tourism	Charter	Cruisers	Ports for accepting cruisers	
	<ul style="list-style-type: none"><li>•Anchorage</li><li>• Mooring</li></ul> Marines* Sorted by categories	<ul style="list-style-type: none"><li>• Motor yachts<ul style="list-style-type: none"><li>- with a skipper</li><li>- without a skipper</li></ul></li><li>• Sailing yachts:<ul style="list-style-type: none"><li>- with a skipper</li><li>- without a skipper</li></ul></li></ul>	<ul style="list-style-type: none"><li>•great world cruisers</li><li>• local cruisers:<ul style="list-style-type: none"><li>- daily cruising</li><li>- multi-day cruising</li></ul></li></ul>	<ul style="list-style-type: none"><li>Ports for large cruisers:<ul style="list-style-type: none"><li>- specialized ports that are members of "Cruise Europe" and other associations</li><li>- not specialized ports</li></ul></li><li>Ports for local cruisers:<ul style="list-style-type: none"><li>- ports in small and large towns</li><li>- island ports</li></ul></li></ul>	
RESEARCH SUBJECT					

Figure 1: Nautical tourism classification model according to the principle of basic activities (after 2019)

(Source: Authors Luković, T. & Piplica, D. & Peronja, I.: "*Marina Business u relacijama razvoja*", Multidisciplinary scientific journal "*Marine*", University of Rijeka, Rijeka, 2022)

<sup>1</sup> Luković, T. & Piplica, D. & Peronja, I.: "*Marina Business u relacijama razvoja*", Multidisciplinary scientific journal "*Marine*", University of Rijeka, Rijeka 2021



Remark:

- \* the categorization of marinas is not uniform in Europe; in Croatia it was changed in June 2008, in the new set of rules of 2019 it has remained the same again, but it has not been accepted in practice yet.
- \* the classification of nautical tourism ports according to the new *"Regulations on the categorization of nautical tourism ports and the classification of other facilities for the provision of mooring services and the accommodation of vessels"* (Official Gazette 120/19, adopted on December 9, 2019) is not acceptable and should be avoided in scientific research.

It should be noted that the use of Croatian legislation related to nautical tourism ports, in particular the "Regulation on the category of ports for nautical tourism and classification of other facilities for the provision of mooring services and accommodation of ships"<sup>2</sup> has become useless. Furthermore, both in the expert discussions and in the professional discussion,<sup>3</sup> this regulation has raised numerous new and old problems, such as

- the so-called "dry port" was first introduced as a port. As such, the dry port cannot be a port in any sense,
- depot was added to the dry port in the second regulation, and the mooring, which was taken over by the state as an illegal port, was abolished,
- the mooring was abolished as a nautical tourism port, but the state kept the moorings in its jurisdiction, creating unfair competition with marinas,
- and finally, in the last "Regulations on the categorization of nautical tourism ports and the classification of other facilities for the provision of mooring services and the accommodation of vessels", only the marina was retained as a nautical tourism port, while all others were listed as "other facilities" without any criteria.

This development of the Croatian legislation on nautical tourism ports, to which are added the problems of the new NKD 2007 - National Classification of Activities 2007 (NCEA 2007/NACE Rev.2) - in comparison with the NKD 2004, as well as the inconsistencies with the state statistics, have made it impossible to use the legislation as a basis for research. The issue of legislative regulation is also a subject of research in other countries<sup>4</sup> with the difference that these develop their legislation in accordance with the goals set by a stable long-term system. In such conditions, the elaboration of a macronational strategy for nautical tourism is only a guess, because macronational goals are a segment of the system that requires high quality research<sup>5</sup>, as well as political will in countries and economies in transition. Considering the offer of Croatian marinas in 2021, after the pandemic year, Croatia had 85 marinas with approximately 16 thousand berths.<sup>6</sup> At the same time, research has shown that the marinas with a high number of charter vessels survived the pandemic in 2020 with a minimal decrease in revenues and a satisfactory profit.<sup>7</sup> All this shows that it is justified to combine marinas and charters in the classification of nautical tourism in Croatia.

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<sup>2</sup> "Pravilnik o kategorizaciji luke nautičkog turizma i razvrstavanju drugih objekata za pružanje usluga veza i smještaja plovnih objekata", Official Gazette 120/2019

<sup>3</sup>Round table in Opatija in December 2021 on the topic of "The Law on Maritime Property and Sea Ports"; Round table in Split in March 2022 on the topic of the "Law on maritime property and sea ports"; the shortcomings and problems posed by this law, especially in connection to this problem of concessions for maritime property, were discussed.

<sup>4</sup>Padovan, AV & Petit Lavall, MV & Casciano, D.: "Marina operator berthing contract from a comparative law perspective", *Revista de Derecho del Transporte*, No 23 (2019): 39-97

<sup>5</sup>C. Perez-Labajos & B. Blanco & L. Sanchez & E. Madariaga & E. D'iaz & B. Torre & C. Lopez & S. Sanfilippo: "The Leisure Nautical Sector in the Atlantic Area", *Journal of Maritime Research*, Vol XI. But. I (2014) pp. 87–97

<sup>6</sup>Estimate for 2021 according to research in the paper Luković, T. & Piplica, D.: "Marina operations in SME approaches", *University scientific journal "Naše more"*, University in Dubrovnik, Dubrovnik, 2021

<sup>7</sup>Luković, T. & Piplica, D. & Peronja, I.: "Marina Business in development relations", *Multidisciplinary scientific journal "Marine"*, University of Rijeka, Rijeka, 2022

### 3. BOATERS' PREFERENCES IN TERMS OF SATISFACTION AND SELECTION

Boaters who come to the Croatian Adriatic, either with their own vessel or with a chartered one, are faced with the selection of marina as a starting point for their nautical vacation and experience. A distinction must be made between boat owners who choose a marina for an annual berth and the option of a multi-year berth. Many factors come into play when selecting a marina for a permanent berth. Charterers, on the other hand, choose a marina as a departure port based on completely different criteria, where the quality of the vessel comes first, followed by the sailing schedule. There are 3 types of yacht charters that can be considered:

- A Bareboat charter, where the crew members have a skipper's license.
- Skippered charter, where none of the crew members have a skipper's license, or even if they do, they feel unsafe to operate the vessel alone, so a professional skipper must be hired.
- Crewed charter, where a group of tourists charter a yacht with a professional skipper and a cook or hostess on board.<sup>8</sup>

Therefore, it is important to have more detailed information about chartering in Croatia in order to consider the type of rental as one of the factors when selecting a marina. Moreover, boat owners in transit, choose marina as a port of passage and destination, which is certainly influenced by some other factors. In addition, the management of the marina, as well as the relations with the municipality where the port is located, have an indirect influence on the marina selection, since their good relations create a positive atmosphere that is transmitted to boaters and tourists. In this respect, Spain has a special pioneering role, having successfully solved the problem of sustainable development. As pointed out by a group of Spanish and Portuguese authors, five key factors must be considered when researching business orientation in nautical tourism, especially in the marina environment.<sup>9</sup>

No.	Factors	
1	Natural	1.1. Influence of wind 1.2. The influence of waves
2	Nautical	2.1. Port entrance and maneuvering 2.2. The depth of the sea
3	Technically	3.1. Infrastructure port 3.2. Reception capacities (number of berths) 3.3. Space for the development of other service activities in the port 3.4. Mobility of boaters (required travel hours) 3.5. Quality of berths and nautical services
4	Environment	4.1. Ecological value 4.2. Monitoring of sea and port quality
5	Socioeconomic	5.1. Influence on the economic development of local communities 5.2. Cultural influence on the local community 5.3. Impact on other services

*Table 1: Matrix of 5 basic groups of factors*

*(Source: Manuel A. Andres, Ernesto Madariaga, Olga Delgado, Jesus, E. Martinez.: "Marine pollution in the nautical seaport in Croatia by the effluent of tourists", European Transport / Transporti Europei (2017), Issue 64, Paper no 3, Issue 1825-3997)*

In accordance with the above factors, the development of marinas must be considered by presenting the factors of sea quality that boaters take into account when selecting marinas, as well as satisfaction with their stay in marina. Important for marinas in Croatia is the cleanliness of the sea and the possibility of swimming in the immediate vicinity of the marina. The length of stay, which ultimately leads to satisfaction or dissatisfaction, follows the choice of marina, and thus destination. The boaters' satisfaction phenomenon is also influenced by various factors.

<sup>8</sup>Stelios, Iannidis: "An Overview of Yachting Tourism and Its Role in the Development of Coastal Areas of Croatia", JOHTI- Journal of Hospitality and Tourism Issues/ Year: 2019, Vol: 1 No:1 30-43, p. 31- 32

<sup>9</sup> Manuel A. Andres, Ernesto Madariaga, Olga Delgado, Jesus, E. Martinez.: "Marine pollution in the nautical seaport in Croatia by the effluent of tourists", European Transport / Transporti Europei (2017), Issue 64, Paper no 3, Issue 1825-3997

As mentioned above, the prevailing opinion is that satisfaction determines return, but many factors require new research, so the question of satisfaction factors arises. Previous research, which considers satisfaction essentially as a global characteristic related to boaters, does not distinguish between satisfaction with staying at the marina and satisfaction with staying at the destination. The above two forms of satisfaction, which represent the overall satisfaction of boaters, also depend on some other factors, such as how to get to the marina. In this regard, more and more attention should be paid to air traffic and the boaters' check-in system at airports, as more and more boaters arrive at the marina by air. Road traffic, which still dominates, is also an important factor for boaters' satisfaction. The construction of new highways in Croatia has contributed significantly to increasing the overall satisfaction of boaters coming to Croatia. The mode of travel - by land or air - also plays an important role in the selection process, especially for reasons of competition from countries such as Italy, France and Spain. The aforementioned "big three" already traditionally have a high-quality road network as well as dynamic air transport, which Croatia is just joining. The perception of the road network, as well as other contents, shape the "value for money" factor, which is an important factor in the selection of a marina from which boaters and their friends set out for a vacation of several days. This fact was well recognized in the research conducted by the Institute of Tourism Zagreb, Tomas Nautica Yachting, which compares the "value for money" of competing countries in a special section.

States	in 2004		in 2017		Comment
	Better in Croatia	Worse in Croatia	Better in Croatia	Worse in Croatia	
Spain	25.0	28.4	12.3	29.6	It is obvious that the offer of the Spanish marinas has improved compared to the Croatian ones, which has strengthened its competitive advantage.
France	24.2	27.6	33.2	30.6	Croatia's sense of "value for money" compared to France has improved, which was influenced by the saturation of its coast.
Italy	27.5	17.2	23.5	21.1	Italy, our direct competitor, is still not better than Croatia, which is "to blame" for the juxtaposition of the beautiful coast of Croatia against ancient historical buildings in the hinterland of the marinas in Italy.
Slovenia	50.0	7.0	37.9	12.4	Slovenia's small coast with a small number of marinas cannot be a competition for Croatia.
Montenegro	no	no	29.1	12.4	The small coast of Montenegro with a small number of marinas cannot be a competition for Croatia. In addition, EU membership is important.
Greece	19.9	21.6	38.7	25.1	The change in favor of Croatia is the result of roads and easier access to Croatia than to Greece.
Turkey	28.0	32.4	no	no	Turkey is clearly becoming a competitor of Croatia, and through the marinas they have bought, the young Turkish nautical tourism also teaches how to develop it in Turkey.

*Table 2: Value for money of Croatia and competing countries in 2004 and 2017 (in %)*

*Note: The share of respondents who rated a particular element of the offer as "worse" or "better" compared to the observed competing country is shown.*

*(Source: Tomas Nautica Yachting 2004; Tomas Nautica Yachting 2017)*

As can be seen from the table, Croatia compares quite well with its main competitors in nautical tourism in the Mediterranean, although the differences are not significant, except in relation to Slovenia and Montenegro.

Some countries, such as Spain, support their development more successfully, and this development is based in particular on sustainable development.<sup>10</sup> As for Italy, vacations and similar forms of tourism put the beauty of the Croatian coast, as well as the cleanliness of the sea, before the beauty of the historical sights in the hinterland of the port and its coast. Slovenia and Montenegro are not important competitors for Croatia because of their short coastline, but also because of Montenegro's (non)membership in the EU. Turkey, which has a developed coastline but has only recently begun to focus on tourism, has successfully gained experience in nautical tourism through the marinas it has acquired and taken over in Croatia. Considering opinions of boaters, it is obvious that Turkey is becoming a competitor of Croatian nautical tourism. As for research in Croatia, there is little research on satisfaction in nautical tourism, i.e. nautical tourism ports, and even less or no research on boaters' preferences in selecting marinas upon arrival. As in Croatia, there are generally no such studies outside Croatia. Therefore, the research conducted by the Institute of Tourism Zagreb, Tomas Nautica Yachting, from 2004 to 2022 is of particular importance. In the area of boaters' satisfaction, the dynamics have developed as follows.

	in 2004	in 2007	2012	in 2017	in 2022
Very high	The beauty of nature and landscape	The beauty of nature, Personal safety	The beauty of nature, Personal safety	The beauty of nature, Personal safety, Reception at the airport (transfer, charter).	
High	Personal safety	Reception at the marina, Staff helpfulness, Gastronomic offer.	Vessel condition (charter), The helpfulness of the staff in the marina, Reception at the marina (charter)	Quality of catering services in marinas, Sanitary facilities in marinas, Variety of cultural manifestations.	
Medium	The helpfulness of the marina staff	Vessel supply, Reception at the airport, Spatial layout of the marina.	Connection quality, "Value for money" of the total offer, Cultural manifestations.	No	
Low	Reception of guests in the marina (charter), Gastronomic offer of the destination, Transport accessibility to the port of departure	Cultural events, Entertainment facilities, Sports facilities	No	No	
Very low	Acceptance at the airport (charter), Spatial layout of the marina, Availability of water and electricity connections in marinas	No	Possibility of purchase in marinas	No	

*Table 3: Development of satisfaction according to Tomas Nautica Yachting from 2004 to 2022 (max 3 factors)*

*(Source: Tomas Nautica Yachting from 2004 to 2022)*

<sup>10</sup> Ricardo Martín & Víctor Yepes: "Public participation in landscape management: Landscape values in a marina in Granada (Spain)", Land (MDPI), 2023 [www.mdpi.com/journal/land](https://www.mdpi.com/journal/land) (accessed on 15/02/2023)

As can be seen from Table 3, according to Tomas Nautica Yachting research, 25 satisfaction factors are observed over the years from 2004 to 2022.<sup>11</sup> It can be seen that the satisfaction of boaters with the offer in marinas, but also outside marinas, is increasing, and in 2017 all 25 factors were classified in the group of high and very high satisfaction. Considering the method of conducting the Tomas Nautica Yachting survey results from 2004 to 2022, i.e. the presentation of the results, the overall satisfaction is discussed regardless of the marina category, showing the differences between charterers and boat owners. In addition, the results show the average satisfaction regardless of location, considered from north to south. Therefore, Tomas Nautica Yachting's results should be viewed through the prism of averages. The question arises as to what factors play a role in selection and satisfaction.

### **3.1. Previous research**

Research on marina selection and satisfaction is rare or nonexistent. Tomas Nautica Yachting 2017 looks at satisfaction, but only satisfaction in terms of the overall experience at the destination. The Tomas Nautica Yachting 2017 survey compared to 2012 shows that boaters' satisfaction is increasing, from which it can be indirectly concluded that satisfaction with marina services is also increasing. There are no other surveys on satisfaction with marina services in Croatia. From some other surveys, indirect conclusions can be drawn about the relationship between satisfaction and the selection of marina in Croatia. This refers to the treatment of all European marinas that ADAC included in the survey, namely 1,608, which confirms the high quality of Croatian marinas. In other words, in the survey conducted in 2010 all 55 marinas in Croatia received a high rating. Of course, this is not the opinion of boaters, but the opinion of ADAC, which knows the needs of all its members and makes an assessment on their behalf. Considering the importance of boaters' satisfaction and selection of marinas, it is necessary to conduct research that will contribute to the understanding of important psychosocial and economic categories that are important for the marketing management of marinas in Croatia.

### **3.2. Boaters' satisfaction, new research**

Boaters' satisfaction is the cognitive-affective response of the service user - the boater - resulting from the (non)correspondence of their expectations with the concrete level of service offered in marinas. Satisfaction is the overall subjective evaluation after using the service based on the boater's experience. It can be viewed as a focus on the boaters' expectations and their satisfaction with the attributes that contribute to the overall experience. Boaters' satisfaction is a key component of successful destination marketing because it influences selection of destination and the decision to visit it again. Boaters' satisfaction depends on and varies with the quality of marina services. It depends on factors related to marina services in a broader context. It can be assumed that boaters' satisfaction, as well as the selection of a marina, depends on their financial, social, and community preferences. Therefore, satisfaction can be determined within these three fundamentally different groups. At the same time, when examining boaters' satisfaction, it is extremely important to consider the categorization, capacity, and location of the marina itself. It is expected that satisfaction with marina service and the most important factors for marina selection are related to the categorization of the marina. Indeed, socioeconomic differences among users of a particular category of marina are likely to be very pronounced. Marinas in a lower category (2 anchors), whether rented or owned, are predominantly used by individuals or groups with lower ability to pay, while marinas in a higher category (5 anchors) are used by individuals or groups with higher monthly incomes.

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<sup>11</sup>Tomas Nautica Yachting from 2004 to 2022

In addition, users of higher category marinas are generally expected to have higher expectations than users of lower category marinas. Nevertheless, there may also be differences in key selection factors on the one hand and satisfaction factors on the other.

### 3.3. The selection of marinas, new research

A boaters' decision to select a marina is influenced by a number of factors. There are several determinants for the selection of a marina. It can be assumed that the selection depends on various financial, social, psychological and societal preferences of the boaters. A tourist/boater going on vacation will invest money without expecting any material or economic return from visiting the marina itself. The decision to visit a particular marina involves motives, intentions of the boater, and incentives that transform his intention into a final choice. A tourist/boater may make their decision in a variety of ways, from very routine to very comprehensive approaches and motives. In a routine approach, decisions are made quickly and with little mental effort, whereas in a comprehensive approach, searching for information and evaluating alternatives requires much more time and effort.<sup>12</sup> The following table shows descriptive indicators through the total average values of the selection and satisfaction factors and their mutual relationship through correlation.

		SELECTION TOTAL	SATISFACTION TOTAL
SELECTION TOTAL	r	1,000	<b>,418**</b>
	p	-	,000
	N	417	417
AVERAGE VALUE	$\bar{x}$	5,6470	5,7386
SATISFACTION TOTAL	r	,418**	1,000
	p	,000	-
	n	417	417
** Correlation is significant at the 0.01 level (2-tailed).			

*Table 4: Total mean value of marina selection factors and boaters' satisfaction in marinas and correlation*  
 (Source: Authors' research in the 2021 and 2022 season)

#### Remark:

When calculating the average of satisfaction and selection factors, a Likert scale of 1-7 was used, where: 1 = unimportant, and 7 = very important. As can be seen from the table, the differences in the total mean scores of boaters' satisfaction with marinas and marina selection, regardless of category, show that there are no significant differences because their total mean values are very similar and therefore they do not have significant meaning. From the above table it can also be seen that there is a positive correlation between the observed variables between the indicators: "total selection and total satisfaction" ( $r=0.418$ ;  $p<0.01$ ), but it is a correlation of weaker intensity. The question arises what it says and how it is to be interpreted. The analysis of the descriptive data with the SPSS system, which provided us with the arithmetic total mean of the selection and satisfaction, shows that the total mean of the satisfaction and the selection are related, and the results show no interdependence.

<sup>12</sup>Moutinho, L.: "Strateški menadžment u turizmu", Masmedia, Zagreb, 2005

As for the correlation, the correlation coefficient shows that the relationship between total marina selection and total marina boaters' satisfaction is weaker. Therefore, it can be concluded that it is not acceptable to consider the interdependence between the selection of marinas and the satisfaction of boaters in marinas, since the increase in satisfaction does not affect selection of marinas. Considering that the above calculations represent the total mean of the lowest category marinas and the highest category marinas together, as determined in the research, there is still a question whether there is a relationship with the categories of marinas. Therefore, it is necessary to conduct further research based on the knowledge of the differences in the factors of boaters' satisfaction with their stay in marinas from the selection of marinas in relation to their category in Croatia.

#### 4. CONCLUSION

The assumption that the role of factors in selection of a marina is not the same as in creating satisfaction by staying in marina is the research hypothesis of this study, which was confirmed by this research. Therefore, the hypothesis that the selection of marina depends on the boaters' satisfaction of staying in marina, which is the prevailing opinion in tourism, is rejected. The alternative hypothesis is adopted, which states that the selection of marina when the boaters arrive in marina does not depend on the boaters' satisfaction of staying in the marina. In examining the boaters' satisfaction with their stay in marinas and the boaters' selection of marinas, the total mean values of the marina selection factors and the boaters' satisfaction with the marina services were used. These values were correlated to determine the degree of correlation. The correlation coefficient obtained showed a weak correlation ( $r=0.418$ ). This refutes the common belief that "a satisfied guest always returns to the same place", at least as far as boaters and tourists in nautical tourism are concerned, i.e. marinas as a subarea of nautical tourism. Considering the importance of tourism, as well as established opinions that have no research basis, it is advisable to continue research similar to the present one. This research has raised a number of open questions, for example, it would be advisable to conduct the research according to the category of marinas. There is also the question of whether or not the results are the same in all target areas. The research is necessary because it is helpful in the design of the offer and management measures in nautical tourism ports, especially in the marinas, and is well suited for the actions of the state administration, which makes decisions through laws and regulations that should be less prescriptive and more supportive.

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## DO UNIVERSITIES EDUCATE FUTURE MANAGERS ABOUT UPCOMING TECHNOLOGIES?

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### ABSTRACT

*The current business environment is highly volatile, owing to the fast development of ICT, globalization, rapid innovation, short production cycles, and employee mobility. In order to cope and survive in such an environment, companies must master modern technology, collect and analyze data from various sources, and efficiently manage human and technological resources. Since digital technology is an integral part of every industry, managers unfamiliar with IT industry trends and technological advances will struggle to manage their people and projects effectively. Managers today must not only collect data through technology but also use that data to inform business decisions and improve processes. Today and in the future, managers in any industry must stay ahead of technological development to thrive in a constantly changing workplace and competitive landscape. Therefore, the question arises if the universities prepare students, e.g., potential future managers, for working in an unstable business environment and with technologies that are still under development or don't exist yet. The challenge of the twenty-first century is digital transformation, which will undoubtedly significantly impact the education of future managers. Universities should be able to respond appropriately to ICT development and trends in the emerging digital and knowledge society. In order to find out if universities educate students, e.g., potential future managers, about upcoming technologies, the authors developed a questionnaire to investigate students' perceptions of education for new technologies. So, the aim of the presented research is to find out if management students at the University of Mostar are equipped with the necessary knowledge about upcoming technologies to be better prepared for their future management roles.*

**Keywords:** *ICT, Managers, University education*

### 1. INTRODUCTION

It is widely acknowledged that today's businesses cannot thrive without cutting-edge technology infrastructure. Digital technologies are developing and evolving at a rapid pace, increasing competition and the need for businesses to adapt quickly. The complexity of the business environment continues to rise. Learning how technology influences internal processes should be a priority for each company. They may then utilize this knowledge to conduct an in-depth analysis of their current setup and pinpoint problem areas that can be addressed by implementing digital transformation.

That allows businesses to determine what it is they hope to achieve via their digital transformation and map out a strategy to get them there. Artificial intelligence (AI), machine learning (ML), blockchain technology, the Internet of Things (IoT), and similar innovations are reshaping conventional management in numerous ways. The use of digital tools can enhance a wide variety of interpersonal and organizational processes, including conversation, teamwork, content administration, analytics data access, and social networking. New ideas and engagement boost satisfaction among both employees and clients. The concern that arises, however, is whether or not managers have adequate education and training to effectively manage and implement present and emerging technology solutions. Namely, it is beyond doubt that managers will struggle to lead their teams and complete projects successfully if they are not up-to-date on the latest technological developments and trends in the IT business. Managers don't have to be IT experts but should have a solid understanding of the technological landscape. Managers can spot issues and seize opportunities more quickly if they are familiar with different digital solutions. Managers' credibility in a dynamic environment stems from their technical proficiency, which is enhanced by their ability to manage people. Managers in any company must keep ahead of the technological curve in order to prosper in a continuously changing workplace and competitive scene. Progress and innovation do not differentiate between young and old managers. To avoid extinction, managers must keep their technological skills sharp and maintain continual communication with their personnel to comprehend better the digital tools they utilize. The widespread adoption of digital technology across all industries, including business, poses new issues that higher education institutions must address. There has to be a better alignment between the means through which management and leadership are taught and the requirements of a world increasingly dominated by technology. Management students, in particular, need practice dealing with sensitive organizational issues such as employee resistance to change and the fast-paced evolution of technology. Future managers will need greater self-awareness and leadership skills to cope with the high levels of unpredictability and dynamic environmental changes (Ramšak and Veligurska 2018). As a result, the question arises as to whether universities prepare students, i.e., possible future managers, for a career in an uncertain business climate using technologies that are in the early stages of development or don't even exist yet. The authors created a questionnaire to explore students' perspectives on education for new technologies to determine whether universities teach students, such as prospective future managers, about emerging technology. The purpose of the research presented in this paper is to determine if management students at the University of Mostar are adequately prepared for the challenges of modern management by learning about emerging technologies. The following research questions (RQ) were posed:

- RQ1: How familiar are prospective future managers with various digital technologies?
- RQ2: What digital technologies are presently being used by potential future managers?
- RQ3: What is the practice at the University of Mostar regarding the use of digital technologies during classes?

## **2. IMPACT OF TECHNOLOGIES ON MANAGERS EDUCATION**

Aside from the traditional issues of change and transformation, digital technologies introduce some unique aspects that managers must address. They include the formation of an ecosystem in which digitalization plays a vital role, as well as new digital tools for communication and teamwork, which affect leadership and the company as a whole. As educators of potential future managers, universities should carefully observe technology's changes in the corporate sector to better prepare their students for possible management professions. The direction universities and colleges should follow in constructing adaptive and robust educational support systems to meet students and the workforce's future needs is especially important in the context of rapidly evolving technologies.

## **2.1. Technology is reshaping the way managers work**

Changes brought on by digitalization and the use of new technology within businesses call for new skill sets on the part of managers and the creation of innovative approaches in management practices (Bresciani et al. 2021). Several studies have examined how management is evolving and how new positions, like a chief digital officer, are being created to accommodate this shift (Firk et al. 2021, Singh et al. 2020). Other studies have emphasized the importance of top management in the digital age, concluding that these individuals are responsible for three crucial tasks: keeping up with digital developments, establishing the institutional framework for digital transformation, and facilitating organizational change (Wrede et al. 2020). Hence, digital environments necessitate a rethinking of the roles and duties of all levels of management, who must become more attuned to the impact of digital technologies and proactive in adapting to the new realities they create (Correani et al. 2020, Eden et al. 2019). According to Konica Minolta (2022), the following five ways technology affects management practices:

- 1) Facilitates improved decision-making. Companies increase the speed and quality of data collecting by integrating new technology, allowing managers to make faster and more efficient decisions.
- 2) It automates repetitious tasks. Automating jobs gives management more insights from data and procedures, giving businesses the oversight they need to be as efficient as possible. Business process automation (BPA) solutions can assist firms in streamlining operations such as employee onboarding, accounts payable, and contract administration.
- 3) Promotes collaboration. Workplaces may now hold remote meetings using video-conferencing technology and collaborate on shared documents using cloud-based file-sharing tools that sync in real-time to keep track of changes.
- 4) Stores, organizes and maintains content intelligently. Technology has enabled firms to store, retrieve, and organize documents effectively, increasing productivity while lowering storage and operational expenses. Enterprise content management (ECM) is a system that manages the entire information lifecycle, streamlines company processes, and improves day-to-day operations.
- 5) Increases employee efficiency. Having the right technology in the workplace may boost employee engagement and, as a result, help the organization achieve its goals.

While the digitization and change landscape is rapidly evolving, the literature around this new approach is still in its infancy and suffers from a lack of consistency and diversity of methodologies (Budde et al. 2022). A number of challenges must be surmounted while attempting to manage a digital transformation (Frank et al. 2019), including a lack of managerial support, limited resources, and reluctance to change, to name a few. Complexity makes it harder for businesses to implement new technologies worldwide, reinvent business models, and adapt to changing regulatory requirements. In this case, the difficulty lies not in eradicating or stifling the complexity brought on by digital transformation but in developing efficient approaches to resolving the issues it raises for managers. That also includes managers' leadership abilities and adaptability to change (Budde et al. 2022).

## **2.2. The role of digital technology in managers education**

Nowadays, higher education institutions (HEIs) face problems analogous to those encountered by businesses. Specifically, the pressures of the digital, global economy are prompting HEIs to undergo transitions driven by digital technologies. In order to be successful, academic institutions' models of educational and organizational democratic accountability must be reorganized to act quickly and precisely, to establish new concepts effectively, and to provide adaptive and respectful facilities. This attitude shift toward an "entrepreneurial mindset" must start instantly (Cilliers 2017).

HEIs, particularly business studies, should focus on developing their students' technical and managerial competencies. Students should learn how to track, analyze, and understand the benefits of technological developments, as well as have a thorough understanding of the organizational business structures, procedures, and strategies, understand the conditions for launching the digital transformation process with the appropriate resources and tools and build technical integration and business process design competencies for re-engineering (Caliskan et al. 2020). According to higher education experts (Ahmad 2019), education should be less structured and allow for more diversity. For people to be able to retrain as needed and put their new skills to use as soon as possible, they urged to create additional courses, multiple streams, and a wider choice of credentials. With the rate at which the modern workplace is evolving, that is more important than ever. The primary driver of this transition is technical progress (Alenezi 2021). Professors, businesses, and students all need to be prepared to deal with the uncertainties that technological change inevitably brings. Experts and policymakers in the field of education are discussing the opportunities and threats facing higher education in the future (Leonardi and Treem 2020). Uncertainty about the right direction higher education institutions should follow in constructing flexible, powerful educational support systems to meet academic and future job objectives is critical in the context of evolving technology. Universities will continue to play an essential role in providing students with the skills they need to succeed in the twenty-first-century industry. Because of the rapid growth of technology, higher education institutions find it challenging to properly plan, strategize, and predict the range of intended educational objectives. However, they must be able to do all of this to fulfill their position as essential contributors to supporting students in preparing for the workforce in the future (Akour and Alenezi 2022). The interactions between students and institutions regarding learning expectations and needs are shifting due to technology. It has encouraged the growth of competitive and alternative learning to provide flexible, in-depth, and personalized learning experiences. In higher education, digital tools have been incredibly beneficial in boosting communication between students and teachers (Sayaf et al. 2021). Although historically, this type of technology has primarily occurred in the classroom, it may now occur virtually everywhere and at any time [9], urging students and instructors to embrace the rebirth of digital transformation use in current culture. Some authors have acknowledged this tension, claiming that technological innovation in the world's rapid change demands must be met through higher education (Santos et al. 2019). HEIs must be inventive in their teaching and learning practices to effectively address the skill requirements of the developing technology work market (Ilori and Ajagunna 2020). New graduates, executives, and digital learners require innovative tools and techniques to improve digital skills and employability. McMurtrey et al. (2008) investigated the significance of knowledge and technical and nontechnical skills in a prosperous professional context, emphasizing information technology. Concerns have been expressed, however, about the educational gap in new technologies and innovations, which are usually missing from HEIs and curricula (Ilori and Ajagunna 2020). When confronted with the problems of a continually changing world, teaching methods, tools, and approaches should better relate to management and leadership development needs. Instead of typical discipline-oriented structures (marketing, finance, logistics, human resources, etc.), business studies should emphasize cross-disciplinary themes (e.g., sustainability, ethical issues, and social consequences of technological changes). HEIs should investigate innovative technologies that can save time and energy for both academic staff (for research and teaching) and students more actively (for collaborative learning and gaining practical experience). Microlearning, virtual learning environments (using artificial intelligence and gamification), and flipped classrooms appear as promising educational approaches (Ramšak and Veligurska 2018). While most HEIs are aware of the necessity of educating future managers about new technologies, there is still a lack of research on this topic.

Most of the research investigates students' views related to online activities such as social networking, web surfing, and email (Kurkovsky and Syta 2011), the influence of social networks on cooperative learning (Alkhathlan and Al-Daraiseh 2017), the impact of technology on creative thinking (Mabić et al. 2021), the use of e-learning platforms (Cilliers 2017, Moreno et al. 2017), understanding of digital literacy (Mabić et al. 2022) or use of technology in the classroom (Dowling-Hetherington et al. 2020).

### 3. METHODOLOGY

The empirical research was conducted at the beginning of 2023 on a convenient sample. A total of 52 students participated. A survey questionnaire was used as a research instrument. It was prepared by the authors, and it is divided into three distinct sections. In the first part of the survey, participants were given a list of digital technologies and asked whether or not they were familiar with them and whether they had heard about them. In the second part of the survey, respondents were shown a variety of technologies and applications and asked to select all technologies they use. The final section consisted of 14 statements concerning the practice of integrating digital technologies into the teaching process (the practice of using and informing about technologies during teaching). The respondents used a Likert scale with five points to indicate their level of agreement with the presented statements, ranging from 1 (never/never at all) to 5 (always/consistently). Absolute and relative frequencies were used to present the results for the first two research questions (RQ1 and RQ2). In contrast, the results for the third research question (RQ3) were presented as an arithmetic mean and standard deviation (M and SD) and mode (C). After collecting the answers, a database was created in Microsoft Excel 2016, and the same program was used for statistical analysis.

### 4. RESULTS

Table 1 contains the response to the first research question (RQ1) - *How familiar are prospective future managers with various digital technologies?* Most respondents have heard of Artificial Intelligence (AI), 3D graphics, social networks, and content-sharing platforms. Edge computing, deep learning, semantic web, blockchain, and web 3.0 have gotten the least attention. The outcomes of familiarity with the provided technologies are identical to the previous one. The majority of respondents are familiar with social networks and content-sharing platforms, but they are nearly entirely unfamiliar with web 3.0, blockchain, and the semantic web. None of the respondents are familiar with edge computing. Less than 15% of respondents recognize up to 8 of 12 ICT. Not a single responder said they were familiar with all the terms. Also, not a single responder chose 11 or 10 of the 12 available technologies. As a result, the highest score is 9 - three respondents say they are familiar with 9 of the 12 offered technologies. The level of familiarity with the offered technologies is comparable, if not worse, than the prior results. Only one respondent is familiar with more than five of the technologies listed; specifically, he is acquainted with eight of the twelve technologies listed. The majority of responders are familiar with three, four, or five of the available technologies.

*Table following on the next page*

Technology	Heard	Familiar with
Blockchain	26.9	1.9
Artificial Intelligence	92.3	75.0
Machine learning	50.0	11.5
Deep learning	21.2	11.5
Edge computing	17.3	0
Decentralized data networks	38.5	9.6
Metaverse	30.8	11.5
Semantic web	25.0	7.7
3D graphics	90.4	50.0
Social networks/media	84.6	92.3
Web 3.0	25.0	3.8
Content-sharing platforms (documents, video, etc.)	84.6	90.4

*Table 1: Information about and familiarity with different digital technologies  
 (Source: prepared by the author)*

Table 2 contains the answer to the second research question (RQ2) - *What digital technologies are presently being used by potential future managers?* Fewer than one-third of respondents say they use five of the nine offered technologies. Half of them say they use voice search and image recognition. Google applications, such as Google Translate and Google Maps, are the most commonly used technology. About 40% of respondents utilize up to three of the offered technologies, with only four using more than five. 77% of respondents utilize between three and five of the offered technologies, with half using the three most commonly used technologies and only 40% using all previously listed technologies.

Technology	%
Cryptocurrencies	3.8
Virtual assistants (e.g., Siri, Bixby, Alexa, etc.)	15.4
Google translate	98.1
Google maps	96.2
Chatbots (robotic advisors)	1.9
Voice search on Google or another search engine	50.0
Image recognition - image tagging (e.g., Pinterest, etc.)	51.9
Google or similar glasses (augmented reality)	30.8
Smartwatch	32.7

*Table 2: Use of different technologies  
 (Source: prepared by the author)*

Table 3 provides an answer to the third research question (RQ3) - *What is the practice at the University of Mostar regarding the usage of digital devices during classes?*  
 The statements' mean ratings vary from 1.57 to 4.04, with the majority scoring less than 3. Grades 1–3 dominate in the majority of statements.

*Table following on the next page*

<b>Teachers during classes</b>	<b>M</b>	<b>SD</b>	<b>D</b>
use computers, presentation software, and Internet sources (e.g., YouTube)	4.04	0.92	4
use software specific to their subject (e.g., databases, analytical tools, modeling tools, etc.)	2.54	1.15	4
devote time to teaching about advanced technologies and their use in the specific field they teach	2.31	1.16	1
give examples of the use of advanced technology in management	2.24	1.18	1
emphasize the importance of knowing ICT for your future career, especially in management	2.41	1.24	1
devote time to teaching about data storage technologies (databases, data warehouses, etc.)	2.69	0.99	3
devote time to teaching about data analysis technologies (Business Intelligence, Analytical Tools, Data Mining)	2.63	0.96	3
devote time to teaching about the importance of adequate analysis and interpretation of digital data, especially data from the Internet	2.35	1.02	3
provide a critical overview of the use of ICT in business	1.92	0.796	2
encourage the student to critically analyze the use of technology in business	2.41	1.00	2
encourage a reasoned discussion on the topic of using ICT in business	1.57	0.76	1
encourage students to research in the field of ICT	2.22	0.99	2
emphasize the importance of knowing ICT for work in the profession	2.58	1.07	3
emphasize the importance of knowing ICT for achieving good business results	2.61	1.17	3
M – mean; SD – standard deviation; D - mode			

*Table 3: Evaluations of claims about the current involvement of ICT in the teaching process  
 (Source: prepared by the author)*

## 5. DISCUSSION

The findings indicate that digital technologies are most effectively utilized as a means of content dissemination and presentation in the classroom. The statement with the highest average rating confirms the previous one: "teachers during classes use computers, presentation software, and internet sources (e.g., Youtube)," while statements encouraging students to conduct research within the context of digital technologies and stressing the importance of knowing them for future business life and a successful career receive low ratings. The previous demonstrates that educators routinely use computers and presentation software but only infrequently bring digital technologies closer to students through critical reviews, demonstrations of their use, examples of their practical uses, etc. The other statements (Table 3) do not have exceptionally high average marks either, and the grading system used, from 1-not at all to 5-always, shows that during studies, not enough attention is paid to familiarization with and application of digital technologies, which only confirms what was said above. Of course, these results cannot be generalized, but they can confirm the often-mentioned gap between the labor market and the education system (Gimba et al. 2019, Leonardi and Treem 2020, Schwartz et al. 2018, Zain 2021). Although the gap mentioned above primarily refers to the imbalance of experts and jobs, it can also be interpreted in the context of the knowledge that students acquire during their studies.

There is a significant gap between the knowledge and skills students gain during formal education and the knowledge and skills that future employers expect from them. On the other hand, the results obtained on the knowledge and use of various digital technologies show that students are not overly interested in technology either privately or at least most of them are not interested. The above implies that in the context of digital technologies, students do not even practice informal learning, which supports the previously explained gap in the context of knowledge and skills. These findings cannot be generalized, but they do confirm the frequently mentioned gap between the labor market and the educational system (Gimba et al. 2019, Leonardi and Treem 2020, Schwartz et al. 2018, Zain 2021). Although the gap mentioned above usually relates to an imbalance of specialists and employment, it can also be viewed in terms of the knowledge acquired by students during their education. There is a large gap between the information and skills students acquire during formal education and the knowledge and abilities expected by prospective employers. Nonetheless, data on students' familiarity with and use of various digital technologies reveals that they are not enthusiastic about technology outside HEIs. The above suggests that students do not even engage in informal learning in the context of digital technology, lending credence to the knowledge mentioned above and skill gaps. It was emphasized in chapter 2 of this paper that for students to learn to monitor, analyze, apply, and use digital technologies, they must build both technical and managerial competencies during their studies. The preceding explains why teachers are the best people to educate students about technological advancements and digital technology in the workplace. As part of agile digital infrastructure, HEIs should provide flexible technology, new enterprise platforms, and a strong and scalable operational backbone to support human resources, teaching, innovation, administration, access, market openness, building process, society, and research (Alenezi, 2023). On the other hand, HEIs must have the physical facilities required to meet modern educational standards and procedures (i.e., institutes of innovations, laboratories for teaching, digital training units, and laboratories for teaching according to digital and innovation scenarios). Improved teaching, learning, and university operations will benefit all stakeholders if they better understand the skills required in the future and how universities are training students to obtain those talents. This understanding is critical, especially given how quickly the workplace is changing. The primary driver of this transition is technical progress. University teachers, employers, and students must prepare to embrace the uncertainties that come with technological change.

## 6. CONCLUSION

Management and leadership education must be in a position to help develop competencies to equip one with the necessary skills and knowledge to successfully handle various business-related issues in a volatile and uncertain world. Among other trends, rapid digital technology development has profoundly impacted the skills and knowledge employers want from prospective employees. Teaching methods, tools, and techniques should better correspond to management and leadership development needs when facing the challenges of a constantly changing world. As business studies need to adapt to the ever-changing market needs, the curriculum, courses, materials, and examples should be adjusted to the ongoing changes. In order to remain interesting and valuable for the students, the curriculum should be based on the actual market needs. Therefore, it is necessary to increase cooperation with the companies in developing courses. As HEIs need to adapt their programs and courses to the changing market needs, potential employers should be the major source of information on how to structure and prepare the programs. For both undergraduate and graduate students, the courses, teaching methods, and materials should be relevant from the market perspective, thus resulting in the development of appropriate skills that are sought on the market. Therefore, courses and programs should be built flexibly, enabling adaptation to the changing needs.



However, in every organization, including HEIs, the worldview, culture, and digital literacy of the students, teachers, administrators, and other stakeholders are crucial to the process. Because of this, the majority of obstacles and possibilities in organizational change relate to people, processes, strategies, structures, and competitive dynamics. The study's findings are not encouraging, implying that students who have completed higher education primarily grasp theoretical information, whereas what businesses seek is practice. The previous should be interpreted by HEIs management as a significant signal of radical changes, which will be principally represented in the adaptation and modernization of study programs in terms of digital technologies. Furthermore, work should be done to improve digital competencies among teachers and students to meet the real sector's demands, expectations, and requirements. That could be achieved by increasing the involvement of experts from practice in curricula development. The research presented did not include a huge number of students; hence, the same research should be conducted on a larger number of respondents to determine whether or not this will influence the results obtained and to what degree it will do so. In further research, it is essential to broaden the topical area of the study by investigating topics such as students' levels of digital literacy and their perspectives on the use of digital technology in the corporate world, amongst other issues. In addition, the research findings should be disseminated to many additional interested stakeholders in the higher education sector (teachers, administration, policymakers, and employers). It should come as no surprise that the perspective of business on the future of higher education places a significant amount of attention on students, the requirements of the job market, and the curriculum related to the labor market. From the standpoint of educational science, the significance of education and the skills and knowledge that students will require to succeed in the workforce are emphasized. Computing is the only field other than information technology in which digitization and digital transformation are prominent topics of discussion and research. The future of higher education needs to incorporate all of these different points of view into a single, cohesive, and comprehensive point of view. The need for higher education as well as the flexibility to create and adapt it, which is governed by governance norms such as legislation, financial tactics, and quality assurance, are essential variables to consider while pondering the question of how higher education might look in the future.

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## WHY AND HOW EXPATRIATE MANAGERS ENGAGE IN MISBEHAVIOR: DEVELOPING A COMPREHENSIVE MODEL

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### ABSTRACT

*Integrating social cognitive and fraud triangle theories, we develop a decision-making model to explain how and why expatriate managers deployed from non-corrupt countries engage in misbehavior in corrupt countries. Discrepancies between home-country and host environments and between parent-company performance expectations and expatriate managerial on the ground realities can trigger expatriate manager misbehavior. We theorize this occurs via cognitive self-regulatory dynamics whereby extrinsic reputation and intrinsic self-esteem threats may lead managers to learn vicariously from the host social environment about the effectiveness of misbehavior for achieving their goals. We propose that self-efficacy and moral standards will play important moderating roles in this process. We also suggest that moral disengagement mediates the relationships between learning from unethical referent others on expatriate managers' motivation to misbehave to achieve their goals, to develop justification for misbehavior, and to exploit opportunities for misbehavior.*

**Keywords:** *decision-making, expatriate managers, fraud triangle, misbehavior, social cognitive theory*

### 1. INTRODUCTION

Records of Foreign Corrupt Practices Act (FCPA; SEC, 2020; US Department of Justice, 2020) violations in the last decade provide a plethora of real-world examples of international corporate corruption scandals (Guterman, 2019). In 2010, U.S. giant General Electric was fined \$23 million for illegal kickback payments made by its Iraqi subsidiary expatriate executives to local government officials to obtain U.N. Oil for Food Program contracts (SEC, 2010). In 2015, Japan's Hitachi and its executives in South Africa were charged for making improper payments to the ruling political party for contracts to build power plants. The company was fined \$19 million (SEC, 2015). In 2018, Credit Suisse Group AG agreed to pay more than \$70 million in criminal penalties to resolve charges that its executives in Asia-Pacific obtained investment-banking business in the region by corruptly influencing officials (SEC, 2018). Violations of the FCPA and similar laws in other countries around the world, such as the Bribery Act 2010 in the U.K. (Transparency International UK, 2010) or certain Articles (e.g. 197-198) of Japan's Penal Code (The Official Gazette, 2006), highlight the struggle, with respect to misbehaviors, that multinational corporations, and the expatriates working for them, face when navigating differences between home and host country institutional and socio-cultural environments. We define expatriate managerial misbehavior as actions performed by expatriate executives that break standards of expected behavior by their MNEs or violate laws of the home and/or host

country. Our definition is derived from the literature on MNE misbehavior (Cuervo-Cazurra, Dieleman, Hirsch, Rodrigues & Zyglidopoulos, 2021). However, in contrast with that literature which attributes misbehavior to organizations, we focus on the expatriate managers who make the decisions to misbehave. In particular, the mentioned real-world incidents imply that expatriate managers often succumb to the pressures to integrate and succeed in a corrupt<sup>1</sup> host country, relative to the pressures to succeed and maintain institutional integrity from the perspective of the non-corrupt home country. Given the rising number of corruption scandals that have recently rocked even the most renowned corporations, we find the need for greater understanding of this phenomenon particularly important. With this paper we, therefore, seek to explain how and why some expatriate managers who are deployed from non-corrupt home country environments, and who are expected to be ethical role models or “good soldiers” during their overseas assignment, succumb to corruption in the corrupt host country environments, as well as why some managers do not. Extant efforts to explain this phenomenon have, for the most part, polarized into macro and micro level research streams. Macro research generally adopts a pre host-entry approach, and uses mostly cultural, institutional, and organizational theories to explore the relationships between home and host country corruption. Aspects of this focus include institutional, cultural, social, political, foreign market selection, modes of entry, organizational structure, strategy, and policy considerations (Cuervo-Cazurra, 2016; Doh, Lawton, & Rajwani 2012; Gabbioneta, Greenwood, Mazzola, & Minoja, 2013; Kuznetsov, Kim, & Right, 2019). In contrast, micro research tends to rely on cognitive theories to explore the facilitating or hindering roles of various personal (i.e. psychological) resources of mostly non-expatriate executives in their wrongdoing. These include: self-control (Zahra, Priem, & Rasheed, 2005), self-directed emotions of shame and pride (Smith-Crowe & Warren, 2014; Tillman, Gonzalez, Whitman, & Hood, 2018), moral standards and disengagement (Bandura, 1990; Moore, Detert, Treviño, Baker, & Mayer, 2012; Tillman et. al., 2018), and rationalizing ideologies (Trevino, den Nieuwenboer, & Kish-Gephart, 2014). Attempting to integrate macro and micro approaches, research drawing on institutional theories posits that societies’ institutions translate into members’ specific, identifiable and enduring cognitive and behavioral patterns by structuring the attention of actors (Lounsbury, 2007), defining the rules of play (Dunn & Jones, 2010) and providing meaning and appropriateness (DiMaggio, 1991; Thornton & Ocasio, 2008). Corruption-prohibiting institutional environments, characteristic for countries with lower levels of corruption, thus, encourage people to reject corruption and to stigmatize offenders, while effective oversight and legal institutions constantly monitor and promptly sanction transgressors (Wolfe, 2019). Oppositely, countries with higher levels of corruption have a higher degree of institutional ambivalence in sanctioning, and may even socially reward unethical behaviors, rendering them more effective in reaching desired outcomes (Wolfe, 2019). For example, Fisman and Miguel (2007) demonstrated the motivating power of home country institutional environments while studying parking violations committed by UN diplomats in New York City. Notwithstanding a lack of regulatory sanctions due to diplomatic immunity, they found that expatriate diplomats from low-corruption countries almost never parked illegally, whereas those from high-corruption countries did so frequently. Similarly, research drawing on social influence theories of strain (emphasis on goal-achievement) and anomie (i.e., the breakdown of standards and values or lack of moral guidance) argues that socio-cultural norms may stimulate misbehavior by placing a disproportionate value on goal achievement and/or conveying a lack of concern about the moral character or the means used to achieve such goals, and vice versa (Bennett, Pierce, Snyder, & Toffel, 2013; Fisman &

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<sup>1</sup> We acknowledge that there are no countries without corruption. However, for the sake of clarity, we refer to “corrupt” countries as those ranked lower on the Transparency International corruption index (indicating higher levels of corruption perception) and to “non-corrupt” countries as those ranked higher on this index of corruption (indicating lower levels of corruption perception). For a detailed discussion of characteristics associated with corrupt and non-corrupt countries, see Warf (2018) and Wolfe (2019).

Miguel, 2007; Shi, Connelly, & Hoskisson, 2017). This research stream contends that managers can adopt criminal attitudes, motivations, and rationalizations in acclimating to social environments characterized by such criminal tendencies (Greppin, Carlsson, Wolfberg, & Ufere, 2017; Sutherland & Cressey, 1970). For example, social norms accentuating network connections and in-group preferential treatment; those fostering systemic barriers such as excessive bureaucracy or centralized and exclusive power to grant access to scarce host country resources (licenses, permits, and signed contracts) could motivate expatriate managers to use unethical means (e.g. bribes) to “smooth out” and “speed up” the administrative processes necessary to secure businesses arrangements. Without a specific focus on expatriates and with limited theoretical development of explanations for their misbehavior, the extant streams of research have offered inconclusive and piecemeal understanding of, and have shed little light on the decisions of expatriates in host country environments characterized by high levels of corruption to engage in corrupt activity themselves. While the concept of a fraud triangle - comprised of motive, justification, and opportunity - offers insights into fraudulent activity by managers, the role of environmental influences on managerial cognition, as well as the identification of managerial cognitive resources and cognitive processes involved in expatriates’ disregard of home country institutional norms and effectuation of the fraud triangle elements in a corrupt host country, has been neglected (Cooper, Dacin, & Palmer, 2013). Hence, we need an understanding of the linkages among environmental forces and managerial cognitions, an unpacking of how motive, justification, and opportunity lead to misbehavior, as well as more in-depth knowledge on facilitators and inhibitors of these dynamics. However, given the illegal nature of most activity included within the term “corruption,” as well as the difficulty of investigating it at the managerial level, such research remains non-existent.

## **2. A MODEL OF EXPATRIATE MANAGERIAL MISBEHAVIOR**

### **2.1. Theoretical Foundation**

As a basis for our model, we draw on the fraud triangle theory from the criminal psychology literature and the social cognitive theory from social psychology. The fraud triangle theory posits that criminal behavior, including corruption, involves three critical prerequisites: motivation, justification, and opportunity (Coleman, 1985; Cressey, 1965). According to social cognitive theory (SCT: Bandura, 1986; 2001), there are two fundamental domains of human functioning: extrinsic (environmental, interactional) and intrinsic (cognitive, self-regulatory). From the environmental perspective of SCT, behavior is the product of the continuous tri-directional interaction among environmental, cognitive, and behavioral influences (Bandura, 1986; 2001). Bandura (1986) called this constellation of influences that vary in intensities a reciprocal triadic relationship. He further stipulated that behavioral agency could be collective (environmental impacts on a person’s cognition affect self-regulatory dynamics, which then produce behavior), personal (a person’s behavior is independent of, and even perhaps changes the environment), and proxy (a person uses competence, power and/or favors of others in a given environment to secure desired outcomes). According to Bandura, (1986; 2001), self-regulatory cognitive systems guide human behavior through principles of foresight, self-reflectiveness, self-reactiveness, and self-efficacy. Using foresight, people orient their behavior towards future intrinsic (self-esteem, pride) and extrinsic (social recognition, reputation) rewards, and away from sanctions (shame, scrutiny). In cases where a discrepancy exists between these rewards and a person’s reality, people reduce or eliminate behaviors that they believe hinder and attempt to exhibit behaviors that facilitate reward achievement. Central to this process are self-efficacy beliefs about one’s ability to execute courses of action required to reach desired outcomes (Bandura, 1977; 2001). Self-efficacy beliefs influence how people set goals, exhibit and persist in their efforts to achieve them and interpret circumstances and conditions they operate in.

According to SCT, self-regulatory system is overt and people's self-reflection and regulation of thoughts and behaviors in the quest to achieve desired rewards is informed by personal standards and environmental contexts, and the extent to which a person learns about the environment and the self. People learn from experience, social exchange, persuasion, support, and by modeling rewarded behaviors. SCT recognizes that some behaviors depart from personal and universal ethical standards and norms. Such departures are explained by the concept of cognitive moral disengagement mechanisms (Bandura, 1990; 2001). Using mechanisms such as moral justification, euphemistic language, exonerating comparison or displacement and diffusion of responsibility, people detach from moral standards and rationalize their actions to neutralize intrinsic (self) and extrinsic (social) condemnation. Hence, blending the SCT and the fraud triangle theory, we explain the genesis of misbehavior of expatriate managers deployed by companies from countries with lower levels of corruption to countries with higher levels of corruption. In doing so, we explain the influence of the competing home and host country environments to expatriate managerial cognition, detailing how expatriate managers cognitively appropriate their corrupt engagements, effectuate the fraud triangle elements and, ultimately, execute the misbehaviors, as well as what managerial personal resources, i.e. cognitive factors, facilitate and hamper such dynamics.

## **2.2. Performance failure and extrinsic and intrinsic threats**

When expatriates move to a new cultural milieu, they may be exposed or subjected to differing, or even opposing, institutional environments that condone or sanction conflicting ways of thinking and behaving. The reality for expatriate managers operating in corrupt host countries is that host country norms accentuating network connections and in-group preferential treatment may hamper their efforts to conform with expectations of their parent company in a non-corrupt home country. Host country stakeholders often serve as suppliers of the information and scarce or limited resources that are important for organizational and managerial success in the host country. In addition, excessive bureaucratic requirements could hinder managerial operational efforts. If socialized to behave legally, responsibly, and/or ethically, expatriate managers may find it especially tempting to either engage in misbehavior to achieve their goals or risk being ineffective due to using only legal, responsible, and/or ethical means. Although expatriates deployed from non-corrupt countries may choose to conduct their business activities "by the book" (i.e., legally, responsibly, and/or ethically), this can be challenging and even ineffective in corrupt host countries. Consequently, due to the challenge of meeting, through proper action, both their own performance expectations and those of stakeholders, expatriate managers may not fully attain their targeted goals. SCT posits that people regulate their behavior to achieve extrinsic (social recognition, reputation) and intrinsic (self-esteem, pride) rewards, and avoid sanctions (scrutiny, shame). Self-regulatory system (re)activates when people encounter changes in the environments they operate in or are subjected to that hamper or neutralize their efforts to achieve desired outcomes. This cognitive processing entails individuals' (re)evaluation of the consequences of their failure and their ability to reach desired outcomes in such environments; and their personal standards (Bandura, 1988; 2001). Hence, when expatriate managers fail to attain their goals, they cognitively process the extrinsic and intrinsic repercussions of such failure. In their respective roles, their performance is subject to monitoring by various stakeholders in the host but also home and wider international environments (e.g., local and international community, media, parent organization) who evaluate them as (un)successful. With their career at stake, managers may perceive their failure and a subsequent negative performance evaluation as an extrinsic threat to their social reputation, defined as perceptions of social appraisals of an individual's prestige in society or industry (Lau, Shaffer, & Au, 2007). Furthermore, since expatriate managers' personal and organizational goals are intertwined, they heavily rely on their performance when

determining their intrinsic sense of self-esteem, i.e. subjective evaluation of self-worth that ultimately results in either pride or shame (Bandura, 1977; 1990). Failure to meet stakeholders' and personal performance expectations may, thus, facilitate expatriate managerial negative self-evaluation, triggering their feelings of frustration and shame and jeopardizing their sense of self-esteem.

- ***Proposition 1a-b:*** *Expatriate managerial failure to perform in a corrupt host environment induces (a) an extrinsic social reputation threat, and (b) an intrinsic self-esteem threat.*

As posed by SCT, expatriate managerial performance failure also leads them to reflect on their own abilities to be successful in the host environment. SCT captures individual's ability, competency, and effectiveness in the concept of self-efficacy. Self-efficacy is defined as a belief in one's capabilities to organize and execute the courses of action required to effectively manage prospective situations (Bandura, 1977; 2001). Self-efficacy beliefs influence individuals' perceptions of extrinsic circumstances and their intrinsic self-regulatory dynamics (Bandura, 1977). Those low in self-efficacy tend to interpret unfavorable circumstances as threats, fixate on and magnify possible risks they impose, and contemplate negative scenarios that such threats imply (Bandura, 1977; 1990). They intrinsically devalue the "self" through self-doubt and blame-taking that foster and amplify their feelings of embarrassment (Bandura, 1977; 1986; Smith-Crowe & Warren, 2014). Individuals high in self-efficacy, on the other hand, tend to view unfavorable circumstances as a challenge to overcome rather than a threat to be feared (Bandura, 1977). Such people believe in and rely on their capabilities to perform well and are more likely to persist in their efforts and cope with difficult, unfavorable or stressful conditions (Bandura, 1977; 1982). Hence, expatriate managers with low self-efficacy beliefs who failed to meet stakeholders' and their own performance expectations are likely to burden themselves with their failure, focus on and aggrandize detrimental consequences this may have for them and their reputation, such as losing their job, destroying their career or acquiring an image of incompetence. They are more likely to doubt their capabilities to perform successfully, and self-assign and internalize the responsibility for their failure. This may facilitate their feelings of shame and contribute to their devaluation of self-worth. Oppositely, managers high in self-efficacy are more likely to perceive their failure as challenging rather than threatening. In pair with the simplicity, opportunism and pragmatism of corrupt "remedies" to such failure, faith and reliance on their business skills and coping abilities may inhibit the development and the intensity of the extrinsic and intrinsic threats. Hence, we state our next set of propositions:

- ***Proposition 2a-b:*** *Expatriate managerial self-efficacy beliefs to achieve organizational goals by acting ethically in corrupt host environments, moderate the relationships between their performance failure and a) an extrinsic social reputation and b) an intrinsic self-esteem threats such that low self-efficacy beliefs strengthen and high self-efficacy beliefs weaken these relationships.*

### **2.3. Extrinsic and intrinsic threats and vicarious learning**

The emergence and intensification of fundamental threats leads expatriate managers to consider alternatives to legal means for the achievement of desired outcomes in a corrupt host environment. SCT describes several ways that people learn about behaviors that lead to positive (e.g., satisfaction and self-worth) and away from negative (e.g., self-devaluation and shame) consequences. These include behavioral modeling and social exchange, persuasion and support. Bandura (1977; 2001) calls this process vicarious learning. Hence, people may learn about effective behaviors by observing the reinforced behaviors of their referent models (i.e., those occupying the same or similar roles) in a given social environment (Bandura, 1986; 2001; Gorsira, et al., 2018), by receiving or exchanging the information regarding the (in)effective or



by being persuaded or supported to exhibit effective behaviors. Vicariously learning, people first identify specific behaviors and store (retain) the behaviors in their cognition. They reproduce the observed behavior upon developing positive expectations about engaging in such behavior. This occurs if their behavior is ineffective and/or they lack knowledge about effective behaviors. Expatriate managers may, thus, learn the efficacy of misbehavior by observing a myriad of referent models such as competitors and host officials in the host environment. As they engage in interactions with their referent models per nature of their work, host officials in particular, expatriates may vicariously learn about this effectiveness from the persuasion and support they receive from their models to engage in such behaviors. Vicariously learning, managers may then develop the expectation that they can secure desired benefits by engaging in similar misbehaviors. Despite observing the behavior and interacting with their referent models since their entry to the host country, without having experienced performance failure and fundamental threats, they likely would have had little reason to expect that engagement in misbehaviors would be necessary to achieve desired outcomes. With such experiences, however, expatriate managers will be more likely to engage in vicarious learning and form positive expectations of their engagement in misbehavior. Thus, we propose:

- **Proposition 3a-b:** *Expatriate managers' (a) extrinsic social reputation threat and (b) intrinsic self-esteem threat lead to their engagement in vicarious learning from the corrupt host environment.*

SCT posits that, in addition to environmental contexts and their own abilities, people regulate their thoughts and behaviors in relation to personal standards. People with weak commitment to personal standards adopt a pragmatic orientation and exhibit behaviors that best fit the circumstances they find themselves in (Bandura, 2001). Vice versa, those with strong personal standards and values exhibit behaviors that measure up to such convictions. Strong personal standards are stable and enduring, rendering people more sensitive to the complimentary and less susceptible to the environmental influences that collide with their standards (Bandura, 1999; 2001). The violation of such standards facilitates self-sanction, condemnation and contempt, ultimately leading to the erosion of individuals' sense of self-worth (Bandura, 2001). Some managers may, thus, nurture strong moral standards and convictions. Managers who possess and deeply identify with their moral standards bind their subjective evaluation of self-worth or self-esteem with their ethicality and not performance. Pragmatically and opportunistically jettisoning moral standards to facilitate business performance in the host environment would then result in managerial self-condemnation and devaluation. Complimented with the norms of the relevant environments beyond the host country, moral standards may also accentuate the punitive consequences to managerial reputation and career, and consequently self-esteem, including criminal prosecution and loss of freedom, that stakeholders from these environments (e.g., parent organization, different bodies of accountability and transparency, media, citizen engagement, owners, customers) would enact were they to engage in misbehavior that was subsequently exposed. Furthermore, strong moral standards may render managers more resilient to the persuasion and support for corrupt enactments they receive from their referent models in the corrupt host environment, thereby inhibiting the formation of positive expectations of such behaviors. Highlighting the norms of the congenial environments, the lack of ethicality and the moral opaqueness of misbehavior, and downplaying their effectiveness, moral standards may, thus, inhibit the effects of the extrinsic and intrinsic threats to the managerial engagement in vicarious learning.

- **Proposition 4a-b:** *Expatriate managerial moral standards moderate the relationships between a) extrinsic reputation and b) intrinsic self-esteem threats and their engagement in vicarious learning from the corrupt host environment, such that low moral standards strengthen and high moral standards weaken these relationships.*

## 2.4. Vicarious learning and the fraud triangle

High(er) managerial moral standards may have rendered expatriates more resilient to and dulled the effect of the ineffectiveness-induced threats and their engagement in vicarious learning. These standards, however, do not remove the performance pressures and expectations bestowed upon them by their respective roles. Expatriate managers with low moral standards and convictions, on the other hand, remain aware of the sanctions that may be exhibited by stakeholders from the environments that nurture universal moral norms should they better their performance with corrupt deeds. Many real-world incidents, however, indicate that in addition to the formation of positive expectations of corrupt enactments, managers also find a way to detach from home-country and international corruption prohibiting norms, in addition to their own moral standards. SCT explains this detachment with the concept of moral disengagement or cognitive reframing of unethical or immoral (corrupt) behavior into morally or ethically correct, appropriate or even desirable behavior (Bandura, 1990; 2001; Moore et al., 2012). This reframing entails normalization or rationalization of unethical acts through several cognitive mechanisms. For example, people may rationalize their misdeeds by linking them to worthy (i.e. group or collective, unselfish, altruistic or "higher cause") purposes. They may do so by comparing them to similar deeds of others, thus diluting, dispersing or completely removing the responsibility for such wrongdoings or by using sanitizing or euphemistic language to describe, communicate or talk about them. People mostly engage in this reframing when they perceive positive or desirable outcomes of a morally dubitable behavior, i.e. behavior that collides with their moral convictions and/or societal norms (Bandura, 1990). Moral disengagement, on the one hand, detaches moral considerations from unethical conduct, neutralizing moral standards, disabling mechanisms of self-condemnation and preserving self-worth. On the other, it facilitates rationalizations of immoral or unethical acts and shields individuals from external condemnation and social scrutiny. Hence, as they form positive expectations for their engagement in corrupt acts in the corrupt host environment and neutralize the extrinsic and intrinsic threats, expatriate managers must also align their misbehaviors with moral norms of the home and international environments as well as their own standards. Without these expectations, managers would lack incentives to morally disengage, however, once they are formed managers need to devise remedies for the possible public and, depending on the strength of their moral convictions, self-scrutiny. We thus argue that, based on the positive expectations of misbehavior and the collision of this behavior with home-country and international norms and managerial personal standards, vicarious learning from the corrupt host environment leads expatriate managers to morally disengage. We, thus, propose:

- ***Proposition 5: Expatriate managerial vicarious learning from the corrupt host environment leads to their moral disengagement.***

To better understand how expatriate managerial vicarious learning from the corrupt host environment and their moral disengagement lead to their corrupt engagements, in addition to SCT we draw upon the fraud triangle theory. As posed by SCT, vicarious learning informs expatriate managers about the effectiveness of corrupt acts in the corrupt host environment. From the fraud triangle perspective all criminal behavior, including corruption, involves three critical prerequisites: motivation, justification, and opportunity (Coleman, 1985; Cressey, 1965). As misbehavior, despite its effectiveness and utility, conflicts with norms of the relevant environments and managers' personal standards, their effectuation of the criminal predispositions for such behavior is dependent on its alignment with these norms and standards. Enabling this reconciliation, moral disengagement, therefore, mediates the relation between expatriate managerial vicarious learning and their development of motivation, justification and opportunities for the engagements in corrupt acts.

Bandura (2001) notes that the formation of positive expectations or the perceived effectiveness of behaviors in reaching desired outcomes under given circumstances motivates people to exhibit such behaviors. Vicariously learning from the corrupt host environment, managers realize that the best, if not the only way to attain organizational goals and, consequently, neutralize the posed external-internal threats seems to be through corruption. Expecting that engagement in corrupt acts will prevent their failure and preserve their social reputation and self-esteem, vicarious learning may, thus, stimulate expatriate managerial motivation to engage in misbehavior in a corrupt host country. However, as such behavior collides with home-country and international norms and their own personal standards, its normalization relative to such norms and standards is critical for the effectuation of this motivational effect. Moral disengagement or cognitive reframing of misbehavior into a rational or righteous one, therefore, enables their motivation to engage in such acts.

- ***Proposition 6a:*** *Moral disengagement mediates the relationship between expatriate managerial vicarious learning and their motivation to engage in misbehavior in a corrupt host environment.*

Corrupt host environments provide many referent models for managers to vicariously learn from. In addition to the effectiveness of the socially reinforced misbehavior, vicarious learning from these models may also provide a platform for managerial development of justifications for their own corrupt engagements. This occurs as the prevalence of corruption and, hence, corrupt referent models in the host environment activates managerial moral disengagement mechanisms through which they reframe corrupt into appropriate, necessary or even desirable behavior. Bandura (1990; 2001) notes several such mechanisms. "Moral justification" and "advantageous comparison" mechanisms connote the conversion of misbehaviors into ethical ones through linking such behaviors to worthy purposes or by comparisons to the corrupt examples of others. Using this mechanism, expatriate managers can justify their misbehavior by linking it to the attainment of organizational objectives or the misbehavior of referent models. Indeed, expatriate misbehavior is a phenomenon driven by closely linked personal and organizational gains that are dependent on such behavior for their realization. Thus, managers can explain their misbehavior as a "necessary prerequisite for success" or as "business as usual" in the corrupt host environment. "Diffusion of responsibility" and "dilution of responsibility" mechanisms disperse or largely transfer the liability for misbehavior to those who hold authority. Since expatriate managers depend upon, and gradually build ties with, their referent models (i.e., government/local authority officials that hold power), they can displace or at least dilute responsibility for their misbehavior to these stakeholders. They see themselves as lacking any real choice of action. To make misbehavior more respectable, and to reduce personal responsibility, individuals often use sanitizing, euphemistic language. Euphemisms are innocuous words or expressions used to mask the meaning of questionable conduct that would otherwise be found ethically, morally, or legally suspicious (Bandura, 1990). Indeed, expatriate managers can justify their unethical inclinations, and the misdeeds that follow, as done in the "local way," behaving "in Rome as Romans do" or as earning "special treatment" by their host partners. Hence, managerial observation and vicarious learning from their referent models in the corrupt host environment activates their moral disengagement mechanisms. These mechanisms enable managers to develop various justifications for their misdeeds that, in turn, provide them with protection from self and external condemnation should these acts be exposed. Based on this discussion, we state our next proposition:

- ***Proposition 6b:*** *Moral disengagement mediates the relationship between expatriate managerial vicarious learning and their development of justifications for the engagement in misbehavior in a corrupt host environment.*

Vicariously learning through interaction, i.e. being persuaded and supported to exhibit effective or by exchanging information on (in)effective behaviors with their referent models, expatriate managers may also identify opportunities for corrupt enactments. Driven by positive expectations on misbehavior reproduction, by morally disengaging or rationalizing corrupt acts, managers are more likely to take advantage of their interaction with their referent models and social ties in the corrupt host country to identify and/or generate these opportunities. Lending additional support to this notion, SCT posits that, when lacking knowledge or resources, people try to have others in possession of these requisites help them in securing desired outcomes (Bandura, 1990; 2001). Therefore, as they morally disengage, expatriate managers are more likely to engage in the exchange of complimentary resources and information with their referrers in the corrupt host environment, i.e. host officials and other representatives of the local authorities to further their ends with corrupt means. Misbehavior is a collaborative phenomenon whereby cohesive and secretive groups of individuals reciprocally exchange information and resources and support and facilitate each other's actions and mutual interests (Brass et al., 1998; Whitener et al., 1998). On the one hand, to neutralize extrinsic and intrinsic threats to their reputation and self-esteem, expatriate managers want to gain access to scarce host resources to facilitate goal achievement. On the other hand, their local "partners" offer various favors (e.g., "short cuts" to resources, "protection" from competition), competencies, and authorities (e.g., license issuance, permit approval) in exchange for different "rewards" or other favors and resources, such as cash, that they seek from expatriate managers. Hence, moral disengagement, i.e. intrinsic and extrinsic normalization of misbehavior, enables expatriate managers to engage in these corrupt exchanges with their referent models. Their interaction creates mutual dependence and builds trust. Dependence upon one another and ability to discredit each other facilitate the secrecy of the exchanges both desire to maintain (Whitener et al., 1998). Morally disengaging and vindicating their actions, therefore, expatriate managers exploit interactions with their referent models to collaborate in corrupt acts and further their respective goals. As they expand their social networks in the host country, their ability to identify and/or generate perceived opportunities for misbehavior to facilitate goal achievement increases. Thus, we offer the following proposition:

- **Proposition 6c:** *Moral disengagement mediates the relationships between vicarious learning and expatriate managerial identification and generation of perceived opportunities for engagement in misbehavior in a corrupt host environment.*

## **2.5. The fraud-triangle and managerial engagement in corrupt acts**

The fraud triangle theory posits that all criminal engagements are preceded by three critical momentums; motivation, justification and opportunity. We, thus, argue that when managers have gained motivation, constructed viable justifications, and generated or identified perceived opportunities for corrupt acts, along with organizational and industrial (profit, competitiveness), social (legitimacy) and personal (career advancement, financial gains) pressures, they become more likely to engage in such acts. SCT also posits that individuals vicariously learn from experience (Bandura, 1986; 2001). Bandura calls this mastery experience which he refers to as experiences people gain when they take on a task and succeed. He further posits that this experiential reinforcement renders people more likely to (re)exhibit such behaviors as well as engage in behaviors of higher complexity or those with larger magnitude of effects relative to their desired outcomes (Bandura, 1977). Hence, as managers engage in misbehavior, they may learn from the consequences of such acts in a corrupt host environment. The reinforcement of these acts may then facilitate managerial re-engagement in as well as the magnitude of the subsequent misbehaviors they commit in such environment.

We thus propose:

- **Proposition 7a-b-c:** *Expatriate managers who have a) acquired motivation, b) generated justifications, and c) identified perceived opportunities, are likely to engage in misbehavior in a corrupt host environment.*

Our model is depicted in Figure 1.

### 3. DISCUSSION

In this paper, we blend social cognitive and fraud triangle theories to explain the process whereby expatriate managers resolve competing tensions between the corruption-prohibiting home country and corruption-condoning host country environments, depicting how and why they engage in and disengage from misbehavior in corrupt host countries. We depicted how opposing home-host institutional environments translate into tension between expatriate managerial and organizational performance expectations and reality, triggering managerial self-regulatory dynamics that lead them to vicariously learn from the host social environment, and the hindering role of managerial self-efficacy and moral standards in this process. We also showed how vicarious learning activates managerial moral disengagement, facilitating their motivation and justifications for corrupt acts. We, further, explained how vicarious learning from the host social environment and moral disengagement facilitate managerial exchange of information and resources with their social ties in the host environment, generating opportunities for misbehavior. Finally, we explained how the realization of these criminal precursors leads to expatriates' corrupt enactments. To the best of our knowledge, our model is the first to explain the genesis and enactment of expatriate managerial misbehavior in corrupt host countries and to identify factors inhibiting their decision to do so. As such, our study makes a number of theoretical contributions and suggests future research avenues.

#### 3.1. Theoretical contributions

Most attempts to understand the corrupt actions of expatriates operating in countries with corruption-facilitative social and institutional environments that collide with those in the home country have had limited explanatory power. Institutional theory, social influence, differential association and fraud triangle-based research overly simplify the complex dynamics of the phenomenon arguing that institutional and social environments foster criminal attitudes, motivations, rationalizations and behaviors (Bennett et al., 2013; Fisman & Miguel, 2007; Shi et al., 2017; Greppin et al., 2017; Sutherland & Cressey, 1970; Moore et al., 2012; Smith-Crowe & Warren, 2014). These studies do not explain the cognitive processes leading to the realization of such criminal elements and neglect broader environmental influences and expatriate managerial cognitive resources involved. Our study remedies the shortcomings of the extant literature.

*Figure following on the next page*

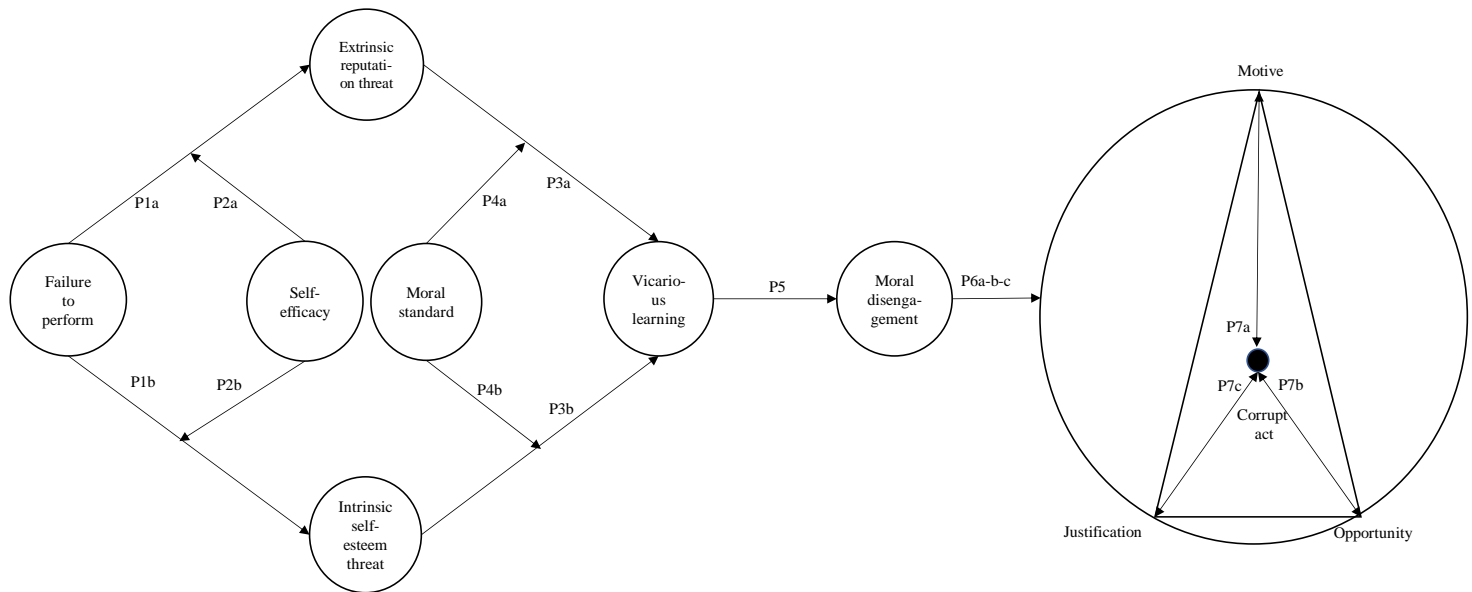


Figure 1: A comprehensive model of expatriate managerial misbehavior

Blending SCT and the fraud triangle theories, we extend and reach deeper than the environment-fraud triangle template of the existing theoretical explanations, outlining how colliding home-host institutional and host social environments translate into expatriate managerial cognitive process that leads to these criminal precursors and, ultimately, their enactments of misbehavior in a corrupt host country, and identifying managerial cognitive factors that hinder this process. In doing so, we extend both the interactional and self-regulatory dimension of SCT, which itself provide a fairly comprehensive and holistic view of corrupt behavior. From an interactional aspect, SCT has limited power to explain different types of human behavioral agency such as directionality of the (reciprocal) influences between environments, cognitions and behaviors. As Bandura himself notes, “SCT subscribes to a model of emergent, interactive agency among environments, people, and their cognitions. However, the dynamics linking environmental factors to action are left largely unexplained” (Bandura, 2001: 4). We, thus, extend the interactional domain of the SCT by explaining the behavioral agency dynamics in the context of corrupt behavior of expatriate managers deployed from non-corrupt home to corrupt host environments. SCT posits that people use self-regulation to control their conduct in accordance with environmental conditions and their moral standards and to engage in behaviors that give them a sense of satisfaction and self-worth. We extend the self-regulatory dimension of the theory by showing how, in the context of our study, self-regulation can work in the opposite way and foster negative (i.e. unethical) behaviors. Additionally, although there has been some mention of the importance of moral disengagement in processes of organizational corruption, its exact role in this process has not been articulated (Bandura, 1990; 2001; Brief et. al., 2001). Hence, we extend SCT by showing how moral disengagement mediates the relationship between expatriates’ vicarious learning from the host social environment and their realization of the criminal behavior predispositions. Finally, we contribute to the expatriate literature. This literature is dominated by the “positive” research on the relationships between various individual, group, relational, social and organizational antecedents and mostly job-related outcomes of several key cognitive concepts (e.g. adjustment and adaptation, cultural and emotional intelligence) critical for expatriate success on international assignments (Shaffer et. al., 1999, Rockstuhl & Van Dyne, 2018). Its “negative” stream similarly investigates nomologies of but a few focal concepts entailing failure, burnout or dysfunctional relationships (Silbiger & Pines, 2014; Ljubica et. al., 2019) while, probably due to the illicit nature of the phenomenon and the difficulties of investigating it on individual,

especially managerial level, omitting explorations of expatriate (managerial) unethical or corrupt behaviors. We, thus, contribute to expatriate literature by developing what to our best knowledge is a first model that explains the genesis of expatriate managerial misbehavior in the context of the opposing home and host country institutional and social environmental conditions. In doing so, we put forth the interconnectedness of expatriate managerial personal and organizational goals and explain such multifaceted emergence of this phenomenon.

### **3.2. Future research directions**

Our model is novel, and we recognize that further work is required to verify and/or amend it. In our study, we used home and host country institutional, home country organizational and host country social environments to depict conditions under which expatriate managers deployed by organizations from non-corrupt home countries downfall into misbehavior in corrupt host countries. Future research could revise our model by implementing and exploring the role of more specific environmental constructs and a wider range of environmental types. Researchers could narrow down and implement different home-host country institutional, especially regulatory profiles in our model. It would be very interesting to see, for example, if any specific legislative profiles, configurations, systems or even specific legislations of a non-corrupt home and/or corrupt host country affect the dynamics of our model and how and why this occurs. Additionally, expatriates are exposed to factors beyond those of the institutional or social (e.g. economic, political, cultural, industrial) environments; this suggests that our model's exploration of the role of these types of environments is reasonable. A potentially fruitful starting point for further research could be the implementation of generic, systemic environmental constructs such as economically advanced/economically developing and transparent/corrupt concepts. Research demonstrates that economically developing or emerging markets have weaker, underdeveloped, and often ineffectively enforced institutions, which makes them more prone to corruption (Doh et. al., 2003). Another potential avenue of exploration would be to investigate centralized vs. decentralized and/or organic vs. mechanistic types of environments. Despite conflicting research in this area, decentralized (organic) environments are generally considered less favorable to corrupt practices due to the direct control and accountability of the parent organization, dispersion of decision-making powers, and bureaucratic quality (Boadway & Shah, 2009). Researchers could also "zero in" on other environmental concepts, and use precise, systemic, country-level environmental constructs such as different political systems. The research in this area is also conflicting. However, it suggests that democracies hinder and dictatorships facilitate corrupt occurrences, as the latter allow more effective extraction and distribution of the gains from corruption (Fredriksson & Svensson, 2003). Similarly, cultural environmental variables at the country and organizational level could also further develop our model. For instance, in collective cultures, social ties may be emphasized over an individual's responsibility to act ethically (Tanzi, 1994). This emphasis may facilitate favoritism and, ultimately, corruption. Research implies, and real-world incidents confirm, that corruption occurs across industries, especially those in which there is a high level of government regulation (pharmacy, defense), which often provides more opportunities for illegal deeds (ICAC, 1999). Hence, it would be valuable to investigate if our model "holds" within other external environmental types, and if these environments affect the causal dynamics we specified. Similarly, examinations of, both, behavioral agentic effects of the internal organizational environment hold promising potential to enhance our model. One such research avenue are the dynamics between parent organizational control and managerial discretion. Organizational control mechanisms tend to focus on two significant business domains: managerial behaviors and organizational outcomes (Child, 1973; Chang & Taylor, 1999). Behavior-oriented controls "specify and monitor individuals' behaviors" (Langfield-Smith, 2008, p. 349) through formalization mechanisms such as corporate policies, codes of conduct,

rules and procedures and enforcement of corrective actions in case of non-compliance (Chang & Taylor, 1999). In contrast, outcome controls relate to the setting, monitoring, and evaluation of organizational performance standards and goals through performance reporting systems such as sales figures or comparable measures evaluating the subsidiary's output (Eisenhardt, 1988). Hence, parent organizational behavior control could render expatriate managers unable to influence firm performance in the host country. Yet, the parent organizational focus on performance at the expense of behavioral discretion could propel managers to engage in misbehavior to achieve individual and organizational goals. In our study, to facilitate parsimony, we propose a generic level of cognitive processing, such as the expatriate managers' personal standards. We recognize that the inclusion of narrower, individual-level variables could have a significant influence on this process. For example, investigators could explore the role of personality and prior experiences with unethical behaviors in the dynamics of our proposed model. It has been shown that mastery (experience) and openness to experience increase self-efficacy (Bandura, 1986). This implies that "more open" expatriate managers are more likely to have or build strong self-efficacy beliefs and (continually) display ethical behaviors. Oppositely, managers whose prior unethical enactments were effective, tolerated or undetected may be more inclined to do so repeatedly and on a larger scale (Bandura, 1977). Consequently, investigations of their pre and post-host entry cognitive processing of misbehavior and the activation of the fraud triangle elements is warranted. Researchers could also determine if cultural intelligence, the ability to function effectively in different cultural contexts (Early & Ang, 2003) and emotional intelligence, the ability to manage and/or adjust emotions in/to environments or achieve one's goal(s) (Golman, 1998), affect the dynamics of our model. Culturally intelligent managers adapt to host countries faster and more effectively than those who lack these qualities. Therefore, it would be reasonable to presume that such managers move through the process we described faster than their less culturally intelligent peers do. Managers high in emotional intelligence are better able to control their emotion, which suggests that they would go through this process more slowly. Their ability to handle the negative, emotional effect of the decreased self-efficacy, in addition to the shame raised by the self-esteem threat, is superior. The self-efficacy beliefs of emotionally intelligent managers might also be affected to a lesser extent because higher self-efficacy positively affects stress resilience (Hobfoll, 2002) and coping efforts (Bandura, 1977). The role of expatriate creativity could also contribute to the development of our model. For example, it could indicate whether creative managers also develop the motivation to engage in corrupt acts or if they instead attempt to devise ways to cope with the corrupt environment without succumbing to corruption. Further research could also explore if managerial creativity affects the quantity and quality (effectiveness) of justifications managers develop for engaging in misbehavior, in addition to the opportunities they identify. Creativity motivates thinking "outside of the box," and encourages such managers to identify institutional, organizational, or social loopholes when facing difficult tasks (Jiang, 2013). Different forms of managerial identity offer another avenue for further exploration. Since identity implies the equalization of one's attitudes, goals, and behaviors with those of another entity (Sedikides & Brewer, 2001), one would expect that an expatriate manager's self, organization, and host identification would facilitate engaging in corrupt acts, while home or universal identification would hinder the causal dynamics of our model. Our model also offers avenues for future empirical research. Depending upon the operational approach, researchers could explore whether different configurations of the mentioned institutional, economic, industrial and other environments exert stronger/weaker effects on the expatriate managerial performance failure in the corrupt host country and, consequently, self-regulatory dynamics. Similarly, future research could more closely investigate relationships between expatriate managers and corrupt host-country nationals.



Building on our model and the notion that moral disengagement is context-related (Bandura, 2001), research could investigate if the specifics of an expatriate's social network (depth, width, breadth, density) are linked to different extents of motivation and types and forms of justifications and opportunities for corrupt behavior. Future studies could also test if these specifics affect the exchange between expatriates and their social ties concerning opportunities for corrupt behavior, especially in terms of knowledge content, tools, and channels/modes used to realize opportunities. SEC reports a multitude of examples. Innospec, a U.S. oil company used third parties or agent channels in Iraq to pay bribes (SEC, 2011). Polycom, a U.S. communication company, used resellers and distributors in China to pay bribes (SEC, 2018). Daimler used corrupt pricing mechanisms such as price surcharges or price inclusions through their distributors to make payments to government officials in Eastern Europe (SEC, 2010). Pfizer (SEC, 2012) and Panasonic (SEC, 2018) used fraudulent accounting practices to conceal their corrupt activities. Building on our model and research on organizational corruption (Aguilera & Vadera, 2008), research could also investigate if different combinations of expatriate motivation, justification, and opportunity lead to different types of expatriate misbehavior. It would also be valuable to explore if the hindering effect of organizational control, as we mentioned earlier, varies in intensity and effectiveness depending upon the types of motivation, justification, and opportunity present for engaging in corrupt behaviors. Tackling these research opportunities will open additional ones. We believe it is reasonable to expect that empirical verifications of our model could enable researchers to develop typologies of expatriate managers and their environments, motivations, justifications, opportunities, and related misbehaviors. It would be especially interesting to see whether variations in the types of misbehavior that occur depend upon these considerations. Such contributions would be significant. We wonder whether the results of such studies would suggest possible links implying the existence of clusters of these elements across geographical, environmental, and other borders. Finally, researchers could explore the dynamics of misbehavior exhibited by managers deployed from and into additional configurations of contexts. Hence, future research could entail managers deployed from non-corrupt countries into countries of the same profile. Scandals such as Volkswagen's Dieselgate affair in the U.S. (US Department of Justice, 2019) suggest the importance of such work. Similarly, researchers could also investigate the dynamics of corrupt behavior of managers coming from corrupt countries into non-corrupt countries, and managers deployed from corrupt countries into corrupt countries. Such work would provide scholars with additional insights into the phenomenon of international corporate corruption and, more narrowly, expatriate misbehavior. This would facilitate further research to understand and, ideally, curb this phenomenon.

#### **4. CONCLUSION**

In this paper, we model how expatriate managers engage in misbehavior in corrupt host country environments. Our model explores a series of decisions culminating in such criminal choices. It reveals the dark spiral or "slippery slope" managers expected to be "good soldiers" can slide into misbehavior in corrupt host country environments, becoming another "bad apple" in the "bad barrel". We hope that our study initiates a conversation about further possibilities for empirical and theoretical developments that test, amend, and, ultimately, complete our model of the phenomenon. Such efforts are important to illuminate alternate dimensions or dynamics that we may have overlooked. Only by understanding this phenomenon can we devise innovative and effective ways to combat it.

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## OMNICHANNEL RETAILING

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### ABSTRACT

*Omnichannel retailing is a modern form of retailing that involves the full integration of traditional and digital channels used in sales. The fundamental difference from multi-channel retail is that all sales channels are managed centrally. Today, consumers use different channels in interaction with a company, not accessing the channel, but always in it or in several channels at the same time, thanks to technology and mobility. Therefore, within omnichannel retail, consumers can choose the ways to be channeled and at what point, they can shorten the time needed to buy, find an affordable product easier, and easily get other customers reviews. In order to meet their needs for the latest, unique and integrated services, regardless of which market channel is used, it is necessary to personalize the approach and improve the consumer experience in interacting with the company. However, the benefits of omnichannel retailing also provide multiple benefits for the company as it benefits when the consumer experience is positive and when it creates satisfied and loyal consumers. Although omnichannel retailing can be challenging and financially demanding, companies must turn to such a strategy sooner or later so that customers do not consider them obsolete. This paper will analyze omnichannel retailing with multichannel retailing. The aim of the research is to prove that customers are increasingly using the benefits of omnichannel sales and gradually abandoning traditional stores. Descriptive statistics will be used to interpret the survey results. The data will be collected from customers aged 18 to 36, at that age everyone uses the Internet and can combine commerce via the Internet and physical channels.*

**Keywords:** omnichannel retailing, retailing, sales channels

### 1. INTRODUCTION

The subject of the paper is omni channel retailing. Omnichannel retailing is such retailing in which all channels used in interaction with consumers, both traditional and digital, are integrated, which actually shifted the focus from the channel that was present in multichannel retailing to the consumer. Such retailing provides various advantages to consumers, and thus results in a competitive advantage of the retail company, greater customer loyalty, greater profit, etc. The aim of the paper is to analyze omnichannel retailing, compare omnichannel retailing to multichannel retailing, and to analyze consumer behavior and their requirements in omnichannel retailing and omnichannel marketing.

### 2. RETAIL

Trade refers to an economic activity that entails the continuous selection, development and procurement of various goods, their storage and sale and resale in quantities and in a way that suits the trader with the aim of achieving financial profit (Segetlija, 1999). Trade can be divided into external and internal trade, that is, into wholesale trade and retail trade.

According to Dibb et al.(1995) retail trade implies the sale of products to end consumers who will consume them in their own households. Segetlija (1999) gives a similar definition and points out that in a retail store, the customer is the end user of the purchased goods. According to the Trade Act in the Republic of Croatia, retail trade is defined as the purchase of goods that will be further sold to end customers and professional users if the trader does not have to meet additional minimum technical and other conditions for such sales. The goal of retail is to constantly monitor the needs and habits of consumers in order to satisfy them, but also to influence consumer habits in accordance with modern developments and various technological possibilities in production. In order to fulfill the set goals, constant cooperation between the manufacturer and the retailer is necessary because in retail the end customers are the product buyers and the retailer is constantly in contact with the customers (Bezić, 2005). Retail thus conveys information to manufacturers about consumer needs and wishes, but also introduces consumers to new products that consumers place on the market, and accordingly acts as a strong promoter in changing consumer habits. From the position of end consumers, retailers are representatives of producers, and from the position of producers, they are seen as representatives of consumers (Segetlija, 2011). This is why constant communication between manufacturers and retail stores is necessary because the retail store transmits information about the needs, habits and wishes of consumers to the manufacturers, and the manufacturers to the retail store information about new products. The retail store fulfills its tasks through the following (Bezić, 2005):

- providing information about the needs of end consumers - for this purpose, an "assortment list" is used, in which the retailer enters end consumer requests that he could not fulfill at that moment, and in order to improve the satisfaction of consumer wishes and needs in the future
- constant communication with the production (possibly through the wholesale trade) so that the manufacturer can keep the consumer's needs and wishes in mind when producing certain products
- timely procurement of goods whose quality and quantity are in harmony with the consumer's wishes and needs and provision of storage space for the procurement of the necessary goods and avoiding jeopardizing the supply of the end consumer
- respect of guarantees and servicing of technical products within the guarantee period and beyond that period in accordance with the manufacturer's standards
- professionalism and courtesy in dealing with the end consumer.

While wholesalers are limited to certain manufacturers and importers when purchasing goods, retailers can choose the quantity of goods they order, how wide the range of products will be, can limit procurement costs and influence other economic factors that are important for their successful business (Segetlija, 2011). Therefore, retail is extremely important in the supply chain because it is the last link in that chain. More specifically, retailers are in direct contact with end consumers and they connect them with producers. Accordingly, due to its position, retail has the best overview of consumer wishes and needs. How important the retail market is best shown by the fact that during 2019, transactions worth 21 billion US dollars were recorded in retail, with the 250 largest retail chains making slightly less than a quarter of these transactions, i.e. 4.85 billion US dollars. Transactions increased by 4.4% compared to 2018, when compared to 2017, a growth of 4.1% was achieved. The average net margin was 3.1%. The largest share of transactions in retail in 2019 related to consumer goods (66% of all transactions) and products for home furnishing and leisure activities (19%) (Deloitte,2021).

## **2.1. Peculiarities of retail and its economic significance**

On the supply side, there is a retail supplier network which includes all suppliers, manufacturers, wholesalers and other market intermediaries who ensure the supply of retailers. It is obvious that the retailer can do business with all members of the network. However, the retailer usually deals with the product manufacturer or with a wholesaler who mediates between the manufacturer and the retailer. In addition, retail can also deal with other market intermediaries in the procurement of certain products, whereby these intermediaries do not own the goods, but with their negotiation skills they add value to those goods. Various service companies (financial agencies, advertising agencies, insurance companies, transport companies, etc.) can assist retail stores in performing all distribution tasks (Segetlija, 2011). Therefore, the retail store directly or indirectly connects the manufacturer and their consumers, which is its greatest meaning. Because of their position, retailers can best see the needs and wishes of end consumers. For the most part, it is precisely through the retail store that the demands of all other members of the supply chain are derived (Mesarić and Dujak, 2009). In a retail store, consumers' point of view about products and their (dis)satisfaction with those products is manifested, so retailers should protect consumers based on their business agreements with manufacturers (Segetlija, 2011). Retail stores have storage spaces that they need because they perform the function of bridging time, that is, the qualitative function, and part of the function of regrouping quantities, more precisely the quantitative function. A retail store must have certain stocks because sometimes the procurement of goods cannot be coordinated with the requirements of individual retail stores. Retail is considered a tertiary activity and is therefore specific. Employees in retail stores have different working hours than employees in other industries. Namely, retail stores often work on weekends, holidays, at night, etc. That is why such working hours belong to the aggravating condition of work. In addition, a peculiarity in the business of retailers is the temporal unevenness of their sales. Namely, sales in retail stores depend on annual, seasonal, monthly, weekly, and even daily fluctuations in demand. The economic meaning of retail is analyzed depending on its functions in the economy and the share that retail has in economic figures. By purchasing and creating an assortment, transporting, storing, bearing financial risk, informing and carrying out promotional activities, selling goods and providing advice for successful management, a retail store creates its economic value (Anić, 2011).

## **3. CHANNEL DEVELOPMENT IN RETAIL**

Retail is part of the supply chain in which companies buy goods from manufacturers or wholesalers "wholesale", that is, in large quantities, and sell them to end consumers "retail". In this chapter, the development of channels in retail is analyzed.

### **3.1. Physical and digital marketing channels for customer contact**

Marketing or distribution channels can be defined as channels that include multiple organizations that participate in the creation of products or services that will be available to end consumers or business users (Kotler et al., 2006). Accordingly, marketing channels are intermediaries. The functions of marketing channels include keeping certain stocks of goods, sales, distribution, after-sales service and financial closing of the cycle (Previšić and Ozretić Došen, 2007). In order to sell products, they need to be promoted, and this is possible through physical or digital channels. Through physical channels, companies find customers directly, while digital channels mean that consumers find the products offered to them on their own. Among the physical channels, printed media, printed materials, recommendations, fairs, presentations, posters, etc. stand out. Traditional channels include radio and television. The advantage of these channels is that Internet access is not required at all when it comes to physical channels (Santanu and Gouri, 2016).

In addition, such channels are more successful in communicating with older consumers who fail to follow the development of technology and who do not know how to use the Internet (to a greater extent). Likewise, physical channels inspire greater trust among consumers. On the other hand, the disadvantages of physical channels are high costs, a limited market and less reach among younger people who are oriented towards digital channels. Digital channels involve promoting products and communicating with consumers through various digital devices. The most important digital marketing techniques are (Santanu and Gouri, 2016):

- E-mail marketing - this is one of the earlier digital marketing techniques, which involves the use of electronic mail to communicate with consumers. Today, the so-called "newsletter subscription" where consumers can request that new information about products, discounts and promotions, etc. be sent to their e-mails, etc. This technique has very low costs.
- Search engine optimization (SEO) – a certain website appears among the first results when searching online . Like e-mail marketing, this digital marketing technique requires low costs.
- Pay-per-click (PPC) advertising - advertisers pay web services when a user "clicks" on one of their ads.
- Social Media Advertising – This digital marketing technique uses social media as a marketing tool. Social networks have gained popularity in the last decade, so social media advertising has become extremely important.
- Mobile advertising – means advertising through mobile devices. It can be in the form of static or multimedia display ads, text messages or multimedia messaging, mobile search ads, advertising on mobile websites or ads in mobile applications or games.
- Blogs – certain businesses recognize the need for accessibility and originality, so they use blogs to make their products popular and unique and ultimately reach consumers who are familiar with social media.

Display advertising – includes many different formats and includes items such as text, images, flash, video and audio. The main purpose of such advertising is to deliver general advertisements and company messages to website visitors .Digital channels also have certain advantages, but also disadvantages. The advantage of digital channels is that in this way contact with users is possible 24 hours a day, that the market is very widespread (it can be global) and that the results achieved through digital means are easily measurable compared to the results achieved with the help of physical channels . In addition, digital channels offer more options than physical channels and enable greater reach among younger people. The disadvantages of digital channels, on the other hand, relate to maintenance costs, dependence on technology, the existence of great competition and the danger of data misuse. Retail businesses can use different physical and digital communication channels to contact consumers. These channels, in addition to physical and digital, can also be divided in terms of the number of channels used and their integration into the following channels: single channel, multi-channel , cross-channel and omni-channel. Single channel communication between the retail company and the consumer takes place, as the name suggests, through only one channel ( single - one). For example, communication takes place in a store, i.e. in a company branch, via catalogs, via the Internet, etc. Such an approach in communication with customers in retail today is very ineffective, and precisely because of this, few retail companies use a single channel as a communication approach with consumers. In distributing goods to end customers, retailers can use different channels by weaving a demand or distribution network into the supply network. The multi-channel approach is based on communication between the retail company and the consumer through multiple channels ( in the store, via e-mail, chat, social networks, etc.). This means combining multiple channels to interact with consumers.



However, although the consumer can communicate with the company through several channels, this communication is independent, that is, the channels through which the consumer and the retail company can communicate with each other are not connected at all. Accordingly, the company cannot see the history of communication with a particular consumer and his past requests, purchases he made and which products he bought, etc. There is also a difference in cross-channel communication, which takes place between the consumer and the retail company through mutually integrated channels. Compared to multi-channel, these channels, through which communication takes place, are integrated with each other, so the company has insight into the interaction with a specific consumer, his purchase history, etc. However, this cannot be properly used because the orchestration of the departments of a specific company is not carried out as necessary. Omni channel communication is realized through channels that are fully integrated with each other. This means that the user sees that there are different channels for communication with the company and that he can choose the channel that suits him best, and the company has insight into the history of interactions with the user and in the case of such communication can use the information it has about the user and thus maximize the consumer's satisfaction with the use services.

### **3.2. Introduction of customer relationship management**

In the past, seller-buyer relationships were based on mutual knowledge of the products the customers were buying and trust. With the advent of mass production, this relationship changed, so companies focused on products and their sales, and promotional activities were emphasized. The intimate relationship between sellers and buyers disappears completely. Namely, in the 21st century, the development of technology and increasingly mass production led to the fact that retail companies lost direct, that is, physical contact with customers. However, it is thanks to information technology that retail businesses can use different channels to establish long-term relationships with consumers. Companies have realized that they have to focus on consumers, discover and satisfy their needs and desires, thus a marketing strategy oriented towards the establishment of customer relations (CRM) is born. In retail businesses, it is important to manage customer relationships in order to increase the loyalty of existing customers and to acquire new customers. Such a marketing strategy represents a novelty in marketing because, unlike traditional marketing, the relationship between the retail company and the consumer does not end after the purchase. Customer relationship management is a process that requires significant financial resources. It implies that the consumer is the main motive behind which the retail company operates. The success of the implementation of the concept, which implies the management of relations with consumers, also depends on market segmentation. Market segmentation determines the selection of the target market, that is, the group of consumers towards which the marketing strategy will be directed. It is about dividing the market into smaller groups of consumers, each of which has certain characteristics, behavioral characteristics and needs, so it requires different products or marketing mixes (Kotler and Armstrong, 2005). Namely, consumers have different needs, desires and buying habits, so it is impossible to satisfy them with the same products. That is why most companies adapt their strategy to specific target segments. Subsequent positioning, on the other hand, ensures the further success of the company. A strategy oriented towards establishing relationships with customers could be defined as a marketing strategy that creates and maintains long-term and profitable relationships with customers. It actually represents a shift from the approach of attracting customers to the approach of retaining clients (Renko, 2005). Repeat purchase is important because without it, market share will decrease. To prevent this from happening, new customers should be replaced by those who did not repeat the purchase. However, retaining customers is more profitable and easier than attracting new customers (Vranešević, 2000).

The development of a customer relationship-oriented strategy is influenced by numerous factors. The most important of them are technology, business processes and the human factor. Technology supports the company's business operations, but at the same time, it feeds customer information into the company so that it can set good strategic goals based on it. As customers differ in their needs, desires, purchasing behavior, etc., companies have begun to organize themselves according to customers and integrate their business processes in order to be able to fulfill consumer needs and desires. In this, employees are the most important as a human factor. They are the ones who come into contact with customers and thus build long-term relationships. The first phase of customer relationship management is to create a database, that is, to collect information about the behavior of customers, their wishes, needs, buying habits, reactions to promotional actions, etc., and to combine them into one database. The next step is to analyze all collected data and information from the database. In doing so, various mathematical and statistical methods are used. This is followed by the selection of customers to whom the marketing program will be directed. Those customers who are loyal to the product and who make the company profitable are chosen. The fundamental purpose of the strategy is to establish long-term and profitable relationships with customers, so it is necessary to constantly monitor customer satisfaction and adjust marketing efforts in order to exceed customer expectations. The last stage is monitoring the success of the strategy. It is carried out in order to be able to assess how successfully a particular company is meeting its strategic goals and so that customer relationship management strategies can be adjusted (Renko, 2005). Nowadays, it is very difficult to retain customers because they have become more demanding, suspicious and educated. For this reason, it is important for companies to see the wishes and needs of their own customers in time and create a strategy that will provide these customers with that satisfaction.

### **3.3. Advantages of simultaneous sales through multiple channels**

The emergence of digital channels has resulted in new challenges in retail, as the new channels have attracted numerous retail companies that have added the online store to the mentioned digital channels as a new digital channel. By simultaneously selling through multiple channels, retail companies began to use new processes and services and created new, i.e. online, markets. New portals are appearing where information is shared, and new services are offered to consumers (Knežević and Butković, 2020):

- tools for comparing product characteristics, prices and terms of sale
- tools for adapting the content, the offer and the product itself to the consumer
- portals where offers from various suppliers are combined
- product control service and online certificate issuance
- product tracking service
- highly specialized intermediaries for certain aspects of commercial business.

The advantages of introducing more channels in retail, by combining traditional and digital channels, are a more available assortment and a greater possibility of sales. Given that consumers are buying more and more, sellers are also motivated to sell goods and provide the best and highest quality service possible (Lewis et al., 2014). Namely, each new channel can be considered a new interactive contact point, that is, a channel through which retailers operate. In addition, the introduction of digital channels has, as already mentioned, facilitated the collection of data on consumers with the aim of segmenting the market and identifying target consumers, thus more successfully meeting the needs and wishes of today's consumers. Likewise, the introduction of additional channels enabled more successful communication and interaction with consumers. It should also be noted that the introduction of new channels has led to the fact that consumers can choose the channels they will use according to their wishes and needs (Dunković, 2015)

#### **4. DEFINITION OF OMNICHANNEL RETAILING**

Omnichannel retailing is a modern form of sales that implies full integration of all sales channels. It can be described as enabling an "integrated and consistent shopping experience" for those customers who wish to shop across multiple distribution channels at any time. It is a retail strategy characterized by the fact that all data related to sales is centralized. Physical and online sales channels are no different. Customers can buy products from various sales channels, and even start a search on one and buy a product on another channel. In this way, the customer is enabled to choose the desired way of shopping. Omnichannel retail seems to be more attractive to the new generation of consumers in the 21st century. In the period when multichannel sales were based on conventional stores and direct catalog sales, multichannel sales began to be organized in retail companies. At that time, the company's management did not yet feel the need for channel integration and ignored such requests. If the retailer offers the same range online and offline, then it has fully integrated both channels, but multi-channel sales can work in practice without integration. The complete integration of two or more marketing channels contributes the most to the creation of a permanent customer base in retail companies that offer a narrow but deep range of products, while in companies that offer a wide range, asymmetric channel integration is efficient. However, the current level of development of multi-channel sales is described in the literature as omni-channel retail, i.e. omni-channel retail. In contrast to the development of multi-channel, in omni-channel retail, the inherent boundary between existing and additional channels based on Internet technology disappears. In omnichannel retail, the boundaries of additional channels overlap.

##### **4.1. Comparison of omnichannel and multichannel retailing**

As pointed out, omnichannel retailing is sometimes presented in the literature as an extension of multichannel sales, but it is actually two different marketing strategies. It is necessary to point out the differences between multi-channel and omni-channel retailing. Multichannel retailing refers to situations in which a retailer sells goods to end consumers at the same time using at least two distribution channels (Franjković et al., 2018). In the context of multi-channel sales, channels are divided into online and offline, i.e. traditional channels. At the same time, three main marketing channels are usually combined in retail, i.e. conventional store, virtual store and catalog sales. Multichannel sales means selling goods in different circumstances and under different conditions, at the same or different prices. Multichannel retail aims to establish appropriate integration between channels in order to positively influence sales (Dunković, 2015). Thus, both in multi-channel and omni-channel sales, retail companies use two or more marketing channels, but the fundamental difference is that these channels are managed separately in multi-channel retail, while in omni-channel retail they are managed centrally and the boundaries between the different channels used are removed. When the integration of marketing channels is missing, it is reflected in the formation of the product offer and pricing, communication with customers, and the supply chain and shopping experience. Although multi-channel retailing has certain advantages compared to single-channel retailing (and these advantages stand out in greater market coverage, cost reduction and a higher level of customization), it also has disadvantages that include a reduction in the market share of existing marketing channels, which results in jeopardizing the survival of a less profitable channel. and which originates from a more profitable marketing channel (Knego, 2016). However, omnichannel retailing has even more advantages compared to multichannel sales because by integrating all sales channels, the boundaries between these channels are erased, and thus problems such as geographical barriers and neglect of consumer needs disappear. The omnichannel environment constantly puts pressure on retailers who are not just intermediaries in the sale of goods, but strive to personalize shopping and deepen their relationship with existing customers, as well as win over new customers.

Personalized experience and creating added value is the experience that consumers choose when purchasing products. At the same time, an important role in the development of omnichannel retailing and omnichannel customers is played by today's mobile devices that the customer constantly carries with him and retailers that provide customers with the best possible shopping experience through various channels and that adapt to shopping via mobile devices (Franjković et al., 2018). An efficient supply chain is also important. It is not only important that the products are available and that there are different delivery options, but also the way the product returns work in increasing customer satisfaction

#### **4.2. Consumer behavior and their requirements in omnichannel retailing**

Today, there are not so many customers who use only one marketing channel. Today's consumers expect a consistent, uniform and integrated service or experience, regardless of the channel they use. They are ready to move freely between channels (traditional stores, online and mobile devices), depending on their wishes, current situation, time of day or product category. Today's consumers no longer access a channel, but are always in it or in several at once, thanks to the possibilities provided by technology and mobility. These new customers want to use their own device to perform searches, compare products, ask for advice or cheaper alternatives during their shopping to take advantage of the benefits each channel offers. In addition, today's consumers believe that they know more about the purchase than the seller and feel that they have more control over the sale (Juaneda-Ayensa et al., 2016). Consumers are given the opportunity to use the advantages and avoid the disadvantages of certain marketing channels. Thus, consumers can choose the marketing channel to be used at a certain stage of the purchase. In the same way, they can shorten the time required for shopping, find a good price for a product more easily, and find the ratings left by other customers on a particular product more easily. All those consumers who use multiple marketing channels are becoming an increasingly important segment of target customers for the management of a retail company. Customer behavior in omnichannel sales is influenced by various factors, primarily ease of use, characteristics of sales channels and products, but also socio-demographic characteristics and consumer personality, previous shopping experience, trust, shopping perception of shopping efficiency and usefulness, certain situational factors (time that can be allocated for shopping, geographical distance, context, etc.) (Perea y Monsués et al., 2004). At the same time, each of the mentioned factors has a different effect on each consumer, that is, consumers react differently depending on these factors.

#### **5. PRIMARY RESEARCH**

The survey questionnaire was created for the purposes of researching the respondents' familiarity with omnichannel retailing methods. Given that the majority of respondents use some form of omnichannel retailing on a daily basis. The aim of the research is to examine the respondents' familiarity with the concept and benefits of omnichannel retailing. The research was conducted at the end of September and the beginning of October 2022 through an internet survey that was shared by e-mail and social networks. For the purposes of the research, a survey questionnaire was used, created especially for the needs of the preparation of the final paper. The questionnaire had a total of fifteen questions. At the same time, the first four questions in the questionnaire related to general information about the respondents, while based on the following questions and answers, an attempt was made to determine whether the respondents were familiar with omnichannel retailing and shopping habits. The target group is people aged 18 to 36, male or female. Since it is an internet survey, this target group was chosen because they are people of a younger age and they all use the internet and are not supporters of only the physical form of retail.

Respondents were selected by a random sample, and the type of sample used to select them is a simple random sample, because each member of the population has an equal chance of being selected in the sample. The limit is set at an annual age of up to 36 years, as already stated, at that age everyone uses the Internet and can combine commerce via the Internet and physical channels. Based on the obtained research results, it is evident that the respondents are somewhat familiar with the term omnichannel retailing. A total of 69 respondents participated in the research. More than half of the respondents, more precisely 56.5% of them believe that they are not sufficiently familiar with the term omnichannel retailing, thus 52.2% cannot confirm the very definition of omnichannel retailing. Furthermore, more than half of the respondents, 55.1%, correctly answered that omnichannel retailing is managed centrally. In any case, when the respondents who did not know what to answer and the respondents who did not know the correct answers to these questions are added together, it can be concluded that there is a significant proportion of respondents who do not know exactly what omnichannel retailing is. Although the majority of respondents, 36.2% of them, are between the ages of 26 and 30, according to the survey questions, we can conclude that the respondents still prefer traditional trade (68.1%) rather than "modern" trade, online trade. 40.6% of the respondents still buy high-value products at sales points and not online. This confirms the value of the fact that thirty-four (49.3%) respondents most often make purchases through physical channels, while 31.9% of respondents make purchases through web channels. Most of the respondents, more than thirty-six of them, are encouraged to buy by Internet ads, while 24.6% do not influence them at all. The results of the question about reviews show us that thirty-three, or 47.8% of the respondents believe that Internet reviews greatly facilitate their shopping, while only one respondent does not value reviews at all when shopping.

## 6. CONCLUSION

Retail trade includes serving the end consumer. The aim of the retail store is to continuously monitor the needs and habits of consumers in order to satisfy them and influence the constant changes in consumer habits. Omnichannel retailing is a modern form of retailing that implies full integration of all channels (traditional and digital) used in sales. With omnichannel retailing, the inherent boundary between online and offline channels disappears, so they are no longer noticeable. At the same time, these channels are defined as channels that are used in interaction with customers to communicate with customers and create the best possible experience and customer satisfaction. This means that these channels are intermediaries between the retail company and the consumer. Physical channels mean channels through which companies find customers directly, while digital channels mean that consumers find the products offered to them on their own. Among physical channels, printed media, printed materials, recommendations, fairs, presentations, posters, etc. stand out. Traditional channels also include television and radio. Digital channels imply communication with customers through various devices: computers, smartphones, tablets, etc. The fundamental difference compared to multi-channel retail is that all sales channels are managed centrally. Omnichannel retailing has developed from ever greater and more complex consumer needs and the development of information technology. Today, more and more consumers use multiple channels to interact with a business, where they do not access a channel, but are always in it or in several channels at the same time, thanks to technology and mobility. Therefore, within the framework of omnichannel retailing, consumers can choose the channel to be used and the time when it will be used, they can shorten the time necessary for shopping and find a favorable product price and reviews of other customers more easily. In order to meet their needs for a consistent, unique and integrated service, regardless of which marketing channel is used, it is necessary to personalize the approach with added value. Therefore, an omnichannel marketing strategy is based on relevance, consistency, relevance, empowerment and agility.

After these factors are implemented in the marketing strategy, it is necessary to plan the personal experience of the consumer, use the collected data as a basis for creating a marketing strategy, segment consumers, send the right message to the target customers at the right time, and direct the marketing strategy to the customer.

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## INSIGHTS INTO THE RELATIONSHIP BETWEEN LEADERSHIP AND JOB BURNOUT OF CROATIAN PROJECT MANAGERS

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### ABSTRACT

*Projects, as a unique endeavours limited by time and budget, imply significant amount of stress for their participants. Stress experienced by project participants, if prolonged, leads to project related burnout. This is especially true for project managers as ultimate responsible persons for the success of projects they lead. In this sense, personal characteristics and especially professional competence are important determining factors of one's coping with stress and reducing or preventing subsequent job burnout. Project leadership competencies, as the core competencies needed for project managers to do their job effectively and efficiently, can be considered influential for the level of burnout project managers experience after leading projects over certain period of time. In this study, the relationship between project leadership competencies and job burnout is examined on the sample of 71 Croatian project managers. Conducted simultaneous regression analyses, among other insights, revealed that project leadership competencies, overall and specific areas, are negatively associated with job burnout. In this sense, the beneficial effects of possessed leadership competencies on limiting own job burnout are stronger in case of project managers who are continually working on developing their leadership and other project management competencies, i.e. those who are active members of professional organizations for project management.*

**Keywords:** project manager, project leadership, competencies, objective stress, job burnout

### 1. INTRODUCTION

Projects, as a unique endeavours limited by time and budget, imply significant amount of stress for their participants. This is especially true for project managers as ultimate responsible persons for the success of projects they lead. Stress, as a subjective feeling of individual, in which the demands of work or life exceed the belief of the individual in his or her capacity to cope, can be perceived as a combination of three types of stress: objective stress, burnout and physiological stress (Leung, Chan, and Olomolaiye (2008, p. 644). Due to conflicting demands of competing a project on time, within budget, on planned level of quality, and satisfying stakeholders, project manager's job can be even more stressful than already stressful general management occupation (Haynes and Love, 2004; Richmond and Skitmore, 2006). Among three types of work stress, job burnout is a consequence of other two types, especially job related or objective stress. Job burnout is a gradual process that occurs as a result of constant and daily exposure to stress over a long period of time (Yip and Rowlinson, 2009, p. 123). Thus, stress experienced by project participants, if prolonged, leads to project related burnout. Project managers, due to high-demand and low-resource work environments, often experience workplace stressors that can lead to burnout syndrome (Pinto, Dawood, and Pinto, 2014; Irfan et al., 2021). As a three-dimensional physical and psychological response of an employee to experienced prolonged stress, job burnout manifest itself through employee's physical or emotional exhaustion, cynicism and reduced personal accomplishments, which can result in deep depression, reduced productivity, vulnerability to serious illnesses, etc. (Bundschuh Jr., 2018; Irfan et al., 2021). The pressure to complete complex and uncertain task of successfully managing project leads to preoccupation with stress and consequently to number of negative effects for project managers and their companies such as decreased productivity and effectiveness, burnout, decreased job satisfaction and well-being, more illness and related



absence from job, and higher employee turnover (Sethi et al. 2002; Berg and Karslen, 2013). Negative changes in social life (e.g. avoiding communication) and in attitude to work (e.g. low motivation), a manifestations of burnout, directly affect project manager's work performance and indirectly project success (Leung, Chan, and Olomolaiye, 2008). As such, job burnout demands special attention of company and its managers in order to avoid or at least diminish job burnout's negative effects for company and for all its employees. As a highly stressful environment and a very fertile soil for the occurrence of job burnout, projects and project management demand adequate, at the level of a company systematic, and at the level of an individual personal approaches and strategies to cope with stress and job burnout. Among just mentioned, personal characteristics and especially professional competence of an individual are important determining factors of his/hers ability to cope with stress and to reduce or prevent subsequent job burnout. One's personality characteristics and professional resources, combined with job demands and job resources, are significant predictors of job burnout (Yang et al., 2017). Developing and updating overall competency and managerial skills is one of the number of approaches which can help in reducing manager's stress and subsequent burnout (Richmond and Skitmore, 2006; Govindaras et al., 2023). As a cornerstone of project manager's overall competence (Crawford and Turner 2007), project leadership has been identified as a critical factor in achieving desired performance and project success (Georgehan and Dulewitz, 2008; Ahmed and Anantatmula, 2017; Podgórska and Pichlak, 2019). As one of the most important and most desirable project manager competencies, project leadership is crucial in all phases of a project's life cycle (DuBois et al., 2015). According to Dulewicz and Higgs (2003, 2005), leadership competencies include three competence areas: intellectual, managerial and emotional competencies. Following the notion of emotional intelligence school of leadership that emotional response to situations primary, not intelligence, differentiates leaders, and the notion of competency school of leadership that different profiles of leadership competence are better in different situations (Müller and Turner, 2007), leader's competency profile, and especially emotional responses to demanding situations, will differentiate effective from non-effective leaders. Having in mind that stress and subsequent job burnout are consequence of one's perception and feelings on own ability to successfully satisfy job demands, more competent and emotionally more skilful leader will eventually better cope or respond to stressful situations, and ultimately prevent or diminish own job burnout. Leaders, depending on their competence, are better in performing leadership role, minimizing in the process own work-related burnout (Harrichand et al., 2021). Thus, project leadership competencies, as the core competencies needed for project managers to do their job effectively and efficiently, can be considered influential for the level of burnout project managers experience after leading projects over certain period of time. Research on the relationship between leadership and burnout is abundant. According to the relevant literature, leadership is associated with burnout and constructs related to burnout, such as occupational satisfaction, work-life fit, turnover intention and personality characteristics (Harrichand et al., 2021). Although substantial research on the relationship between leadership and burnout exists, current understanding of the mentioned relationship is still very limited due to the number of different leadership styles and behaviours leaders can demonstrate (Kelly and Hearld, 2020) and also due to the number of different work situations in which leadership can be demonstrated. Additionally, existing research is predominantly oriented on leadership's impact on followers' stress and burnout levels, whereas there is a lack of research investigating the relationship between leader's demonstrated leadership and own experienced burnout (Zopiatis and Constanti, 2010). Finally, research on the relationship between project leadership, especially project leadership competencies, and job burnout shows even more scarcity, additionally emphasizing the need for new empirical research and insights into this relationship.

When considering the existence of research related to this topic, conducted in transitional-Croatian and regional context, identified research gap is multiplied, additionally emphasizing the necessity of conducting this and similar studies. Following the above, the purpose of this study is to gain insights into the relationship between project manager's leadership competencies and job burnout they experience. Having in mind the multitude of factors influencing job burnout, the following research questions guided empirical research conducted in this study:

- Q1: *What is the nature of the relationship between one's project leadership competencies and job burnout?*
- Q2: *What other personal and job related characteristics are influential for project manager's job burnout?*

Remainder of the paper is organized in three sections. Methodology section explains important methodological aspects of conducted empirical research. Findings section presents most important results and insights from conducted empirical research. At the end of the paper, summary and short discussion of the most important insights from the empirical research are offered.

## 2. METHODOLOGY

In order to provide answers to research questions, empirical research was conducted in 2021 on the population of project managers in Republic of Croatia. Following Müller and Turner (2007, 2010) and Leung, Chan, and Olomolaiye (2008) contributions, a self-assessment questionnaire was chosen as a research instrument in order to gain insights into project managers' leadership competencies and job burnout. More specifically, Leadership Dimensions Questionnaire (LDQ), originally developed by Dulewicz and Higgs (2003, 2005) and burnout self-assessment scale developed by Wharton (2004) constituted the questionnaire. In the end, questionnaire, containing 19 Likert 5-point scale type questions, grouped in two sections (Project leadership competencies and Burnout), and 11 questions related to respondent's information, characteristics and experienced job related stress, was sent via e-mail to project managers. Project managers members of professional organizations for project management (PMI Croatia and IPMA Croatia) and those managers identified as project managers in their companies by the study's author, were a targeted population of the study. After three rounds of e-mail dissemination, 71 project managers filled out the questionnaire correctly and completely, thereby forming a final research sample. Conducted data was processed in SPSS 23.0 statistical software. Research measures used in this study have been tested in number of previous studies. Nevertheless, when using Likert-type scales, it is suggested that Cronbach alpha coefficient for internal consistency reliability is calculated and reported for any scales and subscales (Gliem and Gliem, 2003). According to the relevant literature, mentioned coefficient needs to be at least .7, whereas values very close to 1.0 may indicate item redundancy (George and Mallery, 2010; Hair, Page and Brunsveld, 2019). Reliability statistics shown in Table 1 suggest that internal consistency reliability of items used in scale for project leadership competencies construct is excellent (.932), and good to excellent in scale for job burnout construct.

*Table 1: Reliability statistics (Cronbach's Alpha) for measurement scales*

Scale	Number of items	Cronbach's Alpha	Interpretation
Project leadership competencies	15	.892	Excellent
Job burnout	4	.801	Good to Excellent

The final research sample (Table 2) is balanced when it comes to project manager's gender (male = 52.1% vs. female = 47.9%) and membership in professional organizations for project management (membership = 53.5% vs. none membership = 46.5%). More than half of the project managers in the research sample have graduate degree (53.5%), followed by postgraduate master (19.7%) and undergraduate degree (15.5%). Apart from youngest project managers (24 – 29 = 9.9%), other age groups are almost equally represented in the research sample (30 – 39 = 29.6%, 40 – 49 = 32.4% and 60 – 65 = 28.2%). Similarly, experienced project managers dominate research sample (2 or more years = 80.2%) compared to unexperienced (19.9%) and especially to veteran project managers with very extensive experience in managing projects (4.3%). Almost 60% of surveyed project managers hold professional project management certificate and regularly attend project management seminars and trainings, whereas 85.9% of them work in companies which conduct projects frequently, very frequently or continuously. Related to this, two thirds of the surveyed project managers manage projects in companies and contexts characterized with medium to high maturity of project management practices (66.2%). On the other hand, only one quarter of the research sample are project managers who work in companies which have public (21.1%) or mixed private and public ownership (4.2%). Finally, almost half of the research sample are project managers who work in ICT (33.8%) or construction industry (14.1%).

### 3. FINDINGS

Conducted descriptive and multivariate statistical analyses provided interesting insights into the relationship between project leadership competencies and job burnout. Croatian project managers possess high level of leadership competence ( $mean = 4.24$ ), where area of intellectual competencies is developed the most ( $mean = 4.39$ ), whereas the area of emotional competencies is developed the least ( $mean = 4.18$ ). Project related stress in surveyed project managers is at medium level (3.22), whereas burnout is at low level ( $mean = 1.55$ ). In order to gain comprehensive insights into determinants of job burnout of Croatian project managers, simultaneous regression analyses were conducted. Apart from project leadership competencies, eight additional potentially influential factors were included in regression models. In this sense, project manager's gender, age, formal education, professional training and seminars, experience in managing projects and experienced project related stress were included in regression models. Additionally, company's characteristics of frequency of conducting projects and maturity of project management practices were also included into regression models. According to the obtained results, project managers' job burnout is not related to his/hers gender, age, formal education, professional training and seminars, experience in managing projects, nor to company's characteristics of frequency of conducting projects and maturity of project management practices (Table 3). Project related stress is positively associated with project manager's job burnout ( $b = .252, p = .090$ ), whereas project leadership competencies are negatively associated with project manager's job burnout ( $b = -.476, p = .018$ ). Produced regression model is statistically significant and explains 25.2% of variations in project managers' job burnout ( $R^2 = .252, F(9,61) = 2.288, p < .05$ ).

*Table following on the next page*

*Table 2: Research sample characteristics*

Respondent's characteristics		Share (%)
Gender	Male	52.1%
	Female	47.9%
Age (years)	24 - 29	9.9%
	30 - 39	29.6%
	40 - 49	32.4%
	50 - 65	28.2%
Formal education	High school degree	5.6%
	Undergraduate degree	15.5%
	Graduate degree	53.5%
	Postgraduate master degree	19.7%
	PhD degree	5.6%
Professional training and qualifications	No professional certificates, no seminars and training	9.8%
	No professional certificates, occasional seminars and training	12.7%
	No professional certificates, regular seminars and training	11.3%
	Plan to acquire professional certificates, regular seminars and training	7.0%
	Acquired professional certificates, regular seminars and training	59.2%
Experience in managing projects (years)	Up to 1	15.5%
	2 - 5	23.9%
	6 - 10	22.5%
	11 - 20	33.8%
	21 - 40	4.3%
Membership in PMI or IPMA	None	46.5%
	PMI	31.0%
	IPMA	22.5%
Industry	ICT	33.8%
	Construction	14.1%
	Professional, scientific and technical services	11.3%
	Water supply, waste management, environment protection	8.5%
	Financial and insurance services	5.6%
	Other	26.7%
Company's ownership	Private (domestic)	53.5%
	Private (foreign)	21.1%
	Public	21.1%
	Mixed private and public	4.2%
Frequency of conducting projects in respondent's company	Very rarely	2.8%
	Periodically	11.3%
	Frequently	22.5%
	Regularly and very frequently	38.0%
	Continuously (business entirely based on conducting projects)	25.4%
Maturity of project management practices in company	Very low	1.4%
	Low	11.3%
	Medium	22.5%
	High	43.7%
	Very high	21.1%

*Table 3: Project manager's burnout regression model coefficients (overall competencies)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>	95.0% <i>CI for B</i>
Gender	.085	.170	.059	.502	.618	[-.254, .424]
Age	-.053	.107	-.071	-.494	.623	[-.268, .162]
Formal education	.110	.096	.137	1.137	.260	[-.083, .302]
Professional training and seminars	.033	.073	.064	.454	.652	[-.113, .180]
Experience in managing projects	-.020	.102	-.032	-.193	.847	[-.224, .184]
Frequency of conducting projects	-.119	.086	-.176	-1.395	.168	[-.291, .052]
Maturity of project management practices	.017	.098	.023	.175	.862	[-.179, .214]
Project related stress	.252	.146	.201	1.724	.090	[-.040, .544]
Project leadership competencies	-.476	.195	-.310	-2.442	.018	[-.866, -.086]

*B* = unstandardized beta, *SE B* = standard error for *B*,  $\beta$  = standardized beta, *t* = t-test statistic, *p* = probability value, *CI* = confidence interval.

The predictor model accounts for approximately 25% of variance in Job burnout,  $R^2 = .252$ ,  $F(9,61) = 2.288$ ,  $p < .05$ .

When considering specific competence areas of Croatian project managers, results and insights are in line with those presented and emphasized for overall project leadership competencies (Table 4). All three produced regression models for three competence areas are statistically significant and explain from 22.5% to 25.0% of variations in project managers' job burnout ( $R^2 = .225$ ,  $F(9,61) = 1.968$ ,  $p < .10$ ;  $R^2 = .226$ ,  $F(9,61) = 1.975$ ,  $p < .10$ ;  $R^2 = .250$ ,  $F(9,61) = 2.264$ ,  $p < .05$ ). Apart from specific competence areas, only objective or project related stress is influential factor for project manager's job burnout. This relationship is positive in all three regression models ( $b = .286$ ,  $p = .057$ ;  $b = .251$ ,  $p = .10$ ;  $b = .273$ ,  $p = .064$ ). Of all competence areas, area of emotional competencies has strongest negative relationship with project manager's job burnout ( $b = -.449$ ,  $p = .019$  vs.  $b = -.304$ ,  $p = .062$ ,  $b = -.313$ ,  $p = .061$ ). Additionally, compared to other two competencies areas, the relationship between the area of emotional competencies and project manager's job burnout is statistically significant at 95% confidence level, whereas produced regression model with this competence area is statistically significant at 95% confidence level and explains the most variations in project manager's job burnout ( $R^2 = .250$ ). If the membership in professional organization for project management is introduced into analysis, the results are indicative (Table 5). The same regression model is run for two subsamples: 33 project managers not members of professional organization for project management and 38 project managers members of professional organization for project management. Results suggest that the beneficial effects of possessed leadership competencies on limiting own job burnout are stronger in case of project managers who are active members of professional organizations for project management, compared to entire research sample of project managers ( $b = -.724$ ,  $p = .004$  vs.  $b = -.476$ ,  $p = .018$ ). These project managers continuously and very dedicatedly work on developing their leadership and other project management competencies, and are in constant contact and communication with their peers and with the newest professional project management knowledge. Oppose to the other subsample of project managers, experience of project managers who are members of professional organizations for project management in managing projects is also negatively associated with experienced job burnout ( $b = -.240$ ,  $p = .075$ ). Surprisingly, project related stress in case of these project managers is also beneficial for their experienced job burnout ( $b = -.345$ ,  $p = .075$ ). Produced regression model for this subsample of project managers is statistically significant on 99% confidence level and explain 34.6% of variation in project manager's job burnout ( $R^2 = .346$ ,  $F(9,28) = 3.172$ ,  $p < .01$ ).

*Table 4: Project manager's job burnout regression model coefficients (competence areas)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>	95.0% <i>CI for B</i>
Gender	.008	.166	.005	.047	.963	[-.324, .340]
Age	-.086	.113	-.116	-.764	.448	[-.312, .139]
Formal education	.110	.099	.138	1.112	.270	[-.088, .308]
Professional training and seminars	.055	.074	.105	.743	.460	[-.093, .203]
Experience in managing projects	-.020	.105	-.032	-.188	.852	[-.229, .190]
Frequency of conducting projects	-.099	.088	-.145	-1.117	.269	[-.275, .078]
Maturity of project management practices	-.013	.098	-.017	-.130	.897	[-.209, .184]
Project related stress	.286	.147	.229	1.942	.057	[-.008, .580]
Intellectual competencies	-.304	.160	-.239	-1.900	.062	[-.624, .016]

The predictor model accounts for approximately 23% of variance in Job burnout,  $R^2 = .225$ ,  $F(9,61) = 1.968$ ,  $p < .10$ .

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>	95.0% <i>CI for B</i>
Gender	.023	.168	.016	.135	.893	[-.312, .358]
Age	-.036	.109	-.049	-.331	.742	[-.254, .182]
Formal education	.111	.099	.138	1.120	.267	[-.087, .308]
Professional training and seminars	.045	.074	.087	.613	.542	[-.103, .194]
Experience in managing projects	-.050	.102	-.082	-.491	.625	[-.255, .155]
Frequency of conducting projects	-.111	.087	-.164	-1.272	.208	[-.286, .064]
Maturity of project management practices	-.028	.097	-.038	-.291	.772	[-.222, .166]
Project related stress	.251	.150	.201	1.670	.100	[-.049, .552]
Managerial competencies	-.313	.164	-.235	-1.912	.061	[-.640, .014]

The predictor model accounts for approximately 23% of variance in Job burnout,  $R^2 = .226$ ,  $F(9,61) = 1.975$ ,  $p < .10$ .

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>	95.0% <i>CI for B</i>
Gender	.115	.174	.081	.661	.511	[-.233, .464]
Age	-.034	.107	-.046	-.322	.748	[-.249, .180]
Formal education	.132	.096	.166	1.383	.172	[-.059, .323]
Professional training and seminars	.023	.074	.044	.313	.755	[-.125, .172]
Experience in managing projects	-.016	.102	-.025	-.153	.879	[-.221, .189]
Frequency of conducting projects	-.145	.086	-.214	-1.690	.096	[-.317, .027]
Maturity of project management practices	.042	.102	.057	.416	.679	[-.161, .246]
Project related stress	.273	.145	.218	1.884	.064	[-.017, .563]
Emotional competencies	-.449	.187	-.320	-2.407	.019	[-.823, -.076]

The predictor model accounts for approximately 25% of variance in Job burnout,  $R^2 = .250$ ,  $F(9,61) = 2.264$ ,  $p < .05$ .

*Table following on the next page*

*Table 5: Project manager's job burnout regression model coefficients (overall competencies)*

Variable	B	SE B	$\beta$	t	p	95.0% CI for B
Gender	-.179	.335	-.107	-.533	.599	[-.872, .515]
	.186	.185	.156	1.002	.325	[-.194, .565]
Age	-.045	.188	-.054	-.241	.812	[-.434, .343]
	.020	.130	.022	.152	.881	[-.246, .285]
Formal education	.141	.170	.169	.829	.415	[-.211, .493]
	-.089	.106	-.120	-.840	.408	[-.307, .128]
Professional training and seminars	.115	.119	.213	.968	.343	[-.131, .362]
	.002	.102	.002	.017	.987	[-.208, .211]
Experience in managing projects	-.025	.179	-.030	-.139	.890	[-.394, .345]
	-.240	.130	-.305	-1.848	.075	[-.505, .026]
Frequency of conducting projects	-.150	.146	-.201	-1.026	.315	[-.451, .152]
	-.127	.107	-.188	-1.184	.246	[-.346, .093]
Maturity of project management practices	.201	.213	.213	.942	.356	[-.241, .643]
	-.083	.104	-.141	-.797	.432	[-.297, .131]
Project related stress	.543	.240	.405	2.258	.034	[-.046, 1.040]
	-.345	.187	-.298	-1.848	.075	[-.727, .037]
Project leadership competencies	-.420	.337	-.237	-1.245	.226	[-1.117, .278]
	-.724	.231	-.552	-3.127	.004	[-1.198, -.250]

■ Project managers not members of professional organization for project management (N = 33).

The predictor model was not statistically significant,  $R^2 = .107$ ,  $F(9,23) = 1.424$ ,  $p = .235$ .

□ Project managers members of professional organization for project management (N = 38).

The predictor model accounts for approximately 35% of variance in Job burnout,  $R^2 = .346$ ,  $F(9,28) = 3.172$ ,  $p < .01$ .

On the other hand, regression model produced for the subsample of project managers who are not members of professional organizations for project management is not statistically significant ( $R^2 = .107$ ,  $F(9,23) = 1.424$ ,  $p = .235$ ). Although it is a non-significant model, individual results are somewhat indicative. In this sense, project managers who are not members of professional organizations for project management experience significantly higher levels of job burnout when project related stress increases ( $b = .543$ ,  $p = .034$ ). This positive relationship between project related stress and job burnout in the case of project managers who are not members of professional organizations for project management is significantly stronger compared to the same relationship tested in all other regression models run in this study. Additionally, in this regression model project leadership competencies are not influential factor for experienced job burnout of these project managers ( $b = -.420$ ,  $p = .226$ ).

#### 4. CONCLUSIONS

This study offered interesting insights into the relationship between project leadership competencies and experienced job burnout on the sample of 71 Croatian project managers. By investigating the role of other personal and job related characteristics in project managers' job burnout as well, the study provided answers to main research questions. Although with several limitations, primarily in terms of small sample of project managers, cross-sectional nature of study and common-method bias issue, conducted study presents a valuable contribution to the literature on the relationship between project manager's leadership and experienced job burnout (Zopiatis and Constanti, 2010), especially in transitional economy context, such as Croatia and surrounding region.

Investigated project managers possess balanced and high levels of leadership competencies and low level of job burnout. Conducted simultaneous regression analyses revealed that project manager's leadership competencies are beneficial for his/hers job burnout, i.e. if well developed, they reduce or prevent project manager's experienced job burnout. These results, confirming the findings of similar studies (e.g. Harrichand et al., 2021), suggest that project manager's leadership styles and behaviours, demonstrated by the means of leadership competencies, especially in responding to demanding and potentially stressful work situations, are one of the panaceas for limiting their job burnout. This effect is quite stronger in the case of project managers who are very committed to developing his/hers professional expertise, including leadership competencies, through professional organizations for project management. In this sense, commitment of project managers to professional development, constant interaction with their peers and to acquisition of newest professional project management knowledge, including raising own leadership competencies, additionally fosters mentioned beneficial effects of project leadership competencies in limiting own job burnout. Opposite to the results for the entire research sample of investigated project managers, where experienced project related stress contributes to raising their job burnout, project managers members of professional organizations for project management respond very well on this type of stress and, according to the obtained results, objective stress is even beneficial for limiting their job burnout. Although stress effects are commonly U-shaped and low and very high levels of stress are not beneficial for individual's performances, it seems that project managers who are committed to professional development and who are in constant contact with their peers and with newest project management knowledge, appreciate the existence of certain-medium levels-of objective stress. It even helps them to better cope with job burnout. Additionally, the experience they possess in managing projects, which also includes the experience in coping with objective stress in the past, is also helpful in limiting own job burnout. On the other hand, in the case of project managers who have outdated and lower levels of leadership competencies and who are not committed to their professional development, the beneficial effects of leadership competencies for own job burnout are absent. These project managers, apart from being more susceptible to job burnout due to the non-existing beneficial effects of their leadership competencies, are also significantly less successful in coping with objective stress. For these project managers even experience in managing projects is not an influential factor in limiting own job burnout. Thus, when considering project leadership competencies, objective stress and experience in managing projects, for these project managers it can be expected that job burnout will be significantly larger problem, compared to project managers who invest heavily in their own professional development. The results in this study confirmed the importance of all three leadership competence areas in reducing or preventing own job burnout. Among three leadership competence areas, project manager's emotional response to demanding and stressful situations, in line with emotional intelligence school of leadership (Goleman et al., 2002), stands out as the most important area of competencies in reducing or preventing own job burnout. Indeed, project managers with higher emotional competencies better manage their own emotions and reactions to stressors and are also better in adaptive actions, consequently experiencing lower levels of job burnout (Chan, 2006; Mikolajczak et al., 2007; Cohen and Abdellah, 2013). Finally, the study revealed that Croatian project managers' personal and job related characteristics of gender, age, formal education, professional training and seminars, company's frequency of conducting projects and company's maturity of project management practices, were not influential for their experienced job burnout. It seems that, apart from the experience in managing projects and commitment to professional development through professional organizations for project management, job related characteristics of conventional training and seminars and organizational experience and maturity in conducting projects are not relevant for project managers' level of job burnout.



This indicates the importance and domination of intrinsic factors, including own experience in managing projects and commitment to state of the art professional development, in project manager's coping with own job burnout.

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## ORGANIZATIONAL STRESSORS IN THE HEALTH SECTOR

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### ABSTRACT

*Stress at the workplace is an integral part of the business life of almost every employee. Although mild stress can sometimes be considered a stimulus and a predictor of performance, an excessive level/amount of stress can have a negative impact not only on the health and behavior of employees but also on the performance of the organization itself. Therefore, it is an important task of management to recognize key stressors and manage stress well, where the first task is to discover and understand the causes of stress in the workplace, i.e. organizational stressors. The paper presents the results of research on organizational stressors among healthcare workers. The research included 143 healthcare workers from Herzegovina-Neretva County, most of them women, doctors of medicine, employed in primary health care, in public healthcare institutions. The results of the research showed that healthcare professionals recognize all the factors offered as stressors, with work overload, poor organization of work, inadequate work space, and administrative tasks standing out. On the other hand, fears of injuries at work and exposure to cytostatics, as well as conflicts with colleagues, proved to be the least stressful. In addition, the results showed differences in the strength of organizational stressors depending on the characteristics of the respondents, but also the characteristics of the health organizations where the surveyed healthcare professionals work. According to the obtained results, appropriate measures were proposed for managing stress at the workplace in healthcare institutions.*

**Keywords:** *Healthcare, Organizational stressors, Stress management*

### 1. INTRODUCTION

In a wider sense, everything that can change someone's daily routine and disrupt the natural balance of the organism can be labelled as stress. Stress is a physiological and psychological reaction of a person to external situations that disrupt their balance. Stressful situations can make a person tense and nervous which can lead to numerous physical and psychological changes to an individual that is exposed to them. Psychology describes stress as a state in which a person can find themselves when they are confronted with events that they define as threatening to their wellbeing or which demand special efforts from them in order to be able to accomplish that which is requested from them (Šverko, et al., 2001). Stress is a normal activated generalized psychophysiological reaction to external threats and to the demands that the environment and other people place on the individual. However, intense, frequent, or long-lasting stress, as well as stress that an individual cannot manage successfully, present a problem for the organism itself as well as a health risk for the individual. That state is not desirable and it is necessary to avoid it when possible.

Some of the most stressful situations in someone's life are: death of a child, death of someone close to them, loss of money, job, and love, a serious illness in the family, divorce, criminal charges and imprisonment. When stressed, the human organism is exposed to a certain level of aggression. In stressful situations stress hormones, such as adrenaline and noradrenaline, are released which increase blood sugar and blood lipid levels, fasten heart rate, and enhance muscle tone. The effects of stress are diverse and individual. Stress is possible to determine as a measure of body wear (Sikavica, 2011). However, it is important to note that up until a certain level, which is always individual, stress can contribute to a better adjustment of a person to the demands and requests from the everyday work-life balance. This is why stress is referred to as 'the salt of life'. It is clear, from the statements mentioned above, that almost none of us live without some form of stress. We are often overwhelmed by the demands, psychological or physiological, to which our body responds. Stress cannot be avoided because none of us can live under a glass bell without working with other people or living only according to our wishes. It can be inferred that a life without stress is a life without goals, needs or wants which we are trying to achieve. It is this human need to realize one's need that leads to some sort of stress and tension.

As a rule, stress includes three codependent factors (Kordić, 2002):

- 1) Stressors- which are external factors that place exceptional demands on the individual;
- 2) Individuals and their personal characteristics, and distress which influences their behavior in a stressful situation;
- 3) Adaptive responses, or psychological and physical reactions to a stressful situation.

In order to gauge stress levels in an individual it is important to see how an individual estimates their endangerment in a stressful situation- primary estimate, and how they estimate their own capabilities in order to deal with the emerging situation- secondary assessment (Kordić, 2002). How individuals deal with stressful situations in their life primarily depends on their genetic predisposition, but it also depends on many different factors such as: their health condition, education and experience, socio-economic conditions in which they live and work in, as well as their life philosophy. In order for a potential stress to become a real stress it is important for it to meet the following requirements (Robbins, 2013): 1) uncertainty around the results and 2) the importance of the outcome. Work related stress is a phenomenon with which every man, sooner or later, has to deal with regardless of their occupation or workplace. In a business, it is important to place great emphasis on stress, primarily due to the fact that stress can cause different physiological and psychological reactions by the employee that can negatively affect their health which can lead to frequent absence from work (Sikavica, 2011). Besides that, there is also a possibility that stress can be transferred to other coworkers that aren't as susceptible to stress and can negatively affect general business. Some of the high stress occupations that have a higher susceptibility to the negative side effects of stress are: healthcare professionals, teachers, social workers, call center workers, and prison guards (Johnson, et al., 2005). Even amongst healthcare workers, nurses experience higher levels of stress at their workplace which is also true when compared to other professions as well. In the research of intensity of professional stress conducted by Chan, et al. (2000) amongst six different professions (physicists, engineers, insurance agents, lawyers, nurses, and teachers/professors) nurses have had a higher than average stress levels than all other professions combined.

### **1.1. Causes of stress - stressors**

There are numerous causes of stress or stressors. Stressors can act individually or combined and the more stressors someone experiences the faster they get exhausted.

According to intensity and effects stressors can be (Babić, et al., 2020):

- 1) small or everyday (conflicts in the family or at the workplace, traffic jams, shortage of money, pollution of air, earth, and water, "race against time and money", the divide between wants and possibilities etc.),
- 2) large life changing (death of someone close, divorce, loss of a job etc.)- These stressors don't occur on an everyday basis and can cause significant suffering, however, most people can manage them and
- 3) psycho-traumatic or catastrophic stressors (heavy abuse, kidnapping, rape, mock execution, earthquakes, floods, etc.) which can cause long lasting health conditions to most people.

Generally stressors can be psychological, sociological, and biological. Causes of stress can be tied to the organization in which the individual works as well as in those that are outside of the organization. As such we can organize them into organization based stressors and stressors outside of the organization. The most common organization based stressors (Bahtijarević-Šiber, 1999) are: the job the employee does, management style, organizational structure, culture, climate and others. The job that an individual performs comes with its own stressors such as: the occupation itself (exceptionally stressful occupations are doctors, managers, pilots, police officers, firefighters, journalists, and sport trainers), too much responsibility, the inability of an individual to perform their work requirements, too much workload, time pressures such as too short deadlines, inadequate work conditions. Often, the most stressful jobs are the ones that require frequent contact with other people, so we often hear that a man's biggest stress source is another man. Another important stressor here is also a fear of losing the job. A role is a specified way to conduct oneself on a certain position within the organization which can also be extremely stressful. The most common stressors tied to someone's role are lack of understanding and a double meaning of said role as well as a conflict between roles. Management style characterized by the lack of care or interest for employees, their wants, needs, and expectations can also be a continue source of stress. It should be noted that management of human potential, with its poor politics and practices surrounding the acquirement and selection of employees, positioning them on unsuitable work places, bad development systems, awarding employees and similar, can be a common source of stress within the organization. Bureaucratic, rigid, organizational structure with a high level of centralization, formalization, and standardization of work can often be a basis for the development of stressful situations. Such organizational structure is unbefitting of creative employees that want more freedom and flexibility in their work and as such they are more suited for organic and looser organizational forms. Similar to its structure, the culture of the organization that insists on forcing rules and regulations combined with a distrustful climate and poor interpersonal relations can be a significant source of displeasure and stress. In the healthcare sector, specific organization stressor can be: shifts and working at night, 24 hour responsibility, fear of infection, fear of exposure to cytostatics and others. Alternatively, stressors outside of the organization can be seen in personal factors that arise from the individual's private life (death of a family member, divorce, financial difficulties, and others) or in the economic, political, and technological changes, elemental disasters, crises, wars, and others. The main goal of this paper is to recognize which organizational stressor do health care workers in Herzegovina-Neretva County find the most stressful. The results of previous researches were based on a similar methodology and they showed three major organizational stressors: overwork, insufficient number of employees, and inadequate compensation (according to Jurišić, Vlašić, Bagarić, 2019; Vadoci, 2017; Ljevak, et al., 2016; Marlais, Hudorović, 2015; Pleša, 2018).

## 1.2. How to manage stress?

How management combats stress i.e. which measures and actions they will take, depends primarily on the situation at hand and on the personalities of the employees. As far as organizational situations are concerned it is important to note how it is impossible (nor should they be) completely eradicated, but it is important to lessen their impact and negative effects. Also, it is important to note that people differ from one another according to their physiological, psychological, and other characteristics, which means that not all employees will react the same way to the same stressors or other factors. In order to properly deal with stress management managers should (Sikavica, 2011):

- 1) Understand stress and its effect on the effectiveness of the employees,
- 2) Identify the stress in the organization and,
- 3) Help the employee in stress management.

As far as stress levels and the level it affects the employees work goes it should be noted that both extremely low and extremely high stress levels have a negative effect on the employees effectiveness. Low stress levels are caused by insufficient workload which can lead to the employee becoming apathetic and leads to a worse result. On the other hand, high stress levels are the cause of too much workload on the employee which can actually "block" the employee from achieving the expected results. Long-term and intense stress leads to burnout. Burnout is characterized by the emotional exhaustion of the person that is under too much pressure with very little sources of pleasure. Aside from exhaustion, disappointment, and giving up from further goals and plans, the overworked employee experiences depersonalization, they put up a psychological barrier between themselves and other, and become more cynical. Most common victims of burnout are people with high aspirations that often give themselves unrealistically high goal and those that are of the opinion that they must achieve more and cannot be satisfied with their current position. A balance needs to be found in the optimal stress level which would ensure the most optimal work efficiency. However, determining the optimal stress levels and its limits are a problem in and of themselves. It is difficult to correctly assess this limit with each employee because, as previously mentioned, people are individuals and can differ greatly. Negative stress causes large losses and expenses for the organization. Not only does it lower productivity and the output quality, but it also causes an irrational expense of resources, it causes a poor response to the changes in an organization, and it can all negatively affect the competitive ability of an organization. In highly stressful conditions employees spend most of their time in order to overcome their stress and to survive in these unfavorable conditions and little energy to no energy is used on changes and utilization of the opportunities and possibilities in their surroundings. Identifying the stress points in the organization, i.e. to identify employees that are highly stressed is possible based on certain physiological, psychological, and behavioral symptoms. According to Robbins and Coulter (2005) the symptoms of stress in employees are possible to notice based on certain physical and psychological disturbances and behavioral symptoms i.e. changes in behavior. In order to successfully manage stress it is important to take certain measures that would stop or lessen its negative effects. The first step in stress management is to identify the cause of the stress, which is a pre requisite in order to stop it or remove it. In order to discover the cause it is important to assess the functional status of the organization and the individual. All of this requires an interdisciplinary teamwork, i.e. it requires a cooperation of experts in various fields, from doctors, psychologists, all the way to the people in charge of the organization of work and other functions in the business. Strategies and methods that are developed and used in order to prevent stress or its negative effects can be placed in two categories: organizational, those that lower stressful conditions and eliminate organizational and work stressors and individual, focus on individual issues of the employees.

Some of the techniques that an organization should use to reduce stress to its optimal level are (according to Telebec, 2016; Lesko Bošnjak, 2022):

- Objective explanation of the job during the selection process (clear job description),
- Reformatting the job in order to make it more challenging, to lower workload or to prevent boredom,
- Adequate work environment (in accordance to the rules of work protection),
- Available and safe work equipment,
- Safe and comfortable work equipment,
- Changes in the organizational structure that lead to decentralization, autonomy and flexibility,
- Democratic management style that highlights the increase of worker participation, especially in the decision making process,
- Changes in the organizational climate and culture which has to be based on cooperation, trust, and respect,
- Open and quality communication,
- Regulated rights from employment relations (working hours, daily, weekly and annual leave, etc.),
- Formatting programs related to the advancement of the employees career etc.

Managing stress whose causes come from the personal life of an employee is somewhat more difficult to do, mainly because there are many ethical limitations. Namely, the question arises whether the manager has the right to interfere in the personal life of the employee. If the manager believes that it is ethical and if the employees are open to such a thing it is possible to offer certain ways of help to deal with these stressors (Robbins, 2013):

- Ensure professional counseling and psychotherapy,
- Develop wellness programs that focus on the employee's total physical and mental condition.

## **2. METHODOLOGY**

The empirical research was conducted between 10.12.2022 and 30.1.2023. It included healthcare workers from the Herzegovina-Neretva Canton, Bosnia and Herzegovina. An online survey was conducted (Google forms option was used). The link with the survey questionnaire was distributed by email and through Viber and Whatsapp groups of professionals. Participation in the research was voluntary and anonymous.

### **2.1. Sample**

The sample included 143 people, 117 (81.8%) women and 26 (18.2%) men. The age distribution is as follows: 49 (34.3%) respondents are younger than 30 years old, the same number of the respondents is between 30 and 41 years old, 34 (23.8%) belong to the 42-53 age group, and 11 (7.7%) are older than 54 years. Half of the sample consists of doctors of medicine (77; 53.8%), and the rest are represented as follows: 13 (9.1%) doctors of dentistry, 35 (24.5%) nurses/technicians, and 18 (12.6%) other healthcare professionals. More than half of the respondents work in the primary health care sector (85; 59.4%), 15 (10.5%) of them are employed in secondary health care and 35 (24.5%) in tertiary health care. Most respondents are employed in public healthcare institutions (129; 90.2%), and the rest work in private healthcare institutions (14; 9.8%). The distribution of respondents according to the size of the healthcare organizations in which they work is as follows: 31 (21.7%) in small organizations, 52 (36.4%) in medium-sized healthcare organizations, and 60 (42.0%) in large healthcare organizations.

Less than 20% of respondents have a managerial function in their organization (26; 18.2%). Most respondents work in shifts (95; 66.4%).

## 2.2. Instrument

A survey questionnaire, used as a research instrument, was structured in two parts. The first part of the questionnaire contained questions about gender, age, work experience, profession, professional status, managerial functions, shift work, workplace, ownership and a number of employees in the healthcare institution. The second part of the questionnaire included 20 organizational stressors linked to healthcare work, with respondents rating how stressful they were. A five-point Likert scale was provided for evaluation with the scores having the following meaning: 1- not stressful at all, 2- rarely stressful, 3- occasionally/sometimes stressful, 4- stressful, and 5- highly/extremely stressful. Adjusted according to Milošević (2010), the mentioned 20 organizational stressors are grouped into 6 groups as shown in Table 1.

Groups of stressors	Stressor
1. Workplace organization and financial issues	1.1 Work overload
	1.2 Inadequate job organization
	1.3 Inadequate working space
	1.4 Administrative matters
	1.5 Inadequate staff numbers
	1.6 Limited opportunities for growth
	1.7 Inadequate personal income
	1.8 Everyday unexpected situations
2. Public criticism and lawsuits	2.1 Conflicts with the patient
	2.2 Threat of legal action
	2.3 24-hour responsibility
3. Dangers and hazards at work	3.1 Fear of infection
	3.2 Fear of injury from a sharp item
	3.3 Fear of cytostatic exposure
4. Conflicts and communication at work	4.1 Conflicts with superiors
	4.2 Conflicts with colleagues/coworkers
5. Shift work	5.1 Shift work
	5.2 Night work
6. Professional and intellectual requirements	6.1 The stress of job completion deadlines
	6.2 Time limit for patients examination

*Table 1: Groups of stressors and individual stressors  
 (Source: prepared by the authors according to Milošević, 2010)*

The analysis of the basis of the stressor categories formed in this manner revealed that all categories/factors have a satisfactory degree of internal consistency - Cronbach's Alpha coefficient is higher than 0.7 for each factor/groups of stressors (Table 2).

Code	Groups of stressors	Number of stressors	Cronbach's Alpha
OS1	Workplace organization and financial issues	8	0.886
OS2	Public criticism and lawsuits	3	0.779
OS3	Dangers and hazards at work	3	0.845
OS4	Conflicts and communication at work	2	0.832
OS5	Shift work	2	0.746
OS6	Professional and intellectual requirements	2	0.815

*Table 2: Groups of stressors and individual stressors  
 (Source: prepared by the authors)*



### 2.3. Statistical analysis

Categorical variables are expressed as a number of responses and percentages while numerical variables are expressed as a mean with standard deviation and a median with first and third quartile. The Mann-Whitney test and Kruskal-Wallis test were used to test the statistical significance of observed differences in the level of stress based on the characteristics of the respondents and their organizations. The internal consistency of certain groups of stressors (factors) was checked with the Cronbach's alpha coefficient. The limit of statistical significance was set at  $p < 0.05$ . P values that could not be expressed to three decimal places are shown as  $p < 0.001$ . IBM SPSS Statistics, version 25 (Armonk, NY: IBM Corp.) was used for statistical data analysis.

### 3. RESULT

The results showed that healthcare professionals recognize all the factors offered as organizational stressors, with work overload, inadequate job organization, inadequate working space, and administrative matters standing out. On the other hand, fears of injuries at work and exposure to cytostatics, as well as conflicts with colleagues, proved to be the least stressful. Table 3 shows whether or not individual organizational stressors are stressful for the examined healthcare professionals and how stressful they are.

	M	SD	Not stressful	Stressful
1.1 Work overload	3.14	0.98	7.0%	93.0%
1.2 Inadequate job organization	3.21	1.23	11.2%	88.8%
1.3 Inadequate working space	2.51	1.29	28.0%	72.0%
1.4 Administrative matters	2.78	1.22	15.4%	84.6%
1.5 Inadequate staff numbers	2.75	1.28	20.3%	79.7%
1.6 Limited opportunities for growth	2.71	1.29	21.0%	79.0%
1.7 Inadequate personal income	2.58	1.12	19.6%	80.4%
1.8 Everyday unexpected situations	2.92	1.14	9.8%	90.2%
2.1 Conflicts with the patient	2.37	1.23	30.8%	69.2%
2.2 Threat of legal action	2.04	1.23	44.8%	55.2%
2.3 24-hour responsibility	2.92	1.39	21.0%	79.0%
3.1 Fear of infection	2.29	1.07	25.9%	74.1%
3.2 Fear of injury from a sharp item	2.02	1.03	39.2%	60.8%
3.3 Fear of cytostatic exposure	1.61	0.95	62.2%	37.8%
4.1 Conflicts with superiors	2.14	1.18	38.5%	61.5%
4.2 Conflicts with colleagues/coworkers	2.00	1.06	39.9%	60.1%
5.1 Shift work	2.11	1.21	42.0%	58.0%
5.2 Night work	2.26	1.42	46.2%	53.8%
6.1 The stress of job completion deadlines	2.47	1.14	23.1%	76.9%
6.2 Time limit for patients examination	2.52	1.26	28.7%	71.3%
M – mean; SD-standard deviation				

*Table 3: Stress and level of stress of individual organizational stressors  
 (Source: prepared by the authors)*

According to an analysis of the stress ratings for each category of organizational stressors, workplace organization and financial problems are the organizational stressors that respondents find to be the most upsetting, while they are the least concerned about dangers and hazards at work.

Generally speaking, all analyzed groups of organizational stressors represent occasional or sometimes stress for healthcare workers (Table 4).

Code	Groups of stressors	M	SD	C	Q1-Q3
OS1	Workplace organization and financial issues	2.83	0.89	2.88	2.13
OS2	Public criticism and lawsuits	2.44	1.07	2.33	1.67
OS3	Dangers and hazards at work	1.97	0.89	1.67	1.33
OS4	Conflicts and communication at work	2.07	1.04	2.00	1.00
OS5	Shift work	2.19	1.18	2.00	1.00
OS6	Professional and intellectual requirements	2.49	1.11	2.50	1.50

M – mean; SD-standard deviation; C – median; Q1-first quartile; Q3-third quartile

*Table 4: Descriptive statistics for stress factors  
 (Source: prepared by the authors)*

The difference in the stress level of specific stressors concerning the characteristics of the respondents was investigated for age and gender. The analysis of the differences in the level of stress of individual groups of stressors based on the gender of the respondents shows some significant differences. Thus, it was found that women experience stressors related to Workplace organization and financial issues, Public criticism and lawsuits, and Professional and intellectual requirements as significantly stronger stressors (Table 5).

Group code	Gender	M (SD)	C [Q1-Q3]	p*
OS1	Men	2.27 (0.66)	2.06 [1.88-2.63]	<0.001
	Women	2.95 (0.89)	2.88 [2.25-3.50]	
OS2	Men	1.99 (0.76)	2.00 [1.33-2.67]	0.030
	Women	2.54 (1.11)	2.33 [1.67-3.33]	
OS3	Men	1.74 (0.66)	1.67 [1.00-2.00]	0.251
	Women	2.02 (0.93)	1.67 [1.33-2.67]	
OS4	Men	1.90 (0.92)	2.00 [1.00-2.00]	0.427
	Women	2.11 (1.07)	2.00 [1.00-3.00]	
OS5	Men	1.98 (0.87)	2.00 [1.00-2.50]	0.596
	Women	2.23 (1.23)	2.00 [1.00-3.00]	
OS6	Men	1.96 (0.71)	2.00 [1.50-2.50]	0.008
	Women	2.61 (1.14)	2.50 [1.50-3.50]	

M (SD) – mean (standard deviation); C [Q1-Q3] – median [first quartile - third quartile]; \*Mann-Whitney test

*Table 5: Differences in stress factors based on gender  
 (Source: prepared by the authors)*

Differences in the stress level of the analyzed groups of organizational stressors with regard to the age of the respondents show that younger respondents, compared to their older colleagues, consider organizational stressors from the following groups more stressful: public criticism and lawsuits, dangers and hazards at work, and conflicts and communication at work (Table 6).

*Table following on the next page*

Group code	Age	M (SD)	C [Q1-Q3]	p**
OS1	-29	2.82 (0.86)	2.75 [2.13-3.38]	0.542
	30-41	2.89 (0.81)	2.88 [2.25-3.50]	
	42-	2.76 (1.02)	2.63 [1.88-3.38]	
OS2	-29	2.79 (1.18)	2.67 [2.00-3.67]	0.019
	30-41	2.38 (0.89)	2.33 [1.67-2.67]	
	42-	2.13 (1.04)	1.67 [1.33-3.00]	
OS3	-29	2.16 (0.88)	2.00 [1.67-2.67]	0.041
	30-41	1.97 (0.91)	1.67 [1.00-2.67]	
	42-	1.77 (0.86)	1.67 [1.00-2.00]	
OS4	-29	2.18 (1.11)	2.00 [1.00-3.00]	0.007
	30-41	2.29 (1.00)	2.00 [1.50-3.00]	
	42-	1.71 (0.93)	1.50 [1.00-2.00]	
OS5	-29	2.34 (1.13)	2.00 [1.50-3.00]	0.166
	30-41	2.26 (1.25)	2.00 [1.00-3.00]	
	42-	1.94 (1.13)	1.50 [1.00-2.50]	
OS6	-29	2.64 (1.17)	2.50 [1.50-3.50]	0.409
	30-41	2.47 (0.94)	2.50 [2.00-3.00]	
	42-	2.36 (1.20)	2.00 [1.50-3.00]	
M (SD) – mean (standard deviation); C [Q1-Q3] – median [first quartile - third quartile]; **Kruskal-Wallis test				

*Table 6: Differences in stress factors based on age  
 (Source: prepared by the authors)*

The difference in the stress level of specific organizational stressors with regard to the health organizations where the surveyed health professionals work was investigated for ownership and size of the healthcare institution.

Workplace organization and financial issues, public criticism and lawsuits, conflicts and communication at work, and shift work are more stressful for health workers in public health institutions (Table 7).

Group code	Ownership	M (SD)	C [Q1-Q3]	p*
OS1	Public	2.90 (0.88)	2.88 [2.25-3.50]	0.001
	Private	2.10 (0.72)	1.94 [1.50-2.25]	
OS2	Public	2.50 (1.08)	2.33 [1.67-3.00]	0.025
	Private	1.88 (0.86)	1.67 [1.33-2.33]	
OS3	Public	1.97 (0.83)	2.00 [1.33-2.33]	0.236
	Private	1.95 (1.35)	1.33 [1.00-2.67]	
OS4	Public	2.11 (1.02)	2.00 [1.00-3.00]	0.047
	Private	1.68 (1.19)	1.00 [1.00-2.00]	
OS5	Public	2.26 (1.18)	2.00 [1.00-3.00]	0.005
	Private	1.46 (0.93)	1.00 [1.00-1.50]	
OS6	Public	2.51 (1.10)	2.50 [1.50-3.00]	0.466
	Private	2.32 (1.19)	2.00 [1.50-3.00]	
M (SD) – mean (standard deviation); C [Q1-Q3] – median [first quartile - third quartile]; *Mann-Whitney test				

*Table 7: Differences in stress factors based on the ownership of the health institution  
 (Source: prepared by the authors)*

The size of the health institution was found to be a significant factor in the difference in the stress of certain groups of stressors only for shift work. Shift work is more stressful for healthcare workers in small healthcare institutions than for their colleagues in larger institutions (Table 8).

Group code	Size	M (SD)	C [Q1-Q3]	p**
OS1	Small	2.73 (0.99)	2.88 [2.00-3.25]	0.319
	Medimu	2.73 (0.93)	2.75 [2.00-3.50]	
	Large	2.96 (0.80)	2.94 [2.38-3.44]	
OS2	Small	2.32 (1.03)	2.00 [1.67-3.00]	0.252
	Medimu	2.37 (1.25)	2.33 [1.00-3.17]	
	Large	2.57 (0.92)	2.33 [1.83-3.00]	
OS3	Small	2.19 (1.12)	2.00 [1.00-3.00]	0.270
	Medimu	1.81 (0.80)	1.67 [1.00-2.33]	
	Large	2.00 (0.82)	1.67 [1.33-2.50]	
OS4	Small	1.95 (0.98)	2.00 [1.00-3.00]	0.656
	Medimu	2.06 (1.11)	2.00 [1.00-3.00]	
	Large	2.14 (1.02)	2.00 [1.00-3.00]	
OS5	Small	1.63 (0.78)	1.50 [1.00-2.00]	0.011
	Medimu	2.34 (1.39)	2.00 [1.00-3.50]	
	Large	2.34 (1.08)	2.00 [1.50-3.00]	
OS6	Small	2.37 (0.99)	2.50 [1.50-3.00]	0.053
	Medimu	2.28 (1.16)	2.00 [1.00-3.00]	
	Large	2.74 (1.08)	3.00 [2.00-3.50]	
M (SD) – mean (standard deviation); C [Q1-Q3] – median [first quartile - third quartile]; **Kruskal-Wallis test				

*Table 8: Differences in stress factors based on the size of the health institution  
 (Source: prepared by the authors)*

#### 4. CONCLUSION

The conducted research pointed to significant organizational stressors for healthcare workers. As expected, they are primarily based on poor work organization, inadequate working conditions, and various activities that are not directly related to patients. Significant differences were also observed in the intensity for stress of certain groups of organizational stressors, depending on the characteristics of both the respondents and the organizations in which they worked. Certain organizational factors are perceived as more stressful by women, younger health workers, workers from public health institutions, and workers from smaller healthcare institutions. According to the obtained results, the management of healthcare institutions should work on the organization of work, i.e. all the activities and processes that involve the work of healthcare workers, and to try to relieve them of, at least, administrative tasks that take up time and take them away from patients. Work overload and stress related to shift work can be reduced by increasing the number of healthcare professionals and by reshaping the work so that the workload is adapted to the capabilities of the employees. The fear associated with dangers and hazards at work, which is especially pronounced among younger employees, can be reduced by conducting additional education and improving methods of protection and safety at work. A clear description of the job, open and quality communication, and fostering a democratic style of leadership will help reduce conflicts and improve interpersonal relations. Developing communication skills will also contribute to better relationships with patients. The results of this research and highlighted activities can help healthcare organizations and their employees better recognize and understand organizational stressors and ways to reduce them. The limitations of the conducted research are primarily reflected in the size of the sample and the

distribution of respondents according to their characteristics, however, they are also dependent on the characteristics of the institutions where they are employed. The above implies the need for a limited generalization of the obtained results. Therefore, in the future, the sample should be increased, with a special focus on a larger number of men and respondents from private health institutions, which would create a better basis for concluding factors that may be the cause of different perceptions of organizational stressors in healthcare institutions.

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## SOCIAL MEDIA RETAIL

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### ABSTRACT

*The social media were created in order to enable digital social interaction among people. With development of the smartphones market, Internet and digitalization the social media have become available to the majority of the world population. Numerous researches indicate that the majority of the world population uses social media, especially the new generations-widely called „millennials”. According to the researches, there is a significant growth on the market of the social media retail and creation of new jobs due to the effect of social media retail, for example the social media manager. Indicators for commitment of the marketing towards social media are various advantages. The brilliant idea was to connect social media with sale, which ensures digital market for retailers’ presentation of their products. The large people presence, convenient marketing with clear goals and reach, creation of loyal consumers and followers are the main advantages of the social media retail. The purpose of this paper is to explain: uniqueness of selling on social media, trends, predictions and marketing methods which enable retailers to reduce costs and increase income. Retailers use social media marketing to promote both on line and off line stores. This contributes the strengthening of new concept - social media retail. A good example are online clothing and footwear stores that have great growth potential in social media retail. For the purpose of this paper, Google Analytics data were analysed. Results pointed out how small Croatian company has strengthened in social media through recommendations, and the great potential of social media retail on online market.*

**Keywords:** *on line, retail, social media retail*

### 1. INTRODUCTION

The subject of this research is social media retail. The research issue, i.e. the aim of this research is to describe the retail development on social media, the influence of social media on e-commerce site and social media marketing, as well to explore all the possible channels with the data of a small Croatian company in online business through which customers get to an e-commerce site in order to realize the significance of all digital channels and to understand the role of social media in online business. This research should help retailers realize the relevance of social media to offline and online business. It is estimated that social media retail will have been three times bigger by 2025. The transformation of business into digital, the growing number of social media users, the growing number of smartphone and broadband Internet users were the motivational factors of this research. The aim of this research is to determine which is the most successful and the most attractive channel through which the customers get to e-commerce site and to determine the importance of social media in the business, particularly in online business and their potential. The research describes the development of social media retail, social media retail with emphasis on e-commerce site, social media marketing and the example of digital channels development of a small company in Republic of Croatia.

## **2. THE DEVELOPMENT OF SOCIAL MEDIA RETAIL**

The human communication has been occurring by the physical interaction of people, by oral and written transmission of information. The creation of electronic communication was enabled by phone in 1890 and by radio in 1891 (Hendricks, 2013). Everything is in use today, but the technology has enhanced and changed the long-distance communication of humans forever. The creation of smartphones and broadband Internet access has enabled a faster transmission of information, news and messages to a large number of human population. According to Flynn (2023), 4.9 billion people have an access to Internet. In 2023, 6.8 billion people will be using a smartphone and it is estimated that by 2027 smartphones will be used by 7.7 billion people (Oberlo, 2022). LinkedIn started 2003 as a business platform which enabled a better social and business communication for users. In 2003 My Space was established, which had become the most frequented website in the world by 2006 and it enabled users to share music on their profiles. The biggest change in the development of social media occurred with the appearance of Facebook in 2004; Instagram 2010 and TikTok 2016, which have enabled a rapid development of social media (Hines, 2022). Facebook was the first to start with social media retail in 2007, when it enabled users to sell products to their friends and in 2014 it created a buy button which enabled purchase on the platform. In 2015 Instagram implemented a popular buy button and in 2016 they presented in a revolutionary way a possibility to tag a product in a picture with a price and the possibility of purchasing (Gatto, 2021). In 2022, 4.7 billion people used social media, i.e. 59 % of the total human population and the average time of usage is 2h 29 min (Chaffey, 2022). According to Statista (2022), the number will be increasing and there will be 6 billion social media users by 2027. Social interaction is a key factor to mental and physical health of people (Brody, 2017). The younger generations (Generation Z, millennials) use digital platforms for miscellaneous activities, from health tracking to social media interaction. The social media have become an everyday activity of younger generations and the changes occur with the older generations as well (The Baby Boomers, Generation X). The younger generations use social media as a primary source of news (Deloitte, 2021), which indicates that the best marketing tool for the younger generations is – social media marketing. The coronavirus pandemic forced older generations to use digital platforms for social interaction and that way the world has been approaching the phase in which the social interaction is primarily digital (Burgess 2022). According to Oberle (2022), people primarily use Internet to find information and for social interaction. The retailers have used the presence of large numbers of people on different media to promote and sell products. It was a brilliant idea to use the presence of people to promote and sell products. In the last ten years the media have drastically changed, the customers search for information on Internet and social media and not on TV, radio or in newspapers, as earlier (Singh, M., & Singh, G. 2018). In the era of the digital economy it is not enough to open a store and wait for customers. Retailers have to be proactive in digital social platforms; the social media retail is consisted of reviews, recommendations, purchasing possibilities and communication. The companies invest a high amount of money in customer participation, the retailers want to create an extra value in the relation customer-retailer (Carlson, Jamie et al, 2019). Without the user activity the social media is only media. The social media analytics is used to evaluate engagement of the users with brand (Eckstein, 2021), the retailers should realize that the social media users want a digital social interaction with other users but with brands as well. The social media with the reviews of customers and recommendations of their digital friends, create a convenient atmosphere and encourage people to purchase (Linda, S. L. A. I., 2010). It is estimated that the social media retail will increase from 492 billion dollars in 2021 to 1200 billion dollars by 2025, this growth will enable new generations which use social media for recommendations and shopping, and it is also estimated that the social media retail will increase from 10 % share in the e-commerce to 17 % by 2025 (Kelly, 2022).

### **3. LITERATURE REVIEW**

#### **3.1. Social media in e-commerce retail**

Social media represent Internet sites and applications which enable digital interaction among users (Nations, 2021). According to Walsh (2022), the social media denote digital platforms which enable the interaction and content sharing among users. The main activities of social media are possibilities to like and comment postings and photographs due to the two-way digital communication, and consequently the group creation and digital connection of users. The social media represent digital platforms which have been used primarily for digital interaction among users. Due to the large popularity and influences among different users, they have grown into a tool for advertising and e-commerce retail (Javid, E., Nazari, M & Ghaeli, M. 2019). According to the research (Oberlo, 2022) from October 2022, most of the respondents, 47% of them, used social media for interaction with friends and users. It is to point out how 27 % of examinees of the mentioned research looked for inspirations for products and purchasing and 26.02% searched products to purchase directly. This is a good indicator for retailers to invest into the social media marketing. Social media retail presents the use of social media for interaction with customers and sale at physical stores and digital channels at the same time (Juicer, 2021). The retailers should aim their time and financial investments at the point where customers spend a great deal of their time, and that is social media. The impact of social media in e-commerce is evident with the focus shifting from products to customers. Such changes enable a stronger customer's connection to a brand, the increase of the e-commerce site visiting rate and the generation of new business opportunities (Huang, Zhao, Seo Yeon Yoon, and Morad Benyoucef, 2012). The e-commerce was created with the development of Internet and computers. With the further development of Broadband Internet access and of smartphones, m-commerce was created. Afterwards, the great number of social media users brought the social media retail, which includes customer service, content publication and sale at e-commerce site. The most recent online retail is social commerce, i.e. retail which entirely takes place on social platforms. Social commerce is an e-commerce channel in which retailers sell their products and services directly on social media. Social commerce had a huge growth of 38% in 2020, i.e. 26.77 billion dollars, and it is expected that in 2023 the social commerce revenue will be 52.53 billion \$ (Bigcommerce, 2022). Social commerce is on its way to a further development and it offers numerous benefits for retailers. The power of e-commerce sites and of applications in social media retail must not be neglected. According to the research of Statista from 2022, Google was the most frequented Internet site in the world; right after Google there were Facebook, You Tube, Twitter, Instagram, LinkedIn. Google presents an intermediary site at which a user writes a term for further search, which is the reason why it is no surprise that it is the most frequented Internet site in the world. Google is followed by as many as five social media, which is significant for the development of social media and social media retail. E-commerce site is present at Google, which is still a leading site for the shopping products search. Companies should use Google ads/SEO and social media combined because they have different marketing goals. Google facilitates retail and conversion and social media help create media awareness. That is the reason why it is a smart strategy to use both options (Zolliker, 2021), and both strategies work best on an e-commerce site. On social media customers are able to carry out a purchasing process with one click by their profile (Mayuranki, 2021). E-retailers solved that problem by enabling users to sign in by Facebook or Instagram on an e-commerce site. The retailers empowered mobile-friendly e-commerce sites, taking into consideration a great number of people who visit e-commerce sites via smartphone (Bigcommerce, 2022). E-commerce or electronic commerce describes activities of purchasing and selling of products and services on Internet. A widely known online sale has been growing and is one of the leading purchase and sale processes. The retailers have recognized the strength and advantages of online sales and customers have saved up their time and enhanced the purchasing process (Carpenter,



2022). The social media have helped enhance the e-commerce revenue by introducing a direct sale option at their platforms. The social media simplify a followers engagement and the creation of the faithful consumers group, help in the analytics tracking and understanding of the customers and market behaviour. They facilitate and accelerate the pre- and post-purchasing process with customers (McConnell, 2022). According to Bhattacharya (2022) the social media are useful to business in three key areas: in the brand creation; in omni channel engagement and in business growth. The brand creation is helped by a good choice of content and social media customer service. Omni channel engagement – 60% of millennials expect the same service quality in a physical and online store, which is why it is necessary to control social media for physical and online store in a quality way, business growth – the use of social media marketing for promotion and e-commerce site for retail and online customer support. According to Garrison (2022), the customers follow a brand on social media because they have found it on a social media homepage or due to a recommendation from a friend, because they already know about the brand, or because it has been recommended to them by a person who they follow (influencer). The clothes and footwear stores present an industry which is affected by the trend reversals and social media present a great and affordable marketing tool for a fast and variable communication with the target groups of consumers (Pattnaik & Trivedi, 2020). The social media influence on fashion industry is clear in the linking of social profiles and e-commerce sites of a retailer by using the newest digital and marketing activities (Ahmad, Nawaz, Atif Salman, and Rubab Ashiq, 2015). According to the research of Statista 2022, C&A was the most popular clothes retailer in Germany. The most recent information of C&A closing its physical stores throughout Europe might sound surprising for industry but it is merely a conduction of a new strategy started in 2020, which is the plan to achieve half of the entire sale online (Van Rompaey, 2022). With the growth in electricity costs and rents in malls in 2022 due to inflation, the online business has become even more attractive. According to Statista 2022, in 2021 the entire income of online fashion industry was 700 billion dollars and it is predicted that by 2025 it will be 1200 billion dollars. According to Absolunet, 87% of e-commerce customers consider that social media have helped them make a decision about a purchase. Social media have changed the e-commerce and enabled a further online commerce development (Morgan, 2020). The retailers who have adapted and aimed their business at social media and online commerce have accomplished multiple advantages, which are: the business enhancement, the promotion of a physical and online store at the same place, better customer support, the promotion based on the target groups of consumers. The growing number of retailers integrate their e-commerce sites with social media. The advantages are multiple: customers are able to post reviews and grade products from their profiles, which increases the transparency (Chouffani, 2022). Social media enable the revenue growth, the business acceleration by means of customer support, creation of faithful community and the business costs reduction.

### **3.2. Social media marketing**

The digital marketing is a marketing tool whose aim is to promote the products and services via digital channels. Digital channels can be social media, SEO, e-mail and mobile applications (Patel, 2022). The difference between digital marketing and marketing on social media is that the digital marketing works without boundaries on Internet, and those are different marketing campaigns via Google, e-mail marketing, while the social media marketing is only within social media (Gupta, 2022). Social media marketing marks the use of social media such as Instagram, Facebook, Tik Tok, Linkedin and Twitter to promote the brands and to sell products. It includes activities like the new products promotion, interaction with customers through comments or messages, and the creation of customer engagement content on social media (Kenan, 2022).

Social media marketing presents the best marketing tool for creation and companies long term maintenance which work via e-commerce site and customers who are used to ask for opinion about the purchase through opinions, suggestions and shopping experience via social media (Valerio, C., William, L., & Noémier, Q 2019). According to HubSpot, when it comes to social media, the primary market goal is the products - services advertisements and the brand awareness increase. Content creation activities for the purpose of products and services promotion, the communication building with the target consumer group and the revenue increase are the aims of social media marketing. Word-of-mouth (WOM) marks the transmission of information about company's products and services among the social media users and it presents the best marketing event on social media (M. Bala, D. Verma, 2018). According to Quarterly (2010), WOM is the primary reason for purchase at 20-50 % of all sales decisions. Social media have enabled WOM not to be an oral recommendation but to present the possibility of reviewing many recommendations and recensions. The Croatian Facebook group "Ženski recenziraj" has around 200 000 of female members and it is so popular that the drugstores sales persons know that the product has been recommended in the group when it starts to miss on the shelves. After the commendations numerous products have been sold at record time (Bilić Arar, 2021). This can be ascribed to the phenomenon of WOM on social media. Unlike the cost-free recommendation, the influencer marketing presents the marketing in which an influencer promotes a product or a service to his/her followers with financial reimbursement. An influencer is a person who performs his influence on social media. Almost  $\frac{3}{4}$  (72.5%) of American marketers is estimated to use influencer marketing in 2022 (Newberry, 2022). Social media have created numerous new jobs, e.g. social media manager, advertising experts, social media influencer. They provide a large number of business opportunities because the demand is large, which is a proof of a rapid development of social media marketing (Talavera, 2020). Facebook is the most influential social media and it presents the number 1 in digital interaction of users. It presents a great marketing tool for companies which is free of charge. Not only can the companies introduce themselves to their followers, but there is a possibility of advertising for the audience which they want to attract to the profile or to e-commerce site. Facebook advertisements include advertisements which targeted a demographic group of society and budget setting for advertisements. The marketing management on Facebook aims an interesting content to attract new visitors and followers engagement, promotion of announcements (Marrs, 2020). The second most influential social media is Instagram, right after Facebook. According to the research of Instagram itself, 90 % of Instagram followers follow at least one business profile, which makes Instagram the best social media for the connection of visitors to companies. 70 % of Instagram users do not even mind advertisements which are presented to them on that social media. 50 % of users purchase via Instagram at least once in a week. Instagram offers the possibility of checkout, i.e. purchase at Instagram site without the mediation of an e-commerce site. The quality and fun content is the key, and they also offer the possibility of personalized advertisements for the attraction of new followers (Instagram, 2023). Tik Tok offers a large possibility of presenting a content to many users and with advertisements noticeability and engagement can be enhanced. The growing number of companies invest in Tik Tok marketing. According to Statista from 2021, the greatest number of Tik Tok users, 25 % of them are in the ages of 10-19, 22 % are 20-29, 21.7 % 30-39, 20.3 % 40-49 and 50+ 11 % (Hirose, 2022). Companies invest in Tik Tok in order to introduce younger groups to a brand with content which is mostly informal and amusing. From the business point of view, Facebook, Instagram and Tik Tok are primarily platforms for B2C social media marketing tool. Linkedin presents a web of as many as 59 million companies. Linkedin marketing aims at marketing processes which are used for finding best candidates for a job and for a company promotion. That is the reason why the marketing of this social media is different from the previously described B2C webs.

Linkedin presents a majority B2B social media with the help of which a company is promoted as an employer and at which it promotes its business activities (Newberry, 2022). Social media have become an everyday activity for the majority of human population and they offer huge possibilities for the business development and for the sale of products and services. Successful companies invest in the development of business and promotion on all social media, i.e. profiles on Facebook, Instagram and Tik Tok and Linkedin (Patel, 2022). The corona virus has reinforced the development of online business and in that way encouraged the investments into social media marketing and e-commerce sites. Successful retailers have realized the relevance of digital marketing in time, especially of the marketing directed towards the target group on social media. Social media marketing presents the future of digital marketing due to the great number of social media users. The successful linking of offline business, e-commerce site and social media is a key to the profit growth and to the business development.

#### 4. METHODOLOGY

The impact of social media on e-commerce of a small Croatian company was explored through the data analysis of the mentioned company, obtained from Google Analytics. Google Analytics is an online analytical site in the ownership of Google, which tracks the visiting rate and revenue of Internet sites. It is necessary to link e-commerce site to Google Analytics in order to track data. The research was based on 86,977 visitors to the Croatian company's e-commerce site in 2021 and 118,405 in 2022. 92.06 % of visitors in 2021 are from the territory of Republic of Croatia, as opposed to 91.35 % in 2022. The company invested in SEO in 2021 and it is active on leading social media: Facebook, Instagram, Tik Tok, Pinterest, You Tube. Facebook and Instagram present the leading social media which are used by companies to promote products and services. The company is in the industry with variable trends, that is the reason for social media being in the focus of marketing department. For the purpose of understanding the visit from social media, all channels are shown through which customers visit an e-commerce site. The data have been collected via Google Analytics in the period of 1.01.2021 – 31.12.2021 and 1.01.2022 – 31.12.2022, with the aim of understanding digital channels and the social media role in online business.

##### 4.1. Results and discussion

The review of digital channels through which users visit an e-commerce site of a small Croatian company is shown in the table 1. The majority of visitors comes via Organic Search, 69,23 % of them. Organic Search is the users search which is unsponsored at Google, i.e. when we need e.g. new trousers, we enter the term "trousers" on Google and all the terms we can see that are not sponsored fall into Organic Search. The company had investments into SEO, i.e. digital marketing via Google. Next is Organic Social with a 19.72% share. Organic Social presents an unsponsored visit to an e-commerce site via social media link (postings, photography).

Visit via channel	The visitors share of e-commerce site	The average visit time at e-commerce site by its channel	The revenue share in the e-commerce site
Organic Search	69,23%	3m 50s	77,42%
Organic Social	19,72%	2m 06s	4,91%
Direct	10,39%	2m 58s	16,71%
Unassigned	0,33%	3m 08s	0,21%
Referral	0,32%	17m 32s	0,75%
Organic video	0,01%	0m 20s	0,00%
Total	100%	3m 25s	100%

*Table 1: The visitors share, the average time of visit and the revenue share of an e-commerce site in 2021*

*(Source: Google Analytics)*

Google Analytics 4, which was released in beta version in 2020, has an option of segmenting Social to Organic Social (un-sponsored) and Paid Social (sponsored advertisements on social media). It can be determined that the rapid development of sale and marketing on social media encouraged Google to segment Organic Social. Direct denotes a direct entering of a site or a URL of the company link. In the Direct channel there are visitors who are familiar with the brand, 10,39% of them. Unassigned, 0,33 % of visitors do not belong to any visitors group; it refers to the visitors who have reached the site through an unknown channel. Referral denotes the visitors who have come to e-commerce through another site's link, which is 0,32% of them. Organic Video has a share of 0,01%; it presents the visitors who have come to the site via video (e.g. You Tube). It is an interesting fact that the Referral visitors spent the greatest amount of time on site, with the average of 17 minutes and 32 seconds, followed by Organic Search with 3 minutes and 50 seconds, then Unassigned 3 minutes and 08 seconds, Direct 2 minutes and 58 seconds, Organic Social 2 minutes and 06 seconds and Organic Video 20 seconds. The average time spent on a company's web-store through all channels is 3 minutes 25 seconds. Google (Organic Search) is the actuator of visits and revenue of this e-commerce site with the revenue share of 77,42%, followed by Direct with the 16,71% share, which presents the visitors who are acquainted with the products content of a company and Organic Social with the share of 4,91%, i.e. visitors from social media who have come across the site at a company's social media site.

Visit via channel	The visitors share of e-commerce site	The average visit time at e-commerce site by its channel	The revenue share of e-commerce site
Organic Search	77,47 %	2m 06s	78,76%
Direct	14,67 %	1m 39s	19,17%
Organic Social	6,57%	1m 27s	1,15 %
Unassigned	1,06%	2m 16s	0,51%
Referral	0,23%	1m 24s	0,41%
Total	100%	1m 59s	100%

*Table 2: The visitors share, the average visit time and the share of e-commerce site revenue in 2022*

*(Source: Google Analytics)*

Table 2 show data of the visitors share, the average visit time and the revenue share in online business of a small Croatian company in 2022. Organic Search share has a 77,47% share in the total share of e-commerce site visitors, followed by Direct with the 14,67% share, Organic Social 6,57%, Unassigned 1,06% and Referral 0,23%. The greatest amount of time was spent by visitors through Unassigned 2 minutes and 16 seconds, Organic Search 2 minutes and 06 seconds, Direct 1 minute and 39 seconds, Organic Social 1 minute and 27 seconds and Referral 1 minute and 24 seconds. Organic Search has the greatest revenue share of an e-commerce site, 78,76%, followed by Direct with 19,17%, Organic Social 1,15%, Unassigned 0,51% and Referral 0,41%. The data for 2021 and 2022 point out to the significant role of Google, i.e. Organic Search in the share of visits, use and revenue of e-commerce sites. There is a clear role of Organic Social, which was the second most visited channel in 2021. The company had an active marketing campaign on social media in 2021. In 2022 with the reduction of marketing activity on social media, Organic Social was replaced by Direct with the visitors share. Organic Search is the best digital channel which can enhance the visitors number and the revenue of e-commerce site with smaller investments. These data indicate the significance of digital marketing at e-commerce sites. Part of digital marketing is also SEO (search engine optimization, i.e. marketing activities aimed at the enhancement of ranking at a Google site)

(Patel, 2022) and social media marketing. Social media can generate a higher amount of visits and a greater revenue with the use of advertisements aimed at a target group of consumers. In Google Analytics 4, it is already now possible to track Google advertisements. The growth of Organic and Paid Social is to be expected with the posting of amusing and relevant content, payment of ads, the society's digital literacy growth and great customer service.

Organic Social channel	Facebook share	Instagram share	Pinterest share	Total
The visitors share of social media in Organic Social	81,97 %	18,00%	0.03%	100%
The revenue share of social media in Organic Social	44,45%	51,55%	4%	100%

*Table 3: The share of Facebook, Instagram and Pinterest visitors/revenue in the Organic Social channel in 2021*  
 (Source: Google Analytics)

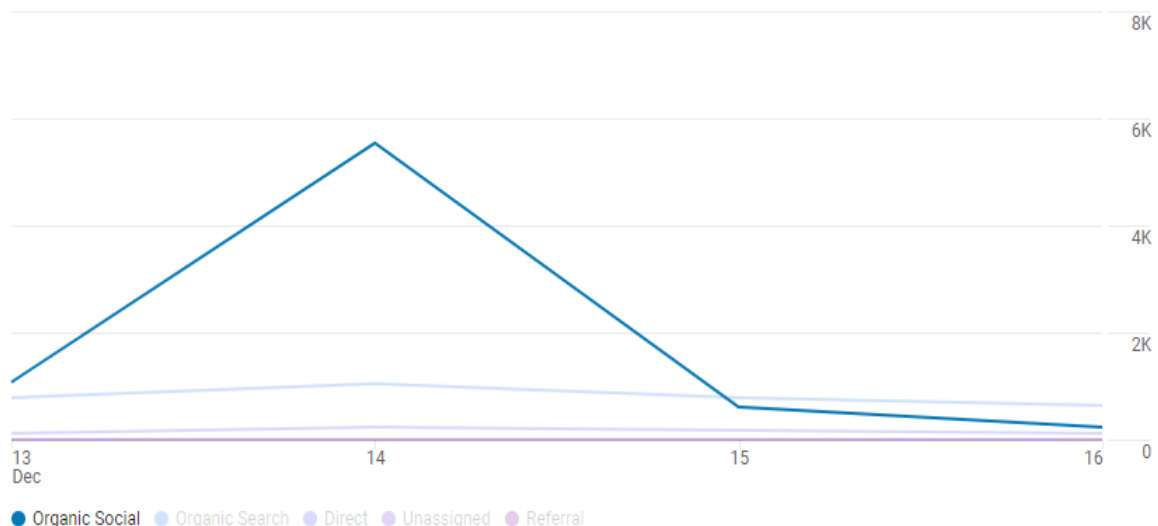
Table 3 shows the share of Facebook, Instagram and Pinterest on an e-commerce site of a small Croatian company. The data were collected via Google Analytics in 2021. The analysed company has twice as many followers on Facebook as on Instagram. Facebook has twice as many users as Instagram in the world, but Instagram has a greater engagement of users and the greater share of the younger population (Jackson, 2022). The data from Google Analytics of the analysed company indicate that Facebook has an 81,97% visits share in the total Organic Social, Instagram 18,00% and Pinterest 0,03 %. The best results are achieved with digital marketing efforts on Facebook and Instagram simultaneously. Although Instagram had 18% of visits share in the entire Organic Social, it accomplished larger revenue, i.e. 51,55%. Next is Facebook with 44,45% and Pinterest with 4%. As opposed to Pinterest, Facebook and Instagram had daily postings in 2021.

Organic Social channel	Facebook share	Instagram share	Total
The visitors share of social media in Organic Social	72,57 %	27,43%	100%
The revenue share of social media in Organic Social	77,72%	22,28%	100%

*Table 4: The share of Facebook and Instagram visitors/revenue in the channel of Organic Social in 2022*  
 (Source: Google Analytics)

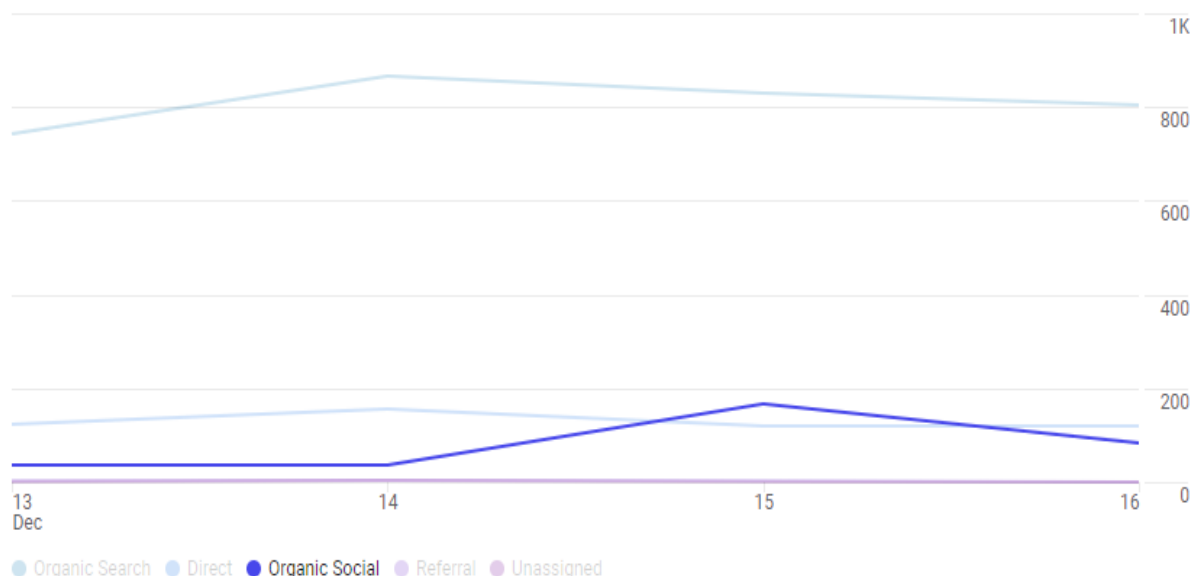
Table 4 shows the share of Facebook and Instagram on a small Croatian company's e-commerce site. The data were collected via Google Analytics in 2022. In the data from Google Analytics of the analysed company, Facebook has a 72,57% share in the entire Organic Social and Instagram 27,43%. The visiting share kept up with the revenue share. Facebook has a 77,72% share and Instagram 22,28%. Facebook and Instagram enabled checkout in 2019, i.e. a direct purchase without the user having to leave the application. The advantages are numerous; the customer enters the data just once and they are filled in automatically by the system at the next purchase, the payment is secure and the products are revised by Meta so as to secure the quality of service (Meta, 2022).

Only the Facebook and Instagram users from the USA are able to use checkout on Facebook and Instagram and the expansion of this option to the rest of the world (Asia, EU and other developing countries) will enable the exponential global growth of sale on social media. This decision would help numerous small companies which do not have financial means for a relatively expensive e-commerce site which requires many investments. According to Pymnts (2021), Instagram has started testing checkout in the UK, which is a good sign for retailers outside the US. Tik Tok is the fastest growing social media in the world. Tik Tok shopping is a new type of social commerce, in which a product is shown on video and the new generations (Generation Z and millennials) prefer videos. They enabled the purchase directly on Tik Tok and there is the possibility of aiming at an e-commerce site. They have become partners with Shopify, which offers the option of linking an e-commerce site to social media. Tik Tok shopping was promoted by a famous influencer Kyle Jenner, who has 35 million followers on Tik Tok. Tik Tok shopping is available only to few companies in the US, UK and Canada, but they have been testing the option in Asia as well (Geyser, 2022). The companies should invest into all of the social media, especially in Facebook which has the largest number of users, Instagram which has the greatest users engagement and Tik Tok which is the fastest growing social media in the world. The graph 1 shows the viewing rate of e-commerce site by channels in the period of 13.12.2021 – 16.12.2021. The key date for the analysed company is 14.12.2021, when Organic Social accomplished 5550 visitors thanks to the marketing phenomenon of WOM (word of mouth) which presents a recommendation from a digital friend on social media, Organic search 1308, Direct 232, Unassigned 2, and Referral 2 visitors. The company's product was reviewed in the Facebook group "Ženski Recenziraj" on 14.12.2021, where it collected numerous recommendations of group members. The product which was recommended by the group members was sold out the same day, which proves the power of WOM and of sincere recommendations on social media.



*Graph 1: Visitors of an e-commerce site in the period of 13.12.2021 – 16.12.2021  
 (Source: Google Analytics)*

*Graph following on the next page*



*Graph 2: Visitors of an e-commerce site in the period of 13.12.2022 – 16.12.2022  
 (Source: Google Analytics)*

As opposed to the period of 13.12.2021 – 16.12.2021, the period of 13.12.2022 – 16.12.2022 (Graph 2) shows the absence of the role of Organic Social. The rest of digital channels did not have great oscillations as Organic Social, which had a WOM (Word-Of-Mouth) effect in 2021 and collected numerous visits to an e-commerce site, unlike the year of 2022.

## 5. CONCLUSION

The majority of people in the world use social media and that was perceived by retailers, who aimed their marketing efforts and financial investments at the place where customers spend a lot of their time nowadays. In the era of digital communication and online store with the tendency of growth and influence, the retail and promotion on social media was developed. Social media retail presents the activities on social media which are aimed at the promotion and retail through offline and online business. The invisible but measurable hand of social media retail is social media marketing, which has enabled a rapid development of business profiles on social media and numerous new business opportunities. This research examined social media retail and all affiliated channels of digital communication. The data collected from Google Analytics of a small Croatian company in 2021 and 2022 have shown that Google (Organic Search) is the main proxy mean of communication through which the customers get to an e-commerce site, followed by Direct (direct, i.e. by entering the company's name or URL link) and Organic Social (link via social media, through the company's postings). Organic Social was the second most frequented channel in 2021 due to the focus of marketing to social media, i.e. daily postings on social media. In 2022, Direct took the second place because of the smaller marketing engagement. The company invested in SEO in 2021 and it has been present in the retail market for more than 20 years, it introduced online business in 2020 due to the coronavirus, i.e. impossibility of sale in physical stores. Due to the investments into SEO and the brand recognition in the market, Organic Search and Direct are justifiably considered the best channels of analysed e-commerce site. Organic Search and Direct are the leading digital channels through which a visit and revenue of the analysed company's e-commerce site are generated. In 2021, the visitors share in Organic Social did not keep up with the revenue. Instagram, which had a visitors share of 18% in Organic Social, had a 51,55% revenue share.

In 2022 the visiting share kept up with revenue, i.e. Facebook with the 72,57% visitor share, had a 77,72% revenue share. The research presented the power of WOM (word of mouth) on social media on the example of a recommendation in a Facebook group which has proved itself to be relevant and sincere. The research by Statista from 2022 showed that Google was the most frequented site in the world, but it is followed by even five social media. Successful e-commerce sites invested in SEO (Organic Search) and Google Ads at first, but now it is necessary to aim the efforts and financial investments at social media. With the decision of Facebook, Instagram and Tik Tok to expand checkout to the rest of the world and to new generations, a further development of social media retail will be enabled, which will focus on the sale exclusively on social media. Currently, checkout is possible in the USA for some retailers. Recommendations for future researches include checkout of the leading social media and advertisements on social media aimed at target groups. The advantage of social media is the generation of affordable advertisements which can be aimed at target groups in a certain geographical area. It is possible to adjust the ads to the target groups depending on the product, service and the company's brand. Even though social media provide numerous business opportunities, they have certain limitations in global development and those are mostly political reasons, e.g. Facebook and Instagram ban in Russia, Tik Tok ban in the US for American state institutions. Numerous influencers and social media managers in Russia had to find another job due to the political decision of the ban of western social media (Facebook, Instagram). It is very important that the company's management notices the social media potential in the acquisition of successful business results. It is clear that companies can accomplish great marketing results with creativity and imagination in the use of social media even without great financial investments.

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## PUBLIC- PRIVATE PARTNERSHIP IN HEALTH CARE IN CROATIA

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### ABSTRACT

*Public-private partnerships (PPPs) have become effective tools for delivering public facilities and services all over the world, generating significant interest in academic circles as a novel approach. PPPs are a notable addition to what has become known as the "new public management" initiative for improvements to the manner that public services are delivered. In the Republic of Croatia, PPP is a fairly young model that includes collaboration between government authorities and the private sector. The purpose of this article is to present previous research on PPPs in health care in Croatia and the EU. With this paper, we want to highlight the advantages of PPPs in the management of public goods, as well as determine whether students support the PPP model. The research included 68 questionnaires, completed by students of the University Department of Professional Studies, Erasmus students, and students of the University of Split School of Medicine, medical Studies in English. The results of our study indicate a generally positive perception of PPPs. A majority of the Erasmus students and students of the University of Split School of Medicine believed that PPPs have advantages, while Croatians, students of the University Department of Professional Studies did not believe in the advantages of this model. These results suggest that there is a noticeable difference in the perception of PPPs between these three groups of students. Finally, the article suggests future research in this field.*

**Keywords:** Croatia, health care, public management, public-private partnerships

### 1. INTRODUCTION

Public-Private Partnerships (PPPs) have gained more and more traction in recent years, even in the health care industry. Major public sector changes were initiated in the 1980s as a result of mounting financial pressure on public finances. Although PPPs are not a new concept, there is still no universally accepted definition of PPP (Hodge and Greve, 2007). According to the numerous definitions in the literature, the important characteristics of PPPs include partnership, long-term relationships, the development of mutual products/services, the sharing of risks, costs, and benefits, and mutual value addition (Klijn and Teisman, 2003). According to Koppenjan (2005), a PPP is a type of structured cooperation between public and private partners in the preparation and/or exploitation of infrastructure facilities in which they share or reallocate risks, costs, benefits, resources, and responsibilities. Growing public needs and increasingly expensive and complex infrastructure projects have faced the state and the public sector with a lack of money and budget constraints in recent years. The classic method of financing has become unsustainable. Such a situation led to the thinking and development of the term public-private partnership, as an intermediate variant between two extremes, state financing and privatization (Kačer et al., 2008).

All across the world, governments are looking for solutions to deal with rising health care expenses and shrinking resources (Blanken and Dewulf et al., 2010). Both the public and private sectors acknowledge their respective inability to address emerging public health issues that remain on the international and intra-country policy agendas (Nishtar, 2004). Traditional public health organizations face a lack of financial resources, complex social and behavioral issues, and rapid disease transmission across national borders, and diminished state capabilities (Reich, 2000). PPPs in the health sector can take many different forms, depending on the degree of public and private sector responsibility and risk. They are distinguished by the sharing of common goals, risks, and rewards, as defined in an agreement or manifested through another arrangement (Nikolic and Maikisch, 2006). PPPs differ from more traditional types of partnerships in three ways. First, the partners do not have common ownership: one side is a state-funded organization, such as the government, and the other is a private organization, such as a business. As a result, they tend to pursue distinct operational and strategic objectives. Second, unlike traditional collaborations, which typically produce private goods, PPPs always produce public or quasi-public products and services for the benefit of a third party. This third party could be society as a whole, but it is rarely a direct customer of either partner. Third, PPPs are typically in place between specific partners for extended periods. PPPs have become a main factor in implementing social and public policy due to being regarded as useful and cost-efficient (Osborne et al., 2000). PPP has emerged as a popular model for delivering healthcare services, with the private sector providing expertise, financing, or operational support to the public sector. This paper aims to provide an overview of the concept of PPP in healthcare, highlighting its potential benefits and challenges. With this paper, we want to find out if students support PPP models in healthcare. The findings of this study have important implications for policymakers and stakeholders in the healthcare sector who are considering PPP as a means of delivering healthcare services.

## **2. THE SYSTEMATIC REVIEW OF THE RELEVANT LITERATURE**

Despite the fact that the Public-Private Partnership (PPP) trend has elicited a wide range of practitioner and academic feedback, there has been little systematic review of evidence, and the literature remains relatively fragmented. In line with the rise in PPPs over the last two decades, there has been an increase in publications, including a number of special issues, in a variety of journals. Although PPP has been investigated by researchers from a variety of disciplines, accounting, finance, and public management perspectives predominate. Surprisingly, the healthcare sector had the highest proportion of practitioner-oriented papers, as evidenced by publications in public health and management journals. It is important to note that there is no universally accepted definition of PPP and that different authors may have slightly different interpretations of the concept. The European Investment Bank (EIB) defines PPP as a long-term agreement between the public and private sectors, in which the private sector provides a public service or facility, and assumes substantial financial, technical, and operational risk (European Investment Bank, 2021). World Health Organization (WHO) defines PPPs in healthcare as arrangements in which the public sector partners with the private sector to finance, design, build, and/or operate health facilities and services (World Health Organization, 2021). These definitions highlight the fundamental components of PPPs in the healthcare industry, such as collaboration between the public and private sectors, risk and reward sharing, and the private sector's provision of public infrastructure and services. Fanelli et al. (2020) conducted a systematic literature review to better understand the dynamics and boundaries of PPPs in the healthcare sector in low and middle income countries. Several barriers and facilitators for successful PPPs were identified in the review, including the need for strong institutional and regulatory frameworks, proper stakeholder engagement, and appropriate financing and resource allocation.

A study by Joudyian et al. (2021) classified PPPs in healthcare into three broad categories: PPPs for basic healthcare services, PPPs in health education and promotion programs, and PPPs for infectious disease services. According to the authors, PPPs have the potential to improve healthcare accessibility, enhance their quality, and achieve cost-effectiveness. Nevertheless, they also note that PPPs are not a panacea, and their success depends on various factors such as adequate governance, clear working terms, and effective evaluation and monitoring mechanisms. In the research of Basabih et al. (2022) the goal was to determine the PPP effect on hospital performance indicators as well as the challenges associated with its implementation. The study focused on hospitals, which account for the majority of healthcare spending, and PPPs can help to reduce costs while improving quality. The article's conclusions imply that PPPs can have a positive impact on hospital performance indicators. They can increase efficiency, enhance access to healthcare services, improve care quality, and reduce costs. The research also identified several implementation challenges, like political and regulatory issues, economic risks, and the complexity of contractual arrangements. There is a lack of research addressing students' support for PPPs in healthcare. However, resources provide some relevant information on PPPs in healthcare and their implementation, as well as healthcare students' standpoints on related topics. Wu et al.(2021) described the perceived impact of the COVID-19 pandemic on the global experiences of healthcare profession students, including challenges related to healthcare delivery and the healthcare system. According to the study, the pandemic harmed the global perceptions of healthcare career students. Students expressed anxiety, overwhelm, and concern about their academic progress, clinical training, and future job possibilities. Alwhaibi and Al Aloola (2020) analyzed healthcare students' pharmacovigilance knowledge, stands, and perceptions. In conclusion, their systematic review highlights the need for improved education and training on pharmacovigilance among healthcare students. While these articles didn't specifically address PPPs, they do provide insight into the attitudes of healthcare students toward important aspects of healthcare delivery.

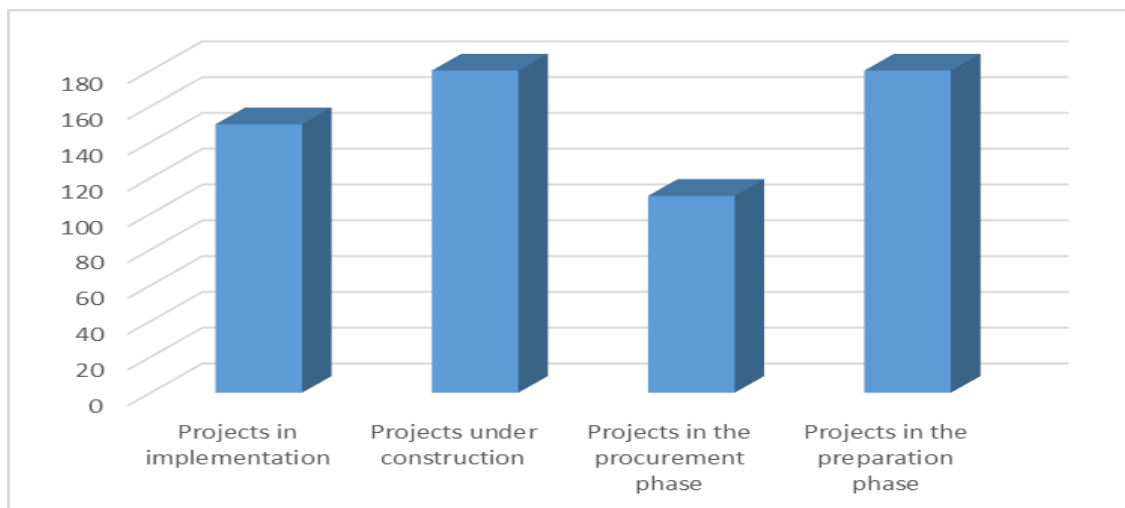
### **3. PUBLIC-PRIVATE PARTNERSHIP IN HEALTH CARE IN CROATIA AND EU**

PPPs have been used to optimize health care in several countries, most notably the European Union (EU) including Croatia. According to a European Commission report, the use of PPP in healthcare varies significantly across EU Member States. PPPs in healthcare can take many forms, including funding, designing, building, operating, or preserving medical centers, providing electronic health records, and managing quality healthcare, among others. As outlined in a recent New WHO report lays (2023) out concrete actions for governments to optimize public-private partnerships for health governments may initiate several activities to improve PPPs in healthcare. Setting up appropriate regulatory frameworks, engaging stakeholders, clarifying roles and responsibilities, and promoting transparency and accountability are all examples of these actions. The Innovative Medicines Initiative (IMI) and the Innovative Health Initiative (IHI) are two distinct but complementary initiatives. IMI began in 2008 as PPP between the European Union and the European pharmaceutical industry to accelerate the development of safer and more effective medicines for patients. The initiative was so successful that the IMI2 program, which resulted in nearly 200 projects covering a wide range of disease areas, was launched in 2014. The IHI, on the other hand, is a new PPP launched in 2021 as part of Horizon Europe. Its goal is to promote research and innovation to address unfulfilled needs and improve medical outcomes in Europe. While the names and focuses of the IMI and IHI initiatives differ, they are both PPPs aimed at advancing medical research and invention in Europe. The IHI initiative builds on the IMI's successes and is an extension of the cooperation between the European Union and the pharmaceutical industry to improve patient care from prevention to diagnosis and treatment. From 2021 to 2027, the total budget for IHI is €2.4 billion, with €1.2 billion coming from Horizon Europe, the EU's research and innovation

framework program, €1 billion coming from IHI industry partners, and €200 million coming from other life science industries or associations that choose to contribute to IHI (IHI funding model, 2023). In Croatia, the Ministry of Regional Development and EU Funds is in charge of managing the implementation of EU funded projects in the healthcare sector, including hospital construction and renovation. The Ministry of Health is in charge of ensuring the country's healthcare services quality and safety. Based on the PPP Law of 2008. in Croatia PPP Agency was established as the central national body and knowledge center in charge of assessing, endorsing, and monitoring PPP project implementation, preserving the Register of PPP Agreements and applying international standards, and establishing a PPP certification program. In the Republic of Croatia, the field of PPP is governed by:

- The PPP Law (OG 78/12 and OG 152/2014) and the Decree on Public-Private Partnership Project Implementation (OG 88/12 and 15/15),
- Concessions Law (Official Gazette 143/12), and
- The Public Procurement Law (Official Gazettes 90/11, 83/13, and 143/13) governs the procedures for awarding public procurement and concession contracts.

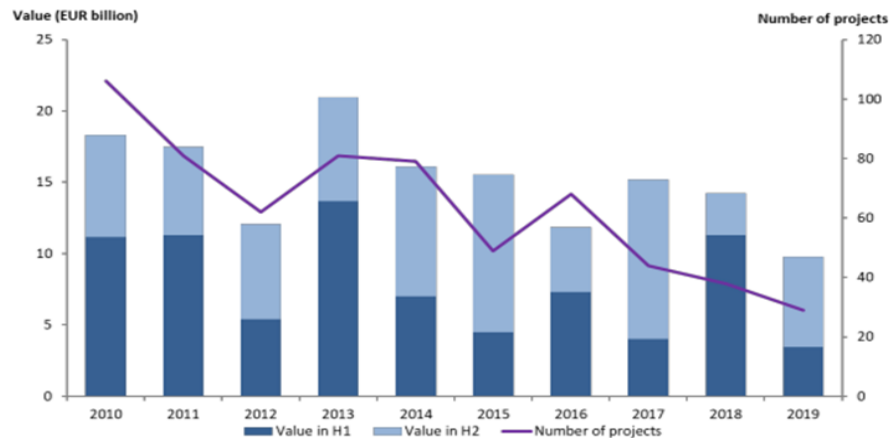
In recent years, more complex models have emerged, particularly in the fields of science, education, public administration, and sports facility construction, alongside the overall structure of PPP projects in the Republic of Croatia.



*Figure 1: The value of the PPP project in millions of euros  
 (Source: Agency for Investments and Competitiveness, [www.aik-invest.hr](http://www.aik-invest.hr) (26.11.2022.))*

Figure 1 shows the value of projects in millions of euros in the Republic of Croatia. It is clear that most projects are in the preparation phase, it is also evident that the majority of investments even refer to the health care system (42%).

*Figure following on the next page*

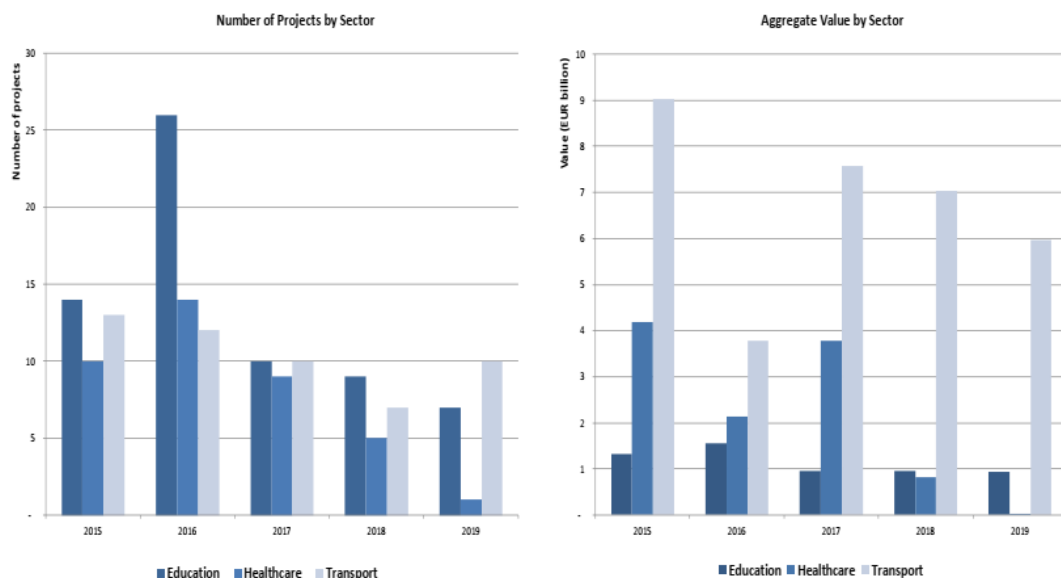


*Figure 2: The value of projects in the area of PPP in the EU*

*(Source: Review of the European PPP Market in 2019,*

*www.eib.org/attachments/epec/epec\_market\_update\_2019\_en.pdf (26.11.2022.))*

Figure 2 demonstrates that there is a downward trend in the number of PPP projects financed by the European Union. While available data does not provide a comprehensive view of the number of PPP projects in the EU over the last decade, it does indicate that the number has fluctuated to some extent, with some countries experiencing greater growth than others, and that the COVID-19 pandemic has had a noticeable impact on the sector in recent years. Regardless, the use of PPPs has varied greatly across EU Member States, with some countries, such as the United Kingdom, spearheading the use of PPP projects and accounting for slightly less than half of total public infrastructure built through PPPs in recent years, while other Member States have not yet used this instrument. This is influenced by factors such as the state of the economy, government policies and regulations, and the availability of financing.



*Figure 3: Number of PPP projects by sector in the EU (in EUR billions)*

*(Source: Review of the European PPP Market in 2019,*

*www.eib.org/attachments/epec/epec\_market\_update\_2019\_en.pdf (26.11.2022.))*

Figure 3 clearly shows that most of the European money goes to the transport sector, and only a smaller part is invested in PPP projects in the health system. For starters, the transportation sector has traditionally been viewed as a more appealing area for PPP investment due to its



revenue generation potential. Airports, ports, and railways, for example, have the potential to generate significant profits over time, making them more appealing to private investors. In contrast, the health sector is frequently regarded as a more socially oriented area with less profit potential. As a result of this perception, the private sector has shown little enthusiasm for participating in PPP projects in the health system. Secondly, the complexity of PPP projects in the health sector may also be a contributing factor. Health projects are typically more complicated than transportation infrastructure projects, necessitating a more in depth comprehension of the healthcare system. The involvement of multiple decision makers in the health system, such as healthcare professionals, insurance companies, and patients, can make it difficult to create and implement successful PPP projects. As a consequence, private investors may consider PPPs in the health sector as riskier investments. Among the various types of PPP contracts, the Design-Build-Finance-Maintain-Operate (DBFMO) contract is the most commonly used in Europe. The private partner is responsible for designing, building, financing, maintaining, and operating the infrastructure for a set period, typically between 25 and 30 years. Benefits include cost and time savings, stronger performance warranties, and project accountability for a single entity. The Hospital de Cascais PPP project in Portugal is one example of a PPP in healthcare in the EU. A private consortium, in collaboration with the Portuguese government, built and operates the Hospital de Cascais to provide high-quality healthcare services to the local population. The PPP model was chosen to improve efficiency, lower costs, and improve the quality of services provided to patients. The Hospital of Pula is an example of a PPP project in the healthcare sector in Croatia. The project aimed to upgrade, extend and consolidate the hospital infrastructure in Pula, in the County of Istria, Republic of Croatia. The project was implemented in 2015 and involved the rehabilitation and extension of the General Hospital in Pula. The Hospital of Pula project was registered in the PPP Projects Registry and monitored by the Ministry of Economy and Sustainable Development in Croatia. It involved private sector participation in the construction and financing of the hospital infrastructure, as well as in the maintenance and operation of the hospital, and was financed by the European Investment Bank, which provided a loan of EUR 55 million to the project. The hospital includes a modern inpatient facility with 10 operating rooms, 10 shock rooms, 16 first aid beds, and a delivery room with 3 boxes and one emergency room, among other facilities. The project is regarded as a successful PPP in Croatian healthcare because it has improved the quality and efficiency of healthcare service delivery in the region. Apart from the Pula Hospital, another example of a PPP project in healthcare in Croatia is the Special Hospital for Medical Rehabilitation Lipik. This PPP project aims to renovate the existing Hotel Fontana building to improve the quality of medical services and health and wellness zones, achieving a 4-star rating.

#### **4. RESEARCH METHODOLOGY AND RESULTS**

The purpose of this study was to investigate the benefits of public-private partnerships (PPP) in the management of public goods, and we want to find out if the students support model PPPs. The population of interest was students of the University Department of Professional Studies, Erasmus students, and students of the University of Split School of Medicine, medical Studies in English. Data were collected using survey questionnaire. A sample of 68 students was selected using a stratified random sampling method with equal numbers of students from students of the University Department of Professional Studies, Erasmus students, and students of the University of Split School of Medicine. The data were analyzed using appropriate statistical methods, and the study was conducted in compliance with ethical guidelines for research with human subjects. We generated frequency tables and bar charts to visualize the distribution of the data. In order to describe the characteristics of the sample, we used SPSS to conduct descriptive statistics. The results of our study are presented below.

The sample consisted of 68 participants, with a higher number of female participants (56,5%) compared to male participants (42%). The average age of participants was 21 years (range = 18 to 25 years). in terms of educational background, 36,2% of participants were students in the University Department of Professional Studies, 33,3% were Erasmus students, and 29% were students in the University of Split School of Medicine, studying medicine in English. Most respondents (79,7%) are familiar with the concept of Public-Private Partnership (PPP). The graph represent the distribution of answers to the question of the importance of collaboration between the public and private sectors in improving the healthcare system. Based on the research we can see that the majority of respondents believe that collaboration between the public and private sectors is important for improving the healthcare.

#### Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	29	42,0	42,6	42,6
	Female	39	56,5	57,4	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

#### Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student of the University Department of Professional Studies	25	36,2	36,8	36,8
	Erasmus students	23	33,3	33,8	70,6
	Student of the University of Split School of Medicine, medical Studies in English	20	29,0	29,4	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

#### Familiar with the concept

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	55	79,7	80,9	80,9
	No	13	18,8	19,1	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

#### It is Important for the public and private sectors to work together to improve the healthcare system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	58	84,1	85,3	85,3
	Not important	10	14,5	14,7	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

Figure 4: Descriptive statistic

The Figure 5 visually represent the distribution of answers to the three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services.

We can see the views of respondents regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services. Based on the graph, we can see that the majority of respondents agree that PPPs can help improve access to healthcare services and improve the quality of healthcare services, also they disagree that PPPs can help reduce the cost of healthcare services.

*Figure following on the next page*

**PPPs can help improve access to healthcare services**

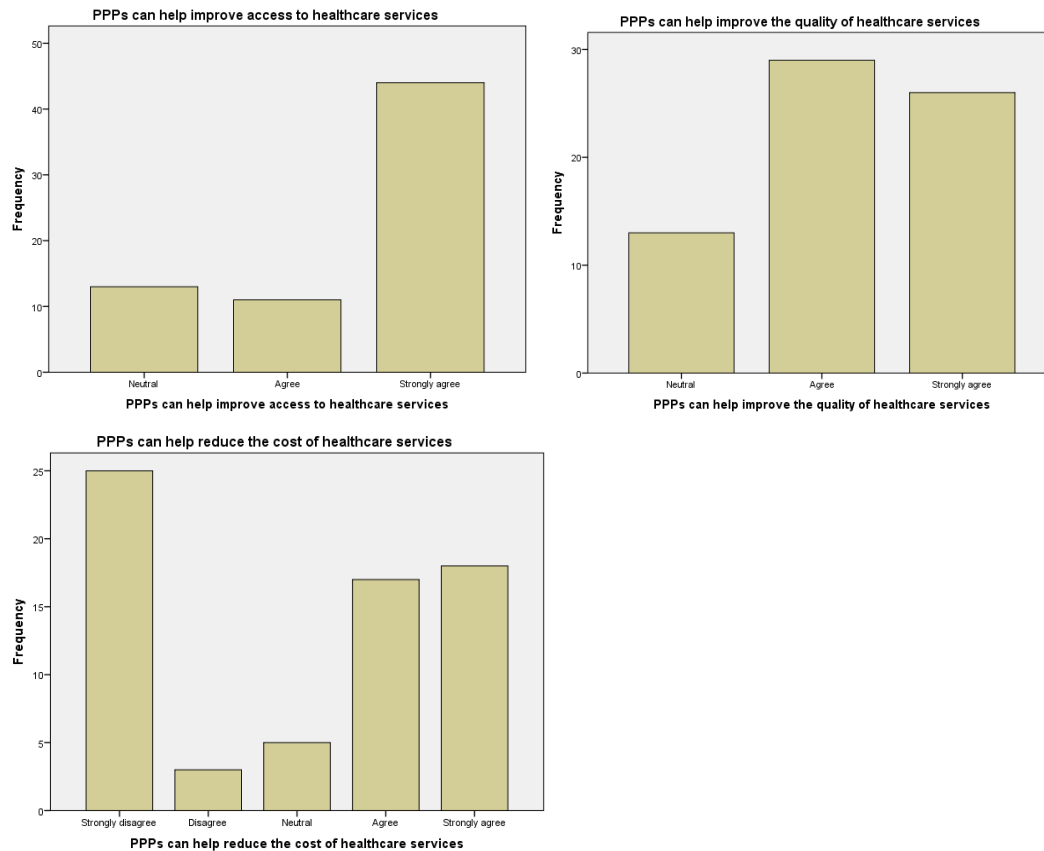
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	13	18,8	19,1	19,1
	Agree	11	15,9	16,2	35,3
	Strongly agree	44	63,8	64,7	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

**PPPs can help improve the quality of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	13	18,8	19,1	19,1
	Agree	29	42,0	42,6	61,8
	Strongly agree	26	37,7	38,2	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

**PPPs can help reduce the cost of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	25	36,2	36,8	36,8
	Disagree	3	4,3	4,4	41,2
	Neutral	5	7,2	7,4	48,5
	Agree	17	24,6	25,0	73,5
	Strongly agree	18	26,1	26,5	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		



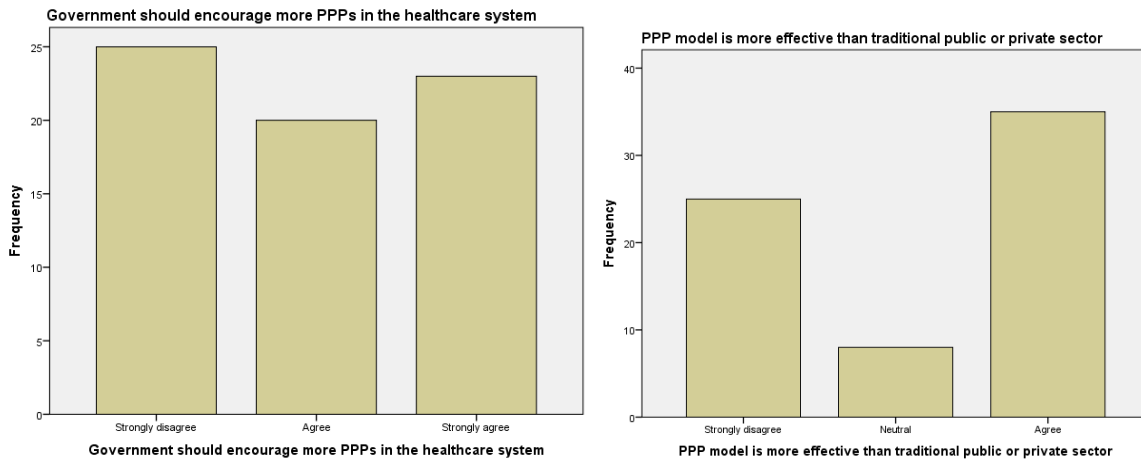
*Figure 5: Distribution of answers to the three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services  
 (Source: Author's research)*

**Government should encourage more PPPs in the healthcare system**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	25	36,2	36,8	36,8
	Agree	20	29,0	29,4	66,2
	Strongly agree	23	33,3	33,8	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		

**PPP model is more effective than traditional public or private sector**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	25	36,2	36,8	36,8
	Neutral	8	11,6	11,8	48,5
	Agree	35	50,7	51,5	100,0
	Total	68	98,6	100,0	
Missing	System	1	1,4		
Total		69	100,0		



*Figure 6: Distribution of answers to the two statements regarding the views of respondents regarding the effectiveness of PPPs and the role of government in encouraging PPPs.  
 (Source: Author's research)*

The Figure 6. visually represents the distribution of answers to the two statements regarding the views of respondents regarding the effectiveness of PPPs and the role of government in encouraging PPPs. Based on the graph, we can see that the majority of respondents agree that PPP model is more effective than traditional public or private sector. Respondents agree that government should encourage more PPPs in the healthcare system.

*Figure following on the next page*

**PPPs can help improve access to healthcare services**

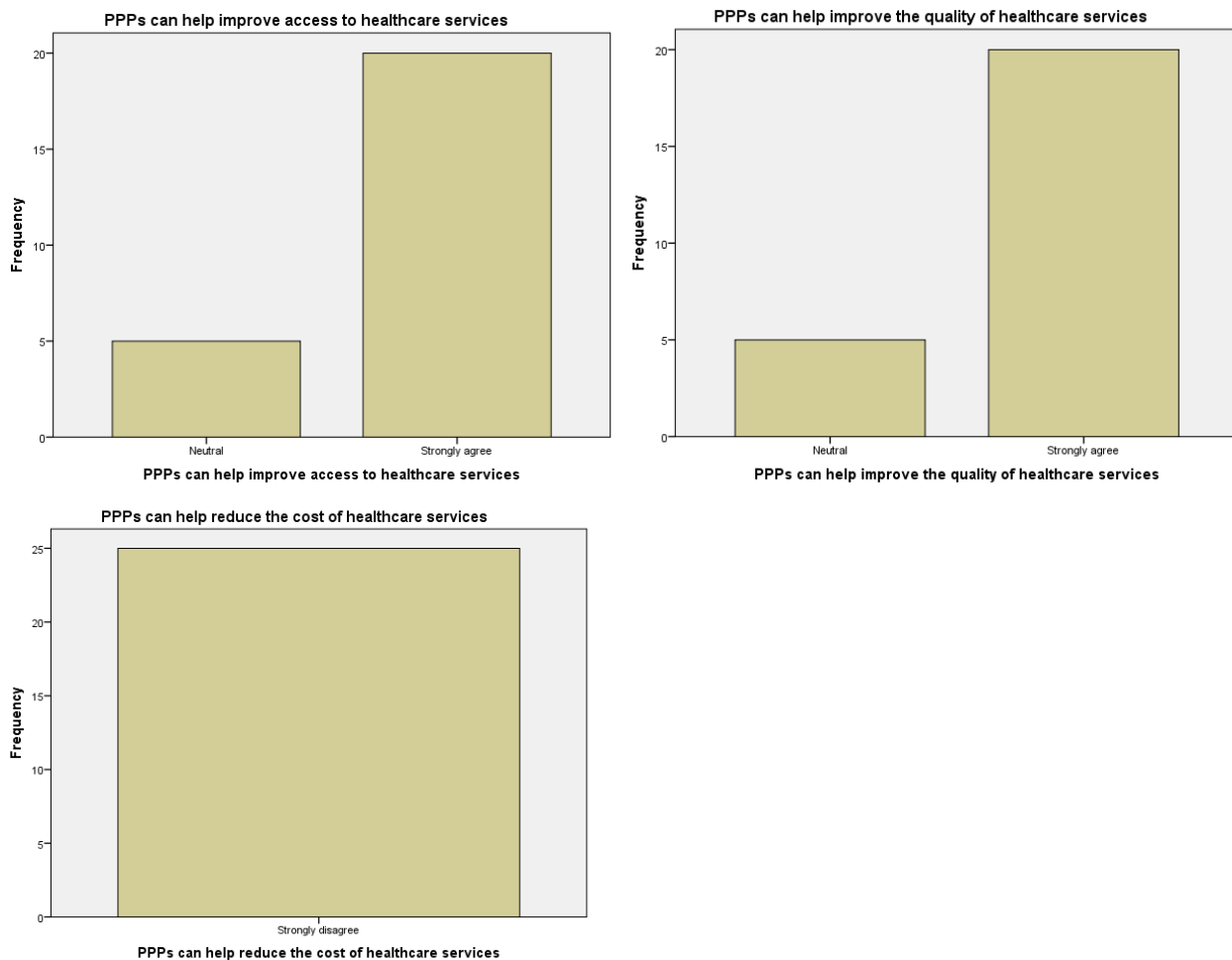
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	20,0	20,0	20,0
	Strongly agree	20	80,0	80,0	100,0
	Total	25	100,0	100,0	

**PPPs can help improve the quality of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	20,0	20,0	20,0
	Strongly agree	20	80,0	80,0	100,0
	Total	25	100,0	100,0	

**PPPs can help reduce the cost of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	25	100,0	100,0	100,0



*Figure 7: Students of the University Department of Professional Studies, distribution of answers to the three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services  
 (Source: Author's research)*

**PPPs can help improve access to healthcare services**

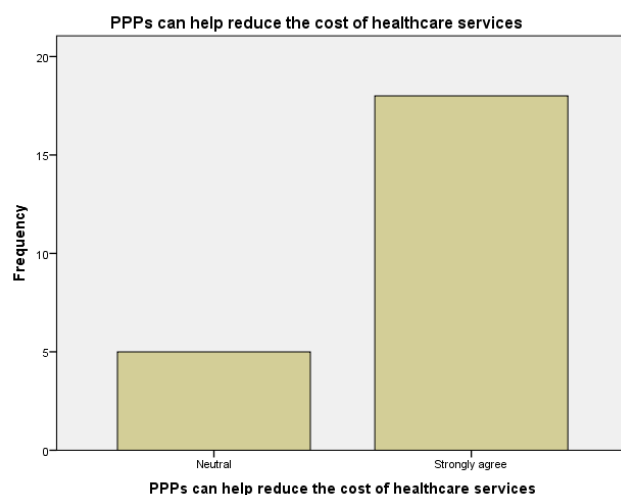
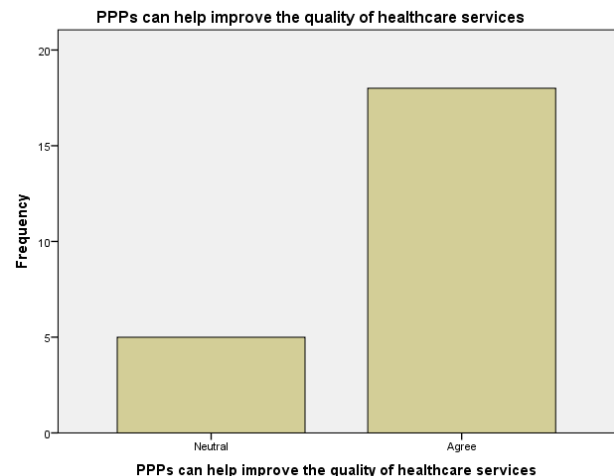
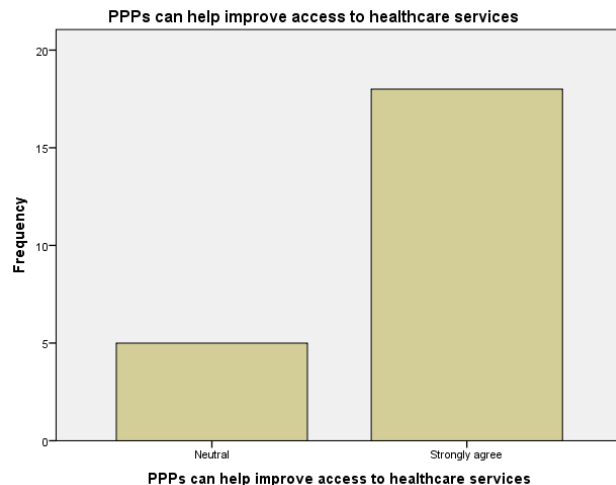
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	21,7	21,7	21,7
	Strongly agree	18	78,3	78,3	100,0
	Total	23	100,0	100,0	

**PPPs can help improve the quality of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	21,7	21,7	21,7
	Agree	18	78,3	78,3	100,0
	Total	23	100,0	100,0	

**PPPs can help reduce the cost of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	21,7	21,7	21,7
	Strongly agree	18	78,3	78,3	100,0
	Total	23	100,0	100,0	



*Figure 8: Erasmus students, distribution of answers to the three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services  
 (Source: Author's research)*

**PPPs can help improve access to healthcare services**

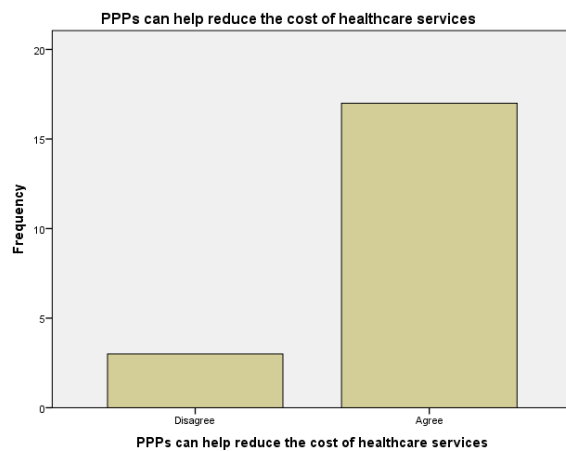
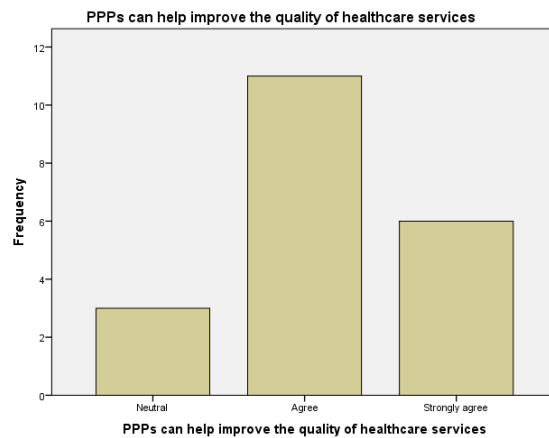
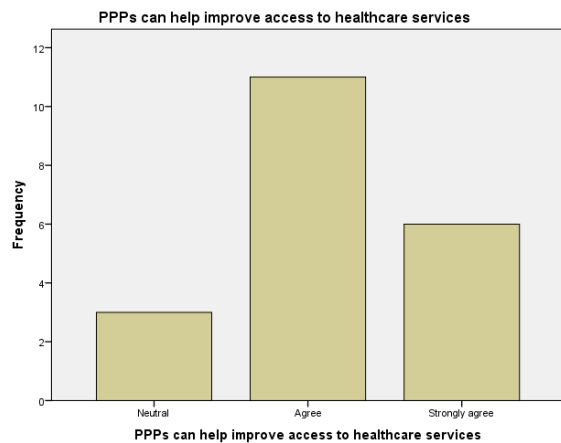
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	15,0	15,0	15,0
	Agree	11	55,0	55,0	70,0
	Strongly agree	6	30,0	30,0	100,0
	Total	20	100,0	100,0	

**PPPs can help improve the quality of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	3	15,0	15,0	15,0
	Agree	11	55,0	55,0	70,0
	Strongly agree	6	30,0	30,0	100,0
	Total	20	100,0	100,0	

**PPPs can help reduce the cost of healthcare services**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	15,0	15,0	15,0
	Agree	17	85,0	85,0	100,0
	Total	20	100,0	100,0	



*Figure 9: Students of the University of Split School of Medicine, medical Studies in English, distribution of answers to the three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services  
 (Source: Author's research)*



The results of the study revealed a significant difference in the beliefs about this three statements regarding the role of PPPs in improving access, quality, and reducing the cost of healthcare services between Erasmus students, students of the University of Split School of Medicine and students of the University Department of Professional Studies. A majority of the Erasmus students and students of the University of Split School of Medicine believed that PPPs have advantages, while Croatians, students of the University Department of Professional Studies did not believe in the advantages of this model. These results suggest that there is a noticeable difference in the perception of PPPs between these three groups of students.

## **5. CONCLUSION AND FUTURE RESEARCH DIRECTIONS**

Global healthcare systems are facing several challenges, including rising costs, an aging population, and increased demand for healthcare services. Countries use a variety of strategies to address health-care issues, but one of the most successful is public-private partnership (PPP), a win-win strategy that leverages the strengths of both public and private parties to achieve the goals. A public-private partnership (PPP or 3P) is a type of business organization formed by the government to support public-sector innovation. They are necessary in the healthcare sector to promote and deliver an effective mix of services and growth. Health PPPs should be distinguished from the privatization trend, which includes the private sector providing medical care for profit. In the latter case, public institutions define and enforce the public health policy goal as well as the rules under which for-profit entities operate. The ultimate goal of each country's health-care system is to improve people's health so that they can participate actively in economic and social activities while remaining healthy. Primary healthcare (PHC) is without a doubt the predominant way used by nations to meet this goal in the present society. There appears to be a lack of research addressing students opinions on the topic of PPPs in healthcare. While there are studies evaluating the use of PPPs in healthcare, there is lack of research that specifically explores students perspectives. It is critical to consider students ideas on this topic because they represent the future of healthcare and will be impacted by PPP decisions. Through an analysis of our research, we found that the majority of respondents agree that PPPs can help improve access to healthcare services that PPPs can help improve the quality of healthcare services, and our students agree that PPPs can help reduce the cost of healthcare services. Our respondents agree that the PPP model is more effective than the traditional public or private sector; they agree that government should encourage more PPPs in the healthcare system. The results of the study revealed a significant difference in the beliefs about the role of PPPs in improving access, quality, and reducing the cost of healthcare services between Erasmus students, students of the University of Split School of Medicine Medical Studies in English, and students of the University Department of Professional Studies. A majority of the Erasmus students and students of the University of Split School of Medicine believed that PPPs have advantages, while Croatian students of the University Department of Professional Studies did not believe in the advantages of this model. These results suggest that there is a noticeable difference in the perception of PPPs between these three groups of students. Further research could look into students' attitudes and beliefs about PPPs, as well as how these opinions differ across different regions and demographic groups. Subsequent research in the field of PPP in healthcare should focus on several areas to build upon the existing knowledge and improve the implementation of PPPs in the healthcare sector. More research is needed to determine the cost-effectiveness of PPPs in the healthcare sector and to understand the most effective governance and management strategies for PPPs in the healthcare sector.

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## THE EFFECTS GENERATED BY BLOCKCHAIN TECHNOLOGY IN THE ACCOUNTING FIELD

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### ABSTRACT

*The global crises that have affected the whole world in recent years, both from economic, health, social and war perspectives, emphasize the importance of digitalization and decentralization of systems in order to maintain the circular flow of all economic activities. In the context of today's market economy, real flows are gradually being migrated to automated processes, so that business installations and equipment communicate with each other using the Internet, a concept defined by the industrialization 4.0 process that brings significant competitive advantages to the production of goods and services. From the perspective of financial flows, transfers depend on international payment systems, such as the SWIFT system that appeared in 1973, respectively international payment card companies, thus cryptocurrencies have come to be diligently legalized in several states. Blockchain is a new technology that has significant potential for implementation in various industries. In most cases where this technology is talked about, the context is related to digital currencies, such as Bitcoin, but Blockchain represents more than currencies. From the perspective of the accounting field, the use of blockchain technology mainly consists in the fact that it reduces risks and the possibility of fraud, promotes efficiency, eliminates human errors and increases reliability and transparency. In its most primary context, blockchain refers to an open information and accounting system that allows the validation and control of transactions, avoiding the duplication or multiplication of digital currencies, being a decentralized system. Our paper aims to make a bibliometric analysis of scientific publications, focusing on the relevance of the concept of "blockchain" in order to highlight its importance in the accounting field. In our research we only took into account the keywords proposed by the authors in the published works and we established a minimum threshold of 5 simultaneous occurrences. The results of our study reveal that there is a significant research interest in the concept of blockchain in scientific literature.*

**Keywords:** *accounting, blockchain, key words, science mapping*

### 1. INTRODUCTION

The global crises of recent years, such as the economic, public health, social and political ones, have highlighted the importance of maintaining the continuous flow of economic activities. Under these circumstances, digitization and decentralization of systems are considered vital

strategies for building a more resilient economy. Digitization can facilitate the flow of information and resources, thus increasing the efficiency and transparency of economic activities. Decentralization can improve resilience by distributing power and decision-making authority, providing a more distributed and adaptive approach to crises. Blockchain is a cutting-edge technology that offers immense potential for implementation across different industries. While many associate it with digital currencies like Bitcoin, its potential is not limited to this realm. In essence, blockchain addresses the challenge of establishing trust between parties, transforming the way transactions are conducted between anonymous parties online. As such, it holds great promise for revolutionizing the way business is done in various sectors. (Al-Housni, 2019)

### **1.1. Blockchain technology and accounting**

From an accounting perspective, the implementation of blockchain technology holds the capacity to reduce risk and fraud, increase efficiency, eliminate human error, and improve reliability and transparency. Essentially, blockchain is an open system of record and accounting that allows for the validation and control of transactions, thus avoiding the duplication or multiplication of digital currencies. Also, being a decentralized system, it offers a high degree of security. Its adaptability, low cost and easy accessibility make it an attractive option for revolutionizing the way transactions are recorded (Abad-Segura, et al., 2021). In essence, a blockchain is an immutable ledger that cannot be tampered with and whose data cannot be deleted. This makes it a promising tool for maintaining reliable and up-to-date accounting records for various entities. In addition to facilitating the transfer of digital currency, blockchain technology can be used to transfer ownership of other assets between firms in a cost-effective, efficient, and secure manner (Bystrom, 2019). Blockchain technology offers several advantages, including fast and cheap processing, direct peer-to-peer transactions, and no transfer limitations. However, there are also disadvantages such as the potential for black money and illegal activities, the risk of cyber attacks leading to asset loss, and the lack of government regulations. Additionally, investing in cryptocurrencies carries a high speculative risk due to the volatility of asset prices (Huaqun Guo and Xingjie Yu, 2022). Adopting these approaches can help promote the continuous flow of economic activities so that they remain functional and unaffected by global crises. Overall, recent crises have highlighted the importance of digitization and decentralization to build a more resilient and adaptable economy to unpredictable shocks. The use of blockchain technology in accounting can bring numerous advantages. Its decentralized nature enhances transparency, eliminates errors and fraud, and allows for a trusted, continuously updated ledger. Moreover, audit checks become more efficient and less time-consuming, enabling auditors to concentrate on high-value elements. Standardized accounting practices also become possible, which results in improved efficiency and accuracy. Finally, blockchain technology can transform transaction recording, verification, and monitoring, offering significant potential benefits to the accounting industry. Researchers use the term "triple-party accounting" to describe the concept of accounting based on blockchain technology. It is considered an improved version of double-party accounting, where the information entered by professionals is cryptographically sealed using a third registration in the blockchain system. Standardization of blockchain records could offer several benefits to companies, such as enabling auditors to verify a wider range of data using automated methods, thereby reducing the costs and time required for checks. This would allow auditors to concentrate on more complex transactions or internal control mechanisms that add greater value (Inghirami, 2020). Collaboration between humans and machines in industrial settings using cognitive technologies is a key aspect of Industry 4.0. Through the incorporation of speech recognition, computer vision, machine learning, and advanced timing models, intelligent machines are capable of supporting humans in carrying out their tasks.

This will involve the use of sophisticated machine learning models, which will enable humans and machines to develop complementary skills in all working conditions. (Zhong et al., 2017) There were identified several critical challenges associated with blockchain technology, including scalability, security, and privacy. The scalability challenge is due to the high resource requirements for complex transactions, encryption, and network distribution. This issue is particularly concerning, considering that mining a single Bitcoin consumes a larger carbon footprint than approximately two billion VISA transactions, according to Deutsche Bank analyst Marion Laboure. Additionally, mining a single Bitcoin can provide the energy needed by an average US home for 61 days (Chang, et al. 2020; Goldstein, 2021). Apart from the risks associated with blockchain technology, the major challenges are linked to energy consumption, e-waste, and carbon footprint. These challenges arise due to the system employed by miners to validate transactions, namely Proof-of-Work (Yli-Huumo, et al., 2016). In terms of transaction handling, VISA can manage up to 24.000 transactions per second, PayPal can operate 193 transactions per second, while Ethereum and Bitcoin are only capable of handling 20 transactions per second. This data suggests that processing millions of blockchain transactions is not feasible in the short term (Chang, et al. 2020). Finally, it is worth noting that the increasing computing power of quantum computers poses a potential threat to Bitcoin and other blockchain projects. This is because such computers could compromise the security of digital signatures. Moreover, as technology advances, new vulnerabilities and security issues may be uncovered on a regular basis. (Reyna, et al., 2018)

## **2. METHODOLOGY**

The bibliometric analysis of scientific publications is a method by which the specialized literature indexed in databases such as Web of Science Core Collection can be quantitatively evaluated. Using the bibliometric network software VOSviewer, the mapping of science can be carried out. In this study, all scientific articles related to blockchain technology published in the Web of Science Core Collection database were selected. From 2013 to present, a total of 27.424 published articles were identified, and the authors proposed keywords were extracted. A minimum threshold of 5 simultaneous occurrences and an additional requirement of at least one citation were used to observe the most common trends and topics in the field of blockchain technology.

## **3. RESULTS AND DISCUSSION**

### **3.1. Keyword analysis**

Using keyword analysis, we were able to identify the distribution and significant relationships among the most commonly used keywords in specialized literature. The selection criteria used for this analysis were a minimum threshold of 5 simultaneous occurrences and only keywords proposed by the authors.. The Vos Viewer program was utilized to visually represent the groups of keywords that are interconnected, with each word being represented by a node whose size corresponds to its relevance. The strength of the connections between nodes is represented by the length and thickness of the lines connecting them. Shorter lines indicate stronger connections, while thicker lines signify more frequent appearances of the terms. Within the period of 2013 to 2023, a total of 27.424 articles were published, and 35.658 keywords were identified, 2.705 met the threshold of at least 5 occurrences. The first 1.000 words are illustrated in Figure 1 and were categorized into 8 clusters with 44.180 links. All the 2.705 identified keywords were categorized into 24 clusters and connected through 75.977 links. The group with the largest number of keywords from the blockchain technology literature was identified as the red group. Table 1 presents the top 10 most significant keywords, arranged in descending order based on the intensity of the links between them.

It is apparent from the findings that researchers have explored various topics related to security, management, architecture, system connections, the Internet, computers, contracts, artificial intelligence, and the future in the field of blockchain technology. This indicates that we can expect a plethora of new scientific articles on this subject in the future.

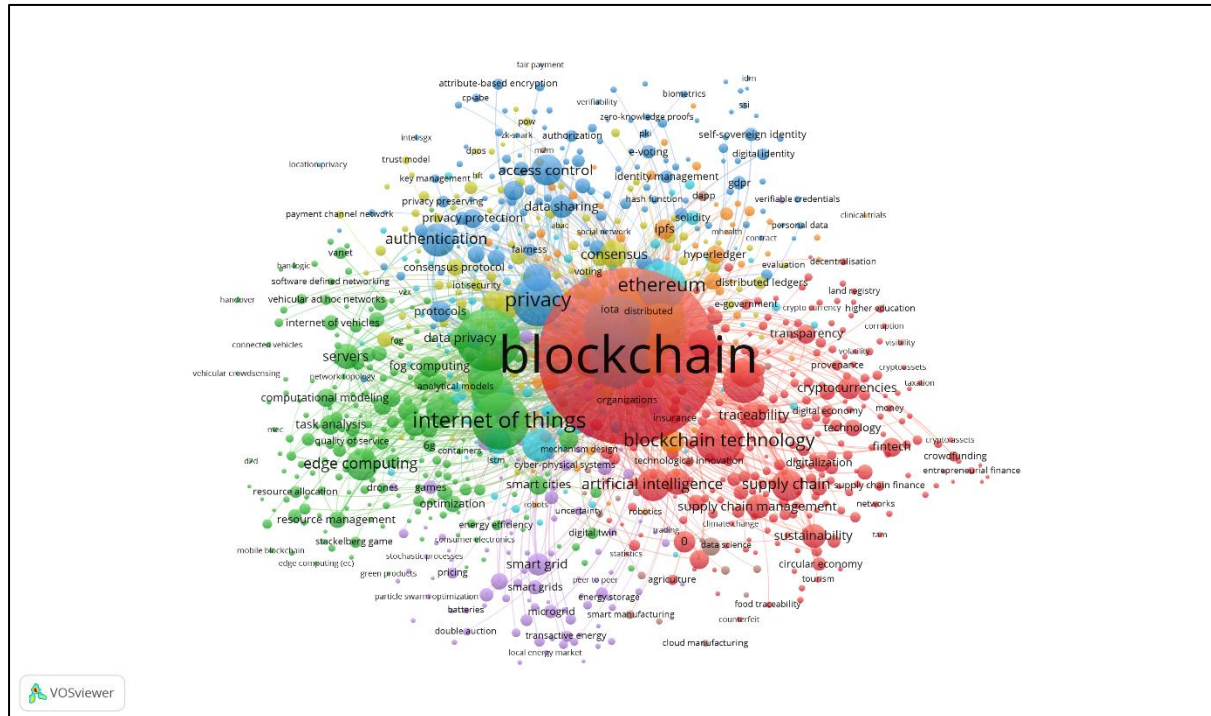


Figure 1: Co-occurrence network of the first 1,000 keywords

No.	Keyword	Occurrences	Link strength	Percentage (%)
1	blockchain	14.796	41.911	19.7%
2	security	1.912	9.439	2.5%
3	internet of things	1.550	6.826	2.1%
4	smart contracts	1.616	6.568	2.2%
5	smart contract	1.996	6.343	2.7%
6	blockchains	835	5.838	1.1%
7	privacy	1.203	5.737	1.6%
8	bitcoin	1.223	4.360	1.6%
9	ethereum	1.114	4.028	1.5%
10	iot	1.010	3.637	1.3%

Table 1: Top 10 keywords from co-occurrence output greatest by link strength

### 3.2. Document citation analysis

From the total of 27.424 articles that were published, 26.923 documents were identified and 18.157 of them met the threshold of at least 1 citation. The first 1,000 results are illustrated in Figure 2 and were categorized into 6 clusters with 18.179 links. Table 2 presents the top 5 significant items, arranged in descending order based on the number of citations.

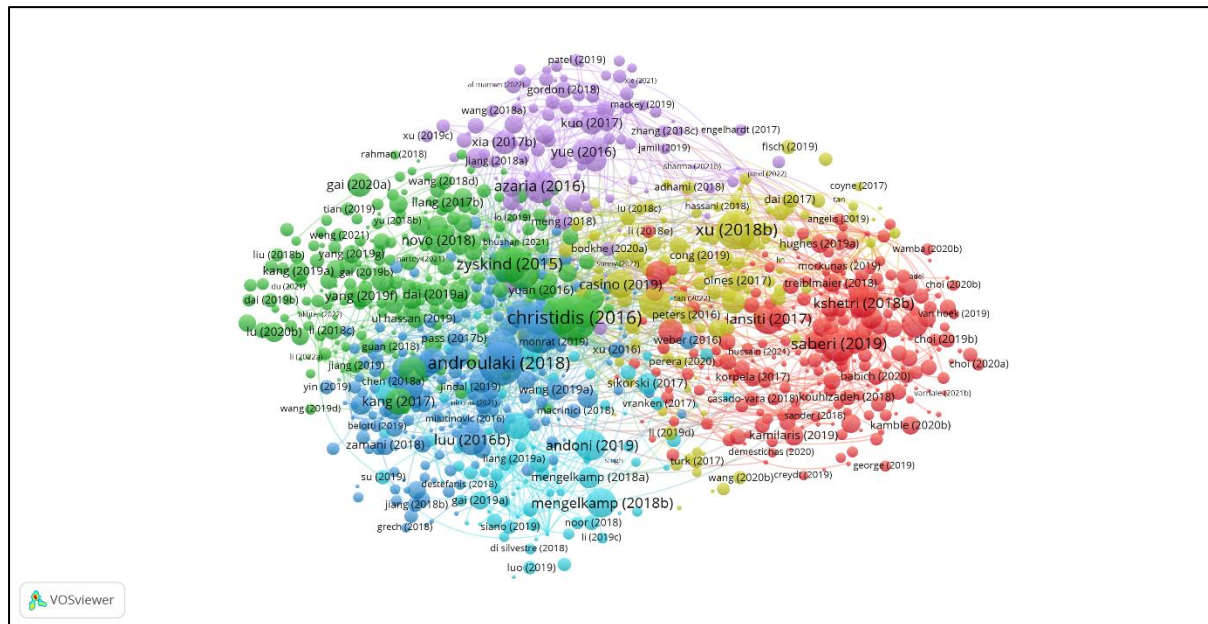


Figure 2: Citation network map for documents

No.	Document	Citations	Links	Percentage (%)
1	christidis (2016)	1.785	227	1.4%
2	androulaki (2018)	1.513	83	1.2%
3	zheng (2017)	1.354	166	1.1%
4	xu (2018b)	1.197	35	0.9%
5	zheng (2018)	1.122	152	0.9%

Table 2: Top 5 cited documents greatest by number of citations

### 3.3. Country wise citation analysis

Analyzing the state network situation among the citations of scientific works in the field of blockchain technology with at least 5 documents and 1 citation at the country level, we identified 108 countries that meet the criteria and are represented graphically in Figure 3, out of a total of 151 countries with links in the specialized literature. All the 108 countries identified are grouped into 8 clusters, between which 4.198 links have been established. In order to be able to observe which are the most representative countries, ordered in descending order according to the intensity of the links between them, the first 5 were selected and can be found in Table 3. The largest number of scientific articles identified in the Web of Science database, 8.205 documents out of a total of 27.424 materials were from the People's Republic of China. We can see that authors from the United States of America have only 4.475 scientific articles, but the number of citations is almost similar to that of the citations of documents from the People's Republic of China, 100.023 citations with a link intensity of 155.589, compared to the 88.617 citations with a link strength of 125.894 in USA.

Figure following on the next page



No.	Country	Documents	Citations	Link strength	Percentage by citations (%)
1	peoples r china	8.205	100.023	155.589	17.9%
2	usa	4.475	88.617	125.894	15.9%
3	india	2.592	28.090	71.534	5.0%
4	england	1.837	32.052	58.502	5.8%
5	australia	1.522	27.178	51.051	4.9%

### 3.4. Author citation analysis

*Figure following on the next page*



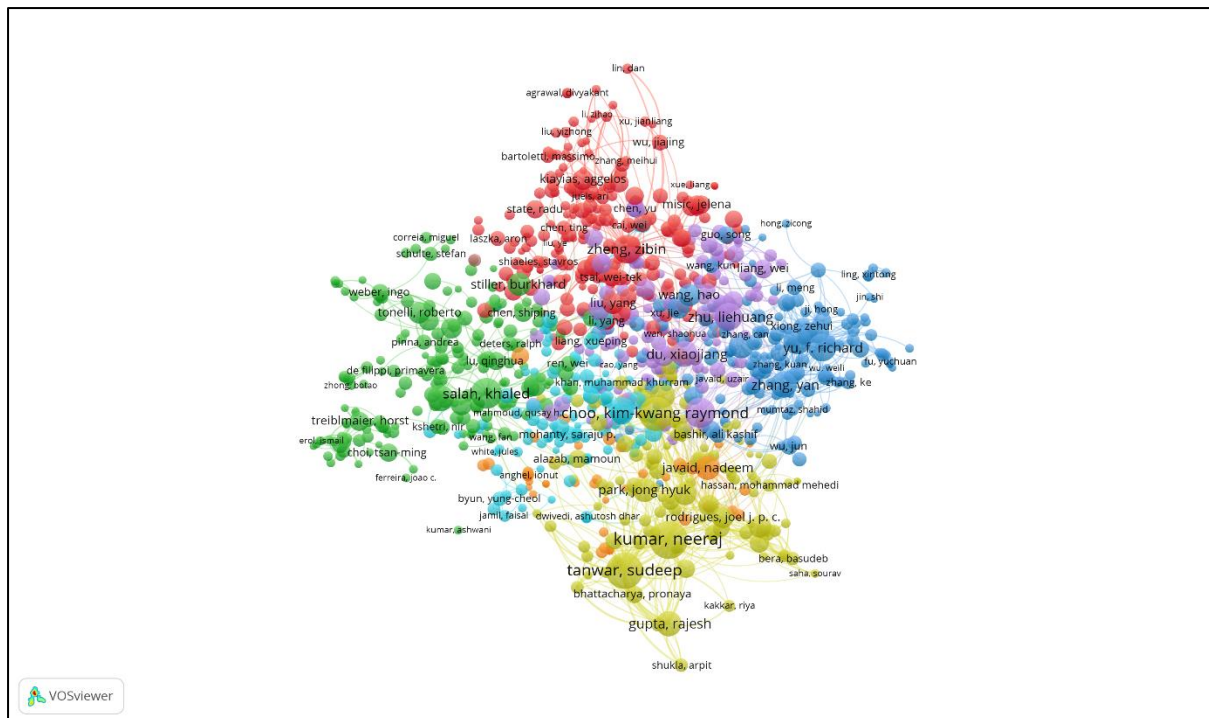


Figure 4: Citation network map for authors

No.	Author	Documents	Citations	Link strength	Percentage by citations (%)
1	zheng, zibin	75	4.666	5.751	1.1%
2	zhang, yan	66	4.279	5.383	1.0%
3	choo, kim- kwang raymond	109	4.109	6.275	1.0%
4	kumar, neeraj	137	3.733	7.112	0.9%
5	salah, khaled	90	3.501	4.319	0.8%

Table 4: Top 5 cited authors greatest by number of citations

#### 4. CONCLUSIONS

Recent global crises, including economic, public health, social, and political ones, have emphasized the significance of maintaining a steady stream of economic activities. Digitization and decentralization of systems are regarded as crucial measures for constructing a more resilient economy. Digitization enhances efficiency and transparency by facilitating the flow of information and resources, while decentralization improves resilience by distributing power and decision-making authority for a more adaptable approach to crises. Blockchain is a novel technology that offers immense potential for application across diverse industries. Although often associated with digital currencies like Bitcoin, blockchain's scope extends beyond currencies. In the field of accounting, blockchain primarily offers risk reduction, fraud prevention, efficiency promotion, error elimination, and enhanced reliability and transparency. Fundamentally, blockchain refers to an open information and accounting system that allows validation and control of transactions, preventing digital currency duplication or multiplication via a decentralized system. There are also critical challenges, such as scalability, security, and privacy, that have been identified with blockchain technology. The scalability challenge results from the significant resource requirements for complex transactions, encryption, and network distribution. This challenge is particularly alarming as mining one Bitcoin consumes more carbon footprint than around two billion VISA transactions.

In addition to risks, major challenges linked to energy consumption, e-waste, and carbon footprint arise from the Proof-of-Work system employed by miners to validate transactions. The bibliometric analysis conducted in this study revealed that research on blockchain technology is highly significant at present. The current "new reality" underlines the need for entities to confront risks, adapt to new conditions, prioritize digitization, and implement strategies to ensure survival and prosperity in the future.

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## CONSEQUENCES OF INTEGRATION PROCESSES FOR BUSINESS CONTINUITY MANAGEMENT

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### ABSTRACT

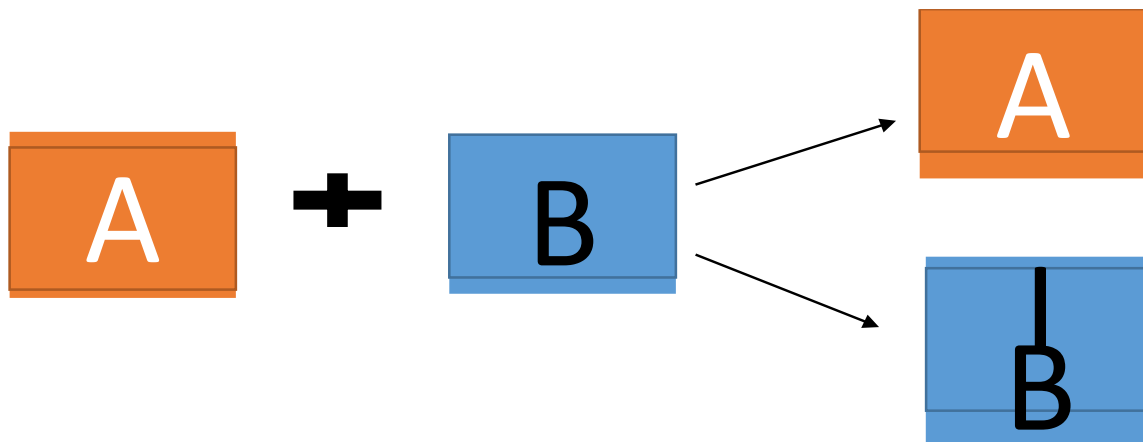
*The modern business environment in which the world economy operates brings increasing unpredictability, which makes it difficult to plan and implement business continuity management. Recent examples are the emergence and spread of the corona virus and the war in Ukraine. Market-oriented economies are characterized by a reduction in the life cycle of companies and competition in saturated industrial sectors. Integration processes, takeovers and mergers, represent one of the ways of implementing development strategies of organizations and most often take place in waves and in crisis periods due to economic shocks and the influence of internal and external factors on the organization. Mentioned strategy is used by companies in order to acquire the necessary capital and resources in an effort to establish their position on the market more quickly and efficiently and to carry out activities of greater volume and income for the purpose of survival and faster progress. Due to the trends of M&A and the growing inconsistency and uncertainty in business, the aim of this paper is to highlight the consequences that M&A brings when it comes to managing the business continuity of a "newly integrated" organization. The impact on employees, business processes and general functioning and management of business continuity during and especially after integration will be observed. In order to fulfill the objective of the paper, the empirical part of the paper uses the Delphi method, in which the source of data is based on statistical collection and then the interpretation of the answers to the set questionnaire from a number of experts in the field of business continuity management, the banking sector, auditing and several business units that have recently passed M&A activities in order to consolidate attitudes about the consequences that integration processes bring for business continuity management and the organization as a whole. The paper will analyze the consequences of mergers and acquisitions for the management of business continuity, identify its advantages and disadvantages, and present recommendations for future such processes in the concluding remarks.*

**Keywords:** *Integration processes, merger and acquisition, business continuity management, Delphi method, business continuity management plan, management*

### 1. MERGERS AND ACQUISITIONS

A takeover refers to the purchase of a controlling interest by one company in another company. When the term controlling interest is used, it refers to the purchase of more than 50% of the voting shares of the acquired company. The most common type of payment for these types of transactions is money, shares of the acquiring company or a combination of both. When it comes to taking over large companies, buyers are often unable to finance a transaction of this size with cash due to the size of the target company, so they decide to finance it through shares (Lazibat, Baković, and Lulić, 2006, p. 71). It is important to mention that in the vast majority of takeovers, the company that takes over the other company is larger and the target company simply becomes part of the acquirer.

In such processes, the company that is the target of the takeover ceases its business independence in the sense that it no longer implements its own strategy, but begins to implement the strategy of the company that took it over (Filipović , 2012, p. 17-18).



*Figure 1: Merger of companies*  
 (Source: Filipović , I. (2009), Revision , Zagreb: Sinergija , p. 199.)

A merger implies an action when two organizations merge into one business unit, regardless of whether it is a completely new company with a new name or a situation where one company merges with another without necessarily establishing a new company (Orsag and Gulin, 1996, p. 27). When the process is completed, the company may cease to operate in such a way that the acquirer takes over both the assets and liabilities of the target company, which signifies a legal merger. The term regional merger refers to the action when the target company becomes a wholly-owned subsidiary of the acquiring company (Lazibat, Baković, and Lulić , 2006, p. 66). Mergers are most often financed by the exchange of shares, the price of which is determined on the basis of market evaluations of both companies (Filipović , 2012, p. 23).

## **2. THE CONNECTION BETWEEN BUSINESS CONTINUITY MANAGEMENT AND BUSINESS INTELLIGENCE**

In practice, both concepts are not sufficiently networked in business, given that business intelligence is still interpreted as an information technology project. Both concepts are run in separate teams with little mutual interaction when it comes to achieving organizational goals (Suša Vugec , Bosilj Vukšić , Pejić Bach, Jaklič and Indihar Štemberger , 2020, p. 1710). Business-type information is a very important item for business intelligence and business continuity management in terms of the efficiency of both systems. The most important common goal of business continuity management and intelligence is to ensure the execution of business activities with as little or no loss of information, productivity, capital resources and reputation as possible, which can have a negative impact on the overall brand and organization in terms of loss of competitive advantages, and in extreme cases, companies can even go bankrupt. due to the lack of efficiency in the segment of business intelligence and business continuity management. An early warning system is a component in which business intelligence and business continuity management are connected and related. In contrast to business continuity management, which acts protectively when it comes to business data, the early warning system works to remove the possibility of shocks with the help of analysis and then risk monitoring followed by sending warnings in case of shocks breaking through to the company for the purpose of timely and efficient reaction. Business intelligence in the aforementioned system acts as a kind of defensive wall that, in synergy with the system itself, detects possible threats to the company and informs and encourages the organization to act on the presented problem

in order to stop the negative impact on business continuity management itself. An important common characteristic of business continuity management and intelligence is cyclicity, which includes various processes and phases, and in business continuity management, this process is also called a plan

### **3. MAINTAINING BUSINESS CONTINUITY MANAGEMENT DURING INTEGRATION**

The chapter will present the challenges of business continuity management when it comes to integration processes. First of all, how the processes of integration relate to the very planning of business continuity management and how this is reflected on the stakeholders, especially on the employees of the organization and consequently on the business unit itself as a whole. Organizational managers are tasked with protecting business continuity management during M&A activities, and this includes protecting the technology and infrastructure in use by backing them up. It is necessary to ensure sufficient resources in the budget for the integration process in order to have sufficient funds for the assessment and implementation of business continuity management in the newly formed business unit. By evaluating plans, procedures and systems, it is possible to determine how well the business continuity management of the target company is protected, and by checking the plans themselves, assessing risks and the impact on the business itself, it is possible to conclude whether business continuity management is feasible and sustainable. In the event that the target company does not have optimal business continuity management and response to disaster recovery, it is necessary to take measures to ensure that all participants in the takeover or merger are as protected as possible. In order for the employees of both business units to be quickly and efficiently connected through the exchange of information for the purpose of defending business continuity management, procedures for disaster recovery and a communication strategy must be established and tested before the very beginning of the implementation of the integration. The business continuity management team after a takeover or merger aims to evaluate the rules and procedures of both integration participants in order to select the best measures and practices and incorporate them into the business continuity management structure of the new organization. Employees at higher levels have the task of conveying the necessity of a quality business continuity management program from the beginning of the integration process (Continuity Central, 2022).

### **4. ACQUISITION AND MERGER PLANNING AND SUCCESS FACTORS**

Planning must not be lost, that is, the organization must take certain actions to preserve all documents, data and files. Otherwise, there could be problems with showing the market value without tangible support in the form of various documents (online, Castellan, n. a.). The first step is to collect data on the number of employees and contractors. A useful source of information at this stage is existing contracts that must be downloaded and maintained (online, Opscentre, n.a.). Newly appointed management must recognize the value of business continuity management planning for the reason of speeding up the reaction and recovery in the event of disruptions and disasters, which results in a reduction of organizational losses, and also reduces the threat of disruptions and additional deterioration of the situation within the business unit (online, Castellan, n. a.). The next step is to assess the business continuity management that is already present in another organization in order to plan the integration in detail and precisely (online, Opscentre, n.a.). It is necessary to deliver tangible data to decision makers who compare the cost of business continuity management planning and the cost of its upgrade with the possible loss of revenue in the event of unfavorable situations, so that they are convinced and informed that business downtime and damaged reputation cost much more than the cost of planning, maintenance and business continuity management. When the integration process is implemented, it is necessary to adapt the business continuity management plan according to the

needs of the newly established business entity (online, Castellan, n. a.). In order to establish a new corporate entity, the groups in charge of business continuity management must be merged into one. The teams will need to work together to make sure there are emergency and crisis plans in place for the new organization to start working to deal with potential problems when different organizations join forces (online, Opscentre, n.a.). Current integration processes are planned in detail for the purpose of more efficient strategic alignment for both parties in these processes. An integrated strategy as a success factor increases the chance for the success of takeovers and mergers of companies, because financial advantages are primarily realized with the aforementioned approach. When the success criteria are combined and used effectively, the impact on the organization is greater than it would be if the factors were used separately. Simpler and more efficient realization of synergy in the post-integration period is the result of quick implementation of planned actions (Bertoncelj , and Kovač, 2007, p. 185).

## **5. METHODOLOGICAL FRAMEWORK**

The work included using the Delphi method and it consisted of from two circle questionnaire which are was processed in Microsoft's the Excel program. In the second circle are respondents received return information about the results the first circle so they could to reconsider your own answers on questions in the light general trend attitudes . Selected respondents who they are not were confident in their own answers in general are had intention to support paragraph of the majority so it was possible to reorganize theirs points of view . Sources data are included statistically gathering answers on placed questionnaires of a panel of eight experts from areas management continuity business , banking sector , audit you several companies which are recently passed activities downloads and mergers. Basically, carried out research has come true compromise agreement examined experts eye repercussions integration process on management continuity business and on the others parts organizations and in conclusion considerations presented series recommendation for the future such processes. The research was conducted using the Delphi method, and consisted of two questionnaires that were processed using the Microsoft Excel program. In the first round, the interviewed experts gave descriptive answers to thirteen open-ended questions. The second round contained statements extracted from the responses of the first round of research. A panel of eight experts responded to statements of help on a five-point Likert scale. The results of the second round of research confirmed the existence of a high degree of consensus among the examined experts, so there was no need to continue the research, i.e. for a third round. The implementation of the research and the results showed that there is a limitation, which is the sample size. For future, similar research, it is advised to use a larger sample of participants, that is, to include a larger number of experts in the research. The research contained a limitation in the form of the participation of examined experts from the Republic of Croatia who answered questions of an international nature. In the case of a similar limitation, for future research with the same structure of respondents, it is advised to omit international type questions. The panel of eight experts was not ideal due to limited international experience, so when compiling the structure of respondents in future research, it is recommended to include a larger number of international experts and domestic experts who have the necessary international experience for the purpose of a better understanding of the issues and problems.

## **6. CONCLUSION**

Today's business environment brings uncertainty, business disruption, price volatility , and the life cycle of the average business is getting shorter. Recent examples are the war in Ukraine and the pandemic coronavirus. Competitive and saturated markets, high business costs and the need for constant investment are just some of the factors that affect the viability of business entities, and for the above and similar reasons, various companies increasingly decide to grow

through external strategies, that is, they participate in integration processes such as takeovers or connection. There are many successful examples of integration, but in the vast majority of cases, integration processes end unsuccessfully due to a number of different circumstances. In order to reduce the risk of failure, organizations must make a thorough financial analysis, increase the level of symbiosis between the companies participating in the integration process, retain human resources and help them with training and education to quickly adapt to changes and many other operations and processes in this regard. that the integration process is a complex and long-term project that should be done thoroughly and precisely. Business continuity and its management is an important segment not only when it comes to integration activities, but also when it comes to business as a whole. Business continuity management includes planning business activities, reacting and being responsible for extraordinary events that can have a strong impact on business units, and its goal is to protect data, processes and other parts of organizations in order to maintain a stable level of business. The trend shows that the business environment is changing more and more quickly and the degree of uncertainty is increasing, so business continuity and its management come to the fore and importance as a component without which a business entity cannot function properly and efficiently in today's conditions. Business continuity consists of many activities and tasks, such as creating and implementing a plan, analysis, constant improvement of the system and testing, and it is demanding to successfully implement it in the organization itself, and especially to change and find new possible solutions while at the same time the business entity is in the process of taking over or mergers, regardless of whether it is the integration of a friendly or hostile character. Maintaining business continuity management during integration entails constant planning, early communication with employees to avoid their resistance, harmonizing the old corporate culture with the new one, and involving as many employees as possible in the integration process itself. The mentioned examples are only some of the preconditions necessary for the stable operation of the entire business entity during and after the integration process. The empirical research lasted two months and included eight experts from the fields of banking, auditing and those who participated in the integration processes. The interviewed experts first answered thirteen questions descriptively, and in the second round they answered the statements extracted from the answers of the first round. Questions were divided into groups such as factors of successful business continuity management, relations between the Republic of Croatia and the world in terms of the development of integration processes and methodologies, business intelligence as a factor in business continuity management, deficiencies in business continuity management, training and education of professional staff, post integration phase and integration processes. After two rounds and the use of the Delphi method with the help of a Likert scale, a high degree of consensus was achieved among the examined experts for all statements, but with different levels of agreement. The research showed that integration processes and business continuity management are complex systems that are influenced by many factors. Takeover and merger activities can be characterized as having a strong impact on the business unit, and consequently on business continuity management. The consequence of poor integration preparation and implementation is a serious disruption of the entire business. Training and education of professional staff and a high level of communication with planning and continuous improvement of the business continuity management system can contribute to a more successful integration, which would mean that the company is able to grow and advance on the market. Quality purpose and method of takeover or merger are prerequisites for successful integration and business continuity management. Any integration process affects the business, so the consequences of the process are great. Business continuity in the event of failure is threatened with collapse, and thus the entire company.

In order to prevent negative consequences, it is necessary to properly design and implement the process of taking over or merging, including in that process as many company employees as possible, and to constantly work on business continuity and its management in order to increase the possibility of a successful merger or acquisition of organizations

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## INCLUSIVE LEADERSHIP AND INNOVATIVE WORK BEHAVIOUR: DOES INTENTION (ALWAYS) MEET REALITY?

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### ABSTRACT

*There is an increasing number of organizations which dedicate a significant amount of attention to inclusive leadership. This leadership style values a sense of belongingness and uniqueness, which allows the company to stay competitive in an unpredictable and fast changing time. Long-term competitiveness is not possible without innovating as well as without innovative work behaviors. Inclusive leadership which has been theoretically developed as well as researched for a long period of time includes creating, promoting and realization of innovative ideas. Leadership is presented as the main driver for organizational change, while employees perceive it as an opportunity to improve their innovative behavior. Moreover, a leader who supports its employees and their ideas creates ground for innovative behavior. This paper defines and analyses the interrelatedness of inclusive leadership and innovative work behavior. The research consists of a theoretical and empirical part. The empirical research was conducted in the banking industry through an online questionnaire, where the total respondents' number is 36, of which 10 were supervisors and 26 were subordinates. The research proved that the subordinated respondents perceive their supervisors as inclusive, while supervisors do not see their subordinates' behaviors as innovative, which leads to the conclusion that inclusive leadership does not always imply innovative work behavior.*

**Keywords:** *inclusive leadership, innovative work behaviors, leading, banking industry*

### 1. INTRODUCTION

The concept of inclusive leadership originally belongs to the field of management and is defined as the words and actions of a leader who shows initiative and respects the contribution of other people. Inclusive leadership is a situation in which everyone contributes to the realization of a common goal and vision through interpersonal relationships (Qi, Liu, Wei, & Hu, 2019). This leadership style helps to understand the human mind, since it contains the nature of social interactions and identity that is formed through communication and social life (Agerwala, Menon, & Bodhananda, 2021). The term inclusive leadership is often used to emphasize the need for greater diversity or better relationships between the leader and followers (Wuffli, 2016). Inclusive leadership encourages team members to express their ideas and perspectives and to discuss and exchange different opinions and knowledge (Ashikali, Groeneveld, & Kuipers, 2020). The role of subordinates is extremely important, and special attention is paid to their perception of leadership (Qi et al., 2019). Inclusive leadership refers to relationships that can achieve mutual benefit. Achieving leadership at an inclusive level means "doing things with people, not to people", which is at the heart of inclusiveness.

The focus is on improving decision-making process and achieving desired goals without relying on the abilities of just one person. The aim is to show how followers can be actively involved in the leadership process to improve the understanding and practice of inclusive leadership. Leaders usually have more initiative, but followers are the key success factor. In a healthy and productive relationship, although the leader is central to the process, the subordinates are not passive, but are actively involved in their role, which requires them to be informed. A leader has positional power but requires support from followers through persuasion rather than coercion. The desired goal is to have a process in which the participants are really involved and as partners want to contribute and not work under pressure. A leader's most important values, along with listening, are respect and inclusion of other participants. Listen, learn, help and lead is the order that every inclusive leader will follow in his business practice (Hollander, 2009). Inclusive leadership encompasses fairness and respect for a diverse range of talents regardless of stereotypes (Adapa and Sheridan, 2018). Inclusive leadership possesses the unique nature of belonging, acceptance, uniqueness, and inclusiveness. It accepts employees as they are, allows them to engage in numerous organizational activities with their unique abilities and views on various topics. The focus is on meeting members' needs for accessibility and openness within the working group (Qi et al., 2019). The four guiding principles when creating a framework for inclusive leadership, point out that it should be:

- 1) Dynamic and change-oriented,
- 2) Horizontal (to build links between different sectors and cultures),
- 3) Holistic and widely applicable (to include as many people and different situations as possible)
- 4) Explicitly normative (in the sense of encouraging leaders to reflect and take positions related to their core ethics and time) (Wuffli, 2016).

Inclusive leaders are open, approachable, active listeners and respond to the thoughts of their subordinates, value their input and share their visions with them. They are available in their interactions with their followers, show concern for their followers' interests, expectations, and feelings, and are available and willing to provide assistance. In this way, subordinates get a sense of fairness, trust, strength and freedom. When employees like and respect their superiors, they demonstrate a high level of organizational commitment. Inclusive leaders who provide support to their subordinates can satisfy their socio-emotional needs for belonging and esteem, and these employees in turn have greater organizational commitment. Employees appreciate this, and their fears, stress, and anxiety are minimized (Choi, Tran, & Park, 2015). Many organizations have managers who are extremely technically strong but are not as effective when it comes to applying the principles of inclusive leadership (Sweeney and Bothwick, 2016). The concept of leader inclusiveness is defined as words and actions that show invitation and appreciation for others' contributions. Also, it can be explained as a leader's attempt to include others in discussions and decisions where their voices and perspectives might otherwise be absent, as well as modeling openness and providing accessibility in interactions with followers (Randel et al., 2018). One of the desirable practices of inclusive leadership is for the leader to provide his subordinates with a forward-looking approach, instead of just reviewing the past. Inclusive leadership considers leaders and leadership to be essential, although critics have occasionally raised doubts about the nature and reality of the leadership phenomenon. The reality is that subordinates hold leaders responsible for outcomes, even those not necessarily related to the leader. Because of this, the leader-follower relationship requires a certain degree of trust and loyalty (Hollander, 2009). If inclusive leadership reflects a new way of leading teams, then we need to look beyond traditional models and frameworks. Research reveals that the term "inclusion" represents people's feeling that they are treated fairly, that their uniqueness is valued, and that they have a sense of belonging and a voice in decision-making process.

When previous mentioned is fulfilled, the subordinates feel involved - inclusive. Putting it in the context of a leader, inclusive leadership is about treating people and groups of people fairly based on their unique characteristics rather than stereotypes. The individuality of each team member, that is, understanding and valuing differences and uniqueness and accepting them as members of a group, exploiting the thinking of different groups for more innovative and advanced ideas and making decisions that reduce the risk of blindness. To achieve such goals, highly inclusive leaders exhibit certain distinctive traits (Bourke and Dillon, 2016). The six traits that describes the inclusive mindset and behavior of leaders are: commitment, boldness, bias awareness, curiosity, cultural intelligence, and collaboration (Bourke, 2016). They are mutually reinforcing and related factors. They enable leaders to operate more efficiently within different markets, connect better with customers, have access to a more diverse spectrum of ideas and realize the full potential of their own employees (Bourke and Dillon, 2016). Despite the extensive literature on leadership and its influence on employee innovative behavior, only few studies have researched the relationship between inclusive leadership and employee innovative behavior. Leadership is considered a key factor of change in organizations and a strong component of the organizational work environment. Therefore, when leaders display behavior that supports new ideas, employees see it as organizational support to improve their innovative behavior (Javed et al., 2017). Today's dynamic and turbulent environment has made it challenging for organizations to survive and thrive within the industry. Leadership, corporate culture, individual differences, job characteristics, job demand, values, and personality were found to be significantly related to employee innovative behavior. Among all these predictors of employee innovative behavior, leadership plays a prominent role. The role of the leader as the bearer of the behavior that supports the employee is much more important than most of the factors that explain the innovative behavior of the employee. The high risks associated with innovative behavior indicate that it is a type of behavior that is not routine and where employees avoid traditional thinking and can talk openly about new ideas. Employees very often challenge the "*status quo*" when there is disagreement with superiors, therefore they need a high degree of autonomy to promote innovative behavior, and autonomy and freedom of expression of ideas arise when employees are supported by management (Javed et al., 2017). One of the unique ways in which leaders support the innovative behavior of employees is by creating a quality relationship with employees. In a solid and quality relationship, leaders provide support to their employees who have challenging tasks. Inclusive leaders allow employees to participate in decision-making and in every step of the activity show their availability to subordinates, support employees who generate new ideas, or show innovative behavior. In this way, inclusive leadership increases the innovative behavior of employees. Inclusive leaders support the employees by taking responsibility for the end results in the innovation process if new ideas result in failure. Leaders protect employees by taking responsibility for that failure. Employees then feel safe taking the risks associated with innovative behavior in the presence of inclusive leadership. Inclusive leaders encourage and respect employees who set challenging and difficult goals for themselves, recognize their efforts and contribution in achieving these special goals. Furthermore, they show responsible behavior and respond to employee problems in a timely manner, which is an additional incentive for employees to behave innovatively. Employees experience leadership support in the form of useful resources such as time, space and materials, support and information related to innovation that lead them to develop, promote and implement new ideas. Inclusive leaders strengthen employees' positive feelings and emotions that motivate them to indulge in their innovative tasks (Odoardi et al., 2015). Rewards in the form of bonuses, salary increases and other allowances for innovative behavior can lead to the inculcation of innovation among employees (Aziz and Al-Heety, 2019). Inclusive leadership is a favorable situational element that fosters innovative employee behavior (Javed et al., 2017). It makes business sense to have an inclusive team with fresh ideas and perspectives (Webber, 2019).

This style of leadership (inclusive leadership) is more suitable for research in innovative environments than any other because it provides an opportunity to simultaneously explore both leadership and co-determination behavior of employees. Inclusive leadership in a social exchange perspective fostered positive outcomes that developed cognitive thinking and motivation to engage in creative performance and innovative behavior (Javed et al., 2018). The lack of research in this field could be due to an earlier ideology that suggests that innovative people have innate traits and talents that other people do not have. Today, it is generally accepted that the innovative behaviors of employees are not only products of individual talents and traits, but also outcomes of social and psychological influences. There are studies that have found a positive correlation between leadership and innovative employee behavior. While it is extremely interesting that a negative correlation was observed between leadership and creativity. Two popular managerial tactics that can theoretically influence employee innovative behavior are good leadership and organizational justice. Leadership is one of the main tactics for influencing creative and innovative performance. Cultivating the innovative behavior of employees is one of the most important functions of the leadership of today's organizations, because the ability of innovative behavior of employees is significantly related to the leadership style. One example is humor. Inclusive leadership positively predicts teams' mental models, and team reflection moderates the relationships between them. The more inclusive employees feel, the more likely they are to improve their work performance. Inclusive employees generally have more creative ideas, but also views that are at odds with the traditional leadership style. Encouragement and tolerance play a big role in relationships (Fang et al., 2019). It has been proven that when employees see that the leader shows involvement in their innovative ideas, technologies and processes, they feel that the organization values them more and takes care of them, thus increasing the level of their innovative behavior. Inclusive leadership acts as a force that facilitates innovative employee behavior (Qi et al., 2019). Innovative work behavior of people working in service industries is a factor that positively contributes to the success of service business. An example of this is banking. Due to the specificity of banking jobs, employees are often required to adhere to specific regulations and procedures instead of promoting their ability and creativity. Policies that generally encourage innovative employee behavior are not applicable within banks. The passivity of most employees is evident, as they perform repetitive tasks assigned to them, and only make changes if their superiors require them to do so. Given that employees cannot apply innovation in the performance of daily tasks, this affects the operations of any organization, including banks. Therefore, the key solution for the banking sector would be to find factors that improve the quality of human resources and the innovative behavior of employees, which especially applies to employees who work in the sales department and have direct communication with clients. They are considered the bank's key workforce in generating revenue. Empowering leadership gives employees the responsibility and authority to act quickly without needing the approval of a superior higher up in the hierarchy. Due to freedom, the employee gains control over the provision of services. Employees who are in direct contact with clients should have the right to self-determination and autonomy in decision-making (Tri et al., 2019).

## **2. METHODOLOGY**

The purpose of the empirical research was to examine the connection between inclusive leadership and innovative behavior of employees, i.e. whether their superiors are inclusive leaders and whether their subordinates behave innovatively. The research was conducted using two anonymous online surveys. The survey questionnaire that was sent to leaders measured the innovative behavior of directly subordinated employees. The IWB questionnaire (Innovative work behavior) was the basic measuring instrument. In this research, the focus is on innovations at the level of individuals within the banking sector.

The instrument consisted of 17 statements rated on a Likert scale from 1 to 5, with a score of 1 indicating "Never", a score of 2 "Rarely", a score of 3 "Can't estimate", a score of 4 "Often", and a score of 5 "Always". In addition to the statements, the questionnaire contained questions related to the respondents' demographic characteristics - gender, age, level of education and work experience in the banking sector. The questionnaire for subordinates is based on the ILQ questionnaire (Inclusive leadership questionnaire) and examines the level of inclusivity of their direct superior through a measuring instrument of 25 statements. The statements were also evaluated on a five-point Likert scale. In addition to the questions about age, gender, level of education and work experience in the banking sector, which were asked in both surveys, respondents also answered additional questions related to the position, the time spent in the said position and the number of direct subordinates. The research was conducted during June and July 2022, and it included 36 respondents, 10 of whom were superiors and 26 subordinates. The analysis will exclusively show group and not individual results. At the time of the survey, all respondents were employees of one of the largest Croatian banks. In the sample of subordinate employees in the banking sector, men predominate, the majority are between the ages of 36 and 45, with higher professional qualifications. More than 50% of the sample has more than 15 years of experience in the banking sector. Men again predominate in the sample of superiors. The highest number of respondents are between 46 and 55 years old. In the sample of superiors, 90% of respondents have a higher education, and 60% of the sample has more than 15 years of experience in the banking sector. Since these are superiors, it is not unusual for more than half of the respondents to have many years of experience in the banking sector (more than 15 years). The majority of people who filled out the survey are in the position of team leader (70%) and most have been in that position for less than 1 year. The reason for such results is the reorganization of several sectors that was made at the beginning of 2022, where divisions into teams were introduced and individuals were appointed as leaders. Previously, employees mostly worked in pairs and their first supervisor was the CEO. The novelty is the addition of one hierarchical level, which is the team leader. The surveyed superiors have a minimum of 4 and a maximum of 20 subordinates. The average, but also the most common, number of subordinates is 7 people. Higher numbers of subordinates refer to CEOs, while lower numbers refer to team leaders.

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

The results include 26 subordinates from the banking industry who evaluated the inclusivity of their first direct superiors. Using 25 statements, four dimensions of inclusive leadership were assessed. The first dimension examines whether the leader provides equal opportunities and fair treatment to all team members, the second one encourages integration and synergy, the third one includes satisfying the basic needs for uniqueness, authenticity and belonging of each team member, and the fourth one whether the inclusive leader implements policies and programs related to organizational diversity and inclusion in the team. The conducted survey was evaluated on a Likert scale from 1 to 5. The results of the first dimension of inclusive leadership are analyzed below, which examines whether the leader provides equal opportunities and fair treatment to all team members. 50% of respondents answered that their supervisor often shares important information and makes challenging tasks accessible to all team members, which is an extremely important characteristic of an inclusive leader. It is interesting that as many as 10 respondents (38.46%) took a neutral position on the statement "My superior treats everyone in the team fairly", while only one respondent less, i.e. 9 respondents, gave a rating of 5 and the attitude that their superior always acts fairly (34.62%). Employees very often perceive fairness through reward systems, superiors compensate employees who contribute better and better to projects or demonstrate continuous excellence when performing work tasks.

Very often, there is a salary secrecy clause or colleagues do not want to share information about the amount of bonuses or salary received, so it is possible that respondents are not able to assess fairness due to ignorance. If salary information were available, it is likely that research results would lead to different and very interesting conclusions. Employees who are aware of the engagement of their colleagues could feel undervalued if a colleague who works less earns a higher amount, which would potentially lead to the opinion that the superior is unfairly distributing the organization's resources. Table 1. analyzes the first dimension of inclusive leadership:

Q (My superior...)	N	$\bar{x}$	$\sigma$	Me
makes demanding tasks equally accessible to all team members ensures equal involvement of all team members.	26	3,50	0,86023	4
shares important information with all team members.	26	3,58	0,90213	4
conducts a fair evaluation of the team members' work.	26	3,54	0,98917	4
treats everyone in the team fairly.	26	3,77	1,10662	3
manages direct and/or subtle forms of discrimination in the team well.	26	3,73	1,04145	4
manages direct and/or subtle forms of discrimination in the team well.	26	3,69	0,92819	3

*Table 1: First dimension - Providing equal opportunities and fair treatment to all team members*

Table 1 shows the average ratings of each statement belonging to the first dimension of inclusive leadership, its standard deviation and median, i.e. the most frequently answered value. On average, respondents gave the highest average score to the statements "My supervisor treats everyone in the team fairly" (average score 3.77) and "My supervisor ensures equal involvement of all team members" (average score 3.73). Although the statement "My superior makes demanding tasks equally accessible to all team members" was rated with the lowest average rating (3.50), the most frequent rating for the stated statement is 4 - "Often", which was chosen by as many as 50% of respondents. There are certainly individuals who specialize in certain tasks or have more experience in certain fields, so it may happen that a leader assigns a task to such a person rather than someone who does not have the prerequisites. There are employees who avoid and refuse demanding tasks because with it comes greater responsibility, which many of them do not want and are satisfied with their current position. According to the average ratings, it can be concluded that the superior provides equal opportunities and fair treatment to all team members.

*Table following on the next page*

Q (My superior...)	N	$\bar{x}$	$\sigma$	Me
treats all team members with respect.	26	4,19	1,02056	5
communicates openly with all team members.	26	3,96	0,99923	4
expects the contribution of all team members in order to fulfill organizational goals.	26	4,54	0,76057	5
encourages team members to contribute.	26	3,77	1,10662	4
respects different approaches to solving problems in a team.	26	3,81	0,98058	4
integrates different approaches to solving problems in a team.	26	3,62	0,94136	4
encourages all team members to participate in decision-making.	26	3,35	1,16421	4
includes different approaches when making final decisions.	26	3,38	1,13409	4
encourages constructive discussion among team members.	26	3,65	1,01754	4
encourages all team members to cooperate with each other.	26	4,00	0,93808	4
encourages team members of different demographic characteristics, educational and practical experience to exchange ideas.	26	3,62	1,16883	4
encourages all team members to learn from each other.	26	3,92	1,05539	4

*Table 2: Second dimension - Encouraging integration and synergy among all team members*

The second dimension consists of 12 statements. The most common ratings 4 - "Often" and 5 - "Always" already reveal the conclusion about the second dimension of inclusive leadership, which examines whether the superior encourages integration and synergy between all team members. The highest rated statement is "My leader always expects the contribution of all team members in order to meet organizational goals" with an average rating of 4.54. The most common answer for the stated statement is grade 5 - "Always". This positive result is accompanied by the statements "My superior treats all team members with respect" (average rating 4.19) and "My superior encourages team members to cooperate with each other" (average rating 4.00). The lowest average rated statement is "My supervisor includes different approaches when making final decisions" with a rating of 3.35, the average attitude of the respondents is neutral. It can be potentially explained this average rating of the claim in several ways, the first is that people are not familiar with different approaches and what their features are, so it is much more difficult for them to recognize the type. And the second is that it is an industry where the hierarchy and decision-making methods are clearly set, so the leader is not even allowed to decide in any other way than the one dictated by the procedure. There is a rigid hierarchical structure in which it is clearly prescribed who can decide at what level for a specific business task. Due to the high result of the average and most frequent ratings, we can conclude that superiors encourage integration and synergy, that is, interaction, among all team members.

Q (My superior...)	N	$\bar{x}$	$\sigma$	Me
respects individual differences in teams.	26	3,77	1,03180	4
values the uniqueness of all team members.	26	3,58	1,02657	3, 4
encourages team members to be authentic.	26	3,23	1,03180	3
enables team members to feel safe during discussions and expressions.	26	3,65	0,93562	4
creates an atmosphere where all team members feel a sense of belonging.	26	3,54	1,06699	4

*Table 3: Third dimension - Directly addressing team members' fundamental needs for uniqueness, authenticity and belonging*

The third dimension consists of five statements. Arithmetic means, standard deviations and medians of each statement are shown in the table. The statement with the highest average rating is "My supervisor respects individual differences in teams" with a rating of 3.77. A rating of 3.23 was the lowest average rating for the statement "My supervisor encourages team members to be authentic". The average result of the respondents shows that they took a neutral position, which is also proven by the most common rating 3. Organizational culture promotes togetherness but does not pay special attention to the authenticity of each individual. Repetitive administrative tasks often do not require a special authenticity of a person, so superiors potentially do not pay so much attention to satisfying this trait of their subordinates, which may be the reason for the above result. Due to the majority average scores, it is concluded that an inclusive leader satisfies the basic needs of team members for uniqueness, authenticity and belonging. The fourth dimension deals with the implementation of policies and programs related to organizational diversity and inclusion in the team by superiors. There are only two assertions in the specified dimension. Almost half of the respondents (46%) answered that their supervisor often ensures compliance with the rulebook on organizational diversity and inclusion in the team, and only 4% believe that this never happens. The banking industry is a highly regulated activity within which there are rules that must be respected and applied as part of everyday business, which is why this result occurs. 38% of the respondents took a neutral position and answered that they could not assess whether their superior implements organizational diversity and inclusiveness programs in the team. Explanations for these results can potentially be found in the fact that the mentioned programs are most often taken care of by the human resources department, so employees, unless they have direct cooperation with the mentioned department, very often do not even know if such programs exist, who exactly participates and in what way programs. Notifications usually go via e-mail messages, which employees very often overlook or do not read in detail, so they are not informed or interested in this type of information.

Q (My superior...)	N	$\bar{x}$	$\sigma$	Me
ensures compliance with the rulebook on organizational diversity and inclusion in the team.	26	3,65	0,93562	4
implements organizational diversity and team inclusion programs.	26	3,50	0,98995	3

*Table 4: Fourth dimension - Implement policies and programs related to organizational diversity and inclusion in the team*

The average rating of the first statement of the fourth dimension "My supervisor ensures compliance with the ordinance on organizational diversity and inclusion in the team" is 3.65, with the most frequent rating 4 - "Often", while the statement "My superior implements programs of organizational diversity and inclusion in the team" has the average score is 3.50, and the most common score is 3, which indicates a neutral attitude of the respondents. According to the average scores, it can be concluded that leaders implement policies and programs related to organizational diversity and inclusion in the team. The results of the subordinate analysis suggest that respondents, on average, believe that their supervisors do most of the things listed in the statements on all four dimensions that characterize an inclusive leader. The above data lead to the conclusion that superiors possess at least some specific characteristics of an inclusive leader. Most of the results indicate that superiors often, but not always, possess the behavioral traits described by the dimensions, so there is certainly room for improvement. The questionnaire, which was intended for superiors, samples 10 people from the banking industry who evaluated the innovative behavior of their direct subordinates. The questionnaire consisted of 17 statements that were evaluated on a five-point Likert scale, and the analyzed data of the entire survey can be found in Table 5.



Q (How often does your subordinate...)	N	$\bar{x}$	$\sigma$	Me
pays attention to problems that are not part of his daily work tasks.	10	3,10	0,87560	4
is looking for an opportunity to improve work tasks.	10	3,40	0,96609	4
thinks about innovative opportunities.	10	2,80	1,13529	2
is looking for ways to improve work tasks.	10	3,20	0,91894	4
Search new products or services.	10	3,10	0,99443	4
is looking for new methods, instruments, or work techniques.	10	3,50	0,97183	4
proposes original solutions to problems.	10	3,10	1,19722	2
has new ideas.	10	3,30	1,15950	4
finds new approaches to task execution.	10	2,80	0,91894	2
has guaranteed support for innovative solutions.	10	2,90	0,99443	2
Obtains an innovative solution.	10	2,80	0,91894	2
affects the enthusiasm of the superiors about the innovative solution.	10	2,80	0,91894	3
tries to convince colleagues to support an innovative solution.	10	3,20	1,03280	2, 3, 4
turns innovative ideas into practical solutions.	10	2,80	0,91894	2
systematically introduces innovative solutions into the working environment.	10	2,50	0,84984	2
contributes to the implementation of new solutions.	10	2,70	0,94868	2
invests effort in the development of new work tasks.	10	3,20	1,31656	2

*Table 5: Analysis of the innovative behavior questionnaire*

Superiors had the highest average ratings related to the statements "How often does your employee look for new methods, instruments and work techniques" (average rating 3.50) and "How often does your employee look for an opportunity to improve work tasks" (average rating 3.40) . The statement with the lowest average score of 2.50 is "How often does your employee systematically introduce innovative solutions in the work environment" and the most frequently selected score for this question is 2 - "Rarely". The average rating of all average ratings of innovative employee behavior is 3.01. This is a neutral position, and no conclusion can be reached whether the evaluated superiors implement innovative behavior or not. Looking at the medians, that is, the most common ratings given by the respondents, the majority is a rating of 2, which indicates that subordinates rarely behave in an innovative way. It should be emphasized that the research was conducted in the banking industry. It is about firmly defined frameworks with a multitude of procedures according to which work is done within the mentioned industry. Employees must adhere to prescribed rules and laws, so it is very difficult to behave innovatively and do unpredictable things that are outside the scope of regular work, so the results of this research are not surprising. In the banking industry, employees are not adequately compensated for innovative behavior, nor are they required to do so.

#### 4. CONCLUSION

Innovative work behavior contributes to change within any organization because it comes as a result of their intrinsic motivation. It is highlighted the most when a problem occurs or a novelty is discovered. When an employee explores possibilities, creates ideas, advocates for them and finally applies them, that is, implements them, then he goes through stages of innovative behavior that require great efforts. This topic has been theoretically observed for years and emphasizes the constant and sincere effort of employees so that they can quickly react to the challenges posed by these unpredictable times. When an inclusive leader allows subordinates to participate in decision-making, it creates security for employees to express their innovative ideas, that is, to demonstrate innovative behavior. In a quality relationship where the superior's behavior supports the subordinate and the leader takes responsibility for potential failure, the subordinate reciprocates with behavior that is outside of his regular work tasks and contributes to organizational prosperity.

Empirical research on the role between inclusive leadership and innovative behavior of employees showed that inclusive leadership does not necessarily include innovative behavior of employees in the observed industry. The average ratings of each statement across the four dimensions of inclusive leadership clearly demonstrated how subordinates rated their superiors as inclusive leaders. On the other hand, the average ratings of superiors when they evaluated the innovative behavior of employees showed a mostly negative attitude, concluding that subordinates rarely behave innovatively. Due to the most frequent and consistent answers, and the industry in which the research was conducted, the stated result was to be expected. Due to the complex management structure, the strong regulation of the financial sector and the large number of procedures and rules within the banking industry, the room for maneuver of employees is significantly reduced. Therefore, there is no compensation that would reward innovative behavior and low employee motivation occurs. An inclusive leader plays an important role in motivating his subordinates because he motivates subordinates to innovative work with intellectual and emotional support. Leaders in the banking industry should pay attention to the fairness of input and output in order to establish a fair reward system for all employees that motivates them to meet the demands of the workplace with innovative behavior.

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## CROSS-SECTIONAL ANALYSIS OF THE COUNTRIES AND CORRESPONDING TRIPS FLEXIBILITIES FOR PHARMACEUTICALS

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### ABSTRACT

*The TRIPS Agreement enabled countries to use flexibilities to make exceptions to patent rights. The governments can make limited exceptions to patent rights, provided certain conditions are met. The paper examines the use of TRIPS flexibilities to facilitate access to medicines. The right to health and access to medicines for all is imperative. However, the developing nations with the greatest pharmaceutical need also have the least access to them. This paper is intended to draw valuable lessons from the cases of states that have applied for TRIPS flexibility for pharmaceutical patents by analyzing them according to the region, type of flexibility, type of disease, GDP per capita, health expenditure, and government effectiveness. Among the 82 countries covered by the analysis, it was noted that the highest number of applications came from the region of Africa, while the most widely used flexibility was Article 31. Analysis per medical indication shows that HIV/AIDS has the highest number of applications, followed by cancer, while most requests were made under Article 31, followed by Part 7. The explanation is that the diversification of approach to flexibilities is independent of the country's wealth. Our study provides evidence of a correlation between the mean values of Government Effectiveness indicators for countries requesting flexibilities through Part 7 and compulsory licensing. However, a significant difference in GDP per capita values was noted for countries that have applied for Part 7 flexibility. We explained this by type of disease and costs of treatment in applications. The findings suggest that more WTO member states should be encouraged to request flexibilities through TRIPS Agreement and that cross-sectional factors must be considered in further research to define how countries can best use the flexibilities.*

**Keywords:** *TRIPS flexibilities, pharmaceuticals, public health, developing countries, LDCs, patent protection, WTO, GDP*

### 1. INTRODUCTION

To a great extent, the prices make pharmaceuticals unaffordable for millions across the globe. [1] The Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS Agreement) is the minimum global legal standard for pharmaceutical patents. TRIPS Agreement recognizes a need for flexibility, which allows countries to mitigate the impact of patents due to the high price of patented medicines, epidemics, high mortality, etc. Unfortunately, most countries have yet to make use of it. The use of TRIPS flexibilities for pharmaceuticals can be achieved through Article 30 (Patent exceptions), Article 31 (Compulsory licensing and non-commercial public use), Article 31bis (lack of manufacturing capacities) and Part 7 of TRIPS Agreement (the Least Developed Country transition provisions). According to Article 30, countries may provide exceptions to patent rights under the condition that: 1) the exception is limited, 2) it must not 'unreasonably conflict with a normal exploitation of the patent', and 3) it must not 'unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties'.

Each country, World Trade Organization (WTO) member, has the right to grant compulsory licenses and the freedom to determine the grounds upon which such licenses are granted. [2] The right to include in their patent legislation a provision for use without authorization of the patent holder is stipulated by Article 31 of TRIPS. Article 31, "Compulsory licensing", lists minimum standards that must be included in implementing legislation. This is the crucial TRIPS flexibility. The amendments of the TRIPS Agreement, through the Protocol of Dec. 6 2005, that entered into force on Jan. 23 2017, inserted a new Article 31bis into the Agreement. The primary purpose of the amendment is to waive the domestic supply requirement under Article 31(f). In addition, article 31-bis allows a country to grant a compulsory license to import a particular drug and to export a generic drug to a country that has issued a compulsory license. This way, countries that lack manufacturing capacities can obtain cheaper generic drugs. For the Least-Developed Country Members, there was a transitional period of 10 years in which they were not obliged to apply most provisions of the TRIPS Agreement to enable them to create a sound and viable technological base. This period was extended to Jan. 1 2016, in the case of pharmaceutical patents, under the Doha Declaration on TRIPS. Public Health ("WTO Members must indefinitely extend the exemption for LDCs from the application of TRIPS provisions in the case of pharmaceutical products."). [3] This is because LDCs have low GDP rates as well as low GDP/pc and therefore have a lower level of investment in the health system and prevention of health emergencies. In addition, most LDCs need a better implementation of procedures and regulations and more vital institutions, contributing to their greater need to use flexibility through Part 7. Given the specific needs and requirements of LDCs, and their economic, financial and administrative constraints, the use of flexibility can facilitate the creation of a sustainable technological base in these countries. In addition, amendments to the TRIPS agreement, unanimously adopted by WTO members in 2005, entered into force only in 2017, when two-thirds of member countries finally deposited their signatures. Thus, a WTO agreement was amended. For the first time since this organization's establishment protocol that changes TRIPS is a permanent mechanism to make it easier for economically weaker WTO members to access affordable generic drugs manufactured in other countries. [4] The TRIPS Agreement also allows WTO members to ensure that life-saving drugs are available and affordable for their citizens. In cases where patented drugs have been unaffordable or not widely available, governments may use WTO-compliant compulsory licensing procedures. An additional possibility within the scope of WTO rules is the voluntary licensing of patents and the pooling of intellectual property for various drugs or medical technologies.

## 2. LITERATURE REVIEW

More than ten years ago, research showed that developing countries are not making full use of flexibilities built into TRIPS to overcome patent barriers, such as compulsory licenses and parallel imports (Smith et al., 2009). [5] But, the newer study (Hoen et al., 2018) found that countries made extensive use of TRIPS flexibilities between 2001 and 2016. [6] In the case of a low or even a medium-income country in which disease affects millions of poor people, patents are not a relevant factor or effective in stimulating R&D and bringing new products to market. [7] The problem of how to mitigate the impact of pharmaceutical patents on the delivery of essential medicines to the world's poor is far from being resolved (Nicol & Owoeye, 2013). [8] Several attempts have been made to limit TRIPS flexibilities to particular diseases, namely AIDS, tuberculosis and malaria, or more generally to infectious public health emergencies (Outtersson, 2008). [9] On the other hand, there are also calls for fresh attempts to enact workable legislation that fits within the prescribed requirements of international law without going beyond them (Nicol & Owoeye, 2013). [10] The trend in modern Free Trade Agreements (FTAs) is the introduction of TRIPS-Plus Provisions, which, especially in cases of new obligations in the field of public health-related IPRs, go well beyond the TRIPS minimum

standards and can cause increased costs and disable access-to-medicines to lower-income countries and individuals. [11] There is no easy or low-cost set of policy choices for low-income nations to follow because even a policy choice of accepting bilateral trade deals may damage the collective bargaining leverage of all low-income countries. [12] So reforming the TRIPS regime in pharmaceutical protection may be the only long-term solution for the underdeveloped. Some of the exciting findings suggest that higher patent protection in China compared to India generates negative impacts on the pharmaceutical industries; thus, governments should utilize TRIPS flexibilities and other regimes like price control to offset the anticompetitive effect in designing patent policies. [13] There is also a study that explores the role of South-South regional approaches in overcoming the constraints that they face in implementing the TRIPS flexibilities effectively at the national level for public health purposes. [14] Given this, we aimed to empirically investigate the particularities of the cases per requested flexibility type and the cross-sectional characteristics of the observed countries applying for flexibilities.

### 3. METHODOLOGY

This research is based on cross-sectional analysis and analysis of the characteristics of countries applying for TRIPS flexibilities for pharmaceuticals. The observed flexibilities refer primarily to different concessions in using protected and registered patents in the pharmaceutical industry. The preparation of data for analysis in this paper required a study of literature reflected in many published papers, books, electronic materials and databases. Also, this paper builds on the previous work of researchers in interpreting and analyzing the work of the WTO related to allowing flexibility for pharmaceutical products. In addition to data analysis and synthesis, datasets have been formed that represent the basis for statistical analysis. For quantitative data analysis, the "R" programming language was used. The theoretical framework is constructed based on literature and the research question: *"How the characteristics of the flexibility type in requested cases and the cross-sectional characteristics of the observed countries connects to applying for flexibilities?"* Based on this research question, we have formed a model as presented below.

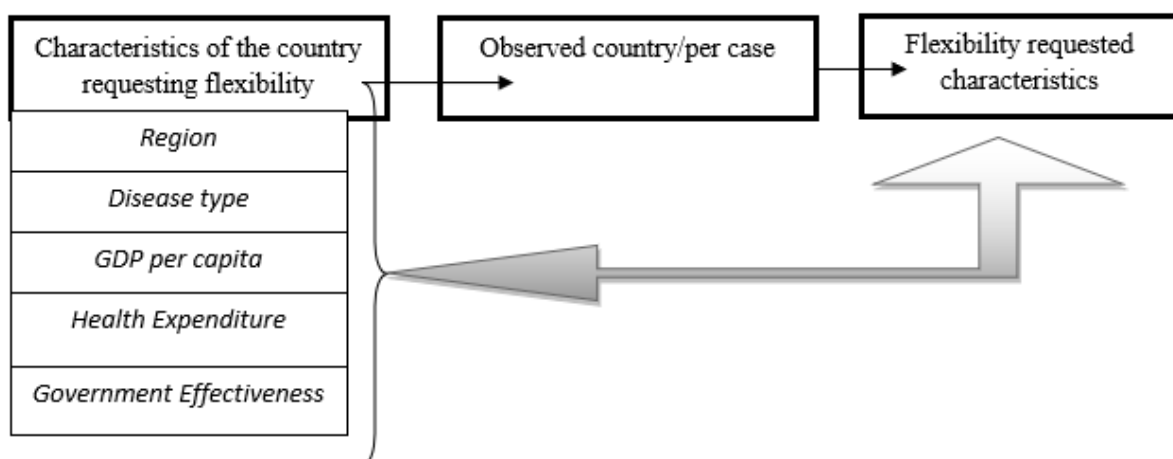


Figure 1: Model of the presented research

#### 3.1. Dataset and analysis

The research framework is represented by countries that have applied for the use of flexibility in the use of pharmaceutical patents (drugs) due to various reasons (drug deficit, high incidence/mortality rate, epidemics, and the poverty rate of the country seeking flexibility). Data collection was gathered for quantitative analysis, as well as constructed from the

databases: Medicines Law and Policy, World Bank, World Health Organization and available literature. [15] The data collected are based on observed cases from 82 countries that have applied for TRIPS flexibility (in a total of 159 cases). World regions group countries according to the World Bank classification: Europe, Africa, Central Asia, North America, Asia & Pacific and Latin America. The time frame for the collected data ranges from 2000-2019 for the entire Dataset (e.g. in 2000, it was applied by Israel as the first case used in the research, while in 2019, it was applied by Kazakhstan, Switzerland and the United Kingdom). In addition, the Dataset also collected data for the type of flexibility applied for by the states on the following legal grounds: Article 30 (Patent exceptions), Article 31 (Compulsory licensing and non-commercial public use), Article 31bis (Lack of manufacturing capacities) and Part 7 of TRIPS Agreement (the Least Developed Country transition provisions). These data include time components relating to when flexibility has been requested, approved or planned for approval for granting access to medicines for public health reasons. Also, data were collected and analyzed for the types of diseases for which the observed state requested a specific type of flexibility. Therefore, data were collected for applications by disease type within the following categories: HIV/AIDS, Avian flu, Bacterial infection, cancer, cardiovascular disease, Covid 19, cystic fibrosis, H1N1 Influenza, HCV, Kidney transplants, Leprosy, tuberculosis, Migraine, Opioid overdose, Prostatic hyperplasia, Rheumatoid Arthritis, Spinal muscular atrophy and type II Diabetes. This paper collected but did not analyze data related to the requested drug. In addition, data were collected for *Gross Domestic Product (GDP) per capita*, *Current Health Expenditure as % Gross Domestic Product (GDP)* and *Government Effectiveness* indicator for all of the observed countries. The data are harmonized with the year when the observed state requested certain flexibility for the pharmaceutical product, and thus, a systematization was done for each state and each request. In order to define the variables used in this research, we are providing the definition and the reason for using mentioned variables. According to the definition, Gross Domestic Product (GDP) per capita is the most used economic indicator for assessing comparative analysis of economic performance among countries (in statistical analysis, this indicator is marked as "GDPc"). [16] We also collected data for the *Current Health Expenditure as % of Gross Domestic Product (GDP)*, which represents an essential indicator of the observed countries' investment in healthcare (in the statistical analysis this indicator is marked as "HE"). This indicator shows the total financing of the health system of the observed country concerning the Gross Domestic Product. Of course, the health system can be financed in different ways (e.g. NGO, out-of-pocket, government, etc.), but we wanted to show the total costs concerning the GDP rate to understand the relationship between the economy and investment in the health system. This is especially important regarding TRIPS flexibility requirements arising from specific problems connected with the health system. Another factor that we considered important for the analysis is *Government Effectiveness* (in the statistical analysis, this indicator is marked as "Gov"). [17] This indicator contributes to research when it comes to government-related aspects. Namely, the indicator is prepared by collecting data from numerous sources and qualitative and quantitative assessments. It collects and describes the quality (perceptions of the government's effectiveness), making them available as a numerical value on the universal scale. We considered using this indicator and added it to the list of other factors (related to healthcare and flexibilities) because we wanted to cross-check mutual correlation and the potential impact of this umbrella indicator. Also, there is no evident impact of this umbrella indicator on the statistical analysis as the umbrella indicator shows the perception of the relevant groups on the aspects of interest for this research. This indicator is shown in values from -2.5 (weak) to 2.5 (strong) for the work of the government on the mentioned issues. We believe that such an indicator showing the degree of democracy in the process of adopting new laws and regulations, as well as the implementation of initiatives proposed by the civil sector, also demonstrates the degree of development of

society and its willingness to respond to challenges promptly (including health system challenges). In some cases, this might also lead to public health emergencies and the development of healthcare institutions (including health emergency preparedness level).

#### 4. RESULTS

Out of 139 states signatories to the TRIPS Agreement, 82 sought certain flexibility about pharmaceutical products regarding patent rights. When we observed the number of applications by region, it turned out that 16 requests were forwarded from the region of Europe, 73 from Africa (mainly Sub-Saharan region); in Central Asia, there were 11, North America - 5, Asia & Pacific – 27, and Latin America - 27 ( Figure 2). Subsequently, we analyzed according to the type of flexibility requested, resulting in the following: Article 30 - 3 requests; Article 31 - 108 requests; Article 31bis - 1 requests; Part 7 -46 requests; parallel import - 1 request ( Figure 3).

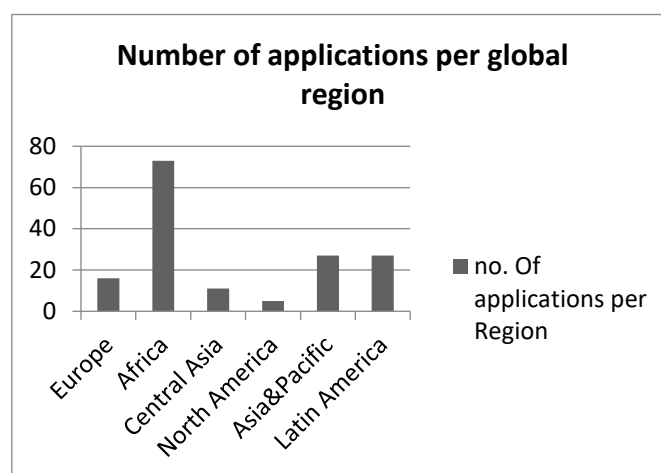


Figure 2: number of applications for flexibilities by region

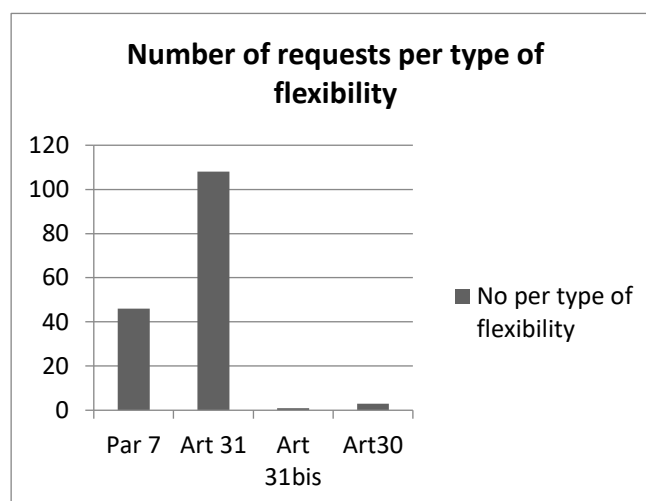


Figure 3: number of requests for flexibilities per type of request

After conducting statistical analysis per medical indication and disease, we established the following results: HIV/AIDS – 110; Anthrax – 2; Avian fly -2; Bacterial infection – 1; Cancer – 14; cardiovascular disease – 1; Covid19 -1; Cystic fibrosis – 1; H1N1 Influenza – 1; HCV – 5; Kidney transplants – 1; Leprosy, tuberculosis – 1; Migraine – 1; Opioid overdose- 1; Prostatic hyperplasia – 1; Rheumatoid Arthritis -2; Spinal muscular atrophy – 1; type II Diabetes – 1; ALL – 12 ( Figure 4).



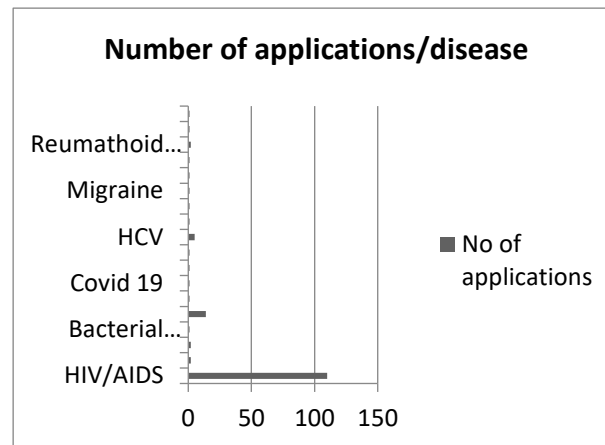


Figure 4: number of applications per disease for requested flexibilities

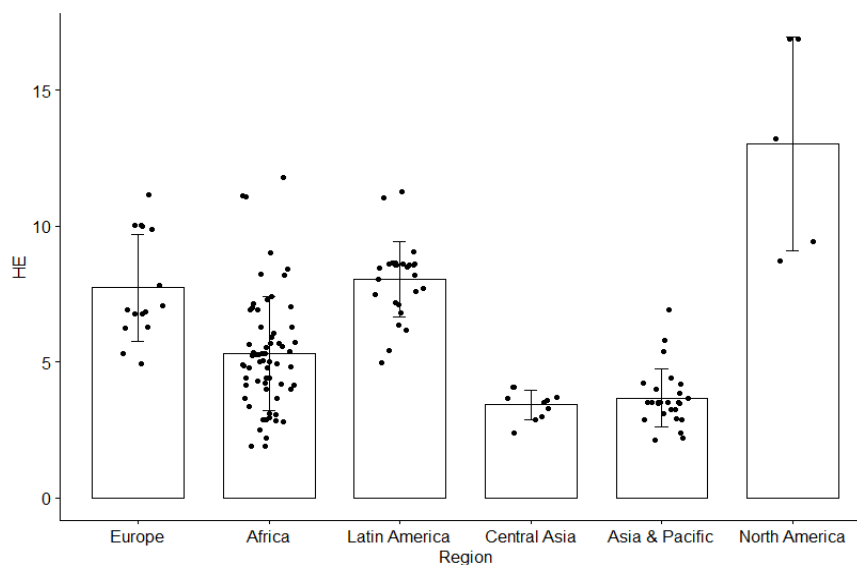


Figure 5: mean SD analysis of countries per region and Health Expenditure (total)

In the further course of the analysis, we wanted to show the mean values for the observed variables (total) in order to compare them with sectional analysis data later:

mean(Gov)	mean(GDPc)	mean(HE)	range(HE)	range(GDPc)	range(Gov)
-0.312517	6803.782	5.902721	1.9 -16.9	139 -81485	-1.76- 1.92

Table 1: mean values per variable (total)

Also, we have analyzed covariance among observed data, and the results show the expected relationship according to theory. Therefore, we had a positive relationship among observed variables in all cases, indicating positive covariance.

cov(HE, GDPc)	cov(HE, Gov)	cov(GDPc, Gov)	cor(HE, Gov)
20689.17	0.765137	7996.638	0.3386453

Table 2: Covariance results of observed variables

Also, we were interested to understand the impact of different diseases on a country level prompting TRIPS flexibility requests. Most requests have been submitted for pharmaceuticals treating HIV/AIDS, including antiretroviral therapy, as they are considered costly treatments.

We have counted the following types of treatments for HIV/AIDS: EFV/FTC/TDF, 3TC/AZT/EFV. Most HIV/AIDS-related requests (72) were by Article 31 flexibility (Compulsory licensing), while Part 7 was referred to by 32 requests, in addition to 3 requests in line with Article 30. This demonstrates that not all low-income countries are prone to apply for flexibility through Part 7, although it was intended as the Least Developed Country transitional provision. The second largest group of diseases is connected with chronicle non-inflammable diseases – cancer treatments. Within this group, we have noted the following products: Imipenem/Cilastatin, Imatinib, Gemcitabine, Sunitinib, Sorafenib Tosylate, Dasatinib, Imatinib, Pertuzumab, Letrozole, Trastuzumab-Emtansine, Clopidogrel, LPV/r, Lumacaftor-ivacaftor. Analysis shows that the preferred flexibility option is connected with a compulsory license for those drugs. The following Table 3 shows other diseases per flexibility type.

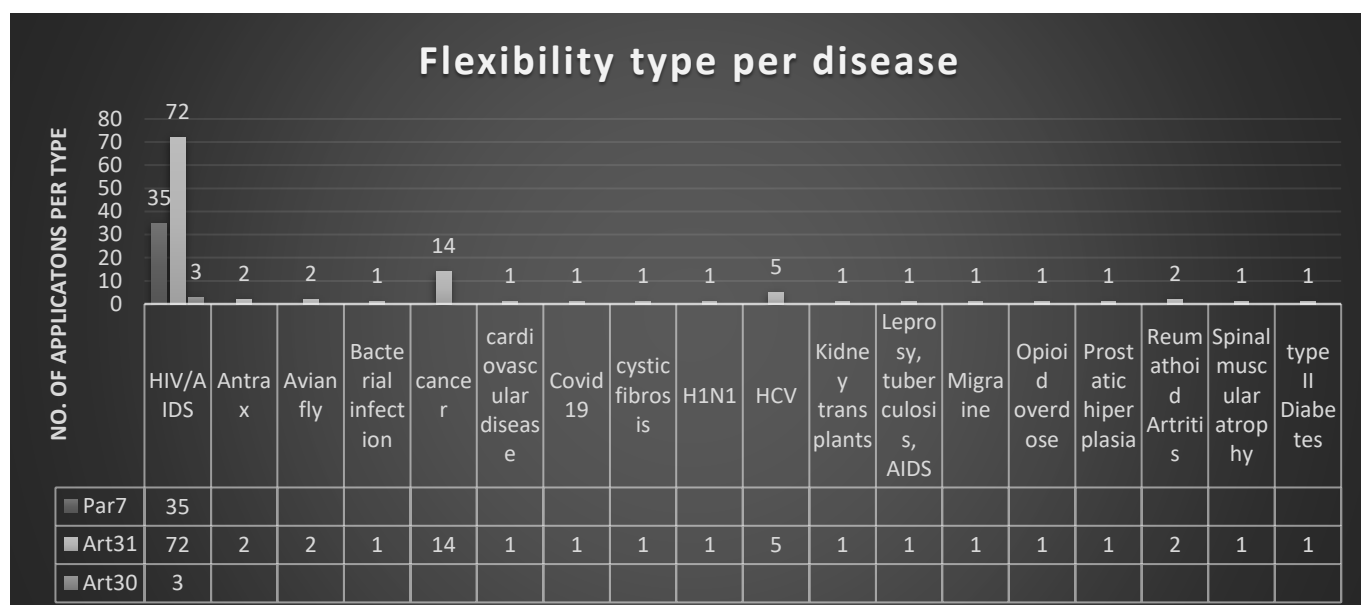


Table 3: Flexibility type per disease

In the following step, we were interested in analyzing the mean and standard deviation in the type-oriented flexibility data required to analyze and present the characteristics of the cross-sectional factors and possible correlations. The Dataset used contains 44 state cases with indicators "Gov ", "GDPc", "HE "per type of flexibility, based on Part 7 flexibility. Also, 101 state cases and cross-sectional context were used for flexibility requirements based on Compulsory licensing (including Article 31bis flexibility). The results of the mean and standard deviation analysis according to the type of flexibility required are as follows:

Mean and Standard deviation per observed variables	Part 7	Compulsory Licensing (article 31 and 31bis (lack of manufacturing capacities))
Mean (HE)	5.65	6.07
SD (HE)	2.19	2.98
Mean (GDPc)	709.5	9422
SD (GDPc)	536.18	15367
Mean (Gov)	-0.87	-0.9
SD (Gov)	0.44	0.84

Table 4: Statistic analysis of mean and standard deviation of cross-sectional indicators per flexibility type

The results indicate a significant difference in mean values between the two experimental groups. We were interested in showing the influence of various cross-sectional factors that can theoretically describe the general socio-economic and state investment in the health system and the development of institutions, their political independence in terms of decision making and others. Comparing the sample of 44 cases with flexibility requested through Part 7, concerning 101 cases in the second group (compulsory licensing), it became evident that the mean value of the indicator "Gov" - is approximately the same. This is interesting given the difference between predominantly developing countries applying through Part 7 flexibility and the significant covariance between the "GDPc" and "Gov" variables. However, in contrast to the observed factor "Gov", the "GDPc" indicator differs significantly; in the first group, it is only 709.5, while in the second group, it is 9422. This is explained by the type of disease that caused the health crisis in developed and underdeveloped countries, but also with the required treatment used for a particular disease where correlation is also established. As a result, investments in the health system are at approximately the same level, indicating that international standards recommendations are observed in terms of the level of gross domestic product spent on the health sector. On the other hand, considering the difference in levels of GDP per capita, it shows a clear disproportion between the number of nominal amounts that finance the health system.

## 5. CONCLUSION

This study analyzes 82 countries, grouped by world regions, which have applied for TRIPS flexibility for pharmaceutical patents in the 2000–2019-time frame. In the quantitative analysis, we used the data for the type of flexibility applied, types of diseases, GDP/pc, current health expenditures, and government effectiveness. Following analysis of the applicant countries, we noted that the highest number of applications came from the region of Africa (predominantly Sub-Saharan Africa) (73), followed by Latin America (27), Asia and Pacific (27), Europe (16), Central Asia (11) and North America (5). Furthermore, the most widely accessed flexibility was through Article 31 (108 requests), followed by Part 7 (46), Article 30 (3), Article 31 (bis) (1), and parallel import (1). Conducted analysis per medical indication shows that HIV/AIDS has the highest number of applications (110), followed by cancer (14) and others (please refer to section Results). After that, we analyzed requests concerning HIV/AIDS in terms of flexibility, and it showed that most of the requests had been made under Article 31 (72), followed by Part 7 (32). We explain this result as a diversification of approach to flexibilities that is not necessarily dependent on the country's wealth status (i.e., Part 7 was initiated as the Least Developed Country transitional provisions). The second largest group of requested flexibilities for cancer treatment analysis shows the dominance of compulsory licensing. Our study provides evidence of the correlation between the mean values of the Government Effectiveness indicator for countries that requested flexibilities through Part 7 and Compulsory licensing. However, a significant difference in GDP per capita values was noted for countries that applied for Part 7 flexibility (LDCs). We explained this by type of disease and costs of treatment in applications. Also, in the same analysis, we confirmed that all countries had a similar percentage of GDP investments in healthcare, from which we can conclude that countries applying for flexibilities consistently follow international guidelines and country-level implementation (considering high GDP level differences among countries). All the above-mentioned findings suggest that several countries requesting flexibilities through TRIPS Agreement show historical growth in international engagement through available procedures, which might benefit those countries and encourage other WTO member states to apply for the flexibilities when needed. Also, it was noted that those countries observe international standards in healthcare investment per GDP and Government Effectiveness. The mean value for Government Effectiveness for all countries was -0.3 (range -1.76-1.92), while the mean Health Expenditure per percentage of GDP was 5.9 (range 1.9-16.9).

On the other hand, the GDP per capita mean was 6803 with high dispersion in range from 139-81485. In addition, it was shown that Government Effectiveness has approximately the same value in cases of countries that applied for Part 7, compared to the compulsory licensing. Finally, the type of flexibility might be highly connected to specific diseases and medical treatments. The findings suggest that more and more WTO member states are encouraged to request flexibilities through TRIPS Agreement and that cross-sectional factors must be considered in further research to define a better approach so that the countries can take full advantage of the flexibilities. Although African countries are most interested in flexibility, high-income countries from Europe and North America are also interested. Furthermore, procedures and flexibility options should be more accessible to countries with competent advisories due to the procedural complexity, bearing in mind that the type of disease and medical treatment necessary play a vital role in countries' approach to flexibility.

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