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# **Economic and Social Development**

99<sup>th</sup> International Scientific Conference on Economic and Social Development

## **Book of Proceedings**

Editors:

**Mislav Ante Omazic, Igor Pihir, Mustapha Machrafi**

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## SUSTAINABILITY: THE ULTIMATE LUXURY

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### ABSTRACT

*There is sufficient evidence in the scientific literature on the sustainability and its significance. However, despite the importance and implications of this phenomenon, there is a lack of literature on sustainability and ESGs within luxury industry. Therefore, the main goal of this research paper is to find a way to understand ESG approaches within the luxury companies. For better understanding of ESG practices, ETFs – investment instrument that comprises the luxury brands by different industries, are analyzed. Hence, the research utilized Refinitiv, an American-British global provider of financial market data and infrastructure. It contributes to the scientific body of knowledge in the context of sustainability practices within luxury sector. The implications of this study will be especially important to high-end companies in properly recognizing, comprehending, and using the findings to better organize their sustainability approaches. Luxury companies should also be aware of the significance of ESGs and their crucial position among investors. The examination of ESGs will allow luxury companies to evaluate and strengthen their sustainability approaches and help them identify which parts of their strategy need to be improved to provide company sustainability.*

**Keywords:** *luxury, sustainability, corporate social responsibility, ESGs, ETFs*

### 1. INTRODUCTION

The sustainable revolution has already started since environmental concerns are top-of-mind for today's customers, who view the environment as a critical problem. A new generation of consumers is increasingly supporting companies with their purchasing behavior; shun those that aren't in line with their values and pursue those that are. Luxury companies are scrambling to shine in the ESG area by checking all the appropriate boxes from a reporting standard and objective setting perspective. There is a feeling that this is still primarily high-level image construction, despite the fact that there is some real action behind it and real outcomes to come. Corporate social responsibility (CSR), newness, and quality can be combined to advance the efforts because environmental, social, and governance (ESG) challenges are persistent while shaping the future. On the other hand, luxury has historically been linked with extravagance rather than sustainability but changing consumer attitudes are propelling profound transformation across the whole business. Whether a corporation "does" sustainability is no longer differentiating; rather, it is whether they have operationalized it throughout their organization.

ESGs practices are not only important for increasing or maintaining the brand image, but also, they are key factors in decision-making processes and considerations that financiers undertake while making investments. They want to make sure the companies they are investing have ethical and sustainable business practices. Hence, ESG aspects provide investors with a more thorough view of a company's performance and empowering them to make more informed investment decisions.

## **2. LITERATURE REVIEW**

### **2.1. Luxury Evolution to times of “Sustainability”**

Luxury comes from Latin word “luxus” which means excess, magnificence, and splendor. However, while luxury is recognized by all of us, it is hard to decide which definition explains the luxury as is best. Fionda and Moore (2009) pointed out that the luxury products have many characteristics. They described luxury as something exclusive, which required high quality, craftsmanship, exclusivity and distinctiveness. According to Veblen (1899), consumers use luxury products to show off their wealth and to be considered on a higher hierarchy level within the society. On the other hand, Snyder and Fromkin (1977) linked luxury with the need of uniqueness, called snob effect, but latter in their research, they discovered that individuals try to maintain the moderate uniqueness, meaning that they are not interested in being totally different or totally the same to others. On contrary, there is Tian et al. (2001), who wanted to prove that consumers want to develop their self-image within the society, thus they linked uniqueness with the luxury consumption. Without doubt, luxury has been existing since the civilizations do. However, over time, it has evolved in various forms and at various levels. It is linked with the Romans since their culture was supporting the concept of luxury, as they were obsessed with the pleasure and extravagance; period of Dark Ages, when luxury was debated through aspect of ethics and natural limit to luxury. At that time, luxury was considered to be a barrier to heaven, so people should abandon it until the period of Renaissance, when the concept of luxury was viewed through the art; and the Baroque period when people were obsessed about luxury through wall frescos, impressed mirrors, picture frames and sculptures (Ward, 2011; Kelly, 2011; Kovesi, 2014). 19th century is a period when the new luxury was born. It was consumed by people who were from the highest social class since the luxury items were considered to be the extra. With the birth of the modern luxury, haute couture was born, an exclusive high-end fashion made with high quality and unusual fabrics; it is handcrafted and time consuming. This is the period when the first brands were established. Today, the rapid growth of global market for luxury brands challenges companies within luxury sector to be innovative and introduce new ways of attracting new customers as well as retaining the already existing ones. Therefore, they should not use the classical way of operating, because that is the surest way to fail in the luxury business (Kapferer & Bastian, 2009), but to require the customers to perceive sufficient value in the luxury goods in order to justify the high price; and this time it is through sustainability.

### **2.2. Luxury Sustainability Paradox**

*“Sustainability is about much more than our relationship with the environment; it is about our relationship with ourselves, our communities, and our institutions”.*

- Seidman (2007)

Because of the rapid global development, concerns about natural resource depletion, climate change, and sweatshops have increased over the past ten years in a wide range of businesses (Vachon & Mao 2008). Due to the mounting pressure that investors, customers, and regulators are putting on businesses, sustainability has become increasingly important. Many stakeholders are demanding disclosure of a company's positive or negative environmental and social impacts



due to transparency (Martinez-Ferrero & Fras-Aceituno 2013). As a result, corporate social responsibility (CSR), sustainability, and socially responsible investment (SRI) are becoming into worldwide ideas (Kim, 2013; Branco & Rodrigues 2007). So, “sustainability has become a mantra for the 21st century” (Dyllick & Hockerts, 2002, p.130). It is a key concept in business since it is necessary to protect rare materials, ensure the creation of their products, avoid pollution, or at least collaborate with others to reduce it as much as possible, and, most importantly, respect workers. In addition, proper consideration must be given to retail packaging and packing procedures, trash recycling, and product life-cycle assessment (Johnson, 2009). Besides its importance, there is a contradiction when it comes to the relationship between luxury fashion and sustainability focus (Achabou & Dekhili, 2013), because these two concepts are opposites; luxury represents uniqueness, opulence, and prestige, while the sustainability refers to principles of ethics and philanthropy. Luxury is related with handmade products, scarcity, self-company control, craftsmanship and heritage, which contradicts claims about poor working conditions and business practices and environmental issues. Consequently, this sector experience enormously high profit margins, which shows that as any other industry, luxury sector is profit oriented to survive in the statures and dynamic business environment (Kapferer & Michaut-Denizeau, 2013). This leads to the idea that, because of the luxury characteristics, luxury sector finds it hard to develop sustainable model (Rahman & Yadlapalli, 2015). It might be challenging to discuss sustainability in the high-end apparel industry. On one hand, the role of luxury fashion is to bring beauty and creativity, and thus these products require many resources for the pleasure of few. (Godart & Seong, 2014; Rahman & Yadlapalli, 2015). It does not need to be cost-efficient because the more expensive the product, the better brand perception the company has (Cais, 2021). In this sense, the sustainable actions can negatively impact the perception of the consumers. (Achabou & Dekhili, 2013). On the other side, lack of sustainability actions may negatively impact the luxury companies by exposing them to risk in regard to reputation (Kapferer & Bastien, 2009). Therefore, many luxury brands intend to involve sustainability practices within their operations, thus that way they will satisfy the consumer expectations and reputation. This means that, in the future, the key to success will be the ability of the luxury companies to integrate the sustainability approaches within their business model. Fortunately, according to Rahman & Yadlapalli (2015), the perception of the luxury consumers, have shift toward more sustainable approach that “allows” luxury companies to adopt sustainable practices much more easily than in another sector. Even more, luxury companies should not copy already existing sustainability initiatives, but use innovative sustainability approach that will distinguish them from the competitors (De Pierre Bruno & Barki, 2015). Luxury creates an issue of inequality, as well; it is irrational and indicated inequality, thus it keeps people from engaging into more valuable circles for society. Yet, sustainability intends to provide equal opportunities for everyone. This indicates that due to the image of “inequality producer”, luxury cannot be considered as sustainable (Gardetti & Torres, 2015). However, according to Davies et al. (2012), consumers consider the brand heritage as most important and consider less the issue of ethics and sustainability when it comes to luxury buying process (Alsop, 2006; Caruana, 1997; Ulmer, 2001). This idea is supported by Osgood and Tannenbaum (1955), who state that the degree for preferring the product is linked with the level of the brand controversy; the more one likes the product, the less controversy they perceived. So, through their point of view, there is no impact of their luxury purchase on sustainable development (Gardetti & Torres, 2015), but what is important are the psychological factors such as self-fulfillment through which they show off their wealth and status (Kastanakis & Balabanis, 2011; Troung & McColl, 2011; Veblen, 1899).

### 2.3. ESG - the Path toward more Sustainable Luxury

*“The new disciplines are a greater awareness for the environment and spending with sense, investing in products that fulfil a promise of quality and durability, that are sustainable and here to last. As people become more calculating and careful with their spending, luxury is defined as what it does for them personally across a wide range of benefits that remain. Consumers will be more careful about unnecessary and excessive spending, and more aware of the environment.”*

- Sergio and Pier Luigi Loro Piana, (2010)

By definition, sustainable luxury is “the concept of returning to the essence of luxury with its traditional focus on thoughtful purchasing and artisan manufacturing to the beauty of quality materials and to respect for social and environmental issues” (Gardetti & Torres, 2015, p.4). It should have positive impact over the people and the planet (Girón, 2014). Sustainability aims at respecting people, preserving the planet while generating profit without endangering societal and environmental rights of future generations. Therefore, it is vital to discuss if and to what degree luxury fashion brands' actions uphold sustainability values, as well as how well they accomplish the objectives established by the sustainability principles (Gazzola et al., 2020). According to Muratovski (2015), the strong positive image of the luxury companies can be of great importance for the social change. They can be potential leaders and reasonable influencers for change in sustainability issues (Kapferer, 2010; Godart & Seong, 2015). Therefore, luxury companies should intend to shift the preference of consumers through shifting the focus from status and taste towards altruism (Kapferer, 2010). However, as mentioned before, in the past, luxury consumers were focused on the nature of luxury such as: exclusivity, high price, quality and scarcity, so the luxury companies consider that discussing about sustainability was deemed unnecessary. At that time, only few luxury brands have indirectly served a sustainable message without even knowing it. Yet, the mid-2010s can be considered years of shifting; at this point the purchasing attitudes began to shift towards more ethical approach. The sustainable revolution has started since environmental concerns are top-of-mind for today's customers, who view the environment as a critical problem. A new generation of customers is more likely to support their beliefs with their purchasing decisions, supporting companies that share their values and staying away from those that don't (DiPasquantonio et al., 2021). Wealthy customers seem to be paying much closer attention to what is green and what is not, starting a trend that could expose dishonest actors and potentially hasten emissions reductions (Phan and White, 2022). This is the breaking point, when the luxury companies can no longer ignore the matter of sustainability. So, luxury businesses are approaching sustainability with a broader perspective. They realize that corporate strategy and ESG strategy are now synonymous. Through utilizing Science-Based Targets Initiative (SBTi) techniques, companies have developed environmental targets that involve lowering greenhouse gas emissions and establishing a decarbonization route for the fashion industry. In instance, fashion icons have a long history of being involved with environmental activism (KPMG, 2022). Luxury companies who are taking initiative and making audacious goals to lower GHG emissions and properly source resources are showing considerable leadership in creating a new benchmark for luxury goods sustainability in their own unique way (Anderson, 2022). Moreover, they are examining cutting-edge supply chain solutions, reducing travel, and enhancing digital capabilities, such as using virtual showrooms, to reduce carbon emissions in their operations. Many are working together to support humanitarian causes, fair trade, and ethical corporate practices. Others, meanwhile, are pushing for social change, making sure that fair wages are paid, and emphasizing activities related to diversity, equity, and inclusion. Consequently, they focus on programs dedicated on promoting culturally diverse, non-racist, sustainable, socially authentic practices (Deloitte, 2020; KPMG, 2022).

Numerous luxury brands are investing in blockchain technology because it might be helpful. They even collaborated to create the Aura Blockchain Consortium to give customers a higher level of transparency and a safe way to discover more about the things they purchase. This way, luxury product buyers will be able to verify the provenance and authenticity of their things. By authenticating the lineage, prestige, and storytelling behind the brand, the technology secures the transaction, fostering trust, and enhancing the brand-consumer relationship. The consumer's direct link to the original source makes it easier to rule out the possibility of a fake good (KPMG,2022). Luxury items have traditionally been appealing because of their understanding of their heritage and origin, but customers want assurances about the moral source and authenticity of these things. Both are major issues. In fact, according to a survey conducted by KPMG (2021), 81% of customers think ethical product sourcing and production are important, and 20% acknowledge that they have only recently become concerned about these issues. Therefore, the Covid-19 crisis stimulated the luxury sector to transform even more towards sustainability due to the change in consumer behavior. The contribution to the planet protection and ethics adaptation, will increase their consumers, and therefore overall success of the companies. Affecting \$600 billion in consumer spending and having a \$150 billion global purchasing power, Generation Z and Millennials are crucial to the expansion of the luxury sector (Selig, 2020). According to Jahns (2021), 70% of Generation Z care about buying environmentally sustainable / responsible products. 41% of the Generation Z identify themselves as gender neutral and 38% of luxury consumers are more likely to trust companies that use diverse advertising. Moreover, 87% of Generation Z are more willing to pay more for a sustainable product, among which 33% care about wearing sustainable appeal than before the pandemic (Frey,2020; Adobe, 2019; Statista, 2018). Without doubt, sustainability is a pivotal component of shopper motivation which encourages luxury companies to practice innovative sustainable approaches which sooner or later will reshape their initial business model. The ability to expand efforts and incorporate newness, quality, and Corporate Social Responsibility (CSR) themes will determine the future victors. Environmental, social, and governance issues (ESG) are a permanent part of society. So, new, adaptable business models must be adopted, which puts luxury players at risk because it necessitates greater fixed costs, investments, and a possible reset in operational leverage. Therefore, bigger businesses and conglomerates have an edge, and that will lead to more consolidation in the industry.

#### **2.4. ESG – a Key Focus of Investors**

Environmental, social, and corporate governance (ESG) issues are becoming increasingly relevant, and both businesses and investors are paying attention to them. Investors increasingly include these so-called ESG aspects into their investment strategies, while firms increasingly incorporate them into their organizational, managerial, and decision-making processes. Although individual investors may view these objectives in different ways, the main objective is to steer clear of businesses that engage in destructive behavior and concentrate on those that do good (United Nation Global Compact,2022).

*Figure following on the next page*



*Figure 1: Example of ESG issues*  
(Source: Redqueen, 2022)

Investors also demand companies to report on their ESG practices because this reporting enables businesses to assess the direct effects of their operations on society and the environment. The ESG agenda is developing globally, and by increasing transparency and fostering security and safety, stock markets around the world play a crucial role in encouraging hedge investments (Redqueen, 2022). Consequently, investors devoted to including ESG in their investment approach, believing in the benefits of ESG-focused investing since, with proper management, it probably produces greater returns and risk control. For this reason, companies that adhere to ESG norms send a message to investors that they are resilient, which results in less negative stock returns after a market crash, better supply chain management, and improved corporate governance. They typically need to examine their internal logistics, personnel practices, and supply chains in order to get good ESG ratings. In addition, companies have benefit if they practice and perform better ESG. From risk perspective, better ESGs lead to better risk management, trend following and long-term investment planning. In regard to financing, ESGs “assist” companies in having better capital access, more favorable financing conditions as well as long-term institutional investors. ESGs are also inked with cost savings due to low energy and water consumption, increased employee motivation and productivity, new business opportunities, license retention and higher societal credibility and brand of the company (Redqueen, 2022). Globally, asset managers invest in ESG Funds/ETFs that are highly reputable, diversified and liquid. They anticipate that their ESG-related assets under management (AuM), which were US\$18.4 trillion in 2021, will rise to US\$33.9 trillion by year 2026. ESG assets are expected to account for 21.5% of total worldwide AuM in less than 5 years, with a predicted compound annual growth rate (CAGR) of 12.9%. It symbolizes a significant and ongoing change in the asset and wealth management (AWM) sector (PWC, 2022). Investors aim to focus their thematic investments on assets that could deliver the returns we need and have a favorable sustainability impact. These could be equity ESG Funds/ETFs, or Green, Sustainable and Social Bonds Funds/ETF. The top ESG ETFs offer a simple, practical means of pursuing this objective. An exchange-traded fund, or ETF, is a collection of securities that typically follows a certain index. Shares issued by the fund management are freely tradable on markets and are always open for purchase and sale. The best ESG ETFs provide a quick and affordable entry point into ESG investing (Rogers, 2022).

### 3. METHODOLOGY

The science suggests that investors want to make sure the businesses they are funding use sustainable and moral business practices. ESG considerations give investors a more comprehensive understanding of a company's performance, enabling them to make wiser investment choices.

However, there is a lack of scientific literature on ESGs in luxury industry. Therefore, this paper tends to study the ESG practices among the high-end sectors. The main goal of the research is to find a way to understand ESG approaches of the luxury companies. For better understanding, the authors analyze ETFs – investment instrument that comprises the luxury brands by different industries. Due to the specifics of the research goal, this investigation needed a data that can provide an insight for ESGs within luxury industry and investors' willingness to invest in it. Hence, the research utilized Refinitiv, an American-British global provider of financial market data and infrastructure.

### **3.1. Refinitiv**

Refinitiv (2022) is aware of the financial industry's growing need for transparent, reliable, and comparative ESG data. It is committed to bringing a variety of best-in-class data, analytics, and workflow solutions to market, so that customers may utilize Refinitiv data as the foundation of their ESG process. It aspires to be the trusted and preferred partner for ESG data and solutions. Based on information provided by the company, ESG scores are intended to assess relative ESG performance, commitment, and effectiveness a company's clearly and unbiasedly across 10 categories (emissions, environmental product innovation, human rights, shareholders, etc.). It measures company's ESG performance based on reported data in the public domain. The model captures and calculates over 400 company-level ESG measures of which a subset of 178 most comparable and relevant fields across 10 categories is selected. The platform also offers an overall ESG combined score that is adjusted to account for important ESG disputes that have an effect on the companies covered. This score overlays the ESG score with ESG controversies to provide a comprehensive evaluation of the company's sustainability impact and conduct. The latter is a discount of the ESG Score based on negative media news. Over 7000 companies worldwide have ratings available, with time series data going back to 2002. With more than 630 different ESG metrics and coverage of more than 85% of the global market value, Refinitiv has one of the most complete ESG databases in the business.

#### *3.1.1. Refinitiv Scores' Structure and Methodology*

Refinitiv collects and computes more than 630 ESG measurements at the corporate level, categorized into 10 groups. The final ESG score, which represents the company's ESG performance, commitment, and effectiveness based on publicly available data, is created by combining the 10 categories, weighted according to the number of indicators within each category. The category scores are combined into three pillar scores: corporate governance, social responsibility, and the environment. The pillar weights are normalized to percentages ranging between 0 and 10 (Refinitiv, 2022). The 10 category scores and the ESG controversies score are calculated using a percentile rank scoring technique, which is based on three factors:

- How many companies are worse than the current one?
- How many companies have the same value?
- How many companies have a value at all?

*Figure following on the next page*

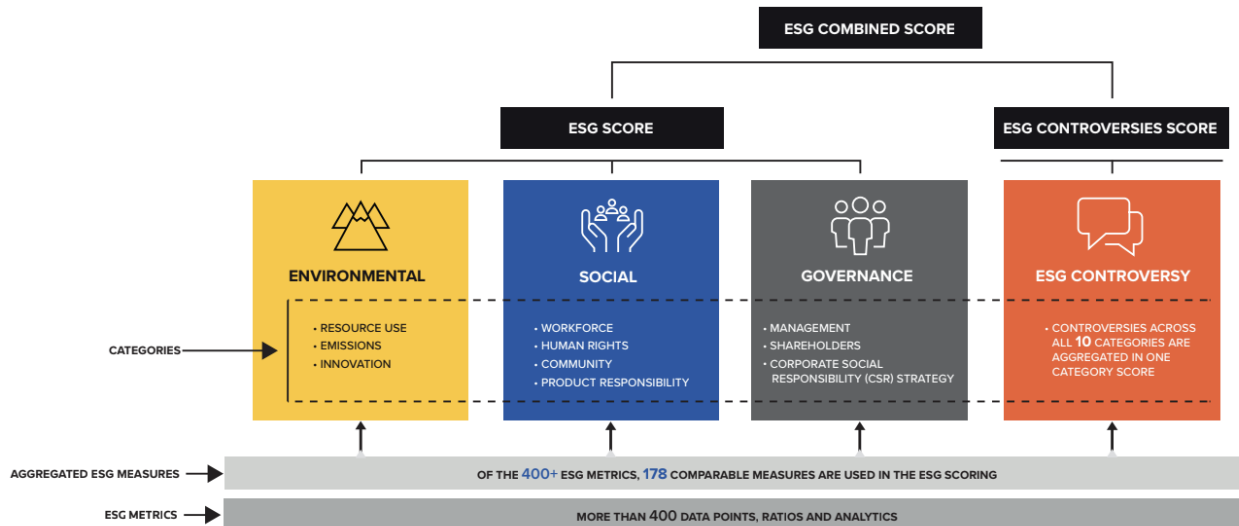


Figure 2: Refinitiv's Categories and Pillars  
(Source: Refinitiv, 2022)

#### 4. RESULTS AND DISCUSSION

The research intends to analyze the ESGs through the EMLES ETF which comprises the luxury brands by different industries, as presented in Refinitiv's platform. EMLES ETF is an investment instrument that comprises luxury brands, that investors invest in, to diversify their portfolios and decrease the risk. This concrete EMLES ETF is analyzed through the top ten luxury holdings (37,57% of the total assets), presented in Figure 3.

Name	Symbol	% Assets
Apple Inc	AAPL	6,93%
The Estee Lauder Companies Inc	EL	6,62%
Nike Inc B	NKE	3,47%
Tesla Inc	TSLA	3,28%
Hermes International SA ADR	HESAY.PA	2,97%
LVMH Moët Hennessy Louis Vuitton SE ADR	LVMUY.PA	2,91%
Diageo PLC	DGE.L	2,88%
Kering SA ADR	PPRUY.PA	2,87%
L'Oréal SA ADR	LRLCY.PA	2,83%
Essilorluxottica ADR	ESLOY.PA	2,81%

Figure 3: EMLES ETF - Top 10 Holdings (37.57% of Total Assets)  
(Source: author's compilation)

The overall ESG score of the EMLES ETF is 6 (out of 10), meaning that these luxury companies need to invest more in assessing net positive impact in the world. Based on the research analysis of the overall ESG scores per category, the results shows that these luxury companies fail more in the G – governance category with score of average 5,75 (out of 10), followed by social category (score of 6,8 out of 10). The environmental category impacts the majority of overall ESG score with 7 (out of 10), yet this score is still insufficient for the investors, who prefer to invest in companies with E – environmental score above 8.

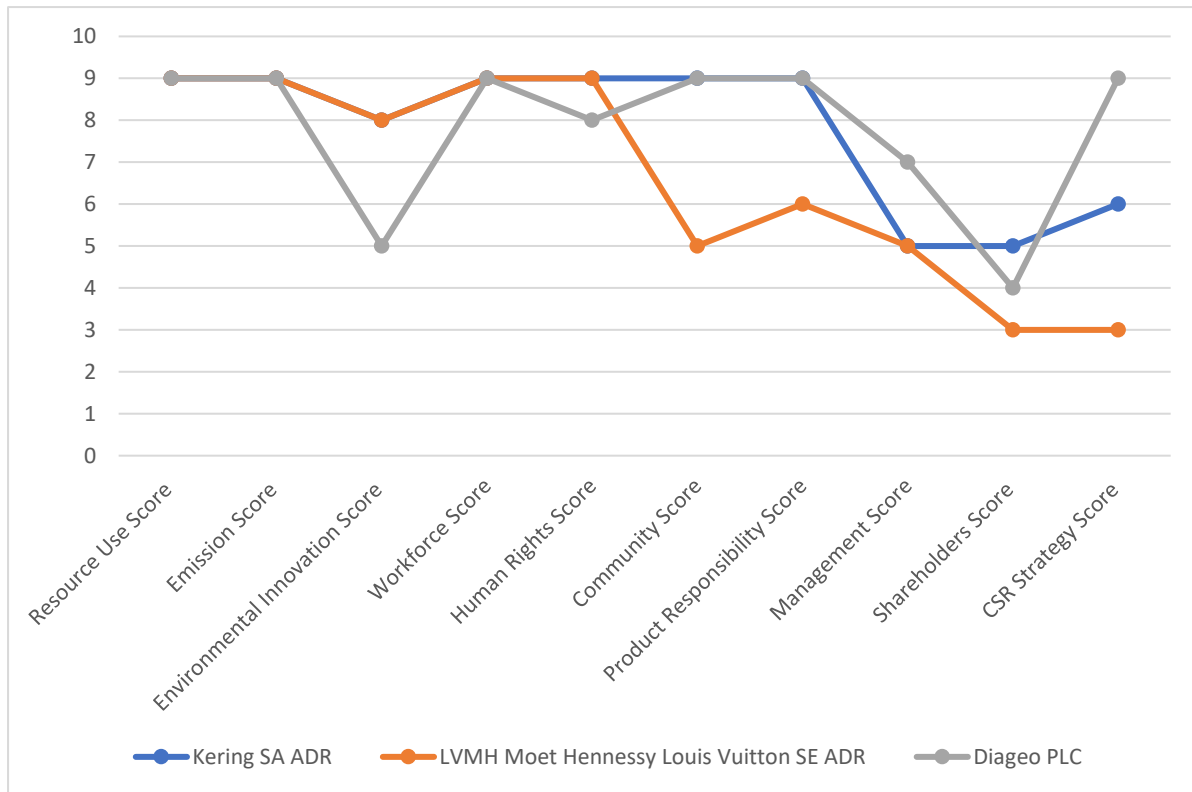
The combined ESG score of the EMLES ETF presents the overall ESG score, discounted for significant ESG controversies, that impacts negatively on the companies' approach towards sustainability. The score is 5 (out of 10), which indicates that the companies are involved in different controversies such as: human rights issues, environment neglect, lawsuits, disputes or fines, negative media image etc. However, the authors are not in position to discuss for this issue since this topic is not subject of this study. Yet, it can be a starting point for further research.

	Overall ETF	Apple Inc	Hermes International SA ADR	The Estee Lauder Companies Inc	Kering SA ADR	L'oreal SA ADR	Nike Inc B	LVMH Moët Hennessy Louis Vuitton SE ADR	Diageo PLC	Tesla Inc	Essilorluxottica ADR
<b>Environmental</b>	7	8	7	8	9	7	7	9	8	6	5
Resource Use Score	8	9	9	9	9	9	7	9	9	5	6
Emission Score	8	9	9	9	9	8	8	9	9	6	6
Environmental Innovation Score	5	4	2	7	8	3	8	8	5	8	2
<b>Social</b>	7	8	7	8	9	8	8	8	9	6	8
Workforce Score	8	9	8	9	9	9	7	9	9	7	8
Human Rights Score	6	7	7	7	9	9	6	9	8	5	7
Community Score	7	8	8	9	9	6	8	5	9	5	9
Product Responsibility Score	6	5	1	7	9	9	8	6	9	5	7
<b>Governance</b>	6	9	4	3	5	7	4	4	7	6	7
Management Score	6	9	3	2	5	6	2	5	7	6	8
Shareholders Score	5	8	4	1	5	8	8	3	4	5	4
CSR Strategy Score	6	8	7	8	6	9	8	3	9	7	5
<b>ESG Score</b>	6	8	5	7	8	8	6	7	8	6	7
ESG Controversies Score	5	0	6	10	10	2	6	2	10	0	0
ESG Combined Score	5	4	5	7	8	5	6	5	8	3	3
<div> <div>Poor</div> <div>12</div> <div>Excellent</div> </div>											

*Table 1: EMLES Luxury Goods ETF (LUXE)  
(Source: author's compilation)*

The Table 1 shows the ESG results per company as part of the top ten holdings of EMLES ETF, which are subject to this research. Out of all analyzed luxury companies, the French luxury design house, Hermes International SA ADR, has a lowest ESG score of 5, with very poor governance and insufficient environmental score especially in the environmental innovation sub-score. This means that they are quite rigid in companies' products, manufacturing processes and marketing as well as internal governing processes. Having into consideration the brand's heritage and reputation, their care toward managing the sustainability performance and impact it is quite concerning. On the other hand, with ratings of 8 out of 10, Kering SA ADR, L'Oréal SA ADR, and Diageo PLC demonstrate the strongest overall sustainability performance. However, if we dig further into their respective category scores, L'Oréal SA ADR does not invest in environmental innovations with score 3 out of 10, which is not in line with the brand that is positioned into luxury ETF portfolio. Moreover, Kering's overall reputation as a luxury conglomerate and ESGs are aliened, yet there is a place for improvement in a long run in the aspect of G-governance. The G-governance category improvement remains as issue for Diageo PLC as well.

*Figure following on the next page*



*Figure 4: ESGs comparison between three luxury companies  
(Source: author's compilation)*

As their main competitor LVMH Moet Hennessy Louis Vuitton SE ADR, the world leader in high quality products, scores overall ESG of 7 out of 10, which is positioned just behind Kering SA ADR and Diageo PLC. Their main weak point is illustrated under the G-governance category, as well as under the S-social category, more precisely their engagement into community activities and product responsibility activities, which directly corresponds with their brand image and position are insignificant and require improvement. Although Tesla Inc is promoted as a leader in designing sustainable system that results in greatest environmental benefit possible, the results do not confirm this approach. Besides their significant environmental innovation score, they fail behind due to low resource use and emission scores under E-environmental category. The company is scored similarly under the S-social and G-governance categories, which does not correspond to the company's mission and vision and the story behind this luxury brand and innovation leader.

## 5. CONCLUSION

The academic literature contains an extensive discussion on the topic of sustainability. However, there is a gap when it comes to understanding of sustainability approaches within the luxury industry. This study shows that luxury companies should focus more on improving the sustainability practices, especially in the part of environmental innovation. However, the S-social and G-governance elements should not be missed. As being leaders from different aspects, luxury companies have strong reputation and huge impact over people. Therefore, they can be considered as a main power in rising sustainability awareness among the audience. Additionally, they owe it to the world to carry out the Year 2030 agenda of UN Sustainable Development Goals, which are activities aimed to end poverty and inequality, protect the planet, and ensure that all people enjoy health, justice, and prosperity. This will lead to win-win situation that they should be seeking through sustainability practices; by trying to transform the world and be more credible in front of investors.



This study has important implications for luxury practitioners. Primarily, luxury companies should be able to adequately identify, understand and use the findings to structure their sustainability approaches more adequate. Furthermore, they should be aware on the importance of ESGs and their pivotal role among the investors. Although no similar studies exist within the literature, the analysis of these aspects will enable luxury companies to assess and strengthen their sustainability approaches and assist in determining which segments of their strategy need to be improved to provide company's sustainability as well.

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## LEGAL ETHICS, PUBLIC ADMINISTRATION AND THE LAW OF AI

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### **ABSTRACT**

*Today, the use of AI in public administration raises important ethical and legal questions. Clear principles must be established to guarantee legality, data protection, equal treatment, transparency and respect for the fundamental rights of users. However, the current ethical approach is insufficient, requiring further legal regulation. It is essential to involve all stakeholders, including governments, companies, civil society and technical experts, to promote dialogue and international cooperation in the governance of AI. UNESCO has highlighted the need to regulate the changes brought about by AI and to put in place ethical values that frame this technology. Political decision-makers are gradually becoming aware of the importance of regulating and legislating on the issue. Clear legal texts are needed to regulate and guarantee the rights of users and stakeholders in the use of AI in public administration. This paper aims to understand the impact of AI usage on public administration and raises a set of questions related to AI law, particularly from the perspective of administrative law.*

**Keywords:** *Administrative Law, Artificial Intelligence Law, Data Policy, Ethics, Legal Principles*

### **1. INTRODUCTION**

This paper aims to understand the impact of Artificial Intelligence (AI) usage on public administration and raises a set of questions related to AI law, particularly from the perspective of administrative law. We observe a scattering of digital rights and emphasize the need for AI law capable of governing the various current issues related to the dissemination and use of this technology. Artificial Intelligence (AI) is transforming the world in unprecedented ways, revolutionizing industries, and reshaping our daily lives. The Annual McKinsey Global Survey on the current state of AI of 2023 has showed the importance of using generative AI (gen AI). This report underlines the explosive growth of gen AI and shows that AI has risen from a topic relegated to tech employees to a focus of company leaders. As AI technology advances, it brings both immense opportunities and significant ethical and legal challenges. The ethical considerations surrounding AI pertain to its potential impact on society, privacy, bias, accountability, and human rights. Meanwhile, the legal aspects focus on establishing appropriate regulations and frameworks to govern AI development and use. Striking a balance between innovation and responsibility in AI requires an approach that addresses the ethical implications and the respects of general principles of law and governance. According to Floridi L, Taddeo M. (2016), “The ethics of data focuses on ethical problems posed by the collection and analysis of large datasets and on issues ranging from the use of big data in biomedical research and social sciences, to profiling, advertising and data philanthropy as well as open data”.

### **2. FROM ETHICS TO LAW OF AI**

AI ethics refers to the study and application of moral principles and values in the design, development, deployment, and use of artificial intelligence systems. It involves addressing questions of fairness, transparency, accountability, bias, privacy, and the overall impact of AI on individuals and society. We argue with Annika Richterich (2018) the need for a nuanced ethical approach that considers both individual and societal perspectives.

In other words balancing between privacy and security is a challenging task that requires careful consideration of various validity claims to normative rightness. The growth of big data has transformed how we look at and use data. Big data has the potential to change the evidence considered by policymakers, leading to more reliance on computer models and predictive analytics. Access to technology-generated data and government administrative data can provide real-time information about society, challenging traditional survey methods. The adoption of big data also challenges governance and policy frameworks. Indeed, the public understanding and trust in big data are also significant concerns. Ethical considerations around personal privacy, data ownership, transparency, and algorithmic decision-making impact public trust. The 'data trust deficit' indicates lower levels of trust in institutions data usage, compared to general trust levels in those organizations. Overall, big data presents powerful opportunities, but addressing ethical, governance, and trust issues is crucial to realize its full potential while avoiding unintended consequences Olivia Varley-Winter and Hetan Shah (2016). The development of AI and Big data require the establishment of data ethics as a new branch of ethics. This branch should be dedicated to studying and evaluating moral challenges related to data, algorithms, and related practices. Data ethics encompasses issues concerning data generation, recording, processing, dissemination, sharing, and use, as well as the ethical implications of artificial intelligence, machine learning, and robotics. In fact, Data ethics goes beyond the existing field of computer and information ethics by shifting the focus from being information-centric to being data-centric. This shift recognizes the moral dimensions of various types of data, even data that may not directly translate into information but can still influence actions or behaviors. The emphasis is on analyzing the content and nature of computational operations, highlighting the interactions among hardware, software, and data, rather than solely concentrating on digital technologies (Floridi L, Taddeo M, 2016). The complexity of ethical challenges posed by data science requires a macroethics approach. Data ethics should be developed as an overarching framework, avoiding narrow, ad hoc methods and addressing the ethical impact of data science consistently and inclusively. By adopting a macroethics perspective, data ethics can provide solutions that maximize the value of data science for societies, individuals, and the environment. The aim is to support morally good solutions in the context of data-centric practices and technologies. According to Olivia Varley-Winter and Hetan Shah (2016) ethical governance “should seek to minimize harm and maximize benefit from the use of data. There are multiple strategic challenges for such governance to address. Decisions involving big data should be based in part on considering risks. Is there a risk in a technical sense? Is there public sensitivity to the data being used, or to how that information will be used? Are there greater biases, sensitivities and risks that arise because the data is not used?”. They argue also that governance needs to fill the gap between what organizations say they will do with big data, and what they say about how they do it. In fact, the strength of the law to deal with ethical objections was raised as an issue.

### **3. LAW OF AI AND PUBLIC ADMINISTRATION**

Artificial intelligence (AI) offers numerous opportunities, including improved healthcare, innovative products and services, and enhanced public services. However, it is crucial for AI to be grounded in values and fundamental rights, such as human dignity and privacy protection. A robust and harmonized regulatory framework is necessary to ensure trust and regulate the rapidly growing innovation. The UNESCO report emphasizes the importance of a strong normative framework to govern AI and its social implications. This framework relies on international and national legal frameworks, human rights, fundamental freedoms, ethics, access to data and knowledge, freedom of research and innovation, as well as the well-being of humanity, the environment, and ecosystems. It establishes a link between ethical values and principles and the challenges and opportunities associated with AI, based on a common

understanding and shared objectives. The European Commission has announced a coordinated approach at the European level regarding the human and ethical aspects of AI, as well as a reflection on the use of big data to foster innovation. The Commission proposes a regulatory and investment-focused approach to promote the use of AI while considering associated risks. The White Paper aims to define strategic options to achieve these objectives but does not cover the use of AI for military purposes. In response, the Council of Europe adopted an Ethical Charter for the Use of Artificial Intelligence in Judicial Systems on December 8, 2018. It mandates that AI remains in the service of the public interest, respecting fundamental rights, ensuring quality and security in personal data processing, transparency, equality, non-discrimination, neutrality, and intellectual integrity. Users must maintain control and remain informed and empowered decision-makers. UNESCO acknowledges that ethical values and principles can guide the development and implementation of policy measures and legal standards based on rights, providing guidance for the rapid development of AI technologies. These ethical values and principles play a crucial role in protecting individuals' fundamental rights, promoting transparency, accountability, and trust, as well as ensuring inclusion and diversity. The report also highlights the need for a participatory and inclusive approach, involving all stakeholders, including governments, businesses, civil society, and technical experts, to promote dialogue and international cooperation in the field of AI. This would address governance challenges and foster beneficial and rights-respecting AI applications. UNESCO has pointed out the need to regulate the changes brought about by AI and the importance of having ethical values that frame this phenomenon in the absence of specific AI laws. There is a growing awareness among policymakers to regulate and legislate on this issue. However, this ethical dimension is insufficient in the current state of affairs as the use of AI in public administration can present a set of risks that require clear legal texts to regulate and guarantee the rights of users and stakeholders. In April 2021, the European Commission proposed the first regulatory framework for AI in the EU. It suggests that AI systems used in different applications be analyzed and classified based on the risk they pose to users. Different risk levels will entail varying degrees of regulation. Once approved, these rules will be the world's first on AI. On June 14, 2023, Members of the European Parliament adopted their negotiating position on the AI law. Negotiations will now begin with EU countries within the Council on the final form of the law. This situation follows the realization of several risks related to AI. Across the globe, the majority of countries have implemented international privacy laws to protect personal data and provide more robust control. These laws are a state response to national and international threats (Puthier L. et al. 2023). Indeed data protection becomes increasingly crucial in order to build trust on the institution and fostering innovation. In the United States for examples there have been 1802 data breach cases from 2005 to 2022, impacting over 422 million individuals. Canada has adopted a risk-based approach to AI regulations, similar to the EU's approach. In 2019, the Canadian government published the "Directive on Automated Decision-Making," emphasizing transparency, fairness, and accountability in AI systems used by federal agencies. Brazil is one of the leading countries in Latin America with regards to AI development and regulation. In 2021, the Brazilian government launched the National Artificial Intelligence Strategy, which aims to promote the responsible use of AI and foster innovation in the field. Like Brazil, the Mexican government launched on 2019 the National Strategy for Artificial Intelligence, which aims to promote the use of AI across different sectors of the economy. In addition, AI development is an essential component of Russia's national strategy. In 2019, the Russian government adopted the National Strategy for Artificial Intelligence, aiming to promote the development, adoption, and export of AI technologies. The strategy focuses on areas such as data infrastructure, education, and research to position Russia as a global player in AI innovation. National AI Strategy in Japan has formulated a comprehensive national AI strategy to foster AI research, development, and implementation.

Data Privacy and Ethical AI: South Korea's AI regulations emphasize data privacy and the ethical use of AI technologies. The country has been working to develop guidelines and policies to ensure responsible AI deployment and address potential ethical concerns. At the same time China have implemented also three data privacy laws to regulate technology and data-driven economy: the Personal Information Protection Law, Data Security Law and the Cybersecurity Law. In 2017, China released its "Next Generation Artificial Intelligence Development Plan,". In India the Information technology Act 2000 establishes the framework for data protection. In Australia the Australia's Privacy Act 1988 regulate the privacy and private sectors. In African countries, we can observe the same trend. In South Africa the Protection of Personal Information Act was adopted in 2013. In Morocco the Moroccan Data protection Act was adopted in 2009. Saudi Arabia has been actively pursuing AI development as part of its Vision 2030 plan to diversify the economy. The country has launched AI-focused initiatives, research centers, and investments in AI technologies. The UAE has been a regional leader in AI development and regulation. The country has launched several AI-related initiatives, including the UAE Strategy for Artificial Intelligence,

#### **4. THE CHALLENGE OF ARTIFICIAL INTELLIGENCE AND ADMINISTRATIVE LAW IN EUROPE**

AI can play an important role in improving public services. For instance, AI-based chatbots can be used to provide automated and personalized responses to citizens, reducing waiting time and enhancing user experience (Smith & Johnson, 2020). AI will have significant impacts on public administration, particularly concerning jobs, political leaders, and citizens' quality of life. It will be essential to manage these transitions ethically and develop appropriate training policies and programs to address the challenges and seize the opportunities presented by AI. Jenna Burrell argues that AI poses a set of constraints in its use. These constraints are inherent in the opacity of the algorithms used. In one of her articles, she examines three distinct forms of algorithm opacity. The first is intentional opacity related to the protection and concealment of companies or institutions, enabling manipulation and deception. The second form of opacity stems from the complexity of writing and reading code, reserved for specialists. The third form of opacity is related to the gap between the mathematical optimization of machine learning and the requirements of human reasoning and interpretation. The impact of AI on public administration can be analyzed through three key areas: jobs, political leaders/public administrators, and citizens' quality of life. Indeed, according to Reis, João & Espírito Santo, Paula & Melao, Nuno, the impact of AI on public administration can be analyzed through three key areas: jobs, political leaders/public administrators, and citizens' quality of life. AI finds numerous applications in the public administration sector, offering opportunities to improve the efficiency and quality of public services. One such application is fraud detection in government financial transactions. AI enables the analysis of vast amounts of data and identifies suspicious patterns and behaviors, contributing to preventing and detecting fraudulent activities. Additionally, optimizing administrative processes is another area where AI can be applied in public administration. Furthermore, implementing AI in public administration may require significant investments in terms of technology, training, and human resources. Developing the necessary skills among public officials and ensuring a smooth transition to AI utilization is necessary. Finally, accountability in case of AI failure is another challenge. When significant decisions are made by AI systems, determining responsibility in case of errors or harm can be difficult. Appropriate mechanisms for accountability and recourse must be established to address these issues. However, despite these advantages, the use of AI in public administration also faces some limitations and challenges. Firstly, one of the major challenges is related to AI ethics. When significant decisions are automated, ensuring transparency and fairness in decision-making processes becomes crucial.

AI can be biased if the data used for learning is itself biased, leading to discrimination or unfair decisions. Another challenge is data privacy. Public administration often collects and processes sensitive data concerning citizens. It is essential to ensure the protection and security of this data to prevent privacy breaches and potential abuses. It should be noted that the pace of technological evolution is not accompanied by a corresponding pace of regulation and legal legislation. Technological and legislative timeframes often lag behind due to the rapid progress of technology and the dispersion of traditional space represented by national laws. This situation is similar to the 1990s when the emergence of cyberspace was linked to the impossibility of regulating its operation due to the speed of its development and the dispersion of the traditional space represented by national laws. Indeed, the technical argument advanced not to regulate AI today was the same argument used by advocates of non-regulation of cyberspace, citing technical reasons related to the issues of transnational dispersion of websites, the configuration of the internet, the attribution of IP addresses, proxy addresses, etc., as well as the inaccessibility of computer data (Karim Benyekhlef and Pierre Trudel, 2009). According to a study conducted by Johan Wolswinkelen in 2022 on Artificial Intelligence and administrative law in European countries, adaptations to the legal systems are necessary to accompany the technological changes observed in the socio-economic environment. The impact of AI systems on the principles of administrative law "depends on the characteristics of the AI system used (e.g., simple reasoning or complex learning) and its role in decision-making (assistance or determining factor). However, each of the principles addressed in the manual "Administration and You" should and must be reconsidered when examining the repercussions of AI and ADM systems on administrative decision-making. While significant attention is given to issues of non-discrimination, non-delegation, and transparency, underlying questions also arise concerning whether strengthening individual rights is sufficiently adequate to address the challenges posed by complex AI systems and their significant consequences." The use of artificial intelligence in administrative decision-making encompasses various approaches, including less complex rule-based methods. A uniform approach to regulating these diverse AI systems might be insufficient due to their diversity. Administrative law governs the relationship between the administration and citizens, and jurisprudence plays a crucial role in this regulation. Administrative law, including the principles of good administration, can play a crucial role in regulating AI systems, filling gaps in privacy and data protection laws. The interactions between administrative law, ADM systems, and AI raise several key questions. As highlighted in Johan Wolswinkelen's study, the use of AI in public administration must respect a set of principles. Firstly, it is crucial that the use of these systems complies with legality and rules of competence, avoiding arbitrary actions. Moreover, the legal framework of automated decision-making systems (ADM) in public administration requires adherence to several principles. Ensuring personal data protection is necessary, conforming to the legal bases established by the General Data Protection Regulation (GDPR). It is also essential that the use of ADM systems is not seen as an illegal delegation of administrative powers, and public authorities remain responsible for the quality of decisions made. The question of freedom of appreciation and hindrance to its exercise arises, especially when machine learning systems are used. Furthermore, it is crucial to ensure equal treatment and prevent discrimination, avoiding biases and considering individual particularities. Similarly, the principles of objectivity and impartiality require the administration to use relevant elements and avoid favorable or unfavorable biases towards certain individuals. The accuracy and quality of input data into the algorithm are essential to avoid errors and decisions based on irrelevant considerations. The principle of proportionality demands that the use of ADM systems is necessary and does not result in an excessive impact on people's rights. Transparency is a key principle, involving the disclosure of public documents held by the administration, as well as information on administrative activities and acts, including AI systems used.



Respect for privacy and personal data protection is also considered, in accordance with data protection laws. The right to be heard guarantees that any person concerned has the possibility to make their observations before a decision affecting their rights is made. Finally, the right of recourse allows anyone to obtain judicial control over the legality of contested administrative acts. In fact, most European Union (EU) member states have not yet adopted specific national legislation regarding the use of automated decision-making systems (ADM) in administrative procedures. However, some member states have taken measures to comply with the EU's General Data Protection Regulation (GDPR). For example, Sweden and Portugal have adopted national legislation on ADM to comply with the GDPR. In some Council of Europe member states, such as Norway and Spain, the regulation of ADM systems is carried out within specific sectoral legislation, in part to comply with the requirements of the GDPR or other regulations related to personal data. For instance, in Norway, the regulation of ADM systems is addressed in the fields of taxation and labor and social protection administration. Regarding policies governing the use of AI systems, most EU member states do not mention self-restraining policies adopted by administrative authorities. Some countries have developed national AI strategies, but these are generally not binding. For example, Turkey, Ukraine, and North Macedonia have adopted national strategies, but they are not legally binding. In other countries, guidelines and guides have been published to promote ethical use of AI, such as the Guide for Responsible AI published by the Agency for Administrative Modernization (AMA) in Portugal. These guides provide principles, best practices, and recommendations for the ethical use of AI.

## **5. CONCLUSION**

The reconciliation between the use of AI systems and the discretionary power of the administration is a recurrent issue. Some countries have explicitly excluded entirely automated decision-making to preserve the administrative discretion power. For example, in Germany and Norway, legislative provisions limit entirely automated decision-making. In Latvia, only minimal fines can be imposed for an administrative offense attested by technical means, to limit the possibilities of determining the circumstances of the offense through technical means. For collaboration between private entities and the administration to develop and deploy administrative decision-making AI systems, certain legal questions arise in some countries. Legal doctrine varies, but in general, administrative powers cannot be delegated to individuals or private entities without legal basis. However, some countries allow limited delegation of administrative powers provided that private actors are placed under the control of a public authority and do not exercise normative power. The increasing utilization of Big Data and AI underline the need to face the challenges concerning privacy, cybersecurity, accountability, transparency and explainability, autonomy and control. Government frameworks, internet governability, national digital and data policy, laws are crucial to protect individuals, organization and the state. Data policies and framework are important in creating an ethical future for data usage and maintaining data integrity, preventing misuse, and establishing user trust. In fact, implementing protocols and rules in data handling and the respect of Ethical principles such as autonomy justice, beneficence and non-maleficence are important in building data policies and digital reforms in order to build transparent, accountable and responsive framework of governing Big Data and AI.

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# AVAILABILITY OF SOCIAL SERVICES IN THE SLOVAK REPUBLIC IN THE CONTEXT OF POPULATION AGING

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## ABSTRACT

*The Slovak Republic is in the golden age from the perspective of the demographic structure, as the productive population reaches its peak, as well as the ratio of the population in the productive age to the population in the pre- and post-productive age. However, in a few decades, the Slovak Republic will be affected by one of the most rapid aging of the population within the countries of the European Union, which will bring several challenges. We can prepare for some challenges, but some are already unavoidable. The changed demographic structure is mainly associated with expenditures on the social and health system, which are experiencing rapid growth causing pressure to strengthen segments such as long-term care, barrier-free premises as well as healthcare. Improving health care and a better quality of life bring results in the form of longer average life expectancy for both men and women. While in 1993, 64-year-old women lived for another 17 years, in 2019 it was 20 years. For men, there was an increase from 14 years to 16 years. According to the long-term forecast, in the year 2100 the life expectancy will increase for 64-year-old women to 28 years and for men to 26 years, which raises the question of how to ensure enough high-quality and affordable health and social long-term care for people dependent on essential help. However, aging will also affect caregivers, causing a shortage of them. In the article, we set ourselves the goal of identifying long-term care providers as well as applicants in the context of the effects of aging. Based on the above, in the article we have outlined the possibilities of using technology for remote care and continuous supervision of a vulnerable group. Innovations in technology complement the social service system and give family members a sense of peace.*

**Keywords:** *Seniors, Social services, Demographic aging, Slovak Republic*

## 1. INTRODUCTION

Aging is not only an individual problem, but also a societal problem. The aging of the Slovak population brings changes in society, to which it is necessary to respond with systemic changes, and at the same time it is necessary to prepare for the growing pressure on the provision of social services that the aging of the population will cause. The main reasons for the aging of the population include, in particular, a low level of fertility that does not reach the rate of reproduction, furthermore a decrease in mortality and, last but not least, the entry of strong population years into the post-productive age. At the beginning of the 1920s, the share of seniors aged 65 and over reached approximately 5% in the territory of the Slovak Republic. The increase in the share of senior citizens accelerated to the 10% mark by the end of the 1980s, and by the end of 2022, the share of seniors reached almost 18% of the total population of Slovakia. According to Šproch, Ďurček (2019), the 20% limit could be broken in the second half of the 2020s, and even 30% in the 2060s.

Age group	2000	2005	2010	2015	2020	2022
Pre-productive age: 0 – 14 years	19,18	16,59	15,28	15,33	15,90	16,09
Productive age: 15 – 64 years	69,35	71,67	72,34	70,22	67,03	66,06
Post-productive age: 65+ years	11,47	11,74	12,38	14,45	17,07	17,85

*Figure 1: Population structure by main age groups*

*(Source: own processing on the basis of data of the Statistical Office of the Slovak Republic)*

The shares of individual age groups change slightly in the short term, but in the long term it is clear that the aging of the Slovak population is accelerating. The Aging Index exceeded 110% in 2022, the Economic Burden Index reached the level of 21.4%, and the Economic Dependency Index of the elderly reached 27%.

Year	Aging Index	Economic Burden Index	Economic Dependency Index
2021	108,3 %	20,3 %	26,1 %
2022	111,0 %	21,4 %	27,0 %

*Figure 2: Indices of age composition*

*(Source: Ministry of Labor, Social Affairs and Family of the Slovak Republic, 2023)*

From the perspective of public policies, not only the indicators of the increase in the number of elderly people in the total population are decisive, but also their health indicators conditioning the self-sufficiency and independence. According to the Statistical Office of the Slovak Republic (STATdat, 2022), the healthy years of life for men over 65 in absolute value in 2019 were only 4.6 years and 4.7 years for women. The Ministry of Labor, Social Affairs and Family of the Slovak Republic assumes in the National priorities for the development of social services that most of the years of their life will be accompanied by limitations in carrying out normal daily activities and dependence on the help of other people. The increasing number of elderly people raises several new challenges, the potential and solutions of which are only gradually being sought. The aging of the population is mostly associated with negative impacts on the country's economy, and only a small group of people see the increasing number of seniors as a potential to create new products, services and job opportunities that would increase the quality of life of this population group. The introduction of social and technological innovations should significantly help older people to remain independent for longer and to have a full and safe life in the natural environment of their own home. Social innovations direct attention to innovative solutions to people's social problems. According to Skokan (2005), they represent the successful creation and use of innovation in the economic and social sphere. From the citizen's point of view, pressure is put on innovations in order to ensure social stability and increase well-being. From a macroeconomic perspective, the introduction of social and technological innovations improves the efficiency of long-term care as well as health systems. The aim of the article is to identify long-term care providers as well as applicants in the context of the effects of aging. At the same time, in the article, we outline the possibilities of using modern technologies for remote care and continuous supervision of an endangered group.

## **2. THEORETICAL BACKGROUND**

Long-term care is made up of a complex set of personnel services, which are oriented towards people with certain health and social characteristics in order to help them with activities in ordinary daily activities, as well as with household care, or when carrying out social activities (Repková, Kordošová, 2023; Kane, 2001; Döhner, Kofahl, 2006; Huber et al., 2009). Husáková (2014) indicates that the state, within its social policy, decides to what extent and in what forms it directs aid to target groups. In the Communication on the EU Strategy in the field of care, the European Commission draws attention to the benefits resulting from the digital transformation of society also for the field of long-term care, which can manifest itself in the possibility of replacing the strenuous and risky actions of the nursing staff with technologies, monitoring of dependent persons, or streamlining the recruitment and training of those who provide care on a formal and informal basis (European Commission, 2022).

The Strategy for Digital Transformation of Slovakia 2030, which the Government of the Slovak Republic approved by resolution no. 206/2019, defines digital transformation as the process of transition from an industrial society to a society based on innovative technologies in the form of:

- Artificial intelligence,
- Internet of things,
- 5G technologies,
- Big data and analytical data processing,
- Blockchain,
- High-Performance Computing.

The mission and importance of social services at the national level is declared in the material National priorities for the development of social services for the years 2021-2030, which was prepared by the Ministry of Labor, Social Affairs and Family of the Slovak Republic. The goal is to positively influence the development of social services in the Slovak Republic in a cyclical manner, by defining the policy for the direction of social services at the national level and subsequently formulating the basic priorities of this development and the prerequisites for achieving these priorities (MPSVaR SR, 2021). However, the aging of the population is not only a matter for the Slovak Republic, as evidenced by the World Population Aging report (United Nations, 2015), which states that almost every country in the world is facing an increase of the number of older people in the population. For this reason, the European Union assigns social services a special role in fulfilling development goals and in promoting such basic values as social protection, social cohesion and territorial cohesion. All the countries of the European Union deal with the issues of development and modernization of social service systems. Social services largely contribute to ensuring the basic rights of citizens of the European Union, such as the dignity and integrity of the citizen. Important documents dealing with human rights in the field of social services at the European level are mainly the revised European Social Charter (1996), the Charter of Fundamental Rights of the European Union (2016) as well as the principles of the European Pillar of Social Rights (2017). Relevant recommendations for the field of social services are contained in the European Charter of Rights and Responsibilities of Elderly People Dependent on Long-Term Care (2010) as well as in the Voluntary European Framework for the Quality of Social Services (2010) (MPSVaR SR, 2021).

### **3. METHODOLOGY**

The aging of the Slovak population brings changes in society, to which it is necessary to respond with systemic changes, and at the same time it is necessary to prepare for the growing pressure on the provision of social services that the aging of the population will cause. In the Slovak context, we perceive a growing group of seniors living alone, the number whose reaches more than 210,000 in the Slovak Republic. According to forecasters, ten years from now, up to 40% of households will be made up of individuals living alone, who belong to the most vulnerable population group. In this context, the aim of the article is to identify providers and applicants for the provision of social services in the context of an aging population generating unsatisfied demand and to outline possible solutions through the use of modern technologies for remote care and continuous supervision of a vulnerable group, thereby improving their quality of life. In order to achieve the goal, we used classic scientific methods, such as the method of comparing knowledge from available literary sources and the method of analyzing existing approaches, extracting common and opposing opinions. At the same time, we used the deduction method to justify individual conclusions.

#### 4. RESULTS

Since 2009, social services have been provided in the Slovak Republic in accordance with Act No. 448/2008 Coll. on social services and on amendments to Act no. 455/1991 Coll. on trade licensing, as amended. The Act on Social Services regulates legal relations and conditions for the provision of social services, the aim of which is to support the social inclusion of citizens and meet the social needs of people in an unfavorable social situation. Social services help socialization and social inclusion and are a prerequisite for the social cohesion of society.

The factors that underline the necessity to intensively deal with issues related to the development of social services include:

- prolongation of human age, while the period of life in which a person needs the help of another person is extended,
- the transfer of the living standard of life in the productive age to the period when a person is gradually more and more dependent on the help of another person,
- the increasing cost of compensating for growing dependence on external aid.

It should be borne in mind that the population of seniors defined as a post-productive population group is a heterogeneous group with differentiated needs. With increasing years, there is a certain limitation in daily activities. If health problems are added to the natural changes in the human body with an impact on the limitation of daily activities, it is necessary to provide more expensive and long-term care. The Social Services Act divides social services into several groups, depending on the nature of the adverse social situation or the target group to which they are intended, namely social crisis intervention services, social services to support families with children, to solve an unfavorable social situation due to severe disability, adverse health status or due to reaching retirement age, social services using telecommunications technologies and support services (MPSVaR SR, 2023). Social services are provided by public and non-public providers:

- in an outpatient form, when the recipient of the social service goes to the provider and after providing the service returns to their natural environment,
- in the field form, which is provided in the natural environment of the social service recipient,
- in the form of residence, which is provided at the social service provider's premises, as a rule, for an indefinite period of time,
- or in another form (for example, telephone assistance).

Support for the use of devices for monitoring and signaling the needs of assistance to dependents is provided in two ways:

- a) in the form of a monetary contribution for the procurement of an aid in accordance with Act no. 447/2008 Coll. on cash contributions to compensate for severe disability,
- b) in the form of social services using telecommunication technologies according to Act no. 448/2008 Coll. on social services in the form of monitoring and signaling the need for assistance or in the form of crisis assistance provided through telecommunications technologies.

As of December 31<sup>st</sup>, 2022, according to the Report on the Social Situation of the Population for 2022, there were 2,293 unique social service providers registered by higher territorial units in the Slovak Republic, who provided a total of 5,733 social services, of which 721 were providers whose founder was a higher territorial unit and 2,376 social services were provided by municipalities and providers established or founded by them. Non-public providers have the largest representation in the provision of social services (2,635).

Social services were provided for 12,723 recipients of home care services and for 46,219 recipients of social services in 1,164 facilities dependent on the help of another person.

Type of facility	Number of places as of 31 <sup>st</sup> December 2022		
	Total	of which the care provided was*	
		residential	residential
Total	49 959	43 429	6 630
of which			
Home of Social Services	11 850	9 943	1 907
Facility for seniors	21 077	20 926	151
Specialized facility	9 719	9 246	473
Nursing service facility	2 619	2 595	24
Day care center	3 559	0	3 359
Supported housing facility	708	708	0
Rehabilitation center	427	11	416

Figure 3: Number of places in social service facilities as of 31<sup>st</sup> December 2022

Note: \*Register of social service providers for the 4th quarter of 2022

(Source: MPSVaR SR, 2023)

Of the total number of recipients of social services in facilities conditioned by dependence on the help of another person, 74% (34,062) were of retirement age. Economically eligible costs for one place in the facility per month were on average €1,137, the highest in residential facilities – specialized facilities €1,742, in social services homes, facilities for seniors and care service facilities ranged from €1,223 to €1,358 on average per month. The lowest economically justified costs were in the day care center, where they amounted to €396. (MPSVaR SR, 2023) Despite the relatively high costs of this type of provided social services, the Slovak Republic shows their inadequacy, which will continue to grow due to the expected demographic development. Slovakia spends 0.9% of GDP on long-term care. Due to aging alone, spending will increase to 1.2% of GDP by 2030. At the same time, the Slovak Republic suffers from a lack of personnel and the departure of workers abroad. Compared to the Czech Republic, we lack approximately 30% of workers in social services. Long-term social care for the elderly in Slovakia does not meet the current needs of the population. Slovakia lags behind significantly in home care capacities and in the number of informal caregivers, i.e. relatives and loved ones who help seniors with their daily activities. In addition, more than half of informal paid caregivers are older than 57 years, which will worsen the situation with the necessary workforce in social services in the long term. Old age is associated with the decline of physical and mental abilities, with the loss of self-sufficiency and the necessary dependence on the help of family members, the environment or social service facilities. However, in recent decades, the Slovak family has seen the disintegration of multigenerational families and the strengthening of nuclear families, which has further increased the feeling of loneliness as well as the risks that threaten the elderly. Relying on the help of family members is becoming increasingly difficult as families have fewer children, live further apart and find employment in the labor market. Although multi-generational living brought different generational perspectives, it created daily natural support and background especially for the elderly. According to the Office of Public Health of the Slovak Republic, every fifth fall results in an injury to a senior, while every fortieth fall results in hospitalization. Falls are the most common cause of injury and the fifth leading cause of death for older people, most often occurring in their home environment. Injuries occur mainly when handling heavy objects, when suddenly losing stability, as well as when slipping or tripping. In the event of a fall, immediate intervention is required, which often prevents death.

In these cases, modern technologies that work on the principle of collecting information about the activity, or passiveness of the supervised person by wireless sensors may be helpful. They are placed in each room and information is sent via the central control unit to the information processing center, where it is evaluated using special algorithms of artificial intelligence. If deviations from the usual behavior are detected, the authorized person is notified via text message, e-mail or sound alarm about the unusual behavior of the supervised person. The sensory network does not violate the senior's privacy and respects discretion, as no cameras or microphones are used in the monitored area. The network consists of a system of motion detectors and sensors that communicate with each other on a wireless basis. The systems also include SOS buttons for calling for help. They are placed on the pendant, central unit and on a separate module with a button, which is usually located in the bathroom, as there is the greatest risk of falls and injuries (Sika, Hajtmánková, Pongrácz, 2023). The protection of human life must be the most important human priority, as every human life has a unique and unrepeatable value. For the senior generation, technologies are an effective tool to help solve the problems of older people. Innovations in technology complement the social service system and give family members a sense of peace. The societal benefit of the use of modern technologies in social services is the increase and improvement of the quality of life of seniors living alone at home, as well as the saving of public resources spent on long-term care in social service facilities.

## 5. CONCLUSION

In less than one decade, the Slovak population in the age category 65+ has increased by more than 241 thousand inhabitants, which means that it is not a marginal group of society, but a population that has specific potential, but also needs that must be met and private as well as public sector needs to prepare for them. Slovakia is still facing one of the most rapid aging of the population among the countries of the European Union. The share of the population older than 79 will increase from the current 3.4% to almost 15% of the total population in 2070, which will mean the fastest percentage increase in the population older than 79 and the second fastest increase in the population older than 64 among the countries of the European Union. The aforementioned assumptions will bring new challenges in the field of social care as well. However, according to the estimates of the Financial Policy Institute (IFP, 2023) of the Ministry of Finance, Slovakia will lack approximately 150,000 people in 50 years to provide today's level of care. At the same time, in the Slovak Republic, there is an increase in the number of people waiting for the provision of services in social service facilities, which show a capacity of more than 90%, which means that the growth in demand exceeds the growth in the capacities of the facilities. The prevalence of residential forms of care negatively affects the availability and efficiency of care and at the same time moves clients far from their community, which creates a negative attitude towards institutional social services. The mentioned fact opens the possibility of increased use of modern technologies, e.g. remote care in the form of remote monitoring devices for people, assistance lines and so on. Modern technologies can streamline and improve the quality of social policy and simplify life not only for vulnerable groups of the population, but also for their family members. People's loneliness and isolation is undoubtedly one of the negative aspects of aging. When preparing its long-term plans, society must include aging policy in its priorities, as the area of social services will have a significant impact on public finances.

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# ANALYSIS OF INVESTMENT OF CROATIAN COMPANIES IN EDUCATION AND INTELLECTUAL CAPITAL AS A FACTOR OF THE COMPANY'S SUCCESSFUL BUSINESS

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## ABSTRACT

*The future development of modern economies depends on the ability of individuals, managers, and creative teams within corporations to learn and consistently enhance their knowledge, creativity, and innovation. The increasing competition and constant changes to which expanding social communities must adapt by improving their skills and knowledge paint the foundational picture of the operating environment. The quantity of a company's assets is becoming less important, while the skill of employees in generating added value for companies is gaining significance. As a result, the pivotal factors for success in the global market are now people, their knowledge, skills, and abilities. Consequently, this paper aims to underscore the significance of investing in education and intellectual capital to ensure successful business operations. Empirical research conducted on a sample of 150 employees from Croatian companies has substantiated the research hypotheses. The research concludes that companies enhance their satisfaction and efficiency by investing in the professional development of their employees. Nonetheless, companies in Croatia do not invest sufficiently in education and professional training, despite the crucial role continuous training plays in achieving workplace efficiency and satisfaction. Employees frequently take it upon themselves to invest in their own ongoing education and professional development.*

**Keywords:** *Education, Intellectual Capital, Business Investment, Business Success*

## 1. INTRODUCTION

Human resource management has evolved into knowledge trading, as knowledge within business organizations now drives business processes. Tangible material values are no longer the key resources; instead, intangible assets in the form of intellectual capital, which cannot be seen and are challenging to measure, have taken precedence. These assets initiate positive changes and yield positive economic effects. Intellectual capital encompasses business factors that extend beyond financial statements, creating additional value within organizations and significantly impacting their long-term profitability and competitiveness. As the global market experiences unpredictable changes, the ability to rapidly adapt successfully hinges on knowledge as a critical factor for strategic economic growth. This paper's goal is to emphasize the importance of investing in education and intellectual capital to ensure business success. Aligned with this, socially responsible businesses invest in employee education, and the cornerstone of a company's operations should be investing in its employees. Such investments should be perceived as advancement strategies for the business, rather than mere expenses.

Simultaneously, education contributes to sustainability, making increased intellectual capital a crucial factor in the long-term sustainable development of national economies. Effective management of intellectual capital fosters greater competitiveness in the global market, enhances the economy's reputation, and sustains a company's long-term success.

## **2. THEORETICAL APPROACH TO RESEARCH**

### **2.1. The Importance of Knowledge in Business Organizations**

Information and knowledge have emerged as pivotal factors for gaining competitive advantage and achieving business success. The rapid development of telecommunication technologies has facilitated quicker information and knowledge transfer. The heart of the new economy lies not in technology itself, but in the advancement of knowledge and intellectual capital. Knowledge amplifies returns to scale and stands as the most significant production factor demanding investment. A symbiotic relationship exists between knowledge and investments; investments can bolster knowledge, and knowledge can expedite new investments, resulting in boundless growth (Borozan, 2006: 432). Throughout history, knowledge has been pivotal for societal development and successful national economies. In the modern economy, knowledge serves as a fundamental economic resource, driving development and enabling the triumph of companies and national economies. This shift in emphasis towards employees and their skills signifies that employees are now pivotal for success in the global market. Consequently, investments in employee knowledge, skills, and abilities are on the rise (Kolaković, 2003: 97). It's evident that intellectual capital now steers the "new economy," fundamentally rooted in knowledge. The concept of intellectual capital in economics first surfaced in the early 1990s with Thomas Steward's article (1991) titled "Brainpower." This notion continues to pique economists' interest globally and remains relevant today (Steward, 1997). A distinguishing feature of intellectual capital is its intangibility, posing challenges in determining its economic value (Kolaković, 2003). Multiple studies affirm the crucial role of investing in intellectual capital. Economies that invest in knowledge exhibit the highest levels of competitiveness and possess a substantial welfare index (Sundać et al., 2016), a significant indicator of socially responsible business toward broader society (Vinšalek Stipić, 2020). Knowledge amalgamates experiences, values, and competitive insights to bestow a competitive edge in the business arena. In organizations, knowledge is enmeshed not only in documents and databases but also in organizational processes, procedures, and norms. Modern companies have transitioned from an industrial to an information technology-based foundation, anchoring their operations in the knowledge economy. The market prioritizes knowledge development and retention, giving rise to knowledge management functions—essentially, the management of intellectual capital, an intangible resource. Knowledge bifurcates into explicit and experiential forms. Explicit knowledge is articulated and transferable, residing in books and accessible through education. Experiential knowledge, conversely, stems from personal experience and encompasses factors like emotions, ethics, attitudes, instincts, and imagination. While personalized, experiential knowledge remains largely untapped, making it unusable for generating new business value. Both knowledge types are disseminated through interactions between individuals, involving four processes—socialization, externalization, combination, and internalization (Frappaolo, 2002):

- 1) Socialization is the process of transferring hidden knowledge between individuals before it becomes explicit. Socialization as a process also translates into ways of working, norms and values.
- 2) Externalization is the process of transforming experiential knowledge into explicit knowledge. It is about the codification of implicit knowledge on some permanent medium that has a standardized physical form. In this way, the organization protects itself from the loss of accumulated implicit knowledge from an earlier period.

- 3) Combination is the process of converting one explicit into another explicit state. Different concepts are combined into larger bodies of knowledge.
- 4) Internationalization is a process in which explicit knowledge is transformed into implicit knowledge. These strategies are not useful if workers are not ready to share and transfer knowledge.

Organizations must foster an environment that encourages knowledge transfer, with an organizational culture reflecting values, norms, and attitudes aligned with socially responsible business strategies. OECD economists delineate four knowledge types (2001: 78):

- 1) Know what: knowledge as factual information
- 2) Know why: knowledge as a cause or foundation
- 3) Know how: knowledge as specialized skills and abilities
- 4) Know who: knowledge identifying individuals

In the past decade, companies have invested in information technology to acquire explicit knowledge, manage and qualify it, and ensure its enduring transfer. Experiential knowledge confers a competitive edge on business organizations, enhancing their success within the market environment.

## **2.2. The Importance of Intellectual Capital in Business Organizations**

Although the term "intellectual capital" has been recognized for many years, its comprehensive development process commenced only a decade ago. In today's landscape, where knowledge serves as the primary raw material, intellectual capital has ascended to such a paramount role that companies must optimize its utilization for maximum success. Intellectual capital, an intangible asset, drives competitive dynamics among companies, with each seeking to leverage it for a competitive edge and advancement. It embodies a company's collective knowledge, experience, expertise, capabilities, and skills, all directed towards achieving superior outcomes, delivering enhanced services, or crafting other intangible values for the organization. Intellectual capital constitutes the knowledge inherent within a company, harnessed to establish competitive advantages. It encompasses everything that employees collectively possess, sharpening the company's competitive edge (Bontis, 2001). This capital translates knowledge into profits and contributes to the generation of value-added within companies. The aforementioned definitions underscore the distinction between knowledge and intellectual capital. Notably, intellectual capital signifies knowledge in action, a dynamic human process. Only when intellectual capital metamorphoses into something valuable and substantial—beneficial for both the company and consumers—does knowledge truly materialize as a valuable asset, transforming into the company's intellectual capital (Kolaković, 2003). The foundation of a company's intellectual capital is knowledge itself. The term "intellect" conveys that intellect, or knowledge, is the source of this capital, manifesting in two practical forms (Jelčić, 2004: 22):

- 1) Material Form: Evident in plans, patents, blueprints, manuals, corporate standards, databases, rules of procedure, licenses, etc.
- 2) Intangible Form: Resides in the minds of employed workers, encompassing knowledge, ideas, leadership, and problem-solving abilities.

In scholarly literature, the term "Intellectual Capital – IC" is used interchangeably with intangible assets of a company, which profoundly influence business success yet remain unexpressed in balance sheets, sometimes referred to as goodwill. Nevertheless, these assets bestow value within the organization, significantly influencing long-term profitability and competitiveness.

Their evaluation and tracking in accounting prove challenging (Sundać and Krmopić, 2009). Beyond this, intellectual capital embodies the inventive application of knowledge in production and other creative endeavors, transforming intangible assets such as knowledge into valuable products and services. Experts delving into the realm of intellectual capital and intangible assets emphasize that value and competitive advantage are derived from refining knowledge flow within the organization and translating that knowledge into tangible value, characterized as relational capital, human capital, and structural capital. Although definitions of intellectual capital may vary, most theorists converge on the following structure (Sundać and Krmopotić, 2009: 35):

- 1) Human Capital
- 2) Structural (Organizational) Capital
- 3) Relational (Consumer) Capital

Intellect underpins human capital, while routines and interconnections within the organization drive structural capital. External relationships play a pivotal role in relational capital. Human capital is challenging to codify, followed by relational and structural capital. The crux of intellectual capital lies in the value creation process. Throughout history, the creation of value has witnessed the interplay between old and new values, extant and desired values. Value emerges by harmonizing intellectual capital components, with their value residing in interconnections, rather than individual traits. Business organizations achieve singularity and success by amalgamating diverse intellectual capital components. Isolating human capital from structural and relational capital obscures the potential for monitoring correlations and synergies across intellectual capital categories and components. Each listed intellectual capital element functions autonomously, yet their cohesion generates intellectual capital (Sundać and Krmopotić, 2009). It is noteworthy that various models exist for categorizing and measuring intellectual capital's efficacy, all striving to facilitate the management of intangible business factors. The essence of intellectual capital management lies in the meticulous care and enhancement of these unseen but pivotal elements for future business. This endeavor demands daily attention, equivalent to that dedicated to physical and financial capital.

### **2.3. Management of Knowledge and Intellectual Capital in Business Organizations**

The value of knowledge is contingent upon its application, and knowledge management constitutes a multifaceted and dynamic process encompassing management, technology, goals, strategies, and human elements. In today's context, knowledge management rightfully assumes the mantle of modern management. It encompasses several facets, including (Gutić and Matković, 2013: 471):

- 1) Application of information technology for collecting, storing, and applying targeted knowledge necessary within the organization (synonymous with artificial intelligence, expert systems, and databases)
- 2) Organizational changes founded on knowledge, encompassing not only education but also employee experience
- 3) Intellectual capital management (embodied in a learning organization).
- 4) Management rooted in knowledge-based responsibility
- 5) Knowledge-based change management

Knowledge management involves strategies and tactics for managing human capabilities. It's a comprehensive endeavor to generate, gather, organize, distribute, and employ knowledge, supported by appropriate technology. Knowledge management orchestrates coordination, storage, transfer, and application of knowledge, linking knowledgeable employees with those in need of similar knowledge, thereby enhancing organizational efficiency.

As such, organizational knowledge management is a process encompassing the exploration, identification, generation, systematization, storage, application, and transfer of information and knowledge. This enables employees to create, refine, and apply knowledge, ultimately securing competitive advantages. The management process integrates personnel, innovation, strategic, project, and communication management with the indispensable application of information technologies, a cornerstone of the knowledge economy. Knowledge management necessitates various competencies, including intellectual or human capital within the knowledge society. Management serves to amplify the avenues for knowledge exchange, establishing fresh channels for knowledge dissemination. Knowledge workers and knowledge managers emerge as central figures, defining a knowledge society predicated upon the knowledge economy. Intellectual capital, encompassing human capital, structural capital, and relational-consumer capital, governs company operations. Recognizing this "hidden capital" as the principal driver, investing in it becomes imperative for market success and positive operations (Sundać and Krmpotić, 2009). The contemporary world is governed by intellect and knowledge—contained within employees' minds and manifesting through diverse ideas, visions, problem-solving abilities, teamwork, etc. Employees represent intelligent contributors, tasked with generating profits, engaging in problem-solving, receiving high-level education, perpetually investing in their knowledge, assuming autonomy and responsibility, displaying diligence and motivation, while remaining adaptable, flexible, self-assured, and persistent. Structural capital encompasses intellectual property (e.g., patents, licenses, franchises) and organizational processes (e.g., plans, blueprints, regulations), unlike human capital, this capital can be quantified. Relational (consumer) capital segments into business networks, brand-consumer relationships, and consumer interactions. IBM, the world's third most successful brand, exemplifies the potency of intellectual work, with 94% of employees engaged in some form of intellectual activity. Once a competitive edge grounded in intellectual capital is established, continual investment in intellectual capital (via education, employee development, research, etc.) becomes requisite for sustainability (Sundać and Krmpotić, 2009). Successful intellectual capital management demands perpetual enhancement of each intellectual capital category's performance, coupled with refined interaction methodologies. Management must introduce techniques that foster the transformation of individual abilities into business value, addressing obstacles hampering optimal potential utilization. The culmination of intellectual capital elements' synergistic amalgamation yields a multiplier effect, engendering added value and competitive advantage. Realizing this synergy necessitates a new perspective on strategic management, fresh taxonomy, innovative management approaches, and novel measurement systems (Jelčić, 2004: 31). Continuous analysis of potential gaps between set and achieved goals informs further actions and strategies. By continually addressing weaknesses, a positive trajectory for business enhancement is forged.

### **3. PREVIOUS RESEARCH**

Education stands as the cornerstone of society and the knowledge economy, with unquestionable significance attributed to investing in it. The correlation between education and enhanced quality of life is well-established. A 2014 research conducted in Croatia involving students revealed that 46% hailed from families with at least one parent holding higher education, 56% from families with a parent possessing a high school education, and 3% from families where only primary school education was present. In Croatia as a whole, Eurostat data for 2021 indicates that over 35% of individuals aged 24 to 35 with a high level of education reside in the country. The average figures are exceeded by Zagreb, boasting 50% of the highly educated population. Croatia aims to reach a 45% threshold for young highly educated individuals by 2030 (MZiO Croatia, 2021). Mobilizing all available intellectual capital and company potential is a requisite for optimizing value creation and providing maximal benefits

for shareholders and owners (Jelčić, 2004). Although total revenues and profits remain pivotal indicators in annual business reports, the evolving realization is that these traditional benchmarks present a diminishingly accurate depiction of company performance. Modern company success hinges not solely on amassed material assets but on the company's aptitude to efficiently generate maximum new value added (Sundać and Krmpotić, 2009: 30). Prior research within Croatia often highlights that companies continually investing in their employees experience higher success (Vinšalek Stipić, 2020). However, it is equally apparent that companies often remain oblivious to the significance of investing in intellectual capital (Grabić et al., 2021). A study conducted by Grabić et al. (2021) involving 61 small companies in the Split-Dalmatia County of Croatia found that 86.89% of companies recognize the importance of investing in intellectual capital growth. The findings also reveal that 40.98% of companies allocate resources towards training and developing new work-related skills, while 21.31% do not invest in further education and training. Of note is the 27.87% of companies investing in their managers. Vinšalek Stipić (2020) conducted research aiming to ascertain the contribution of employee knowledge investment to a company's profitability. Although small statistical correlations were observed, the connection exists, leading the author to conclude that investing in employee education fosters satisfaction and improved efficiency. Kolaković (2003) concludes that research has yielded a consensus on the terminology and vocabulary used to describe intellectual capital, with terms such as human, structural, and consumer capital, along with experiential and explicit knowledge, being integral to crafting a new theory. Nevertheless, much remains to be accomplished in the realm of knowledge and intellectual capital management and measurement (Kolaković, 2003: 940). Sustainable competitive advantage constitutes the objective of every company, as it results in above-average profits conducive to the imperatives of contemporary competitive business realms: sustainability, constant growth, and economic entity (company) development (Sundać et al., 2016: 195).

#### **4. HYPOTHESES AND METHODOLOGY OF RESEARCH**

Frequently, company owners and managers remain oblivious to the significance of investing in employee education and professional development, as well as the vital role of intellectual capital in securing the company's long-term financial success. This issue underscores the need for the present research. The research endeavors to substantiate the importance of investing in employee education and professional growth for achieving employee satisfaction and the enduring profitability of the company. Drawing from the problem and research goal, the following hypotheses were formulated:

- H1: Investing in the education and professional development of employees significantly contributes to workplace efficiency and satisfaction
- H2: Companies in Croatia adequately invest in education and professional development
- H3: Employees in Croatia perceive a necessity for continuous training, routinely applying such training in their work
- H4: Employees in Croatia predominantly invest in their own professional training, finding online training to be practical and beneficial

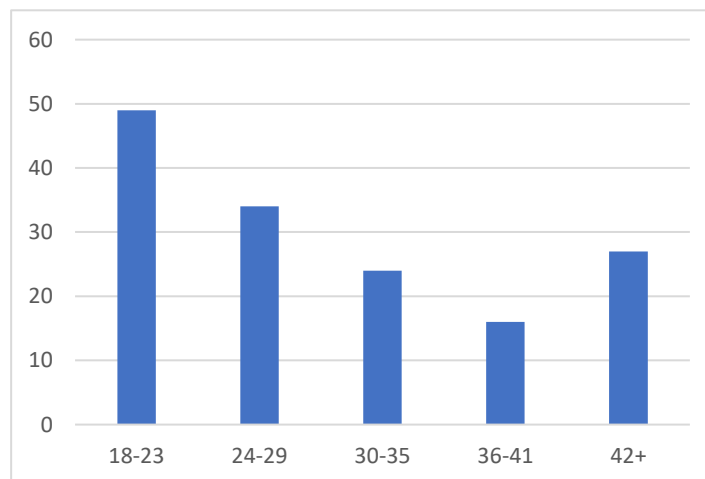
Empirical research to validate these hypotheses involved a sample of 150 respondents employed within the public and private sectors of the Republic of Croatia. Data collection transpired through an anonymous survey disseminated via social networks. The survey questionnaire, crafted for this research, consisted of ten questions categorized into two groups: questions about employees and questions about the company. A Likert rating scale was employed, featuring the following options: 1 – I strongly disagree; 2 – I disagree; 3 – I neither agree nor disagree; 4 – I agree; 5 – I strongly agree. Data collection spanned three months, from February 1 to May 1, 2023.



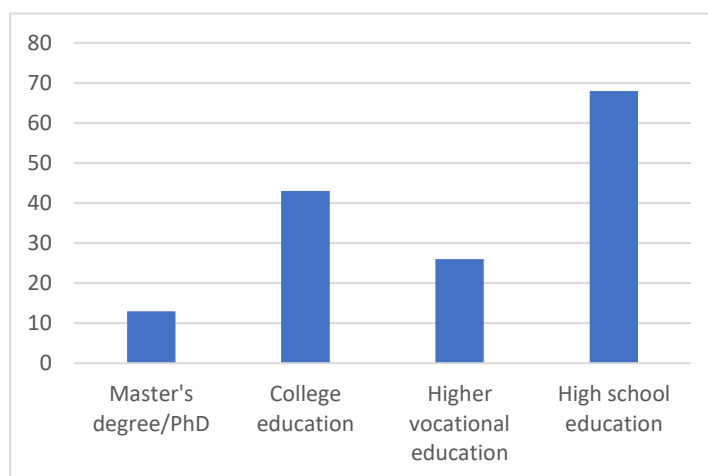
The statistical program SPSS 26.0 was employed to validate the main hypothesis, with the independent variable being the company's investment in employee education and professional development (EducaC), and the dependent variable being employee satisfaction at the workplace (SatisE), both derived from the survey questionnaire. The research solely encompassed adult participants.

## 5. RESULTS OF THE RESEARCH

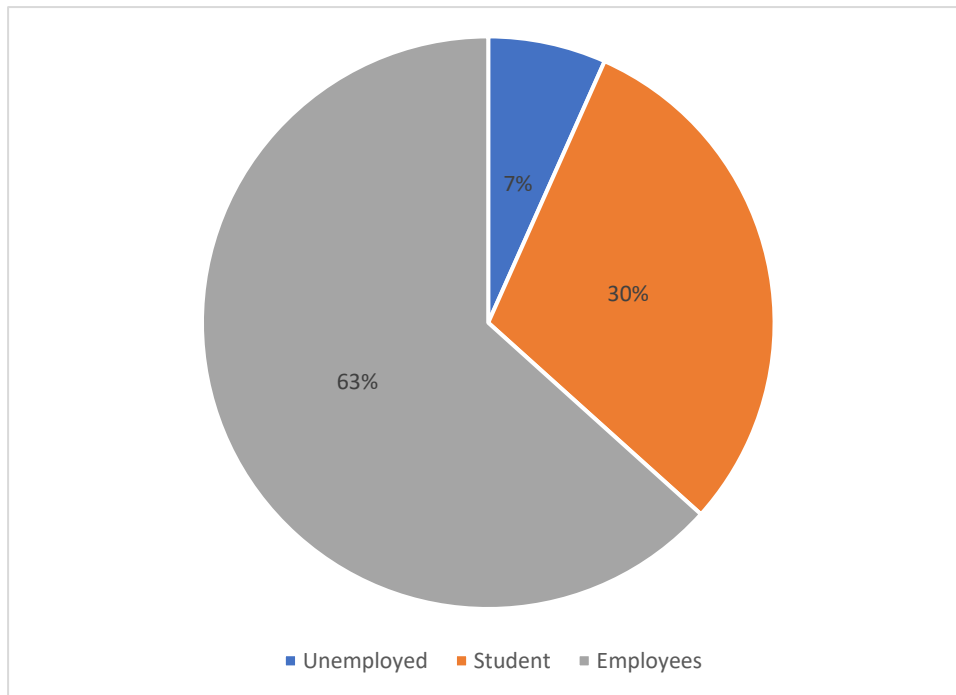
The research encompassed participants of various genders: M - 22 (15%) and F - 128 (85%). Age distribution and respondents' educational backgrounds are depicted in graphs 1 and 2, while the composition of employees according to employment status and the sector of the company they work for is illustrated in graphs 3 and 4. The data visualizations reveal that 55.33% of respondents are under 30 years old, with the age group of 36-41 accounting for the smallest portion, 10.67% of respondents. In terms of education, respondents span various categories: those with at least a Master's degree/PhD constitute 8.67%, followed by higher vocational education at 17.33%, college education at 28.67%, and the highest proportion of respondents with a completed high school education at 45.33%. Regarding employment status, 63.33% of respondents are employed, while 30% are students. In terms of sectors, 63.33% are employed in the private sector and 40.67% in the public sector.



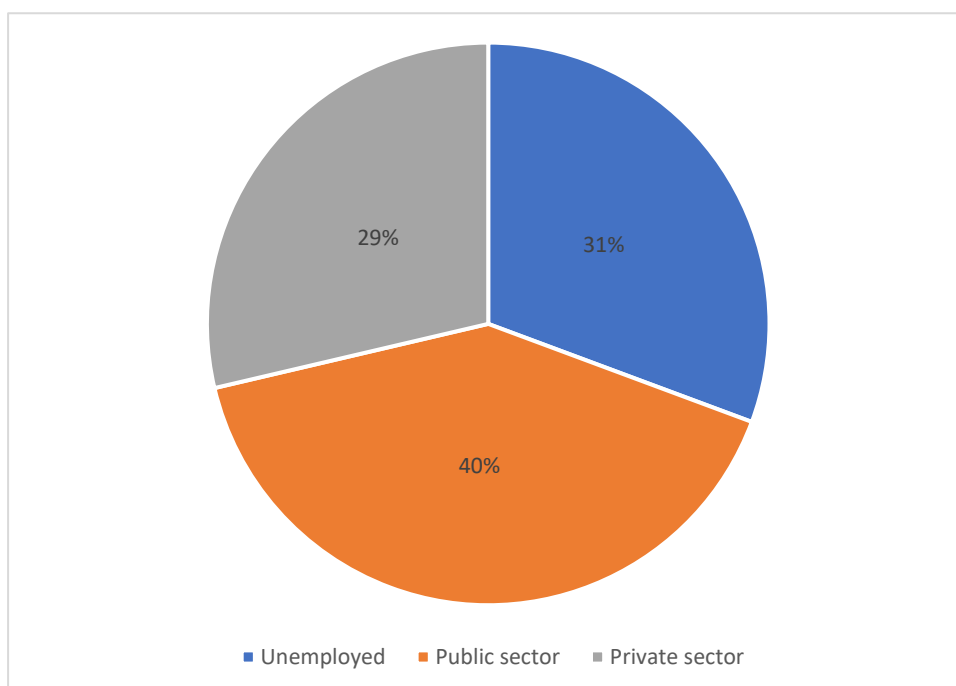
*Graph 1: Age of the respondents  
(Source: Author's own research)*



*Graph 2: Education of the respondents  
(Source: Author's own research)*



*Graph 3: Structure of respondents according to employment  
(Source: Author's own research)*



*Graph 4: Type of company according to the sector in which the respondent works  
(Source: Author's own research)*

To validate the primary hypothesis, a Pearson correlation analysis was conducted, resulting in a coefficient (R) of 0.601, as illustrated in Table 1. A robust positive correlation is evident between a company's investment in education and professional training and the satisfaction of its employees in the workplace. The coefficient of determination reveals that 25.1% of the variation in the dependent variable (employee satisfaction, SatisE) can be attributed to the independent variable (enterprise investment in education and professional training, EducaC), underscoring the model's significance.

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,601 <sup>a</sup>	,251	,246	,85582	,251	49,664	1	148	,000	2,343
a. Predictors: (Constant), EducaC										
b. Dependent Variable: SatisE										

*Table 1: Regression model investment in education and employee satisfaction  
(Source: Author's own research)*

Through variance analysis of the regression model, an assessment of the differences between population averages was performed at a significance level of  $p < 0.001$ . The observed F ratio and degrees of freedom ( $F_{1, 148} = 49.664$ ) indicate a statistically significant regression model. The Durbin-Watson statistic affirms the absence of autocorrelation errors. Additionally, graph 5 illustrates that over 60% of respondents hold the belief that investing in their own training enhances their value as productive employees. Approximately 60% strongly agree, while 24% agree with this statement. A mere 3% of respondents hold an opposing view.



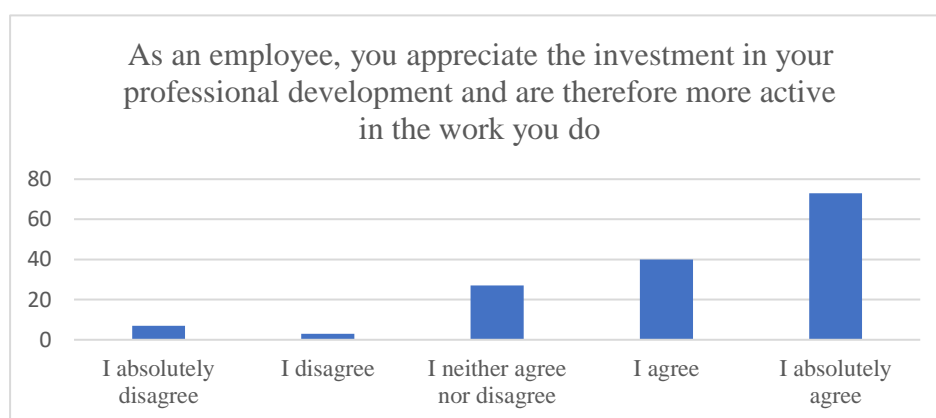
*Graph 5: Investment in education and employee efficiency  
(Source: Author's own research)*

Graph 6, illustrating the impact of investing in education on employee satisfaction, reveals a significant trend. The majority of respondents express the belief that investing in education notably influences their satisfaction within the workplace. Precisely, 50% of participants align with this sentiment, while an additional 26% unequivocally agree with the notion. This alignment underscores the perceived connection between educational investment and personal contentment in their roles.



*Graph 6: Investment in education and satisfaction at the workplace  
(Source: Author's own research)*

The subsequent graph further underscores the prevailing sentiment among respondents regarding the value of investing in education. A noteworthy majority acknowledge that such investment contributes to their enhanced success and utility within the workplace. The graph distinctly reflects this sentiment, with half of the participants (48%) steadfastly agreeing, of which 26% affirmatively believe that their workplace effectiveness and utility are positively impacted by educational investment. However, a smaller proportion (6%) holds an opposing viewpoint, expressing skepticism about this relationship.



*Graph 7: Investment in education and activity at the workplace  
(Source: Author's own research)*

Based on the detailed analysis presented in graphs 5 to 7, it becomes evident that respondents share a consensus regarding the positive impact of training on their professional growth and efficacy as employees. This belief corresponds with heightened workplace satisfaction and increased engagement in their roles. The regression model analysis (EducaC and SatisE) strengthens this correlation, revealing a robust positive link (0.601) between a company's investment in education and professional training and the contentment of its employees in their workplace. Consequently, it can be confidently deduced that the findings from both the graphs and the regression model affirm the validity of Hypothesis H1, which postulates that investing in the education and professional development of employees significantly contributes to enhanced efficiency and satisfaction in the workplace. Continuing with our analysis, we turn to the examination of Hypothesis H2 – the extent to which companies in Croatia invest adequately

in education and professional development. To gauge the significance and scope of such investments by companies in Croatia, graph 4 offers valuable insights.



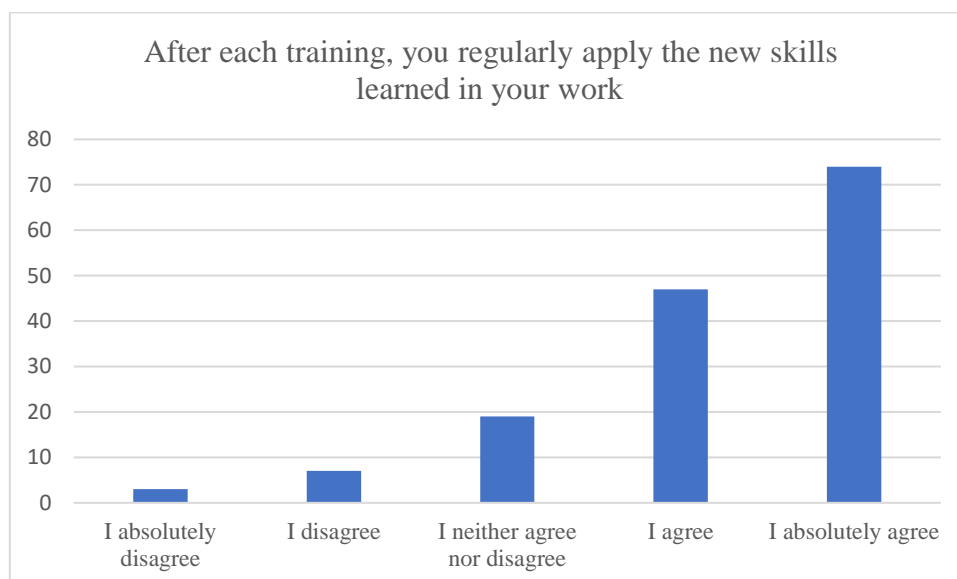
*Graph 8: Investment in education and professional training  
(Source: Author's own research)*

When considering whether employers consistently invest in business training, respondents' average response hovered around the "neither agree nor disagree" mark, yielding an average score of 3.05. Subsequently, in response to a query regarding employee training, the average response, at 2.81, leans more towards disagreement. A notable majority of respondents do not concur with the statement that companies provide them with training once or twice a year. The graphical representation underscores that while companies still prioritize the professional advancement of individual employees, the respondents' average response to this assertion (3.68) aligns with agreement. From this, we can conclude that Hypothesis H2 is partially substantiated. Respondents' average response concerning the adequacy of investment by Croatian companies in education and professional training gravitates towards "neither agree nor disagree." Proving the hypothesis H3 – the conviction among Croatian employees that continuous training is essential and routinely applicable in their work – we refer to the analyses presented in graphs 9 and 10. Graph 9 affirms that a substantial portion of respondents (78 individuals) strongly believes in their need for professional development, with an additional 51 respondents expressing agreement with this assertion.



*Graph 9: Employees and the need for professional continuous training  
(Source: Author's own research)*

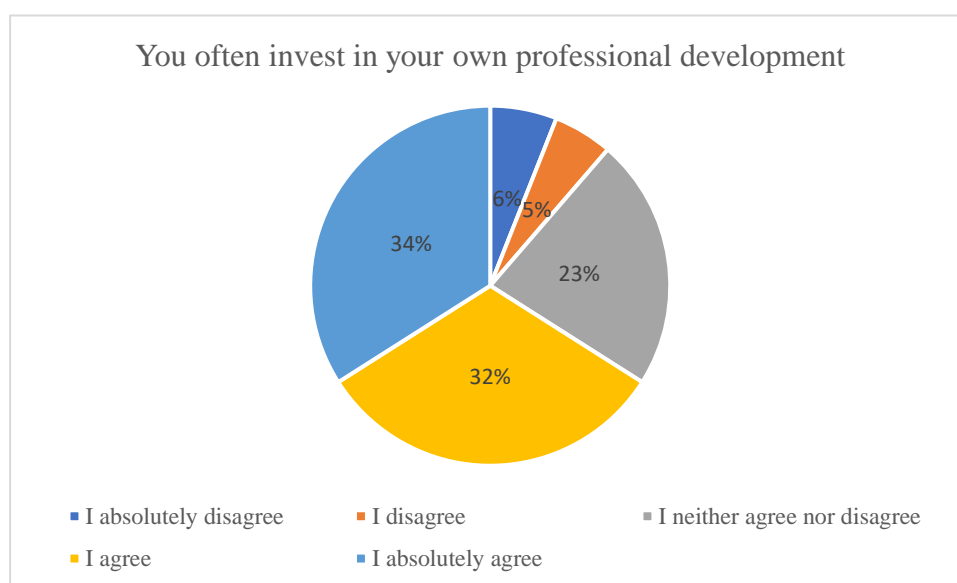
From the results of graph 10, it is also clear that employees use the new learned skills in their work. More precisely, 72 of them absolutely agree, that is, 47 agree that after each training, they regularly apply the new skills learned at work.



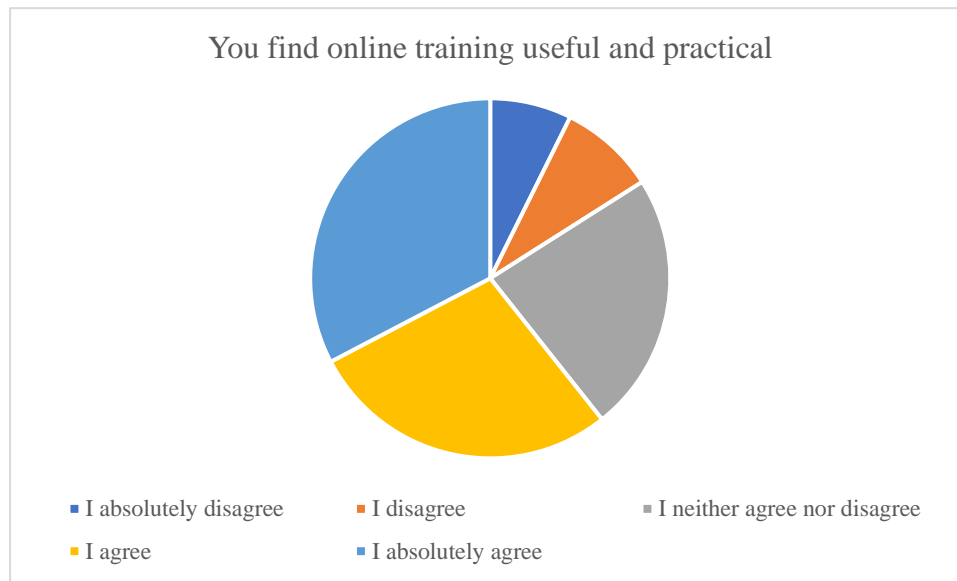
*Graph 10: Application of learned skills of employees at work  
(Source: Author's own research)*

The obtained results confirm hypothesis H3 that employees in Croatia believe that they need continuous training that they regularly apply in their work. Therefore, the majority of respondents believe that they need training, which they later regularly apply in their work.

Proof of hypothesis H4 – Employees in Croatia largely invest in professional training themselves and consider online training useful and practical, is shown below. From graph 11, it is evident that employees most often invest in their own professional training, 50 of them absolutely agree, while 48 agree with the statement that they invest in their own additional professional training.



*Graph 11: Independent investment of employees in professional training  
(Source: Author's own research)*



*Graph 12: Usefulness and practicality of online training*  
(Source: Author's own research)

The majority of respondents believe that online training is useful and practical, which is evident from graph 12, 48 of them absolutely agree, that is, 42 agree with the stated statement. Looking at the test results shown in graphs 11 and 12, it can be concluded that hypothesis H4 is confirmed, employees in Croatia largely invest in professional training themselves and consider online training useful and practical.

## 6. CONCLUSION

Intellectual capital is one of the most important social subsystems, which, due to its scope and influence, is gaining more and more importance in the development of modern society. What used to be capital and manual labor in the industrial economy, for the new economy it is intellectual capital. Intellectual capital has become an extremely important resource for achieving productivity and competitive advantage in the market by creating added value of the company. Knowledge is no longer just one of the resources in the organization. It is the basic capital of what we are now and what we can be. In the past, competitiveness was based on the possession of specific resources or the ability to minimize costs. Now competitiveness is produced by knowledge. That is why today's business organizations must direct more and more financial resources to education and skills acquisition. Only those business organizations are successful that continuously create new knowledge and share it with all levels of management and operations, and quickly implement it in new business processes. The industrial era of production forced the creation of goods according to the principle of efficiency, economy and productivity through the economy of volume, but in recent times this is no longer enough. The concept of creating added value is now based on knowledge as a powerful tool that cannot be stolen or copied. The success of modern companies depends on the perception and recognition of knowledge, as well as quality management of knowledge and its adequate use. Therefore, knowledge should be nurtured, invested in the renewal of knowledge and the acquisition of skills as a prerequisite for achieving a competitive advantage. Harmony is achieved by evaluating human knowledge in business organizations with the concept of a satisfied customer. Only a satisfied and loyal customer provides security for the company's development in the desired direction. The new economy, the knowledge economy, puts knowledge in the foreground, as an economic resource, which has come a long way to finally be recognized as a fundamental and indispensable source of economic growth and development. The synergy of all components of intellectual capital is the key to creating added value in the company and

achieving a sustainable competitive advantage. Therefore, intellectual capital is an important segment of the sustainable development of business organizations, and every organization in today's modern environment must be aware of it. The society we live in is largely dependent on knowledge. Over time, we have become a knowledge society, and intellectual capital is the foundation on which the company's success rests. Every company that has recognized intellectual capital as the key to the success of its business invests in knowledge and additional education, as well as the training of its employees. The research results confirmed the set hypotheses. Namely, the results indicate that investing in the education and professional development of employees significantly contributes to efficiency and satisfaction at the workplace. The results indicate that companies in Croatia do not invest in education and professional development to a sufficient extent. The research examined attitudes and opinions about continuous improvement, and the results indicate that the respondents believe that they need continuous improvement, which they later use in their work, thus confirming the third hypothesis. The results of the conducted research indicate that companies do not invest in employee education to a sufficient extent. Namely, employees often invest in their own further education and professional training, thus confirming the fourth hypothesis. Based on the results of the research, it can be concluded that training and investing in the intellectual capital of employees affects their satisfaction and efficiency at work. Respondents believe that they need training, but companies in Croatia often do not invest enough in the professional training of their employees, rather the employees usually do it themselves.

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## BRAND COMMUNICATION OF MEDITERRANEAN TOURIST DESTINATIONS THROUGH PROMOTIONAL VIDEOS: YOUTUBE CHANNEL OVERVIEW

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### ABSTRACT

*The remarkable evolution of digital technology in recent years has drastically transformed tourism marketing, ushering in a new era in which tourist destinations around the world use the power of digital platforms to promote their brand identity. This paper explores the impact and effectiveness of promotional videos as a form of brand communication for Mediterranean tourist destinations. The purpose of the study is to analyze the promotional videos used by the most popular Mediterranean countries on their official YouTube channels and evaluate their success in engaging and attracting potential tourists. The methodology includes conducting an analysis of the YouTube channels of the most popular Mediterranean tourist countries, with a focus on the frequency of their posts and indicators of viewer engagement. A quantitative approach was used to measure the number of videos created, views, and number of subscribers. Performance is compared with the ranking of other countries and channels. The findings of the paper emphasize the power of promotional videos in improving the perceived image of tourist destinations. Active interaction strategies such as comment responses and regular updates contribute to the overall success of brand communication. This study offers new insights into the growing field of destination marketing through promotional videos. It posits YouTube as an important platform for successful brand communication and emphasizes the importance of interaction to increase viewer engagement and tourism demand. The findings can serve as a guide for marketing strategies for tourism entities looking to harness the power of social media and video content to effectively communicate their brand.*

**Keywords:** Brand communication, YouTube, Promotion, Engagement

### 1. INTRODUCTION

In today's fast-paced and digital-driven world, promotional videos have emerged as a formidable force in capturing the attention of audiences and leaving a lasting impact on destinations. As technology advances, so does the creative potential of video marketing. From heartwarming narratives that tug at emotions, promotional videos have become a dynamic medium that bridges the gap between brands and their target audience. Promotional videos play a crucial role in promoting tourist destinations and have a significant impact on attracting visitors. The growth of social media platforms offer unprecedented opportunities for tourism destinations to connect with potential visitors and inspire them through captivating narratives and compelling visuals (Hudson & Thal, 2013; Roy et al, 2020; Gebreel & Shuayb, 2022). In the vibrant Mediterranean region, countries like Croatia, France, Italy, Greece, Turkey, and Spain have utilized promotional videos on YouTube to showcase their rich cultural heritage, picturesque landscapes, and unique tourist attractions. Despite the widespread adoption of YouTube for tourism promotion, there is a notable research gap in understanding the effectiveness of such strategies, particularly in the context of Mediterranean tourist destinations. YouTube, a leading video-sharing platform, has gained considerable prominence in this context, serving as a potent tool for brand communication (Munar & Jacobsen, 2014; Tiago et al, 2019; Roy et al, 2020). Mediterranean tourist destinations, renowned for their cultural richness and natural beauty, have increasingly adopted YouTube as a channel for their

promotional activities. However, despite the widespread use of YouTube in tourism marketing, empirical research exploring the effectiveness of promotional videos for Mediterranean destinations remains scant. Recognizing this gap, this paper aims to analyze and evaluate the branding strategies employed by the aforementioned six Mediterranean countries through promotional videos on their official YouTube channels. This research contributes to the existing body of literature on destination branding and the use of social media in tourism marketing, particularly in the vibrant and culturally diverse context of the Mediterranean region. This research is set in the theoretical framework of destination brand communication, promotional videos and viewer engagement, drawing on previous studies (Morgan et al, 2003; Munar & Jacobsen, 2014; John & De'Villiers, 2020; Moin et al, 2020; Cao et al, 2021). Through this investigation, the paper seeks to contribute to the existing literature by providing valuable insights into the utilization of YouTube as a brand communication platform for Mediterranean tourist destinations. The findings of this study can contribute to marketing strategies for tourism entities that aim to effectively use social media and video content in brand communication.

## **2. THEORETICAL BACKGROUND**

Destination branding involves creating a unique and compelling identity that differentiates a place from its competitors (Morgan et al, 2003; Moin et al, 2020). It incorporates aspects such as the location's natural and cultural attributes, experiences offered, and perceived image. It's a dynamic process where stakeholders create, communicate, and manage the identity of a destination to attract and satisfy tourists (Boisen et al, 2011; Huertas et al 2017; Cao et al, 2021). Promotional videos serve as a powerful tool in destination branding, offering vivid visual narratives that allow destinations to showcase their unique attributes and connect with potential visitors emotionally (Munar & Jacobsen, 2014; Wang & Chan-Olmsted, 2020). In the context of tourism, such videos can create immersive experiences, inspire travel desires, and enhance destination attractiveness (Tasci & Gartner, 2007). Utilizing media platforms, particularly YouTube, allows destinations to connect with potential tourists and convey a compelling brand narrative (Hudson & Thal, 2013). The influence of these narratives, coupled with the role of visual and textual content, plays a vital role in destination branding (Neuhofer et al, 2014; Moin et al, 2020). Cultural representation is integral to destination branding, as it differentiates destinations by leveraging their unique cultural heritage. Effectively representing culture in promotional materials can create an emotional connection with potential tourists and stimulate travel interest (Reijnders, 2011; Moin et al, 2020). Videos that highlight the culture and natural beauty of a destination can create an emotional connection with viewers, promoting positive perceptions and intentions to visit (Pratt et al, 2010; Deng et al, 2022). Viewer engagement in the digital context refers to the level of interaction users have with online content, as indicated by metrics like views, likes, comments, and shares (Munar & Jacobsen, 2014). Active engagement strategies like timely responses to comments and regular content updates have been linked to higher levels of engagement and positive brand perception (Zeng & Gerritsen, 2014). Authenticity in promotional content has also been found to enhance trust and favorable attitudes towards a brand. Authenticity of content plays a crucial role in destination branding, as it helps build trust with the audience and enhances the credibility of the brand. Authentic content in promotional videos can evoke positive emotional responses, thereby influencing travel decisions (Wang, 1999; Huertas et al, 2017; Jiménez-Barreto et al, 2020).

### **2.1. Brand Communication Through YouTube Videos**

YouTube offers a unique platform for brands to communicate and engage with their audience. Traditional one-way communication has transformed into interactive dialogue on YouTube, where users can comment, like, share, and even create their own content related to the brand (Burgess & Green, 2013).

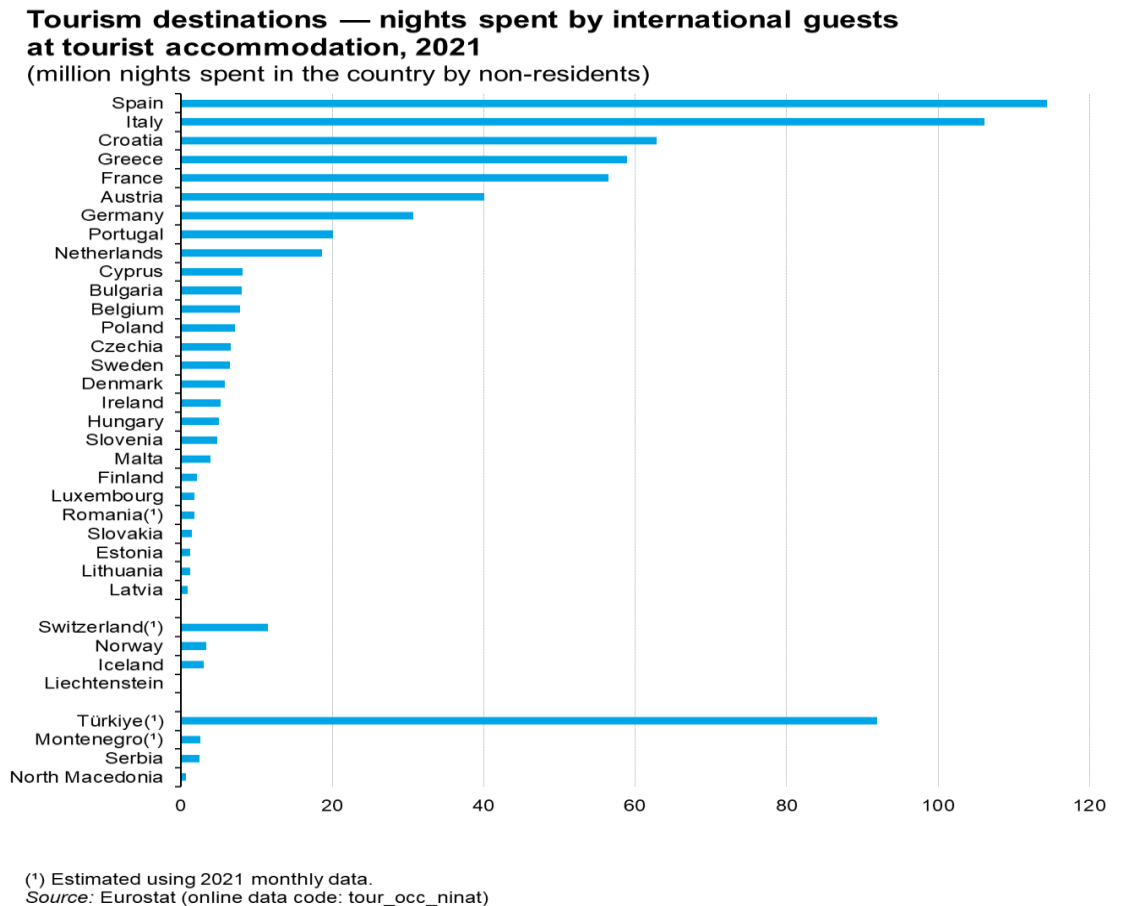
According to Kuhn et al (2010), video content allows for a richer and more nuanced brand narrative due to its ability to use audio, visual, and textual cues. This, combined with the high accessibility of YouTube, can lead to increased brand awareness and positive brand attitudes. Lund et al (2018) explored the use of YouTube in tourism and found that successful videos often tell compelling, authentic stories that evoke emotions. They argue that emotional engagement can lead to increased viewer interest and positive brand associations. Another important aspect of YouTube videos is the potential for virality. Berger and Milkman (2012) highlighted the role of high arousal emotions in making content go viral. They found that videos that evoke strong positive or negative emotions are more likely to be shared, improving the reach and impact of the brand message. Wang et al (2020) found that YouTube videos featuring user-generated content could enhance credibility and authenticity. In the context of destination branding, these aspects are critical in influencing potential tourists' perceptions and travel intentions. The power of YouTube lies in its ability to facilitate co-creation of brand meaning. Rebelo et al (2020) argue that brand is co-created by the company and its audience, particularly through videos in interactive platforms. Brand communication through YouTube videos is multifaceted and offers immense potential for creating and managing brand identity, fostering engagement, and driving positive brand outcomes (Burgess & Green, 2013; Wang et al, 2020; Huertas et al, 2020; Cao et al, 2021).

## **2.2. Viewer Engagement in Brand Communication**

Viewer engagement has become a pivotal aspect of brand communication, especially in the era of social media and digital platforms like YouTube. Engagement in the digital context is often defined as the intensity of an individual's participation and connection with online content (Brodie et al, 2011). In brand communication, viewer engagement is not just about passive consumption but involves active interaction, such as liking, sharing, commenting, and creating user-generated content. High viewer engagement is considered a sign of successful communication, indicating the brand's ability to resonate with its audience. It provides brands with direct feedback on their communication effectiveness and offers a pathway to foster deeper connections with their audience. (van Doorn et al., 2010; Hollebeek et al, 2014; Rebelo et al 2020). Various metrics can measure viewer engagement on platforms like YouTube, including video views, watch time, likes, dislikes, shares, comments, and subscriber growth. Each metric offers a nuanced perspective; for example, while views indicate reach, watch time provides insights into content relevance and viewer interest (Muntinga et al, 2011). Engagement metrics such as likes, comments, shares, and view counts serve as critical indicators of a video's success and the effectiveness of a brand's communication strategy. These metrics provide an insight into the audience's behavior and response towards the brand's content, offering valuable data for refining future communication strategies (Pletikosa Cvijikj & Michahelles, 2013). Viewer comments on YouTube videos offer a treasure trove of data that can be mined for insights. According to Hays et al (2013), comments provide direct feedback from the audience, offering insights into their preferences, attitudes, and potential objections or concerns. This user-generated content can serve as a valuable resource for brands to understand their audience better and tailor their communication accordingly. Viewer engagement can foster stronger brand loyalty and stimulate brand advocacy behaviors (Hollebeek et al, 2014). Engaged viewers are more likely to defend a brand, share positive experiences, and recommend it to peers (Kumar et al., 2010). In a saturated digital landscape, brands face challenges in consistently maintaining high viewer engagement. Algorithm changes, platform policies, and evolving viewer preferences can impact engagement metrics. Finally, the videos that tell a compelling, coherent story are more likely to engage viewers and evoke a positive response (Brodie et al, 2011; Hollebeek et al, 2014; Rebelo et al, 2020).

### 3. METHODOLOGY

The research includes an analysis of the success of brand communication through promotional videos for six most popular Mediterranean countries for international guests according to the Eurostat report (2022).



eurostat

*Figure 1: Tourism destinations - nights spent by international guests at tourist accommodation, 2021*  
(Source: Eurostat, 2022)

The main objective is to measure and compare the success of promotional videos for tourist destinations in Spain, Italy, Turkey, Croatia, Greece and France on the official YouTube channel by measuring the number of uploads (videos posted), the total number of views of all videos and the number of subscribers to the channel. The content of the official YouTube channels of the tourist boards of the selected countries is studied through a descriptive and comparative analysis. Publicly available analytical data from the provider Social Blade was used for the analysis. Social Blade tracks user statistics for YouTube, Twitch, Instagram, and Twitter, providing a deeper understanding of user growth and trends. Social Blade offers a publicly available database that uses advanced technology to provide global analytics for content creators or brands.

### 4. RESULTS AND DISCUSSION

An analysis of the official YouTube channels of the tourist boards of six leading Mediterranean countries showed that all of them have had attractive channels for many years and update them regularly.

The countries of Croatia and Spain were the first to set up YouTube channels at the end of 2005, and the last to join was Turkey in 2014, which today has the most views and subscribers.

Country	Channel	User created	Uploads	Video views (M)	Subscribers (K)	Number of views per upload	Number of subscribers per upload
Turkey	Go Türkiye	Feb 2014	769	1538,88	401	2002080,4	530,6
France	Explore France	Jun 2011	1174	64,21	15,6	54695,6	13,3
Croatia	Croatia Full Of life	Nov 2005	492	429,05	22,2	872055,9	45,1
Greece	Visit Greece	Mar 2010	356	44,84	37,8	125978,7	106,2
Spain	Spain	Dec 2005	959	63,54	22,4	66257,9	23,4
Italy	Italia.it	Oct 2011	952	36,01	20,9	37826,5	22,0

*Table 1: YouTube Travel channels overview*  
(Source: Author's analyse with access date on August 15<sup>th</sup> 2023)

As shown in Table 1, France has the most uploads, followed by Spain and Italy, and Greece has the fewest. Despite the high number of uploads, France has the lowest number of subscribers and a relatively low number of views. Turkey has by far the most video views and also the most subscribers. Croatia has a high number of views but a lower number of subscribers than Greece. Looking at the number of views per video upload, Turkey leads with over 2 million views, followed by Croatia with 872 thousand. Bringing up the rear are Italy with 37,000 and France with 54,000. Looking at the number of subscribers per uploaded video, Turkey is also the most successful with 530 subscribers, followed by Greece with 106 subscribers. France brings up the rear with only 13 subscribers, followed by Italy and Spain with 22 and 23 subscribers. In addition to the data presented in the table, an analysis of the most viewed videos for the country setting was also performed.

- Turkey  
The most viewed promotional video is 'Turkaegean, Coast of Happiness' for 30 seconds with 76 million views in the last 2 years. Then follows 'Safe in İstanbul, Safe in Tuerkiye' for 30 seconds with 74.6 million views. Several hundred comments were registered but no reply was received from the author.
- France  
The most viewed promotional video is 'Explore France' with a duration of 67 seconds and 3.9 million views in the last 8 months. Then the 2 year old video with 2.9 million views 'What Really Matters - #ExploreFrance' with a duration of 148 seconds. A lack of comments was noted.
- Croatia  
The most viewed promotional video is the 30-second 'Croatia Feeds 2019 de' with 22.8 million views in the last 5 years, plus 24 million views in the English and French versions. It is followed by the 30-second 'Visit Croatia for memories' with 11.5 million views. There is a relatively low number of comments (less than 10) and a low number of likes (less than 100). Comments are disabled on newer promotional videos.

- **Greece**  
The most viewed promotional video is 'Destination Greece - Health First' with a duration of 30 seconds and 6.6 million views in the last 3 years. It is followed by "Visit Greece 'Peloponnese'" with 4.6 million views and a duration of 62 seconds. There are few comments and no replies.
- **Spain**  
The most viewed promotional video is 'You will fall in love with Spain' with 20 seconds duration and 6 million views in the last year. Then a one year old video with millions of views, 'Family Summer in Spain', 22 seconds long. There are no comments on the videos.
- **Italy**  
The most viewed promotional video is 'Italia, a beauty to treasure' with a duration of 30 seconds and 7.8 million views in the last 3 years. Then the 6 year old video with 2.5 million views 'Storia e arte di Abruzzo, Lazio, Marche, Umbria' with a duration of 50 seconds. Only a few comments, no replies.

Below are the results of the analysis of publicly available statistical data for the YouTube channel by the provider Social Blade. The website compares data from about 90 million YouTube accounts grouped by industry. In this research, the results for six selected countries were presented in the "Travel" group.

Country	Video views rank	Subscriber rank	Country rank	Travel rank	Social Blade rank
<b>Turkey</b>	7054	1933	807	551	32093
<b>France</b>	191703	6597	1934	1666	138793
<b>Croatia</b>	30998	5044	465	1593	280180
<b>Greece</b>	260417	3468	713	1428	775016
<b>Spain</b>	193434	5010	1994	1590	789206
<b>Italy</b>	311955	5305	1576	1610	789275

*Table 2: YouTube Travel channels comparison*

*(Source: Author's adaptation according to <https://socialblade.com/youtube> with access date on August 15<sup>th</sup> 2023)*

According to the Social Blade ranking, Turkey performed the best during the observed period, followed by France and Croatia. Turkey performs by far the best in almost all criteria (video views, subscribers and travel rank). Croatia is the best-ranked country and is behind Turkey in terms of video views. Spain and Italy are ranked poorly. Italy and Greece perform poorly in terms of number of video views, and Spain and France rank poorly as countries. In terms of number of subscribers, France performs worst, followed by Italy and Croatia.

## 5. CONCLUSION

YouTube is a dynamic platform for brand communication, offering brands the opportunity to engage with their audience in a more interactive and personal way. The unique features of the platform, combined with the power of video content, make it a powerful tool for effective brand

communication. Analysis of the above YouTube channels shows that the most frequently viewed videos are related to the topics of natural beauty, culture and health. The videos are short, usually 30 seconds, and involve storytelling with the awakening of emotions. A lack of communication through responses to comments was noted, which would help increase user engagement, which would be a recommendation for the future. The study found that while the sheer number of uploads played a role in the total number of channel views, the quality, relevance and emotional resonance of the content drove the higher views per video. Tourist destinations in countries like Turkey and Croatia that maintain a consistent brand narrative and embrace the experiential aspect of travel performed well in terms of views and subscriber engagement. It's also worth noting that a high number of uploads doesn't always correlate with high engagement. The best results in terms of almost all criteria were achieved by Turkey, which was the last of the countries monitored to join the YouTube channel, but which achieved a high viewership and a large number of subscribers by regularly posting interesting short videos. Italy performed poorly, although the country has a relatively high number of publications. Tourist boards should do more to encourage user engagement. The interactivity offered by YouTube in the form of comments, likes and shares should be used to foster a sense of connection and belonging to the destination.

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## THE IMPACT OF COVID-19 PANDEMIC ON VULNERABLE GROUPS IN THE LABOUR MARKET

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### **ABSTRACT**

*The crisis associated with the COVID-19 pandemic has had unprecedented consequences on the labour markets despite massive measures aimed at supporting economies and labour markets. The COVID-19 pandemic has exacerbated existing labour market inequalities, making it even harder for people from vulnerable groups to keep or find jobs. Non-standard employment is typically associated with vulnerable groups and it significantly worsens their situation in case of any crisis almost immediately after its outbreak. Prevention of a situation when short-term unemployment turns into structural and/or long-term unemployment should be a key policy worldwide. Especially for young people, a priority has to be to ensure that the harmful prolongation of their unemployment period is avoided. In this context, it is important to emphasize policies and measures focused on improving skills. The aim of the paper is to identify and summarize labour market developments associated with the COVID-19 pandemic and its impact on vulnerable groups in the labour market.*

**Keywords:** COVID-19, Labour Market, Vulnerable groups

### **1. INTRODUCTION**

The crisis associated with the COVID-19 pandemic has had unprecedented consequences on labour markets, despite massive measures aimed at supporting economies and labour markets, which significantly reduced employment losses and the growth of unemployment (European Commission, 2022a). The pandemic affected different sectors differently, and inequalities between sectors and between firms varied from whether they could be open, whether it was possible to transfer activities to the online space, and whether these were critical services provided during the pandemic (Stantcheva, 2022). That is why it is necessary to consider a wider range of diverse aspects when evaluating the situation in the labour market during the COVID-19 pandemic and the prospects for development in the next period. In terms of long-term effects, prolonged periods of unemployment have proven to be detrimental to human capital and reduce the potential for reintegration into the labour market (Phelps, 1972; Blanchard and Summers, 1986). The reduction in economic activity during the pandemic, combined with more unpaid work at home, made it difficult to find a job. Especially for people with low incomes, including vulnerable groups in the labour market, reallocation is problematic because they are overrepresented in occupations with a lower potential for remote work and also in sectors more negatively affected by the COVID-19 pandemic (Tyson and Lund, 2021). The crisis associated with the COVID-19 pandemic has also accelerated the processes of automation, robotization and digitization. The intensification of these trends increases the supply of available low-skilled labour, but, crucially, increases the demand for high-skilled labour, creating a mismatch. Stiglitz (2020) found on data for the USA that labour-intensive sectors are becoming less attractive, which strengthens automation processes and increases inequalities. This contribution identifies and summarizes labour market developments associated with the COVID-19 pandemic. It is focused on young people, a group that is considered as a vulnerable one in the labour market.

## 2. LABOUR MARKET DEVELOPMENTS: YOUNG PEOPLE

One of the fundamental problems of vulnerable people in the labour market is that non-standard employment (temporary contracts and other atypical contracts) is typical for them in the gig economy (Oyer, 2020). This significantly worsens their situation in the event of a crisis almost immediately after its outbreak. Governments should therefore strive to create a modern flexicurity system. An effective flexicurity system requires certain elements of security in the labour market combined with proactive training schemes and passive income support (Pastore, 2018). For addressing the situation of vulnerable groups in the labour market, especially young people, it should be an absolute priority to ensure that the harmful prolongation of their unemployment period is avoided. In this context, it is important to emphasize policies and measures aimed at improving skills (Sanz-de-Galdeano and Terskaya, 2020). Prevention of a situation where short-term unemployment turns into structural and long-term unemployment is a key policy challenge worldwide. Marelli and Signorelli (2017) point out that the flexibilization of European labour markets in recent decades has been insufficient to reduce unacceptably high levels of youth unemployment in some EU countries. Firstly, the active labour market policies that proved to be effective need to be put in place combined with passive labour market policies. Secondly, the crucial thing is to focus on the a) school-to-work transition, b) innovative educational and training schemes, and c) specific labour market measures to ensure that the acquisition of required skills and competencies will be successful. Obviously, there is no easy way out of this complex issue. Why to focus on young people in the labour market? Firstly, according to the Eurostat data, there were approximately 2.75 million unemployed people aged 15-24 in the European Union in 2022. Youth unemployment in the European Union decreased by 2.2 percentage points and reached 14.5% in 2022. However, it still remains a major challenge. Secondly, there have been serious labour shortages across the EU Member States. The annual European Union report *Employment and Social Developments in Europe* (European Commission, 2023a) highlights some specific sectors and occupations that experience persistent labour shortages, such as construction, STEM jobs (science, technology, engineering, and mathematics), and healthcare. From this perspective addressing skill gaps could be a win-win situation for both unemployed young people and sectors with significant labour shortages. In addition, one of the factors that have an impact on labour shortages is lower labour market participation among young people, lower-educated people, migrants, women and older workers. The report *The Future of Social Protection and of the Welfare State in the EU* (European Commission, 2023b) highlights that the welfare state in the European Union faces a double challenge. There is a pressure to devote more resources to the issue of population ageing – older people. On the other hand, there is a need to secure more resources for younger generations. The famous quote of Nicolas Schmit, the Commissioner for Jobs and Social Rights, from June 2020 (European Commission, 2020a) is: “*I am particularly concerned about the rise of youth unemployment as we cannot accept that another generation is sacrificed.*” Therefore, it is also important to prevent young generation from potentially scarring effects in the beginning of career. ILO (2020c) point out that after the onset of the crisis associated with the COVID-19 pandemic it is very important to focus on the implementation of such measures and policies that correspond to the seriousness of the situation and are sustainable, sufficiently flexible, and actionable at the same time. In this regard, the International Labour Organization recommends a) to guarantee that individual measures must be effective on the one hand and adequate on the other; and to target support primarily to the vulnerable groups most affected by the COVID-19 pandemic, including young people; UNDP (2020) concludes that the evidence clearly shows one crucial thing to remember – young people are affected disproportionately. Choudhry et al. (2012) examined the impact of financial crises on the youth unemployment rate. Their findings suggest that financial crises have greater impact on the youth employment rate than on the general unemployment rate.

Therefore, more resources need to be directed to high-quality training and education what could enable young people to get into high-quality jobs (European Commission, 2023b). The European Commission (2022b) in its report *Meta-analysis of the ESF counterfactual impact evaluations* concludes that youth training programmes appear to be effective and show positive results. The positive effects are relatively small in a short-term, but become more positive and larger in a long-term and after the programme period. This is an important point for future policy proposals because it confirms that it is crucial to maintain investments in training programmes in order to increase the level of human capital. Data suggest that youth unemployment is still a big issue in the European Union. Sure, there have been some improvements over the past two decades, but young people are still highly vulnerable in the labour market. In some southern (e.g. Greece, Italy, Spain) and eastern EU Member States (e.g. Romania and Slovakia) the situation is worrying and there is a risk of long-term scarring effects on young people and their careers. Young workers use to start in temporary, insecure, and low-paid jobs what could lead to a mobility trap instead of a desirable transitional phase (European Commission, 2023b).

YUR/Year	2009	2019	2022
5-9.9%		BG, CZ, DE, MT, NL, AT, PL, SI	CZ, DE, MT, NL, AT
10-14.9%	DK, DE, CY, MT, NL, AT, SI	BE, DK, EE, IE, LV, LT, HU	BG, DK, IE, LT, HU, PL, SI, FI
15-19.9%	BG, CZ, LU	HR, CY, LU, PT, RO, SK, FI	BE, EE, FR, HR, CY, LV, LU, PT, SK
20-24.9%	BE, IE, PL, PT, RO, FI	FR, SE	IT, RO, SE
25-29.9%	EE, EL, FR, HR, IT, LT, HU, SK, SE	IT	ES
30-34.9%	ES, LV	ES	EL
35-39.9%		EL	

*Table 1: Youth unemployment rate in 2009, 2019 and 2022 (15-24, percentage of population in the labour force)*

*(Source: based on data from Eurostat)*

Table 1 shows changes in youth unemployment rates between 2009 and 2022 in the EU Member States. By adding the year 2019, it is also possible to evaluate the state before COVID-19 pandemic. The crisis associated with the COVID-19 pandemic is not the only reason for the current high youth unemployment rates in the European Union. As shown in Table 1, in some EU Member States, youth unemployment rates were relatively high even before the crisis associated with the COVID-19 pandemic what is really surprising considering the economic growth in the previous period and massive steps taken by the European Union after the Great Recession to improve the situation in the labour market. In 2019, ten years after the end of the Great Recession youth employment never fully recovered in some EU Member States. As shown in Figure 1, there are only small improvements between 2009 and 2019 in Greece, Italy and Spain. Interestingly, there are countries like Czech Republic, Germany, Malta, the Netherlands and Austria that experienced youth unemployment rates lower than 10% in 2022 as shown in Table 1. The reasons of positive youth labour market outcomes in the Czech Republic and Germany we could find in education system, school-to-work transition system and active labour market policy. Figure 1 also points out that Germany is the only one EU Member State with continuously decreasing youth unemployment rate except for 2020.

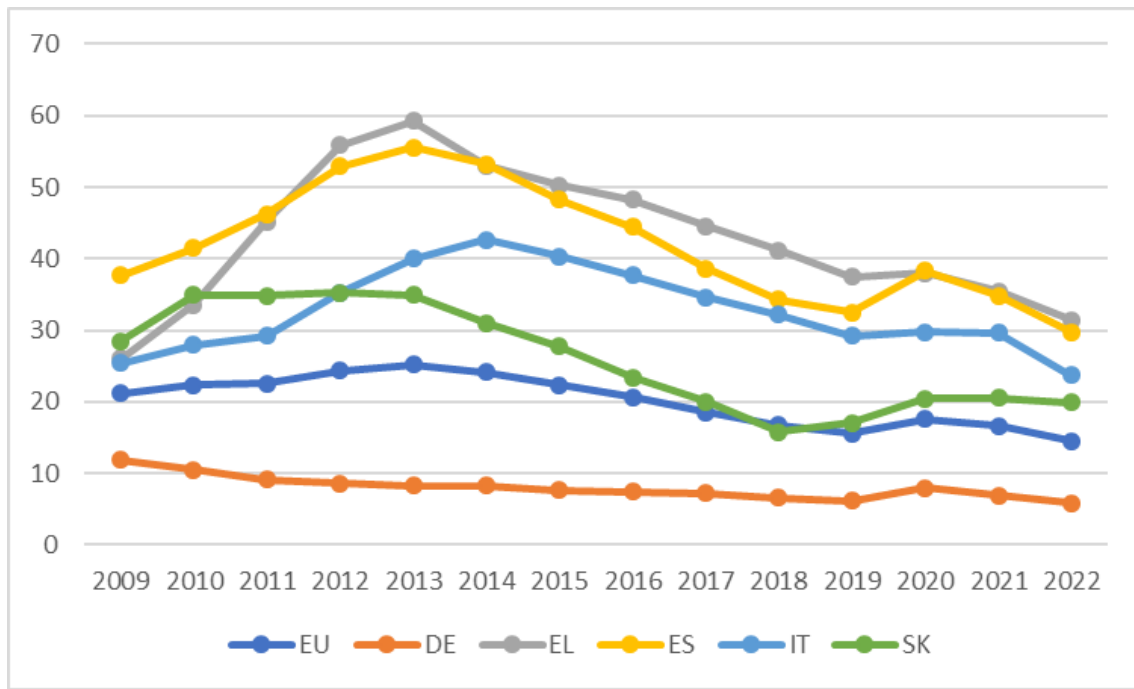


Figure 1: Youth unemployment rate in selected EU Member States (15-24, percentage of population in the labour force)  
(Source: based on data from Eurostat)

Young people were a vulnerable group in the labour market even before the onset of the crisis associated with the COVID-19 pandemic. As a result, millions of young people were added to unemployment statistics worldwide. However, millions more young people are not employed, do not participate in education or training. Many young people have been working in the informal economy, as well as in sectors such as accommodation and food services, which can be considered the most affected by the pandemic (Lee et al., 2020). The International Labour Organization published a study (ILO, 2020a) that aimed at capturing the immediate effects of the COVID-19 pandemic on the lives of young people aged 18-29, specifically targeting the areas of employment, education, psychological well-being and others. The results of the study show that the impact of the COVID-19 pandemic on young people is significant and disproportionate. Young people are concerned about the future and their place in it. In connection with the COVID-19 pandemic and young people, the term "lockdown generation" also appears (e.g. ILO, 2020b). In the first half of 2020, the situation associated with the COVID-19 pandemic forced the governments of the EU Member States to introduce significant restrictions and take unprecedented measures to protect their residents. In addition, the labour markets in the EU Member States were hit hard by job losses, reduction of hours worked, or reduction of remuneration. A study from Great Britain (Gustafsson, 2020) shows that at the beginning of May 2020, roughly one-third of employees aged 18-24 (the study did not take into account full-time students) either lost their jobs or had to stay at home and not work due to the COVID-19 pandemic. Young people were among those most affected and the study also confirmed that it is much more common for young people to work through atypical employment contracts. When comparing the consequences of the COVID-19 crisis on young people, the report of the European Commission (European Commission, 2022a) concludes that there are similarities between COVID-19 crisis and past recessions. However, there was a significant fall in youth employment in 2020 which was even bigger than in the early stages of previous recessions.

The impact of the COVID-19 crisis on the situation of young people in the labour market can be summarized as follows:

- Young people are hit disproportionately hard which is due to the higher volatility in employment and unemployment. Conversely, when the economy is back on track, the demand for young workers usually increases more than that for older workers.
- Adverse and long-lasting effects can be expected. The research of Choudhry et al. (2012) point out that the impact of economic crises affects the youth employment rate up to five years after their onset. Greg and Tominey (2005) examine the impact of economic crises on the male youth unemployment and they estimated a male wage scar between 13-21% at age 42. According to them, if it is possible to avoid recurrent spells of unemployment, there is a lower penalty between 9-11%.
- The longer the crisis associated with COVID-19 pandemic lasts, the more severe impact on the young people in the labour market can be expected. Youth-related policies has to play a crucial role in the medium term.

Youth unemployment developments are heterogeneous across the EU Member States and there are large differences in youth unemployment rates within the European Union. One decade was not enough to reduce high levels of youth unemployment in some EU Member States and get back to the pre-Great Recession youth unemployment rates. Obviously, there is no easy and fast solution. O'Reilly et al. (2019) point out that Great Recession intensified problems and made worse early career insecurity. Regulatory trends that started in the 1990s resulted in poorly paid, short-term, and unstable jobs for young people. Different regulations and law changes enhanced labour market flexibility through the liberalization of employment protection legislation. Back then, the European Union institutions supported the idea of making labour markets more flexible, with limited concern about the impact on young people. On the other side, Figure 1 and Table 1 clearly show that the differences in the youth labour market outcomes are enormous among the EU Member States. It suggests that an emphasis should be put on the creation of smoother and more stable transition from education to employment. ILO (2012) highlights that there is no one-size-fits-all and propose five pillars as a part of a comprehensive approach to foster youth employment growth and decent job creation for young people. These pillars are:

- 1) Employment and economic policies for youth employment.
- 2) Employability – Education, training and skills, and the school-to-work transition.
- 3) Labour market policies.
- 4) Youth entrepreneurship and self-employment.
- 5) Rights for young people.

O'Higgins (2017) points out that young people have limited access to decent jobs that would match their qualifications and meet their aspirations. Their transition into employment is difficult and could potentially have long-lasting impacts not only on them, but also on their families and communities. On the other side, young people – women and men – are important contributors to the world's economy. However, their full potential can only be unlocked if they have a real opportunity to form an integral part of productive labour force.

### **3. CONCLUSION**

In general, we can conclude that the crisis associated with the COVID-19 pandemic has had a significant negative impact on young people in the labour market. Experience suggests that unemployment spells during the early years in the labour market may lead to long-term scarring effects on young people and their careers. Therefore, early and comprehensive action seems to be the best way to prevent long-term damage and expensive interventions in future.

Young people entering the labour market require a complex and targeted solution that will enable the creation of smoother and more stable transition from education to employment. As shown in Table 1 and Figure 1, there are large differences in youth unemployment rates within the European Union. It is important to realise that youth unemployment rates were relatively high in some EU Member States even before the crisis associated with the COVID-19 pandemic. One decade was not enough to reduce high levels of youth unemployment in some EU Member States. The impact of the COVID-19 crisis on young people has been significant. They have been hit disproportionately hard so that adverse and long-lasting effects can be expected. Therefore, policy makers should focus on youth policies now and these policies will be crucial in the medium term. But, there is no easy and fast solution.

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## SOCIAL IMPACT OF PUBLIC POLICIES ON WORK-LIFE BALANCE

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### ABSTRACT

*Within the project "Impact of public policies at family and work life quality and demographic situation in Croatia – spaces of change", the association B.a.B.e. and the Department of Sociology of the University of Zadar conducted research on existing measures and indicators of public policies aimed at balancing the private and public spheres. Existing measures and indicators at the European, national and regional level were analysed, as well as strategic documents and legislative frameworks of the European Union and the Republic of Croatia. Also, regional government units were directly contacted. Based on the report of the aforementioned research, in this paper we provide an overview of the most important findings on the social impact of existing public policies regarding work-life balance of parents of minor children. Work-life balance concept is multidimensional and includes the relationship between the dynamics within the household and the labour market. It is very important to contextualise the above issue and take into account the socio-political framework. This paper focuses on the broader macro context, that is, on public policies that the state does or does not implement. The analysis of public policies at all levels shows the adequate detection of certain problems in the context of achieving a balance between the family and work spheres of women and men, as well as the activities that would need to be implemented. However, there is not a single document that would unify all the existing and propose new public policies that in any way affect the balancing of parents' family and work life. Following all of the above, this paper presents challenges and potential solutions for the purpose of improving the position of parents of minor children on the labour market.*

**Keywords:** legislative framework, public policies, social impact, work-life balance

### 1. INTRODUCTION

When talking about public policies, we come across a large number of different definitions depending on the authors and the context in which the term is used. For example, David Easton in *The political system: An enquiry into the state of political science* characterized public policy as "a web of decisions and actions that allocates values" (Easton, 1953). Paul Cairney in *Understanding public policy: Theories and issues* defines them as "the sum total of government action from signals of intent to the final outcomes" (Cairney, 2012). In his book *Advanced Introduction to Public Policy*, B. Guy Peters defines public policy as "the set of activities that governments engage in for the purpose of changing their economy and society", effectively saying that public policy is legislation brought in with the aim of benefiting or impacting the electorate in some way (Peters, 2015). In another definition, author B. Dente in his book *Understanding Policy Decisions* explains public policy as "a set of actions that affect the solution of a policy problem, i.e. a dissatisfaction regarding a certain need, demand or opportunity for public intervention. Its quality is measured by the capacity to create public value" (Dente, 2014).

Lastly, one of the more controversial definitions that many criticized as an empty concept is that of Thomas R. Dye according to whom "public policy is whatever governments choose to do or not to do" (Dye, 1972). Based on the research that has been conducted by association B.a.B.e. Be Active. Be emancipated. and the Department of Sociology of the University of Zadar as part of the project "Impact of public policies at family and work life quality and demographic situation in Croatia – spaces of change", this paper will present the most important knowledge about the existing measures and indicators of public policies aimed at balancing private and professional spheres, whereby the main focus is put on working parents of minor children. Relevant documents dealing with the topic of balancing the family and working life of parents were studied at three macro social levels: the strategic and legislative framework of the European Union, the strategic and legislative framework of the Republic of Croatia and the regional measures of the Republic of Croatia. This paper gives an overview on whether existing public policies at all levels adequately respond to the needs of working parents. It aims to establish the social impact of aforementioned public policies as well as to suggesting ways of potentially improving public policies related to work-life balance. In the previously mentioned research, a total of 119 relevant articles of law, regulations, decisions, programs, directives and strategies on the levels of the Republic of Croatia and the European Union were analysed. The hypothesis is that there is a variety, in the number and content, of public policies in which numerous points can be found on the subject of work-life balance, however there is no comprehensive document that unites all of these public policies. With the aim of unifying the existing measures and indicators of public policies, this paper presents the findings of the conducted research and presents problems as well as possible solutions for improving the status of parents of minor children on the labour market.

## **2. STRATEGIC AND LEGISLATIVE FRAMEWORK OF THE EUROPEAN UNION**

In its efforts to address the problem of balancing family and work life, the European Union has produced a series of directives, recommendations and strategic documents for the purpose of improving the balance of private and professional spheres. The first two directives that are important to present are the Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding and the Council Directive 2010/18/EU of 8 March 2010 implementing the revised Framework Agreement on parental leave. While the first mentioned directive was focused on the protection of pregnant women, the latter one dealt with the regulation of parental leave and the promotion of parental leave as an individual right of both parents. In 2019, Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers and repealing Council Directive 2010/18/EU entered into force. The aforementioned directive covers three areas of public policies, namely family policies (paternity leave for the duration of ten working days used on the occasion of the birth of a worker's child, parental leave for the duration of four months, salary or salary compensation for paternity and parental leave), labour market policies (flexible working conditions for providing care and the right to return to the workplace under the same conditions) and policies directed towards the elderly (leave for caregivers lasting five working days per year and absence from work based on force majeure due to urgent family reasons). In the national context, it is important to note that the Republic of Croatia adopted the aforementioned directive on August 2nd, 2022. In connection with the directive, Opinion of the European Committee of the Regions – A Union of Equality: Gender Equality Strategy 2020-2025 in its content emphasizes the importance of its implementation. Furthermore, it is important to highlight the European Pillar of Social Rights and the associated Action Plan as the most comprehensive strategic document of the European Union, which as areas of public policy includes the promotion of gender equality, flexible working hours and

other working conditions, preschool and school services and services for dependent family members. At the European Union level, it is also important to mention the Commission Recommendation of 7 March 2014 on strengthening the principle of equal pay between men and women through transparency and the Council Recommendation of 22 May 2019 on High-Quality Early Childhood Education and Care Systems. Finally, the European Parliament resolution of 21 January 2021 with recommendations to the Commission on the right to disconnect (2019/2181(INL)) as an area of public policy focuses on protection in the workplace.

### **3. LEVEL OF THE REPUBLIC OF CROATIA**

#### **3.1. Strategic framework**

Within the strategic framework of the Republic of Croatia an important document is the National Policy for Gender Equality 2011-2015. For the purposes of this research, the most important measures related to equal opportunities on the labour market were analysed. With regard to the mentioned area, it should be pointed out that the National Policy for Gender Equality sets out measures that would enable a better balancing of family and work life. Furthermore, there are other measures that contribute to balancing family and work obligations, such as raising awareness and knowledge about gender equality, eliminating discrimination against women in the labour market, reducing unemployment and the wage gap, and supporting the development of female entrepreneurship. In its measures related to the labour market, the National Plan for Gender Equality for the period until 2027 does not differ drastically from the measures in the previous National Policy. Since this paper is about public policies, what should be highlighted from the new National Plan for Gender Equality is the goal of introducing the perspective of gender equality into public policies with the following measure: strengthening the capacities of the state administration for the implementation of the principle of gender equality in everyday work and creating gender-sensitive public policies. The following two documents that will be listed do not directly issue instruments for balancing family and work life, however, it is important to list them because of the measures they include. Strategy of women entrepreneurship development in the Republic of Croatia 2014-2020. and the corresponding action plan issue the improvement of coordination and networking of public policies and the improvement of systematic support for women's entrepreneurship. National recovery and resilience plan 2021-2026. aims to reform the education system through measures such as construction and extension of preschool and primary school institutions and to bring new services for dependent family members through the construction and equipping of centres for the elderly.

#### **3.2. Legislative framework**

The legislative framework of the Republic of Croatia includes many laws, i.e. legal regulations, therefore, in accordance with the topic of the research, those regulations were analysed which in their content issue measures that enable the balancing of family and work life. Laws are different from directives that act as guidelines or from plans and programs that have a specific duration because measures issued by the law do not have implementation indicators or deadlines. Although they are only described through legal provisions, the mentioned measures contribute substantially to work-life balance. The following laws were analysed: the Labour Act, the Maternity and Parental Support Act, the Child Allowance Act, the Act on Nannies, the Pension Insurance Act, the Income Tax Act, the Mandatory Health Insurance Act, the Primary and Secondary Schools Act, the Preschool Education Act and the Act on Housing Loan Subsidization. The Labour Act, as an area of public policy encompasses labour market policies and prescribes the following measures: prohibition of discrimination against pregnant women, new mothers and mothers who are nursing during employment and protection of acquired rights; protecting the privacy of pregnant women in the workplace; the right to adjusted working

conditions or paid leave for pregnant women, new mothers and mothers who are nursing; recognition of maternity, parental, adoption and similar leaves during the time spent at work; protection of pregnant women and parents at the workplace; the right of pregnant women and parents to privileged conditions when terminating an employment contract; the right of parents to return to their previous workplace; the right of pregnant women and parents to privileged conditions during overtime work; the right of pregnant women and parents to privileged treatment conditions in case of unequal working time schedule; protecting the privacy of pregnant women on workplace; prohibition of discrimination against pregnant women, new mothers and mothers who are nursing during employment and protection of acquired rights. The next law that was analysed is the Maternity and Parental Support Act which as an area of public policy deals with family policies, where the relevant measures are the following: the right to maternity leave with job protection; the right to financial compensation during maternity leave; the right to parental leave with job protection; the right to financial compensation during parental leave; the right to work part time for increased child care; the right to financial compensation for working part time for increased child care; the right to parental leave to care for a child with severe developmental disabilities; the right to financial compensation during parental leave to care for a child with severe developmental disabilities; the right to work part time to care for a child with severe developmental disabilities; the right to financial compensation for part time work to care for a child with severe developmental disabilities; the right to a break for breastfeeding; the right to a day off for prenatal examination; the right to financial compensation during the breastfeeding break; the right to adoption and parental leave of the adoptive parents with job protection; the right to financial compensation during the adoption and parental leave of the adoptive parents; the right to maternity exemption from work for beneficiaries who earn other income, farmers outside the profit or income tax system, unemployed beneficiaries; the right to financial compensation during maternity exemption from work for beneficiaries who earn other income, farmers outside the profit or income tax system, unemployed beneficiaries; the right to parental exemption from work for beneficiaries who earn other income, farmers outside the profit or income tax system, unemployed beneficiaries; the right to financial compensation during parental exemption from work for beneficiaries who earn other income, farmers outside the profit or income tax system, unemployed beneficiaries; the right to adoption exemption from work of a person who earns another income or is a farmer or an unemployed person; the right to financial compensation during the adoptive exemption from work; the right to maternity and parental care of a child for beneficiaries outside the labour system (beneficiary of a pension, rights to professional rehabilitation, rights to a disability pension due to professional incapacity to work, a person unable to work, full-time pupil, full-time student and all other insured persons of HZZO who cannot exercise the right as an employed or self-employed parent, on the basis of other income, as an unemployed parent, farmer, etc.); the right to financial compensation during maternity and parental care of the child; the right to adoptive care of the child; the right to financial compensation during the adoptive care of the child; the right to one-time financial support for a newborn child. Furthermore, the Child Allowance Act and the Act on Nannies also cover family policies as a public policy area. The Child Allowance Act as a measure regulates the right to child allowance and the Act on Nannies regulates the subsidization of babysitting work. The area of public policies covered by the Pension Insurance Act is labour market policies, and the public policy measures are: mandatory insurance for parents who perform parental duties; mandatory insurance of carers; mandatory insurance of the foster parent; presumption of full-time work while calculating the length of insurance. Tax policies as an area of public policy are part of the Income Tax Act, while the measures prescribed by the act are: receipts on which no income tax is paid and an increase in the basic personal deduction due to the support of immediate family members.

The next law analysed was the Mandatory Health Insurance Act, which as an area of public policy includes family policies and as a measure prescribes the acquisition of the status of an insured person as a family member. The Act on Housing Loan Subsidization also enters into family policies as an area of public policy and prescribes the following measures: subsidizing housing loans and extending the subsidization of loans due to children. The last two laws analysed cover education policies as a public policy area. The Primary and Secondary Schools Act prescribes the following measures: extended stay in primary school; home schooling or health institution schooling; student nutrition and student transportation, while the Preschool Education Act prescribes kindergarten programs.

### **3.3. Regional framework**

Public policy measures aimed at balancing private and professional life at the regional level of the Republic of Croatia have been collected in several ways. Some of the regional government units submitted an overview of the measures in their counties upon request. Data was also collected from local self-governments of the thirty largest cities in the Republic of Croatia as well as from the official websites of ministries and local government offices. Considering the information received by the counties, the conclusion is that the counties do not play a major role in the implementation of measures regarding work-life balance. When analysing data collected from counties that had submitted an overview of their measures, it was found that they mainly offer preschool and school service measures (hot meals) and to a much lesser extent offer compensations aimed at families (compensations for newborns). At the city level, data was collected on 62 public policy measures, and it was found that almost half of them (30) refer to family-oriented compensations, i.e. to one-time monetary compensations upon the birth of a child. The vast majority of cities independently adopt aid measures for newborns. This is followed by preschool and school services (15), such as co-financing the costs of meals or textbooks. It can be seen that "hard" measures, i.e. measures issued by laws and demographic measures prevail, while "soft" measures related to the balancing of family and work life are not sufficiently recognized. It is also important to point out that there are large variations in the implementation of local measures. New measures should therefore be defined in accordance with the strategies of individual regional units and it is also necessary to improve the normative framework.

## **4. CONCLUSION**

Overview of strategic and legislative frameworks and of existing measures and indicators that contribute to a better work-life balance at the European, national and regional level shows that there is already a large number of public policies that have, in their own way, impact on a better balance between private and professional spheres. The social impact of public policies is still a relatively unexplored part of the policy cycle, but this overview has made it clear how widespread and ubiquitous public policies are. In order to investigate the social impact, it is necessary, after the implementation of a certain public policy, to create an adequate methodology and to carry out an analysis that would include indicators on the basis of which the effect of public policies should be evaluated and therefore, to finally propose recommendations for the continuation, modification or termination of a certain policy. As can be seen from this overview, these policies are scattered and are found within different directives, laws and other documents. It is necessary to consolidate all existing as well as new public policies based on research and the real needs of parents into one coherent and comprehensive document that would promote adequate conditions for a balance between work and private life.

This is a necessary prerequisite for social change in terms of improving the position of women on the labour market, reducing economic and other types of gender-based violence, women's equality in political and public action and decision-making as well as gender equality in all segments of life.

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## GENDER BUDGET AS A TOOL FOR IMPROVING WORK-LIFE BALANCE

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### ABSTRACT

*Within this paper, the state of budgets of local government units in Croatia and the possibilities of implementation of gender budgeting within public budget processes will be reviewed and discussed, taking into account theories of gender budgeting and current trends in the theoretical and practical consideration of the implementation of gender budgeting as a standard. In this sense public budget is a political document that distributes public funds and enters the space of work, opportunities and private and public life of the population through the framework of social and political turmoil. This paper points out the lack of a gender dimension within public budgeting, where the unequal position between men and women is ignored, including their different needs and different opportunities within society. It also highlights that putting gender budgeting with its social impact in the focus of social public policies would aim to close the gender gap between man and women in all areas of the society; including improving work-life balance for working parents. In this way, the macroeconomic framework of public budget production would be replaced by emphasizing complex social needs of different members of society, which would enable them to be viewed as equal, active social actors. Although gender-sensitive budgeting as a tool of social policy has been present for many years, in Croatia there have been no significant attempts to apply it, therefore this paper is based on the existing research of a small number of researchers and civil society organizations that have covered this subject in Croatia.*

**Keywords:** *gender budgeting, social impact, work-life balance*

### 1. INTRODUCTION

Gender equality is a fundamental EU value, it's one of the 17 social development goals or SDG's and it is important part of current political landscape. That wasn't always the case, gender equality became center of the political debates only in the last 30 years. That happened mostly thanks to gender mainstreaming. "Gender mainstreaming is the (re)organisation, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and all stages, by the actors normally involved in policy-making." (Quinn, 2009:5). Gender mainstreaming led to mainstreaming feminist aims that up to that point weren't widely recognized by institutions. In order to create a society that is really gender equal, it's necessary to dismantle and change assumptions that are part of many policy decisions, and with gender mainstreaming the goals was exactly that. In all stages of political decision making there has to be a consideration regarding gender implications of the policies (National Woman's Council of Ireland, 2017). As a policy, mainstreaming is now adopted by the European Union as a way of promoting gender equality, but it first appeared after the UN Third World Conference on Women in Nairobi in 1985, where gender mainstreaming was seen as an action to ensure integration of women's values into development work. On the next Conference in Beijing in 1995 gender mainstreaming was included in "Platform for Action".

After that, on EU level Fourth Community Action Programme for Equal Opportunities for Women and Men (1996–2000) explained the principle of mainstreaming equality, the aim was to bring gender perspective into EU policy making (Booth, Bennett, 2002). But regarding the efforts of gender mainstreaming and legally binding and non-binding international and national accords addressing gender equality up to this moment gender inequality remains a huge barrier for women in both private and work life (Stanimirović, Klun, 2021). Care work is clear example that shows the fact that gender equality is still not reached. Women are still doing most of the care work inside the house including care for the elderly and children and care for the household and they are still the ones taking most of the mental load when in partner relationships. Care is important dynamic of gender equality because there is nothing intrinsically gendered in care work but it's still the work that is predominantly undertaken by women. A feminist perspective on care work recognizes that care work even though it's mostly performed within the families it's vital for social and economical wellbeing. There are number of research data stating that the unpaid work, including care work, is basically fueling global economy and it's still not fully recognized or valued. Unpaid work has significant implication in relation to resources and opportunities available to women and men and it's crucial that it becomes factor in political decision-making. Also, this association clearly show how society ascribes and reproduces gender roles. (Stanimirović, Klun, 2021, National Woman's Council of Ireland, 2017). Such data prove that special measures and policy are needed but are not enough. In order for the policies to be implemented there has to be enough resources in the budgets, but unfortunately gender dimension is often overlooked in budgets what further reinforces existing patterns of gender inequality despite political commitment to gender equality. Current budgetary procedures are often based on rational self interest of economic actors with little or no reference to gender. Knowing that gender determines experience in different aspects of society, whether it's healthcare, transport, or justice an equal approach to them is important. Even though budget is often seen as neutral government tool, most fiscal policies have implications for gender equality, and it is important to develop tools that can determine gender impact of policies and that's where gender budgeting proved to be useful. Therefore, it's clear that gender mainstreaming is and has to be linked to budgets because policies, programs and measures are only enforceable with money (Stanimirović, Klun, 2021).

## **2. GENDER BUDGETING AS A TOOL**

Gender budgeting was first developed in Australia in 1980's as a way of analyzing the budget for its gender equality impact (Stanimirović, Klun, 2021, National Woman's Council of Ireland, 2017). The Council of Europe (2005) defines gender budgeting as a "gender-based assessment of budgets incorporating a gender perspective at all levels of the budgetary process and restructuring revenues and expenditures in order to promote gender equality". It was developed as a gender mainstreaming tool reflecting the understanding that reaching gender equality calls for a systemic approach. It's gender mainstreaming of financial policies on all levels and it has to be applied to expenditures, budget and revenue. That way public money is distributed so that all people benefit equally from public activities and budgets. Common misconceptions regarding gender budgeting are that it means separate budget for women or increased spending on "women specific" activities. Contrary to that, it is a tool that recognizes intersectionality, gender biases, and norms that are rooted into society and helps to shed the light on those inequalities. Gender budgeting refers to all stages of budget planning insuring gender equality is fully integrated in the process (European Women's Lobby 2022; National Woman's Council of Ireland, 2017). While doing so, it takes into account that budget does not affect only distribution of material and financial resources but also nonmaterial resources, especially time. Unlike standard budget, gender sensitive budget considers unpaid work in the household and in the community.

Unpaid work in this context is productive work that takes place outside of the labor market and it's most often done by women. Implementing gender sensitive budget is a long process that asks for changes in a way of think about the budget, but the end goal is for it to be the main component of every budgetary cycle (Sikirić, 2019). One on the main things that gender budgeting aims to do is deconstruct gender norms and rules and to put concerns regarding paid and unpaid labor, care and different use od time between men and women in the center of analysis of budget proposals (O'Hagan, 2018).

## **2.1. Gender budgeting in practice**

Gender budgeting as a practice exists in the EU since early 2000's and it was expected that with time it would elevate gender mainstreaming to the level of macroeconomic policy. The early examples of gender budgeting originated in Australia in late 1980's, then United Kingdom Women's Budget group was founded in 1989 and finally, the Canadian gender responsive budget exercise that happened in 1993. In Canada and Australia, feminist government officials pushed for gender analysis of the budget and gain political support and external recognition while in the UK, Women's Budget Group is an example of outside government pressure from academic analysis through forming a civil society platform. UK initiative in Europe was followed by initiatives in France and from there it spread to other European countries. All of that was followed by a commitment at an OECD conference in Brussels in 2001 for gender budgeting to be implemented across Europe by 2015, but to this day that hasn't been realized. That shows that gender budgeting wasn't really formally adopted and systematically implemented but remained somewhat a marginal strategy for gender equality. In recent years that started to slowly change, although the implementation is still lagging in most EU states. In the period between 1984 to 2011 over 40 counties all around the world started experimenting with gender budgeting. One of the things researchers noticed it was missing from the budgets and from the analysis was including unpaid labor into decision making which is putting women in underprivileged positions (O'Hagan, 2018; Sikirić, 2017, Marx, 2017). Out of the EU countries, Austria was the first that implemented gender budgeting into their Constitution which made it mandatory for all government bodies and since 2013 gender equality became one of the four constitutionally mandated budgetary principles, together with transparency, efficiency, and a true and fair view of the financial position of the federal government of Austria. Their main goal was to identify gender equality objectives for each budget chapter. But regardless of their commitment to gender equality, a 2015 evaluation showed that budget personnel, while committed to working on reaching gender equality, lacked capacity for meaningful gender analysis, which is a crucial part of the budgetary process (Quinn, 2017). Another country that had early initiatives regarding gender budgeting is Belgium. Ahead of the OECD conference in Brussels they started forming the initiative of gender budget in Belgium. In the next 15 years number of analysis and studies have been done in Belgium in order to prepare budgetary process for introducing new way of looking at it, also it became mandatory to have and to collect sex-segregated data in order to have to develop gender indicators (Quinn, 2017, Holvoet, 2014). Some other counties that had early start and conversation regarding gender budgeting are; Sweden that had a feminist government in 2014 that committed to installing gender budgeting; Iceland where instructions on gender budgeting have been included in the budget since 2010; and regions like Andalucia and city of Berlin. At current stage, practice of gender budgeting across Europe is most often associated with the expenditure side of the budget, especially those expenditures related to delivery od public services. Even though that way does not focus enough on revenue and income transfer on macro-level, this way of investing public funds is taking away some of the burden of unpaid care work that is most often put on women. Another thing that can often be overlooked when discussing budgets is decisions to increase the tax take, particularly in times of fiscal constraint, that then lead to cutting funding of social programs

that can enable women to better balance paid and unpaid work, as well as mitigating the risk of a rise in poverty (Quinn, 2017). It is necessary to keep in mind when there are measures of austerity in place, that cutting into social welfare programs is primarily going to harm women. The countries that have some form of gender budgeting implemented, like Belgium, UK and Sweden, report high rates of employment of women, but those rates are not direct reflections of gender equality, they are results of more flexible employment policies for women in order to better balance private and work life. More intensive involvement of women on the labor market is prerequisite of gender equality, but in order to do that it's necessary to develop social policies and finance public services that would lower the scoop of unpaid labor done by women in the household and that way make it easier for women to balance private and work life. Even though unpaid work includes many different activities, parenthood, more exactly motherhood, is proven to increase the amount of unpaid work done by women (mental and physical) and it also results in lower rates of employment and lower income for women when compared to men. While on the other hand fatherhood has positive correlations with employment of men, which is direct reflection of socially formed roles and obligations of men and women. One thing that was proven to have positive correlation with higher rates of employment of mothers is access to satisfactory childcare in forms of nursery and daycare. Having that in mind, by investing public funds in childcare for young children, governments can increase rates of employment of mothers, increase their work-life balance and with that have a positive impact on gender equality. Other than investing in early childcare, governments can invest in measures motivating fathers to use parental leave. That can lead to lower productivity of women in household and easier return into the labor market (Sikirić, 2017). Regardless of commitment of EU countries to gender budgeting, to this day in almost all EU countries needs for early childcare are higher than the offer. The countries that have the highest rates of accessible early childcare are Sweden, Denmark, and Finland. But in order for childcare to be adequate it needs to be more than financially accessible; it has to align with working hours of parents in order to have the wanted impact (Sikirić, 2017). All of that needs to be part of the government's social policies in order to properly invest the money. In Croatia, up to this moment no significant steps have been taken to put gender budgeting in focus of national budgetary process. In 2008 there has been an analysis of the government program and activities that have expenditures related to equal opportunities. But in Croatia gender sensitive budget is still not recognized as an important tool for reaching gender equality. Some smaller steps have been taken on local levels. In the city of Zagreb in 2018 the budget of the City has been analyzed in order to recognize out activities and programs that are advancing gender equality and improving work life balance for parents (Sikirić, 2016, 2019) and there have been some efforts from Croatian NGO's to put gender budgeting in focus of local politicians, but so far there has been no systemic approach.

### **3. THEORIZING GENDER BUDGETING – SOLVING THE PROBLEM OF UNPAID WORK**

Considering the budget as ethical and well founded (whether the city, county, or state budget) can be observed from different theoretical and analytical positions, however if we are talking about a budget that takes into account all social actors, then our theoretical thinking about the budget begins with a critical analysis of existing statistics that serves as a justification for the distribution of money within the budget. If the statistics do not correspond to the actual conditions within the social order, then the conclusions, in the event of the creation and implementation of public budget, will be inaccurate, and therefore distributed money will not correspond to the real social, economic needs and well-being of social actors. Take the differentiating of paid and unpaid work for example. Paid work, of course, refers to paid work within the labor market and in that context is considered to be a "production" which is still confused with "market-based production" and "work" with "market-based work" (Carrasco,

2010: 210). As stated above, unpaid work refers to work within a home, a domesticated job with its everyday obligations. If we look at the distinction between paid and unpaid work through the frame of gender roles, then the positioning of paid work within the gender role of a man, and unpaid work within the gender role of a woman, is imposed. Therefore “the division of labor by sex has contributed to the way things are done because it associates - more in collective imagination than in reality - men’s work with the market sphere and women’s work with the domestic sphere” (Carrasco, 2010: 210). This raises the question, if we take unpaid work as the basis of the economic development of society, which equation can we use to calculate the amount of unpaid work depending on the gender? Considering the UN argues that “cooking, cleaning, caring for children and the elderly - economies depend on such work, valued at between 10 and 39 per cent of GDP. It can contribute more to an economy than manufacturing or commerce. Unpaid care and domestic work fills gaps in public services and infrastructure - and are largely provided by women” (UN Women, 2017:3). Having said that, if we want to examine, in the context of the gender, who performs the jobs of unpaid work, that is the question of the method, calculating formulas and deciding on analyzing paid and unpaid work together or separately. More importantly, the question is whether we use these calculations, methods and analysis to create public policies and finally create and implement the budget and distribute local and state money. In other words, using the incorrect methods and formulas, we are leaving a symbolic analytical structure and entering a decision-making system with its programs, politics and the budget, which, by using those incorrect methods and formulas becomes insensitive to the difference between a man and a woman and thus perpetuates gender inequality. For example, if we separate analysis of unpaid and paid work, we neglect the interconnection of two models of work which “prevents the observation of the strong interrelatedness, while also creating the fallacy of similar job market for women and banishing what are considered “family restrictions” realm and the division of labor by sex” (Carrasco, 2010: 211). In this way, the incorrect calculation of the amount of unpaid work done by women, impacts the fabrication of programs and the adoption of public policies, as same as political decisions, and ultimately generates budgets and allocations of money in areas within the budget that are highlighted as more or less needed. The money is distributed in this way, not based on the actual conditions in the society, but based on the wrong calculations, which results in the money invested where it may not be needed, or it may be less needed. This is why many theorists emphasize the “gender blindness” (Elson, 2011:29) of the budget instead of gender neutrality, within which they request a shift in getting data required for creating public budgets. Today, there are a number of directions in both economics and social sciences that, using theoretical thinking and analysis methods, try to change ways of deliberating when creating and implementing budgets, taking into account real social circumstances and the more important individual needs of different social actors, especially men and women. Here, we will propose one such model of thinking that, within the discussion of gender-responsive budgeting, includes the term “wellbeing” as a holistic approach of reflection about the real needs of society and the provision of policies based on those needs, especially work-life balance.

### **3.1. Wellbeing gender budget approach**

The inclusion of the wellbeing approach in the gender budget theory is more a question of "why" instead of "how". Primarily, this approach is based on the problematization of unpaid work “as a major component of the total work of women and men” (Addabbo et al., 2011: 105). It also “places the process of social reproduction of the population among the structural processes of the economic system as a condition of its sustainability, and it assesses gender inequalities from the standpoint of a multi-dimensional concept of wellbeing as defined by a list of the individual capabilities and effective functioning of women and men” (Addabbo et al., 2011:105).

Analysis of public budgets from a gender perspective clarifies wrongly set postulates of money distribution through the prism of "gender neutrality" where women are seen as a homogeneous group and not as individual actors. The neutrality of public budgets is a matter of political decisions and the practice of democratic ideals, but in reality, budgets are politically colored documents that, within their rigid bureaucratic vocabulary, hide power relations through the assessment of money distribution. As already emphasized, such approach to creating a budget projects social relations and brings them into the political and financial dimension of life, which is crucial in creating a false image of the needs of women within society. In other words "means are mistaken for ends" (Addabbo et al., 2011:106). Observing society through the prism of different cultural, social, and economic needs of individuals within society is a perspective that in its essence approaches social actors as people with their own needs and possibilities, desires, and values. Such approach was developed by Amartya Sen, where he defines the economic approach of wellbeing under the term "the standard of living" which is "determined by the opportunity set of basic capabilities to function (...) this capability set in turn is determined by goods, environmental factors and personal characteristics. Sen further argues that the freedom to choose, that is the extent of the opportunity set rather than merely the point in it that happens to be chosen, is an important ingredient of the standard of living" (Muellbauer, 1985: 39) (tanner lectures). In other words, if a social actor is observed through a bureaucratic, systematic, and statistical framework using present methods and analyses, his or her overall standard of living is measured through that frame. That includes the issue of access not only to the labor market but also to basic needs; redefining the issue of luxury with regard to social and political circumstances (what is considered a luxury depends on social circumstances and the position of actors in society. Having said that, what is considered a luxury in one country is considered a fulfillment of daily needs in another); interconnection of unpaid and paid work as fundamental for economic, monetary and social development. For example, a woman as a social actor with her role within the system of unpaid work, i.e. work within the household, enters the area of responsibility for the quality of life not only for her as an individual, but also for her family, which becomes extremely complicated in a society where the focus is on career progress of each individual, within which there is a problem of availability of social and health care institutions and in which a woman fulfills a number of roles between which she ultimately has to choose, often deciding on the family one. Knowing the diversity of gender roles when creating a gender-responsive budget, while thinking about the wellbeing of each actor, allows us to shift towards the allocation of resources to those parts of the budget that will enable such a standard, and ultimately result in appropriate public policies and programs. Therefore, the wellbeing approach requires a change in the way of thinking. Addabbo et al. (2011:111) emphasizes the nine dimensions of the wellbeing gender budget, which would ultimately raise the quality of life within the political space within which it was implemented. Those dimensions include having *access to knowledge* (education, training, and information) as basic life need with an emphasis on lifelong learning that would enable one to enter the labor market as the basis of a high quality of life. The second dimension includes *living a healthy life* which, in addition to including excellent health care, also takes into account the issue of safety (traffic safety, public safety, etc.), the question of the activity of every person and concern for their health, access to health institutions, etc. The issue of health and the health system is a good example when we are thinking about the political dimension of the production of the budget, because apart from the fact that we have to keep in mind that the adoption of legislation related to health is only partly related to the real needs and raising the standard of living of people, also in many countries the budget depends not on national but on regional decisions, which greatly complicates the issue of availability of health services. *Working and carrying out business activities* is the third dimension which largely ignores the problem of "caring for others" which,

in addition to their household, everyday tasks are mostly done by women, which limits their possibility of self-employment, opening a private business or entering the work market at all. The fourth dimension is *having access to public resources* (services and allowances) which depends on the criteria adopted by the government and indicates the problem of access to different public services. The problem of defining the concept of luxury opens the fifth and sixth dimensions which is *living and working in safe and suitable places and in an eco-compatible environment* and *travel*. This is where we enter the space of enabling security for all social actors, which should be a basic human right, however it is not present in all societies, while travel refers to the possibility of allocation, or free movement, and the possibility of traveling as leisure. For example, there are many places in Croatia that are isolated due to poor transport infrastructure, and their residents do not have equal access not only to health, school, and other public institutions, but also do not have the opportunity to enter the labor market at their own pace and develop and engage in various leisure activities. This mainly applies to women. The seventh and eighth dimension involves care. *Care for others* refers to care for members within nuclear family and is more often performed by women. Distribution of money for social services, programs for the elderly, sick or children can take that burden off women to enable positive work life balance. *Caring for oneself* which includes the right to free time, entertainment, hobbies, and sports. Generating a public budget that takes care of such social activities enables the realization of this dimension. For example, even indirectly, a well-connected and flowing transport infrastructure in large cities can result in a greater amount of free time for people living in that community. The last dimension is *participating in public life and living in an equitable society*, which means the possibility of involvement in political life, access to information and influence on the making of political and other decisions. By developing a gender-responsive budget through the concept of wellbeing, we adopt a different way of thinking about society and acknowledge different layers of social needs and opportunities. In this way, we ensure a different understanding of women's life, not separating the paid and unpaid dimensions of work, but emphasizing the importance of work-life balance and the standard of living in general.

#### 4. CONCLUSION

Gender budgeting is a crucial tool for reaching gender equality. Regardless the fact that it has been present for more than 30 years, it still hasn't become inseparable part of the budgetary process. For the most part it's because deciding to turn to gender sensitive budgeting asks for a strong political will and determination, and changing the way politicians and decision makers are thinking and approaching the budget. Existing data indicate that investing in programs and activities that are actively supporting women joining the labor market and financing care work, that is most often done by women in the households, is increasing gender equality and helping working parents achieve greater work-life balance, especially those of younger children. The wellbeing approach to gender budgeting sees social actors as part of different layers of society with various needs, opportunities, approaches, inequalities, ethnic and cultural differences. It describes life through the concept of wellbeing with all its dimensions that enable the free and content functioning of every member of society. In this way, by entering into public programs, policies and budgets, it tries to solve the problem of gender inequality and other inequalities by changing the direction of thinking, enabling a fairer and more fulfilled society. Through the gender issue, it enters into the analysis of public budgets, creating an example of the potential of a unbiased, cost-effective budget within complex political and economic systems and therefore a higher standard of living and more prominent society. In the words of Amartya Sen "Walter Bagehot had once remarked that "one of the greatest pains to human nature is the pain of a new idea". Happily, this pain need not occur here. The living standard is an old idea, and I have tried to argue that the pioneers who considered the demands of the idea - Petty, Lavoisier,

Lagrange, Smith, Marx, even Pigou, and others - did point towards the complex issues underlying the concept and its diverse relevance. The fact that we have also been frequently led up the garden path should not make us overlook the value of the leads we have got. There is, of course, a long way to go" (Sen, 1985:38). Therefore, by changing the way of thinking, even an old idea acquires a new meaning.

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## CHANGES IN CONSUMER BEHAVIOR IN THE CONDITIONS OF INFLATION

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### ABSTRACT

*The war in Ukraine, the COVID-19 pandemic and the new euro currency in the Republic of Croatia are just some of the causes of inflation. Inflation, known as a rise in the general price level, has led to changes in consumer behavior, prompting them to adjust their purchasing decisions and priorities. Consumers faced rapid changes and therefore had to adapt their habits to adapt to the new situation. In the paper, an empirical study was conducted on a sample of 200 respondents, where the goal of the study was to compare consumer habits before inflation and during inflation, i.e. to investigate for which product categories during inflation they spend more money, for which less, and how much money an individual household manages to save. Studying consumer behaviorism in these situations is critical to understanding consumer needs and wants, and understanding these changes allows marketers to adjust their strategies and communications to meet consumer needs. Therefore, it is important to continuously study and analyze changes in the psychological states of consumers in order to better understand their needs and adapt marketing strategies accordingly.*

**Keywords:** *consumer behavior, consumer habits, COVID-19, inflation, survey*

### 1. INTRODUCTION

Inflation, depending on its form and intensity, implies different behaviors of consumers, their habits and ultimately purchasing decisions. Consumers will always try to adapt to new conditions, trying to stay in the best possible financial situation, so they will reduce consumption or choose cheaper, alternative ones when choosing products. Psychological states of consumers have a significant influence on consumption decision-making. The most important factor influencing the change in the psychological state of consumers is still price. Unfortunately, in market conditions when the price rises, i.e. inflation occurs, the perception of the value of money changes and creates fear of financial insecurity. Therefore, it is important to know the inflationary factors that influence consumer behavior and adapt to them. The issue of this paper is focused on the analysis of consumer behavior in inflation conditions. More specifically, the paper will explain through a review of the literature what led to inflation, that is, which events are cited in the literature as factors that caused inflation in the Republic of Croatia. Furthermore, how inflation affected the market and the economy, and ultimately how it affected consumers. The empirical part of the paper will show a comparison of how consumers bought certain categories of products before and during inflation.

That is, for which product categories they have to allocate more money, for which less or the same amount and how much money they manage to save. In the final part of the paper, primary and secondary research was analyzed and the conclusions of the studied topic were synthesized.

## **2. LITERATURE REVIEW**

Inflation represents an increase in general price levels in the economy and a fall in the value of money, and it arises as a result of an imbalance in the same. In such a situation, it is important to observe the amount of money in circulation, although an increase in the amount of money does not necessarily mean the appearance of inflation, and there is also the possibility of hidden inflation, i.e. price increases without public recognition (Božina, 2008). The causes of inflation can be: an increase in the money supply, an increase in government expenditures, a decrease in the domestic supply due to an increase in exports, an increase in wages or an increase in the prices of input resources (Matić, 2011). Considering this, inflation can disrupt normal economic relations and the rational behavior of economic entities, causing a deformation of the structure of relative prices. This can lead to a decrease in confidence in the currency and an increase in interest rates, which in turn can reduce investment and economic growth. The effects of inflation are explained as the time it takes for changes in relative prices to occur, meaning that some prices rise faster than others. This can have different effects on different sectors of the economy and society. Also, inflation can lead to income redistribution, where the rich get richer and the poor get poorer. This happens because the prices of goods and services rise faster than income (Matić, 2011). Inflation can also have a negative impact on people's purchasing power and social stability. Therefore, it is crucial that economic entities and monetary policy respond and react to the occurrence of inflation in a timely manner in order to mitigate its negative consequences (Babić, 2004). Because of all the above, it is undeniable that inflation has a profound effect on consumer behavior. Consumer behavior as a theoretical discipline can be described as a specific way in which people act when buying and using products and services (Grbac & Lončarić, 2010). This theory encompasses all objectively expressed reactions that occur during the purchase or consumption process, i.e. it represents a process that goes through several stages, from the purchase stage, the use stage, to the disposal stage (Crljen, 2017). In other words, consumer behavior refers to the cycle of acquisition and consumption of products, services and ideas by consumers. In addition, it includes activities that take place after the purchase itself, such as evaluation and after-sales behavior (Kesić, 1999). In an environment where prices are constantly increasing, consumers face financial challenges and uncertainty. This continuous rise in prices has an impact on their perception of value for money and the way they spend. There are many factors that influence consumer behavior in different ways (Kesić, 2006), but price still plays a leading role when making a purchase decision (Kotler & Keller, 2008). As inflation progresses, consumers become sensitive to fluctuations in the prices of goods and services. Their purchasing power decreases, so any additional spending becomes a more difficult decision. Price increases can cause concern among consumers, as they wonder if their money will be enough to cover basic needs and planned purchases. Because of this, studying consumers is a very complex task due to the interaction of numerous variables that mutually influence both themselves and consumer behavior. Consumer behavior models were developed with the aim of facilitating the understanding of this complexity and making consumer behavior accessible and understandable to a wider audience (Previšić & Ozretić Došen, 2007). Likewise, inflation encourages consumers to change their spending habits. Some increase savings and refrain from unnecessary expenses, while others quickly spend money to avoid future price increases. This consumer behavior has long-term consequences for the economy as it affects overall consumption and investment. During inflation, people even tend to spend more while they still have good purchasing power than they will in the future if inflation continues to increase.

This leads to indebtedness of the population and creates a vicious circle that further encourages inflation in the future (Samuelson et al., 2000). In order to maintain the stability of the economy, key factors that have a significant negative impact on inflation should be controlled in order to keep inflation under control (Buturajac, 2022 according to Lim & Kun Sek, 2015). In conditions of inflation, consumer behavior becomes key to understanding economic changes. Their reaction to rising prices and changes in the value of money shapes the economic picture and affects the measures taken to control inflation. Therefore, it is important to analyze and understand how inflation affects consumer behavior in order to better understand the complexity of this economic phenomenon. The thing that most affected the psychological state of consumers is inflation, and related to it, research will be conducted in this paper in the form of analyzing changes in consumer spending habits. So, consumer habits were affected by various events such as: the war in Ukraine, the COVID-19 pandemic, the lockdown and finally inflation. All these events have caused fear, uncertainty, geopolitical change and instability, and general concern. These are all facts that hit consumers quickly and within three years, and where consumers had to react in the most correct way known to them, and thus changed their consumer habits through a change in their psychological state. Changes in consumer behavior in this paper will be viewed from the aspect of current market disturbances that caused inflation, among which the causes are the Covid-19 pandemic, war events in Ukraine and the introduction of the euro as the new official currency in the Republic of Croatia (Novak & Kutnjak, 2022 ). During the Covid-19 pandemic and after the lockdown, consumers changed their habits and behavior patterns (Sheth, 2020, Loxton et al., 2020). Stockpiling (Donthu & Gustafsson, 2020), panic buying (Yuen et al., 2020) and the increase in online shopping (Novak & Kutnjak, 2022) are highlighted in the literature. The newly created situation tried to prevent any form of social contact in the provision of services, so there was a noticeable drop in demand for hairdressing services and recreation (Laato et al., 2020), while an increase in demand was recorded for food products such as snacks and alcohol (Poelman et al. al., 2021), and disinfectant products, cleaning products and protective masks (Vanapalli et al., 2021; Laato et al., 2020; Pantano et al., 2020). This increase in demand was also reflected in price increases, which is why many consumers accepted price increases of up to 300% for certain categories of products and services during that period (Pantano et al., 2020). In addition to the above, the war events between Ukraine and Russia also favored further price growth, i.e. they directly affected the areas of the agricultural, food and, above all, energy supply chain (Jagtap et al., 2022). The consequences of all this are felt by consumers all over the world, especially throughout Europe, because inflation has reduced purchasing power, so individual households with lower incomes have to make difficult decisions in choosing the priorities of the consumer basket (Novak & Kutnjak, 2022), increasing the budget for basic needs such as energy, transportation and food, while money directed to savings or luxury within such households is drastically reduced (Bazzoni et al., 2022). In addition to households, states also had the problem of meeting costs due to energy resources, which led to the introduction of new rules and reduction of resources, and all of the above caused additional fear and restlessness among consumers (G. Benton et al., 2022). In addition to all the above events, Croatia also had to face the introduction of a new currency when the Euro was introduced as the official currency of the Republic of Croatia on January 1, 2023. Learned from the experience of other EU member states, a slight increase in prices was expected with the introduction of the euro (Pufnik, 2018), which consumers did not want after all the above events. Thus, the introduction of the euro caused additional fear among consumers because the conversion costs began to "spill over" to consumers (Novak & Kutnjak, 2022). Numerous cases of unfair rounding of prices, use of incorrect conversion rates have been recorded, and the newly created situation further endangers the so-called Money illusion. The monetary illusion explains the phenomenon when consumers are under the strong impression of reference prices when evaluating prices in euros, and such a mental state of

consumers will be in an illusion until they get fully used to the new currency. In addition, the money illusion is also caused by the feeling of poverty when consumers compare a salary in euros with a salary in the domestic currency (Novak & Kutnjak, 2022; Gärling & Thøgersen, 2007). Each of the mentioned phenomena caused changes in consumer behavior, whereby consumers in the Republic of Croatia began to complain about inflation, and the media further inflamed anger during the summer months by emphasizing the daily increase in prices in the tourism sector. This review of the literature indicates the key events that caused inflation, which caused consumers to change their buying habits, while the results of the empirical research will confirm the studied situation.

### 3. RESEARCH METHODOLOGY

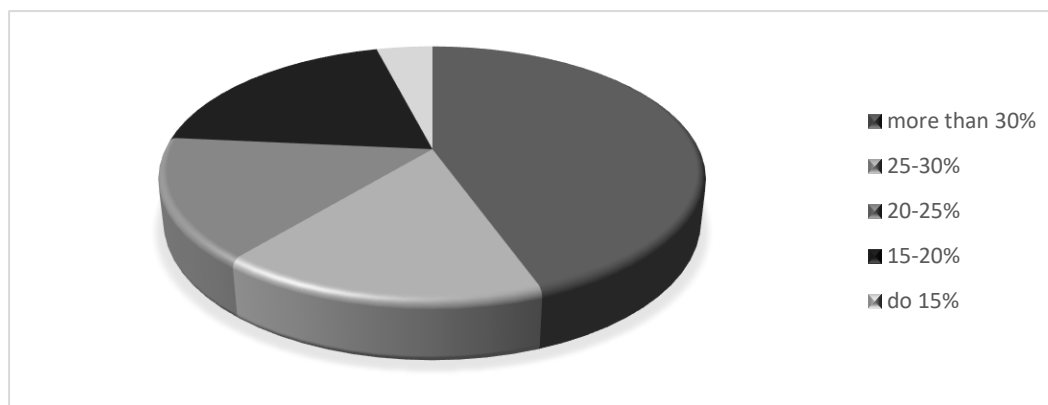
The goal of this research was to study consumer behavior in situations when the economy is going through various challenges, in this case inflation. The focus of the research was on understanding how inflation affects consumer spending patterns and how they adjust their costs and priorities in such conditions, that is, how they react to price increases of almost all products on the consumer market. It is important to recognize their changes in shopping habits, so that products and services can be offered to them based on this, while the store and customers achieve a win-win situation. For the purposes of this research, a survey was conducted using a Google form, which consists of 25 questions. Only adults and persons who were or are currently employed could access the survey. The social networks used as mediators according to the questionnaire were Facebook and Instagram. The research was conducted on a sample of N= 200.

Gender	Men	Women			
	77%	23%			
Number of household members	Two members	Three members	Four members	Five members	More
	28%	20%	28%	12%	12%
Age	18-25	25-35	35-50	50-70	More
	45%	20%	22%	12%	1%
Monthly household income	Do 500 €	500-1000 €	1000-1500 €	1500-3000€	More
	6%	25%	25%	30%	14%

*Table 1: Sociodemographic data  
(Source: author's)*

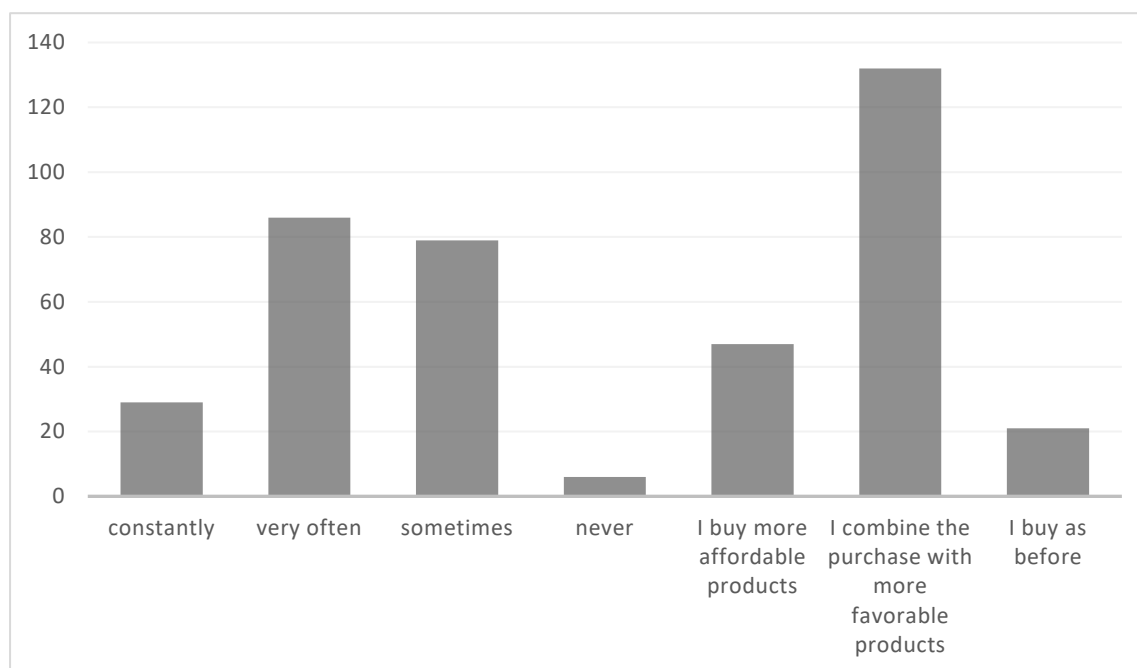
The research is focused on the analysis of consumer behavior in the period of inflation and their changes in behavior, comparing them with the period before inflation. The following indicators were obtained.

*Figure following on the next page*



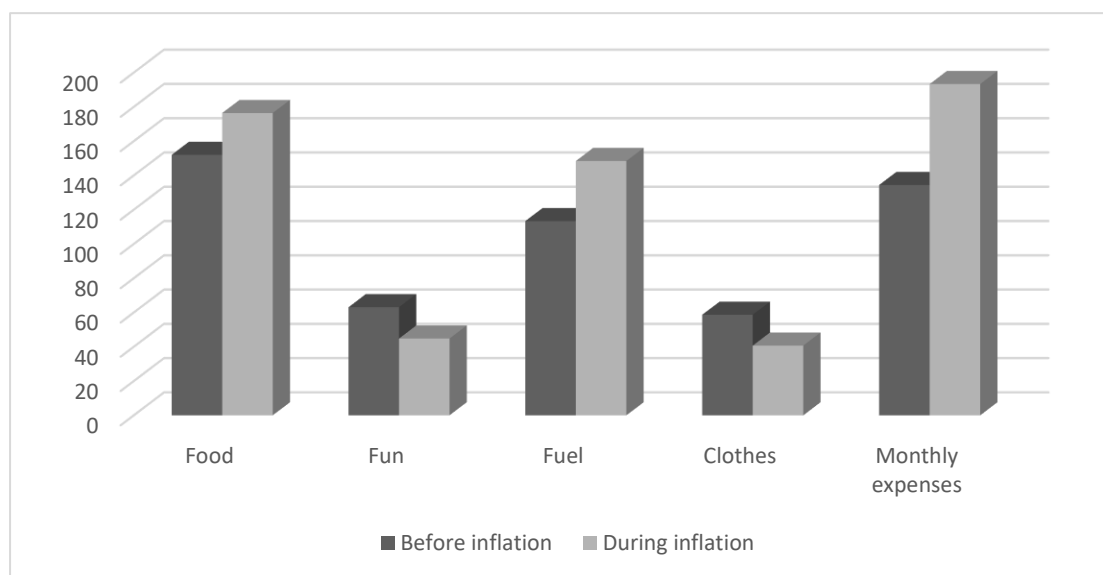
*Figure 1: Price increase in the last 12 months  
(Source: author's)*

44.5% of respondents believe that prices have increased by almost more than 30% within 12 months. The stated attitude was motivated by information from the media, which significantly influenced the instability in consumer behavior and raised their fear. A very small percentage of respondents do not notice significant changes in price levels.



*Figure 2: How often do consumers think about inflation and do they spend as much as before  
(Source: author's)*

43% of respondents think about inflation very often, 39.5% of respondents sometimes think about inflation, and only 3% of respondents never think about inflation. 41% of the respondents combine their purchase with cheaper products, 25% of the respondents buy what they like at that moment, so by assumption, like the first part of the respondents, they buy a mixture of both products that have become significantly more expensive and cheaper products. 23.5% of respondents answered that they buy products and services that are more affordable. It can be concluded that inflation had an impact on that number of respondents. 10.5% who answered no, I still buy the products and services I used to buy even before inflation inflation had no effect and did not affect their consumption of products, services and goods much. Then the research focused on the changes in the respondents' consumption before and during inflation.



*Figure 3: Monthly consumption before and during inflation  
(Source: author's)*

The above indicators indicate a significant growth in spending on food, fuel and monthly expenses, which causes a drop in spending on clothing and entertainment. Based on the research carried out by the survey, the conclusion is reached that consumers tend to change their behavior, habits and attitudes when they are faced with unpredictable circumstances on the market that have negative consequences. Even if they have practiced a certain way of behavior for many years, consumers are ready to radically change their lifestyle under the influence of growing fear and problems. Initial resistance to change can be overcome when consumers understand the seriousness of the situation and adapt to the new conditions. Adjustment may include reducing spending, changing shopping priorities, increasing savings, and generally adjusting spending habits to weather the period of uncertainty. These changes have a significant impact on the market as the demand for certain products and services changes. Companies and retailers must adapt their strategies to respond to the new needs of consumers and offer them suitable products and services. It is important to note that consumers often adapt out of necessity rather than choice. Their behavior may return to its previous pattern when the situation stabilizes and consumer confidence is restored. Essentially, research suggests that consumers are prepared to make significant changes in behavior and habits to deal with unpredictable circumstances. This adjustment has a profound impact on the market, retailers and the economy as a whole, so it is important to monitor and understand changes in consumer behavior in order to respond and adapt to market conditions in a timely manner.

#### 4. CONCLUSION

Consumer behavior is an extremely important determinant for research when one wants to approach the customer, because within this discipline of marketing, consumer attitudes, opinions, solutions, everything that has to do with psychology and other elements of social sciences will be studied. Understanding consumer behavior patterns plays an important role in organizations because they can predict how consumers will behave during certain actions or similar notifications. Given that inflation, which has as its consequential cause an increase in general prices in the economy, has a very strong impact on the change in consumer buying habits. With the arrival of disruptions in the economy such as the war in Ukraine, the COVID-19 pandemic and the introduction of a new currency in the Republic of Croatia, changes took place in the economy that had an impact on changing consumer buying habits. Thus, during the pandemic, consumers stockpiled products, but also money, and after the implementation of the

quarantine and the complete freedom of movement of citizens, the demand increased drastically and caused an increase in inflation. In the conducted practical research in which 200 respondents who were or are in employment took part, it can be concluded that globally all respondents reduced their consumption when inflation arrived. In each category of food, entertainment, travel expenses/fuel, clothing and utilities, the respondents mostly had changes in their answers related to price reductions in all categories of consumption, while in the categories of utilities and food it can be concluded that more respondents started all to spend more for these goods because it is a primary life need, to have water, food, electricity and gas. It is important to point out that consumer habits are extremely sensitive to changes in the market and the economy. In order to achieve the desired result, it is crucial to properly handle and communicate with consumers in these situations. Consumers tend to change their habits in unpredictable circumstances that have a negative impact on their financial stability. In conclusion, knowing the psychological state of consumers in the conditions of changes in the market becomes a key factor in business.

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## IMPACT OF CRISIS ON RECOGNITION AND MEASUREMENT OF PROVISIONS IN FINANCIAL STATEMENTS

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### ABSTRACT

*Provisions, as a separate item in the financial statements, have an effect on the balance sheet and the profit and loss account and are also published in the notes to the financial statements. The special and significant characteristic of provisions is that they are determined by the company's management, which means that they are subject to assessment. In this sense, there is a great risk and the possibility of manipulation with this position of financial statements in order to achieve the desired financial result. The aim of this work is to determine the practices of reporting provisions on a sample of Croatian companies with a special emphasis on determining and identifying practices in the recognition and measurement of provisions in financial statements in the period before the COVID pandemic and during the pandemic period. Research was conducted on a sample of 53 companies listed on Zagreb Stock Exchange in period 2016-2021. The main goal of the research is to determine whether companies increase or decrease provisions in periods of crisis as well as to analyze impact of provisions on financial result in period before crisis and in crisis period.*

**Keywords:** *crisis, financial manipulations, provisions*

### 1. INTRODUCTION

Provisions are liabilities that are reported in the financial statements of companies and present important and significant item of financial statements due to fact that they are based on judgements. More precisely, this position of the financial statements is subject to management's assessments and in that sense is vulnerable to management's manipulations. Suer (2014, 392) points out that "provisions are a vehicle of earnings management and one of the most discretionary accruals". Provisions and disclosure of provisions in financial statements is often used by managers to meet different earnings targets. A provision is a present obligation of an unspecified time or amount, resulting from past events, the settlement of which is expected to result in an outflow of resources that generate economic benefits (IAS 37, item 10). Long-term provisions can be defined as the amount of cost charged to the current profit and loss account due to an event that will cause expenses in future periods and whose amount cannot be determined with complete accuracy, but must be estimated (Belak, 2006, 416). Provisions, therefore, represent long-term liabilities of the company and as such have a direct effect on the balance sheet and profit and loss account of the company. Namely, at the same time as the liabilities based on provisions are recognized in the company's balance sheet, expenses based on provisions are presented in the profit and loss account. One of the fundamental features of provisions is that they are determined by the company's management, which means that they

are based on subjective assessment of the management. In this sense, there is a great risk and the possibility of manipulation of this position in order to achieve the desired financial result. Namely, the position of provisions is one of the positions often used for manipulating with income or expenses depending on the goals that the management of the company wants to achieve. It is a common situation that company's management creates reserves in good business years by using aggressive or false provisions and in poor business years uses these reserves to improve business results (Belak, 2017, 541). Management can be motivated for adjusting financial statements using different forms of creative accounting techniques in good years but also in bad years such as past few years when financial crisis was caused by COVID pandemic. COVID 19 pandemic which “has shocked the entire global economy” (Sun et al, 2021, in Aljawaheri et al 2021, 707) causing crisis and “the markets responded to the CORONA pandemic with sharp declines, and investor uncertainty rose to record levels which was not seen since the global financial crisis of 2007-2009” (Aljawaheri et al, 2021, 708). In the context of the crisis caused by the COVID-19 pandemic, which was reflected on the entire business world, it is interesting to analyze provisions as specific item in financial statements whose basic attribute is that they are based on judgements of expected future events. So it was interesting to determine how managers reacted to the crisis and financial instability caused by the COVID-19 pandemic in the context of the assessment and reporting the provisions in the financial statements. The aim of this paper is to determine the practice of reporting provisions on a sample of Croatian companies with a special emphasis on determining and identifying practices in the recognition and measurement of provisions in financial statements in the period before the COVID pandemic and during the pandemic period. The research was conducted on a sample of 53 companies that were listed on the regulated capital market in the Republic of Croatia from 2016 to 2021. Paper contributes to existing literature in the area of provision measurement and disclosure due to the fact that authors analyze impact of crisis caused by COVID 19 on provision disclosure in financial statements. It is interesting to analyze whether companies increase or decrease provisions in times of crisis as well as connection between provisions and financial result. Paper is structured as follows. After introductory part, some theoretical aspects of provisions and literature review are presented. Third chapter brings description of the sample and research results while in the last part of the paper concluding remarks are presented.

## **2. THEORETICAL ASPECTS OF PROVISIONS AND LITERATURE REVIEW**

Provisions present specific part of financial statements due to fact that they are based on management judgments and intent. In order to recognize and disclose provisions management is required to define probabilities, key assumptions and uncertainties related to this items. Recognition and measurement of the provision is defined in IAS 37: Provisions, Contingent Liabilities and Contingent Assets. Provisions can be defined as “the amount of cost charged to the current profit and loss account due to an event that will cause expenses in future periods and the amount of which cannot be determined with complete accuracy but must be estimated” (Belak, 2017, 628). Moreover, Belak (2017) states how the assessment of long-term provisions should be realistic and objective and based on real data that can be verified and based on experience from previous years. Provisions are recorded as cost in the profit and loss account and as long-term liability in the balance sheet. This position of financial statements should be reviewed and adjusted on each balance sheet date in order to reflect the best current estimate. If it is no longer probable that the settlement of the liability will require an outflow of the resources provision is reversed. Using estimates and assumptions in recognizing and reporting provisions opens space for manipulating financial statements. Suer (2014, 392) points out how provisions are “vulnerable to manipulation”. Similar is emphasized by Sevin & Schroeder (2005) who point out that using estimations in recognizing provisions opens the door to earnings manipulation.

Moreover, they state how “cookie jar reserves” present one of the main earnings management techniques and it refers to overstating sales returns or warranty costs in good years and using them in bad years to reduce similar changes (Sevin and Schroeder, 2005, in Suer, 2014, 393). Peek (2004) examined use of position of provisions for the purposes of earnings management. Research was performed on a sample of listed Dutch companies between 1989 and 2000 and research results have shown how Dutch firms “use their discretion in recognizing these provisions under two circumstances. First, firms report unexpectedly large provisions to smooth current earnings increases. Second, when earnings are low relative to the previous year's earnings, firms report unexpectedly large provisions if they expect that current earnings are relatively transitory” (Peek, 2004, 27). Suer (2014) examined recognition and disclosure of provisions at the sample of 100 non-financial companies listed on Istanbul stock Exchange. Research results revealed that BIST 100 non-financial companies report provisions in 39 different types. Position of provisions was analyzed in two years and according to results companies disclose high amounts for provisions based on lawsuits and no differences in reporting provisions in two observed years were noted. Acar & Ozkan (2017) performed research on the relation between provisions and corporate governance on a sample of 1.078 firm-year observations in period 2005-2010. Sample was comprised of companies listed on Borsa Istanbul. According to results 62% of observed companies recognize provisions in their financial statements. Moreover, companies that disclose provisions are characterized by larger board of directors, concentrated ownership and institutional owners. Impact of COVID-19 on provisions measurement was examined by Abdelkader (2022). Author relied on descriptive approach and presented the requirements for recognitions and measurement of provisions in accordance with IAS 37.

### 3. RESEARCH RESULTS

In this part of the paper research sample and research results are presented.

#### 3.1. Research sample and data

The research sample is comprised of nonfinancial companies listed on the Zagreb stock exchange in period 2016 (first year of analysis) to 2021. Companies were included in the sample randomly with the exception of financial companies. Total of 53 yearly observations were included meaning that a total of 318 firm-year observations in period 2016-2021 were included in analysis. For the purpose of this research we focused on following accounting variables: provisions, total liabilities and financial result. Data on accounting variables were collected from financial statements of observed companies. Based on data on provisions and liabilities provision to liabilities ratio (further in text: PLR ratio) was calculated. Descriptive statistics for PLR ratio is presented in Table 1.

	2016	2017	2018	2019	2020	2021
N	53	53	53	53	53	53
Mean	0.0557	0.0426	0.0375	0.0415	0.0502	0.0487
St. deviation	0.1538	0.0864	0.0708	0.0856	0.0936	0.0834
Min	0	0	0	0	0	0
Max	0.80	0.40	0.39	0.42	0.43	0.37

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

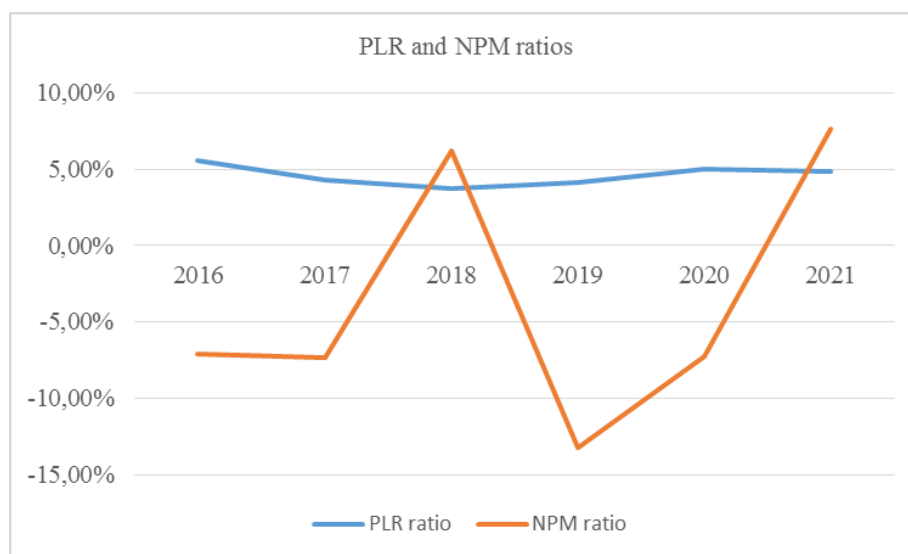
Minimum value of PLR ratio in all years of analysis was 0 meaning that there were companies that did not report provisions in their financial statements. Maximum value is achieved in 2016 where it amounted 0.80 but in all following years maximum values were around 0.40 meaning

that maximum proportion of provisions in total liabilities amounted 40%. Mean value for the observed variable ranges from 0.0375 in 2018. to 0.0557 in 2016. Standard deviation as a measure of dispersion shows that there is a large dispersion among companies due to fact that in all years of analysis standard deviation is greater than the arithmetic mean. Furthermore, for the purposes of this paper financial result is proxied by net profit margin (further in text: NPM ratio) which was calculated as ratio between financial result and total income. Descriptive statistics for NPM ratio is presented in Table 2.

	2016	2017	2018	2019	2020	2021
N	53	53	53	53	53	53
Mean	-0.0709	-0.0738	0.0617	-0.1325	-0.7242	0.0766
St. Deviation	0.6905	0.7439	0.1706	0.7814	0.5711	0.3949
Min	-4.77	-4.84	-0.61	-4.31	-30.27	-0.76
Max	0.39	0.62	0.67	0.37	0.76	1.87

*Table 2: Descriptive statistics for NPM ratio  
(Source: author's calculation)*

Mean value of NPM ratio was negative in all the observed years except 2018 when it amounted 0.0617. Minimum values of NPM ratio ranged from -30.27 in 2020 to -0.76 in 2021. According to data it can be noted that NPM ratio increased in 2021 and that financial results of the observed companies improved. Trend in PLR ratio and NPM ratio in period 2016-2021 is shown in figure 1.

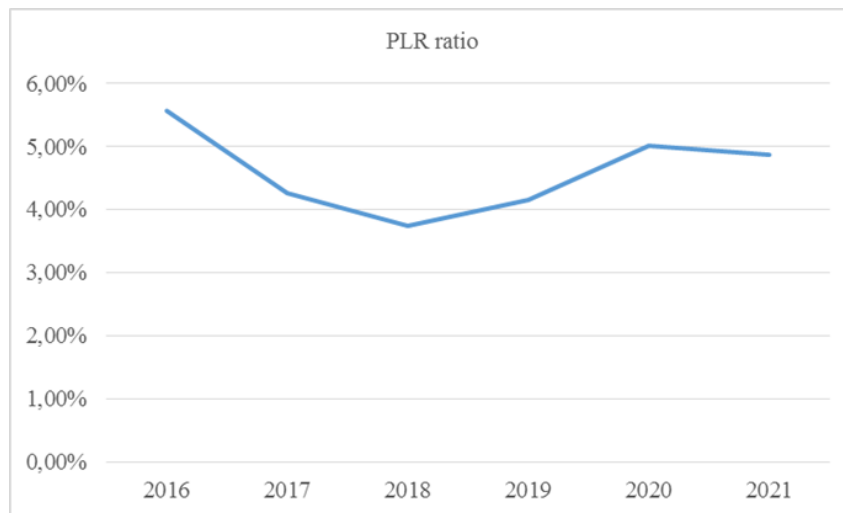


*Figure 1: PLR and NPM ratios in period 2016-2021  
(Source: author's calculation)*

### 3.2. Research results

Main goal of our research was to determine the practices of Croatian companies in reporting provisions. With this purpose we focused on 53 companies randomly selected on Zagreb stock exchange. In the first year of analysis, which was 2016., out of total number of analyzed companies 21 of them or 39% of observed companies did not report provisions in financial statements. In order to test impact of crisis caused by COVID 19 pandemic on reporting provisions we first focused on PLR ratio in the observed period. Figure 2 shows the movement of the coefficient in the observed period. It can be noted that PLR ratio achieved the highest score in the first year of analysis where the mean value of the ratio was 0.0557.

In two following years, that are preceding crisis we can observe a slight decrease in the PLR ratio which amounts 0.0426 in 2017 and 0.0375 in 2018. This trend of reporting lower provisions was turned in 2019 where increase of PLR ratio was noted. This shift in trend could be caused by crisis due to fact that COVID pandemic was declared on 11th March 2020 and impact of upcoming financial crisis could be reflected already in financial statements presented for year 2019 due to the fact that in the Republic of Croatia new financial reporting deadlines were introduced because of COVID-19 pandemic. Financial statements for the year 2019 should have been submitted for public announcement by the end of August 2020. In terms of recognizing provisions in financial statements it is interesting to analyze how management responded to first signs of COVID caused crises due to fact that in challenging, crisis time, management is under pressure to manipulate accounting information and smooth financial results over years and provisions are one of the items often used for these purposes. The main goal of this paper was to examine how did companies react on crisis caused by COVID-19 in terms of recognizing and reporting provisions in financial statements.



*Figure 2: PLR ratio in period 2016-2021  
(Source: author's calculation)*

Goal of this research was to determine whether differences exist in reporting provision in the year preceding crisis and in the year of crisis. In order to obtain answer to our research question we performed paired sample t-test. Results of the conducted analysis are presented in table 3.

t-test			
Mean difference	0.00396	95% conf	(-0.00722 0.01515)
t	-0.71068	p (same mean)	0.48046

*Table 3: Results of paired sample t-test  
(Source: author's calculation)*

When performing paired samples t-test if the p-value is less or equal to the significance level (which is 5%) the decision is to reject the null hypothesis. If the p-value is higher than 5% then null hypothesis should be accepted. According to results, obtained p-value amounts 0.48046 which means how null hypothesis is accepted which shows that there are no differences in reporting provisions in the year before pandemic and the year of pandemic. In the further step of the analysis authors focused on examining the correlation between provisions and financial result in the year before crisis and year of crisis. Results of conducted analysis are presented in the following table.

	2016	2017	2018	2019	2020	2021
Correlation	-0.0169	-0.0717	0.0509	0.0691	-0.0152	-0.0216

*Table 4: Correlation results in period 2016-2021*

*(Source: author's calculation)*

From data presented in table 4 it can be observed how correlation among provisions measured by PLR ratio and financial result measured by NPM ratio fluctuates from negative to positive values. In all the observed period correlation among observed variables is weak considering the fact that the correlation between the observed variables is stronger if the coefficient is closer to 1. For example, in 2016 correlation among variables is negative meaning that increase in variable PLR ratio causes decrease in NPM ratio. But this connection is quite weak (coefficient amounts -0.0169) so we cannot draw strong conclusions about influence of provisions on financial result. The sign of the correlation coefficient was changed in 2018 and 2019 and it turned positive which is not in line with expectations. However, these positive values are also quite low and we cannot draw conclusions about connection of the observed variables and impact of provisions on financial result in the observed period. Due to such findings further efforts should be undertaken with the aim of clarifying the relationship among these variables.

#### 4. CONCLUSION

Measuring and disclosing provisions in financial statements is an important and challenging issue in the process of financial reporting. Since provisions are based on estimates they allow management challenging space for using techniques of creative accounting and managing earnings on this position of financial statements. The aim of this paper was to determine practice of Croatian companies in reporting provisions and analyze differences in reporting provisions in the period before the COVID pandemic and during the pandemic period. Research was conducted on a sample of 53 non-financial companies that were listed on Zagreb stock exchange in period 2016-2021. According to results in the first year of analysis 61% of observed companies reported provisions in financial statements. PLR ratio which was used as proxy for provisions was highest in the first year of analysis when it amounted 0.0557. In the following two years a slight decrease in the PLR was observed and this trend was again turned in 2019 where increase in PLR ratio was noted. Results of paired sample t-test showed that, despite increase in PLR ratio in 2019, there were no differences in reporting provisions in the year before pandemic and the year of pandemic. This can be explained by the fact that at that time it could not have been predicted that the pandemic would take such hold on a global scale and ultimately have such an impact on business events and whole global economy. Moreover, the relation between provisions and financial result was examined. Research result revealed how correlation among these variables in two observed years is quite low and further efforts should be undertaken in order to examine this relationship more detail. However, this research contributed to better understanding of provisions and reporting provisions on a sample of Croatian companies and it contributes to rather scarce literature in the area of provision reporting. As significant contribution of this paper, an attempt of clarifying the impact of crisis on provisions should also be pointed out since this creates the foundations for future research on the impact of unexpected crisis events on the effect of manipulations with provisions. As a limitation of this study lack of literature in the area should be pointed out. Generally, there is a lack of literature about provisions and even more when research area is focused on analysis of crisis on provision disclosure. Future research should focus on clarifying impact of crisis on provisions recognition using sample from other countries and maybe observing even longer time periods.

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# ECONOMIC GROWTH AND EXCHANGE RATE REGIMES IN THE CENTRAL AND EASTERN EUROPEAN COUNTRIES: A COINTEGRATION ANALYSIS

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## **ABSTRACT**

*The group of Central and Eastern European countries primarily includes developing countries, which are characterized by significant dynamics of macroeconomic indicators in their aim to reach the economic development and standard of living of developed countries in the Western Europe. As developing countries, Central and Eastern European countries traditionally have higher economic growth on average than developed countries in Western Europe. At the same time, half of the Central and Eastern European (CEE) countries are members of the Euro Area, and the other half of CEE countries have chosen different exchange rate regimes. On the other hand, countries with fixed exchange rates experience stable, but lower economic growth on average, relative to countries with floating exchange rates, which raises the question of whether there is a relationship between the choice of exchange rate regime and economic growth. In the present study, economic growth and exchange rate regimes in the CEE countries are examined in the context of the presence of a long-term relationship between them, using cointegration analysis and the econometric software Eviews for this purpose. Data from the International Monetary Fund's Annual Report on Exchange Arrangements and Exchange Restrictions are used to determine countries "de facto" exchange rate regimes. As regards the exchange rate regimes, a major challenge facing the analysis is to which group the euro area member states should be classified in.*

**Keywords:** *Cointegration Analysis, Economic Growth, Exchange Rate Regimes*

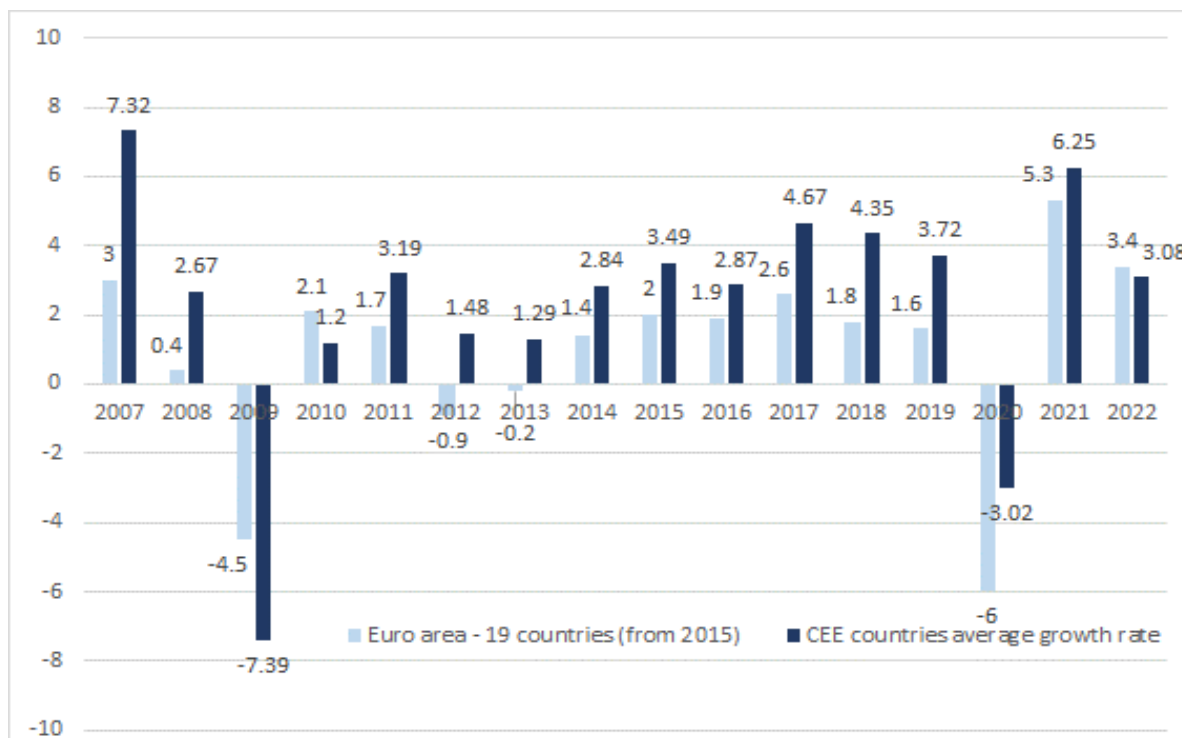
## **1. INTRODUCTION**

Economic growth is among the main macroeconomic indicators for any country, and sustainable growth is a prerequisite for increasing the income of economic agents. Many factors affect economic growth, and empirical evidence suggests that the choice of exchange rate regime may be one of them. Countries with fixed exchange rates experience stable, but lower economic growth on average, relative to countries with floating exchange rates, which raises the question of whether there is a relationship between the choice of exchange rate regime and economic growth. In the present study, economic growth and exchange rate regimes in the Central and Eastern European (CEE) countries are examined in the context of the presence of a long-term relationship between them, using cointegration analysis and the econometric software Eviews for this purpose. The main hypothesis of the study is that there is a long-term relationship between economic growth in CEE countries and the chosen exchange rate regime.

## **2. ECONOMIC GROWTH IN THE CEE COUNTRIES**

The study examines economic growth in CEE countries, which include Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia and Slovakia, for the period 2007-2022. The group of Central and Eastern European countries primarily includes developing countries, which are characterized by significant dynamics of macroeconomic indicators in their aim to reach the economic development and standard of living of developed countries in the Western Europe.

As developing countries, Central and Eastern European countries traditionally have higher economic growth on average than developed countries in Western Europe (Figure 1).



*Figure 1: Average real GDP growth rate (annual %) in Euro Area countries and CEE countries*  
(Source: Eurostat)

As Figure 1 shows, the average economic growth in the CEE countries during almost the entire period considered was significantly higher than the economic growth of the Euro Area countries. An exception is 2009, when the CEE countries (mainly due to the significant decline in Estonia, Lithuania and Latvia) experienced a larger decline in GDP than the Euro Area countries. In 2010 and 2022, economic growth in CEE countries is also close, but still below that of the Euro Area. At the same time, half of the Central and Eastern European countries are members of the Euro Area (currently Estonia, Latvia, Lithuania, Slovenia and Slovakia), and the other half of CEE countries (Bulgaria, the Czech Republic, Hungary, Poland and Romania) have chosen different exchange rate regimes. Bulgaria is in a Currency Board, and the Czech Republic, Hungary, Poland and Romania apply a floating exchange rate regime during almost the entire period 2007-2022. For the purposes of the analysis in this study, countries are divided into three groups depending on the chosen exchange rate regime. The first group includes the countries in Currency Board and other regimes of fixed exchange rates. The second group includes the CEE countries that are members of the Euro Area. And the third group includes countries that have chosen a floating exchange rate regime. According to empirical data, countries with fixed exchange rates should experience stable, but lower economic growth on average, relative to countries with floating exchange rates. Figure 2 shows that a similar conclusion can also be drawn for CEE countries - for 10 of the years in the period 2007-2022, the average economic growth of countries with floating exchange rates is higher than that of countries with fixed exchange rates. For the remaining 5 years of the period, economic growth in countries with floating exchange rates is less than growth in other countries, or if there is a decline (2020), it is greater.

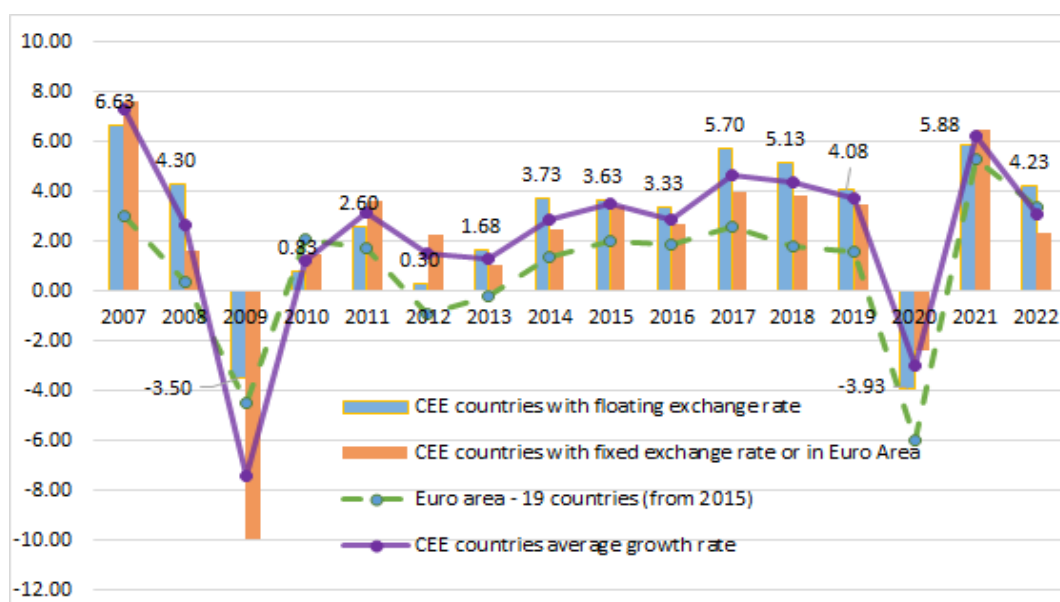


Figure 2: Average real GDP growth rate (annual %) in Euro Area countries, CEE countries and CEE countries with fixed and floating exchange rate  
(Source: Eurostat)

For the analysis of economic growth in Figure 2, the CEE countries that are members of the Euro Area are grouped with the countries with a Currency Board, since the countries have fixed their exchange rates to the central "anchor" currency (the euro), and to the other currencies they have a floating exchange rate.

## 2.1. Literature review

The influence of the choice of exchange rate on the country's macroeconomic indicators, and in particular on economic growth, remains controversial according to many studies. Frankel, Ma&Xie (2019) "construct a new database characterizing the de facto Exchange Rate Regime (ERR) for 145 countries during the full post-Bretton Woods period" and find that "intermediate ERR are positively related to economic growth at the greatest significance level" and that "this relationship varies among countries at different income levels, and the choice of ERR appears to be more important for low-income countries rather than high-income ones". Hansson (2022) examines the relationship between the two variables for a sample of sixty countries and finds out "that the non-industrialized countries perform better under a fixed regime with significance for two out of three regressions while the industrialized countries perform worse under a fixed regime, implying that a floating regime is preferable". Guellil, Marouf&Benbouziane (2017) conclude "that there is a positive relation between exchange rate regime and economic growth with a preference for fixed exchange rate regimes in achieving the highest growth rate.". Petreski (2009) examines empirical and theoretical studies and concludes that "one group of studies found that a pegged exchange rate stimulates growth, while a flexible one does not, another group concluded the opposite holds. Moreover, a third group of studies came up with no effect or inconclusive results". Kirova (2014) reached the same conclusions regarding the CEE countries.

## 3. METHODOLOGY

Cointegration analysis is used to reveal a long-term relationship between non-stationary variables (Kovachevich, 2016), i.e. variables where there is a trend. In order to choose an appropriate test for the cointegration analysis, it is necessary to check the data for stationarity. The source of data on economic growth rate (annual %) in CEE countries is Eurostat.

Data from the International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions* are used to determine countries' "de facto" exchange rate regimes. As stated above, countries are divided into three groups depending on the "de facto" applied exchange rate regime (Table 1 and Table 2). Group 1 includes the countries in Currency Board and other regimes of fixed exchange rates. It includes Bulgaria throughout the period and Estonia, Latvia, Lithuania and the Czech Republic for several years. The second group includes the CEE countries that are members of the Euro Area – Slovenia, Slovakia, Estonia, Latvia and Lithuania. And the third group includes countries that have chosen a floating exchange rate regime – Poland, Romania, Hungary and Czech Republic.

Years	Bulgaria	Estonia	Latvia	Lithuania
2007	1	1	1	1
2008	1	1	1	1
2009	1	1	1	1
2010	1	1	1	1
2011	1	2	1	1
2012	1	2	1	1
2013	1	2	1	1
2014	1	2	2	1
2015	1	2	2	2
2016	1	2	2	2
2017	1	2	2	2
2018	1	2	2	2
2019	1	2	2	2
2020	1	2	2	2
2021	1	2	2	2
2022	1	2	2	2

*Table 1: Exchange rate regimes in Bulgaria, Estonia, Latvia and Lithuania*  
(Source: International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions*; Author's calculations)

With the exception of Estonia, Lithuania and Latvia, the CEE countries remained in the same group for almost the entire period.

Years	Czech Republic	Hungary	Poland	Romania	Slovenia	Slovakia
2007	3	1	3	3	2	1
2008	3	3	3	3	2	1
2009	3	3	3	3	2	2
2010	3	3	3	3	2	2
2011	3	3	3	3	2	2
2012	3	3	3	3	2	2
2013	3	3	3	3	2	2
2014	1	3	3	3	2	2
2015	1	3	3	3	2	2
2016	1	3	3	3	2	2
2017	3	3	3	3	2	2
2018	3	3	3	3	2	2
2019	3	3	3	3	2	2
2020	3	3	3	3	2	2
2021	3	3	3	3	2	2
2022	3	3	3	3	2	2

*Table 2: Exchange rate regimes in Czech Republic, Hungary, Poland, Romania, Slovenia and Slovakia*  
(Source: International Monetary Fund, *Annual Report on Exchange Arrangements and Exchange Restrictions*; Author's calculations)

In the present study, economic growth and exchange rate regimes in the CEE countries are examined in the context of the presence of a long-term relationship between them, using cointegration analysis and the econometric software Eviews v.12 for this purpose. As mentioned above, before applying a cointegration test, it is necessary to check the data for stationarity. An Augmented Dickey-Fuller (ADF) test is used in order to identify whether the data are stationary, and if the data are non-stationary ADF test can identify the integration order of the source data. In order to apply the ADF test correctly, data on economic growth and exchange rate regimes of the CEE countries were previously checked for the presence of a trend and/or constant. The results of the ADF test are presented in Table 3.

<i>Country</i>	<i>GDP growth rate(%)g. Level</i>	<i>Exchange rate regime</i>
<i>Stationary data</i>	Czech Republic, Estonia, Latvia, Lithuania	Estonia
<i>Non-stationary data</i>		Czech Republic (1st order of integration), Latvia (2nd order of integration), Lithuania (2nd order of integration)

*Table 3: Augmented Dickey-Fuller stationary test results  
(Source: Author`s calculations)*

The results of ADF test for exchange rate regime data in Bulgaria, Hungary, Romania, Slovakia, Slovenia and Poland show highly collinear lagged values, so the cointegration test cannot be applied. For this reason, a panel Auto-Regressive Distributed Lag (ARDL) model cannot be applied either. Thus, the analysis continues only with the Czech Republic, Estonia, Latvia and Lithuania. Since the economic growth and exchange rate regime data of the countries are integrated from a different order, an Auto-Regressive Distributed Lag (ARDL) model can be applied. The ARDL models show short-run and long-run relationship (cointegration) between variables. The results in Table 4 show that there is a short-run relationship between economic growth in the Czech Republic and the chosen exchange rate regime, as only the exchange rate regime variable with lag 3 is statistically significant with probability under 0.05 (5%). The selected model is ARDL (3,4).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GRCH(-1)	-1.121872	0.444637	-2.523116	0.0859
GRCH(-2)	-1.030580	0.378097	-2.725705	0.0722
GRCH(-3)	-0.533885	0.354294	-1.506896	0.2289
REGCH	-0.839401	0.715185	-1.173684	0.3252
REGCH(-1)	-2.150800	1.082745	-1.986434	0.1412
REGCH(-2)	-1.146172	1.092478	-1.049149	0.3712
REGCH(-3)	-3.723038	0.815390	-4.565963	0.0197
REGCH(-4)	-1.590973	1.809173	-0.879392	0.4439
C	30.01323	9.615270	3.121413	0.0524
R-squared	0.933888	Mean dependent var		1.933333
Adjusted R-squared	0.757591	S.D. dependent var		2.945978
S.E. of regression	1.450454	Akaike info criterion		3.695336
Sum squared resid	6.311452	Schwarz criterion		4.059016
Log likelihood	-13.17202	Hannan-Quinn criter.		3.560689
F-statistic	5.297229	Durbin-Watson stat		2.601751
Prob(F-statistic)	0.098895			

*Table 4: ARDL model results for Czech Republic (short-run relationship)  
(Source: Author`s calculations)*

Regarding the long-run relationship, the ARDL model shows no long-run relationship at 5%, but the presence of a long-run relationship at 10%. (Table 5).

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	3.756296	10%	3.02	3.51
k	1	5%	3.62	4.16

*Table 5: ARDL model results for Czech Republic (long-run relationship)*  
(Source: Author`s calculations)

The selected model for Latvia is ARDL (1,0) and the ARDL model shows no long-run relationship at 5%, but the presence of a long-run relationship at 10%. (Table 6).

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	3.788681	10%	3.02	3.51
k	1	5%	3.62	4.16

*Table 6: ARDL model results for Latvia (long-run relationship)*  
(Source: Author`s calculations)

The selected model for Lithuania is ARDL (1,0) and the ARDL model shows long-run relationship at 5%. (Table 7).

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	5.270411	10%	3.02	3.51
k	1	5%	3.62	4.16

*Table 7. ARDL model results for Lithuania (long-run relationship)*  
(Source: Author`s calculations)

Since the data on the exchange rate regime and economic growth of Estonia are stationary, a VAR model can be applied. The results also show long-run relationship.

#### 4. CONCLUSION

The ARDL model is used to study the long-term relationships between economic growth and exchange rate regimes in CEE countries for 2007-2022. The results of the applied models show that for Latvia, and the Czech Republic there are long-term relationships between the variables at 10%, for Lithuania at 5%, and for the Czech Republic there are also a short-term relationship. The VAR model for Estonia also shows the presence of a long-run relationship between economic growth and the chosen exchange rate regime and for Bulgaria, Hungary, Romania, Slovakia, Slovenia and Poland there are highly collinear lagged values, so the cointegration test cannot be applied.

**ACKNOWLEDGEMENT:** *This work was supported by the UNWE Research Programme (Research Grant No10/2021 „Economic Activity and Development of the Banking Sector in Central and Eastern Europe in the Context of Contemporary Crisis Processes“).*

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## ANALYSIS OF THE ESG INDEX OF COMPANIES LISTED ON THE ZAGREB STOCK EXCHANGE

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### ABSTRACT

*The binding new legal regulation, Corporate Sustainability Reporting Directive, CSR Directive, which comes into force at the beginning of 2024, prescribes the reporting obligation for large, small and medium-sized companies that are subjects of public interest, as well as listed issuers are obliged to report on the impact companies on sustainability and the impact of sustainability on development, business results and the company's position. Publishers who will have the so-called green policies will more easily attract investors and funds from EU funds, and those "non-green" companies will not be able to be financed from incentive loans and loans (projects) of the EU. Non-transparent companies that do not report on their sustainability will have difficulty accessing loans, will pay higher interest rates on loans, potential investors will not invest in companies that do not report on sustainability. Therefore, the new regulation seeks to prevent "greenwashing", and sustainability reporting prevents this. The aim of this paper is to prove to what extent Croatian companies, which are listed on the Zagreb Stock Exchange, are transparent about their sustainability by measuring the ESG index using the HANFA Guidelines. The conducted analysis determined that the total sustainability index for 80 companies listed on the Zagreb Stock Exchange (those that have and those that have not published sustainability reports) is 1.40, which is significantly below the average of 2.5, while the highest possible index would be 5. From the obtained results, it can be concluded that companies listed on the Zagreb Stock Exchange do not sufficiently conduct socially responsible operations or report on sustainability.*

**Keywords:** *ESG index, sustainable business, socially responsible business, sustainability reporting, listed companies*

### 1. INTRODUCTION

In order for companies listed on the securities market of the Zagreb Stock Exchange to fulfill legal obligations on sustainability reporting or to attract investors, in March 2021, HANFA defined Guidelines for the creation and publication of issuers' ESG relevant information for the interim reporting period, i.e. until the final legal sustainability reporting framework. Global climate change represents significant social, ecological and economic risks for humanity, and finance is recognized as a dominant force that can influence change. To achieve the goals and achieve a sustainable way of working, financial resources are needed, which are channeled into projects that will ensure a sustainable way of working. The inclusion of sustainability needs to be introduced in all policies of the European Union in order to realize the ambitious plan set by the European Green Plan. A sustainable way of doing business is a way of doing business that meets the needs of today without endanger the needs of future generations. By implementing a business concept that encompasses ecological, social and management values, we influence changes and build a sustainable way of doing business (Vinšalek Stipić, 2019). Global climate change represents significant social, ecological and economic risks for humanity, and finance is recognized as a dominant force that can bring about change, while institutional investors are



the driving force of international financial flows. The United Nations Global Compact is an organization whose activities are aimed at companies on a global level with the aim of aligning their activities and strategies with ten generally accepted principles in the areas of human rights, labor, the environment and the fight against corruption, and to take measures that will contribute to UN issues contained in the goals of sustainable development. The European Green Plan, which is the main strategic development document for the European Union, is indispensable. The Green Plan is a new growth strategy that aims to transform the European Union. It strives to make the transition just and inclusive and to put people first. The European Union has the collective ability to transform its economy and society to put them on a more sustainable path by introducing directives and commitments (Vinšalek Stipić, 2020a). Each organization must identify and assess its greatest ESG impacts and select goals, and the goals should be realistic and measurable to be able to track their achievement. The data used to create the sustainability report is based on the day-to-day actions and decisions that guide organizations towards achieving their goals. Companies should have an established corporate governance structure that will effectively implement the ESG strategy. Therefore, the aim of this paper is to prove to what extent Croatian companies, which are listed on the Zagreb Stock Exchange in 2021, are transparent about their sustainability by measuring the ESG index by applying HANFA Guidelines as a measure of a sustainable way of doing business.

## **2. HISTORY OF SUSTAINABLE DEVELOPMENT IN THE WORLD**

The responsibility of the company for sustainable development can be viewed from several aspects: economic, social, ecological and social responsibility, and the analysis of economic responsibility, legal, moral, social and ecological responsibility is further discussed. An unsustainable business can be adapted by developing sustainable operations or planning for a future that lacks the currently needed resources (Vinšalek Stipić, 2020b). In practice, organizations generally strive for less unsustainability by increasing efficiency in the way resources are used. The answer is that healthy and responsible companies need a healthy and good society, and that's why only sustainable development is the key to long-term success (Vinšalek Stipić, 2023). The first establishment of a national policy for sustainability was established in the United States of America in 1969 with the enactment of the National Environmental Policy Act (NEPA), the purpose of which was to encourage and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony and fulfill social, economic and other demands of current and future generations (Brundtland Report, 1987). The Environmental Protection Agency began operations in 1970, assuming responsibility for enforcing federal environmental laws. The mission of the US Environmental Protection Agency is to improve and preserve the quality of the national and global environment, and the agency works to protect human health and natural resources on which all human activities depend (History of Sustainability, 2013). A conference known as the Stockholm Conference was held in 1972 in Stockholm, Sweden. As a result of the organization of the conference, the concept of "sustainable development" was born from an attempt to find a compromise between the underdeveloped nations in the southern hemisphere and the demands for preservation of the developed nations in the north. Then the United Nations Environment Program (UNEP) was founded with the aim of promoting the idea of environmentally friendly development. In December 1983, Gro Harlem Brundtland, Prime Minister of Norway, began her presidency at the United Nations of a special independent commission, the World Commission on Environment and Development known as the WCED or "Brundtland Commission" whose mission was to review critical environmental and development problems worldwide and formulate realistic suggestions for solving them. The aim of the commission was also to strengthen international cooperation on environmental and development issues in order to raise the level of understanding and commitment to sustainable

development by individuals, organizations, companies and governments. An additional result of the WCED's activities was the United Nations Conference on Environment and Development (UNCED) Earth Summit in Rio de Janeiro in 1992, known as Agenda 21. It was the second meeting of world leaders to discuss environmental and development issues, which was significantly larger than its predecessor, the Stockholm Conference held 20 years earlier, and defined the action plan of the United Nations for the implementation of sustainable development goals (History of Sustainability, 2013). The Agenda for the 21st century sought to educate people about the state of the environment and development, and to help them make decisions that lead to sustainability. Agenda 21 calls on all countries of the world to undertake a comprehensive process of planning and action to achieve sustainability. Furthermore, in December 1997, more than 150 countries adopted a historic agreement known as the Kyoto Protocol on Climate for the Protection of the Earth's Atmosphere and Climate, which was established in Kyoto, Japan. For the first time, countries have agreed to set legally binding limits on their emissions of heat-trapping greenhouse gases (Dominis, 2016).

### **3. ESG DEFINITION AND HISTORICAL DEVELOPMENT**

The ESG acronym was coined in the mid-2000s by a British law firm for the United Nations Financial Initiative. Acronym ESG means: E-Environmental; S-Social; G-Governance, which refers to a management method that takes into account environmental, social and corporate management. It defines the criteria that characterize the organization's activities as sustainable, responsible, ethical and are the basis for investment analysis. The idea was that incorporating ESG data would help protect investments by avoiding material financial risks from climate change, labor disputes, human rights issues, poor corporate governance and resulting litigation (Bloomberg, 2022). ESG is a global topic, complex in its application at lower levels, but extremely necessary for achieving sustainable development. With the development of the global economy, awareness has developed about the consequences of the existing way of production, sale and consumption of goods, as well as the need to change the existing ways for the benefit of the social community. ESG investing was a niche investment strategy, which became more recognizable after the implementation of the UN's Sustainable Development Goals (SDGs) in 2015. This continued with the signing of the UN's Paris Agreement in 2016 and the publication of the European Commission's Action Plan on Financing Sustainable Growth in 2018. Active management has an important role in contributing to positive changes. The establishment of a regulatory framework for ESG reporting, the Taxonomy Regulation (Non-Financial Reporting Directive – NFRD; Sustainable Finance Disclosure Regulation – SFDR; Corporate Sustainability Reporting Directive – CSRD) has further influence on the development of ESG issues. The Taxonomy Regulation is the European Commission Regulation 852/2020 which represents the creation of a technically reliable classification system for sustainable economic activities. Amendment of the Directive on non-financial reporting - NFRD 2014/95/EU, which stipulates the obligation to publish ESG information for companies and the Regulation on disclosure of data related to sustainability - SFDR 2019/2088/EU, which standardizes ESG processes for participants in financial markets and financial advisors. Sustainable financing is a key concept for mobilizing the capital needed to realize the goals of the European Green Plan and the international obligations that the European Union has undertaken in relation to meeting the climate, social and governance goals of sustainability. Sustainable financing is a process of considering and taking into account ESG factors when making investment decisions or giving investment advice, which should ultimately lead to a long-term increase in investment in sustainable economic activities and projects. Regulation (EU) 2019/2088, better known as the SFDR, entered into force on December 29, 2019, and will come into force on March 10, 2021. Obligations for financial market participants begin gradually in the period from 2021 to 2023.

The regulatory framework of sustainable finance, which directs the private flow of capital towards sustainable finance, is based precisely on corporate sustainability reporting. The European Commission has published on its official website a draft of the delegated act that adopts the European Sustainability Reporting Standards (ESRS), which are provided for by the Corporate Sustainability Reporting Directive 2022/2464/EU. The stated regulation aims to prevent greenwashing. Deceptive marketing or greenwashing is created with the intention of deceiving consumers who are happy to buy goods and services from environmentally conscious brands. By providing wrong information, by presenting a false impression about the ecological characteristics of the product with the aim of misleading consumers. Organizations then spend more time and money advertising themselves as environmentally friendly than actually reducing their environmental impact (Edwards, 2022). A binding new legal regulation, the Corporate Sustainability Reporting Directive, the CSR Directive, which enters into force at the beginning of 2024, prescribes a reporting obligation for large, small and medium-sized companies that are entities of public interest and listed issuers and are obliged to report on the impact companies on sustainability and the impact of sustainability on development, business results and the position of the company. Until now, Sustainability Reports prepared according to GRI standards and/or the Global Compact framework and/or the UN SDG framework have been submitted (Vinšalek Stipić, 2022).

#### **4. THE METHODOLOGY OF RESEARCH**

In order for companies to be listed on the stock market papers of the Zagreb Stock Exchange fulfilled legal obligations on sustainability reporting or attracted investors, in March 2021 HANFA defined the Guidelines for the creation and publication of ESG-relevant information by issuers for the interim reporting period, i.e. until all directives are harmonized and finally come into force. regulations and sustainability reporting framework. In order to determine how transparent and detailed Croatian companies report on sustainability, in March 2023 an analysis of sustainability reports of business organizations listed on the securities market of the Zagreb Stock Exchange from 2021 was conducted. HANFA's Guidelines were used for the detailed analysis of the 2021 sustainability report. The research used the method of quantitative data collection through content analysis. Sustainability data for the year 2021 was collected (data for the 2022 business guide was not yet available). The target groups included small, medium and large companies listed on the Zagreb Stock Exchange and their sustainability reports. The analytical matrix contains indicators from the HANFA Guidelines for the preparation and publication of ESG relevant information by issuers, which were published in March 2021. The unit of analysis was the annual reports of companies published on their business pages and the Zagreb Stock Exchange website. During the content analysis, the presence and compliance of individual data with the HANFA Guidelines was determined and a value from 0 to 5 was assigned and included in the matrix with the defined 48 indicators. That is, the indicators from the report according to the HANFA Guidelines were evaluated with interval grades that ranged from 0 to 5. Grade one (1) indicates that the information is either not published or due to the nature of the business, such an event/emission/consequence does not exist. A rating of two (2) indicates that the information was published but without additional explanations. A rating of three (3) indicates that the information was published with a short explanation. A score of four (4) indicates that the information was published with a clear explanation. A rating of five (5) indicates that it was published in accordance with HANFA metrics and with a clear explanation. A value of zero (0) indicates that there were no events. The corpus of this research consisted of the published Sustainability Reports, Annual Business Reports and Management Reports for 2021 of 80 small, medium and large companies listed on the Zagreb Stock Exchange in March 2023. The resulting indices indicate the average of the scores of each individual indicator for 80 small, medium and large companies listed on the Zagreb Stock Exchange which have or will

have an obligation to report on sustainability. The highest possible index for each individual indicator is 5, and this would be possible only if the observed company reported on an individual indicator (even when it does not appear in the business, but the organization would state so in the report), then it was evaluated with a score of 5. The aim of the analysis is to determine whether the data is published according to the described metric and how much it deviates from the given description (Guideline), because issuers that have green policies will more easily attract investors and funds from EU funds. Those "non-green" companies will not be able to be financed from incentive loans and credits (projects) of the EU, it will be difficult for them to access loans, they will pay higher interest on loans, potential investors will not invest in companies that do not report on sustainability. The new regulation seeks to prevent greenwashing, and reporting prevents this.

## 5. THE RESULTS OF RESEARCH

Table 2 shows the average values for each individual indicator of all business organizations listed on the stock market paper of the Zagreb Stock Exchange according to sustainability reports from 2021. The analyzed reports were published either as an independent document or within the management annual report, or as part of the financial annual report. The overall analysis includes 48 indicators that are shown in table 2, which shows the final calculations of each individual index, or the average score for each analyzed indicator. The structure of the analyzed companies that have or have not reported on sustainability is shown in Table 1, from which it is evident that 60% of companies did not report on sustainability for the business year 2021. The rest of the companies have published data on their sustainability for 2021. Of the companies that reported on sustainability for 2021, 56.25% of them reported according to the GRI standards (framework), otherwise the most commonly applied framework for creating sustainability reports. Furthermore, 15.62% of companies reported using the combined application of GRI standards and/or the Global Compact framework and/or the UN SDG framework, while 28.13% of companies reported using an independent form of sustainability reporting without applying prescribed criteria and/or standards.

<i>Description of the sample</i>		
Total number of companies included in the research (small, medium and large)	80	
The number of companies that did not report on sustainability in 2021	48	60.00%
Number of companies that reported on sustainability in 2021	32	40.00%
Number of companies (from the total number of those that reported) that reported according to GRI standards in 2021	18	56.25%
Number of companies (from the total number of those that reported) that reported in 2021 combined: according to GRI standards and/or the Global Compact framework and/or the UN SDG framework	5	15.62%
The number of companies that chose an independent form of reporting (out of the total number of those that reported)	9	28.13%

*Table 1: Structure of the sample of analyzed companies according to the publication of the sustainability report for 2021.*

*(Source: Author's own research)*

It should be emphasized that according to the Accounting Act of 2017, large and medium-sized companies of significant economic interest and which exceed the criterion of an average number of 500 employees on the balance sheet date have the obligation to report on sustainability.

Accordingly, in order to facilitate the sustainability reporting process, HANFA has issued Guidelines for identifying ESG factors relevant for reporting the main adverse effects on sustainability under the SFDR, based on the draft delegated act published in February 2021.

<i>Description of the indicator - sustainability adverse effect factor (SFDR)</i>		<i>Average Index</i>
<b>Climatic and other environmentally oriented indicators</b>		
<b>Greenhouse gas emissions (GHG)</b>	Scope 1 GHG emissions	1.700
	Scope 2 GHG emissions	1.650
	Scope 3 GHG emissions	1.250
	Total GHG emissions	1.475
	Carbon footprint	1.525
	GHG intensity of the issuer	1.338
	General data on the issuer's activities related to the production and distribution of fossil fuels	1.013
	Share of non-renewable energy consumption and non-renewable energy production from non-renewable energy sources compared to renewable energy sources, expressed as a percentage	1.225
	Energy consumption in GWh per million EUR of the issuer's income, in the sector with a high impact on the climate	1.625
<b>Biological diversity</b>	Plants or facilities located within or near sensitive areas of biological diversity, whose activities have a negative impact on these areas	1.425
<b>Water</b>	Water emissions generated by issuers expressed in tons per million EUR investment, expressed as a weighted average	1.213
<b>Waste</b>	Hazardous waste generated by issuers expressed in tons per million EUR investment, expressed as a weighted average	1.400
<b>Climatic and environmental indicators</b>		
<b>Emissions</b>	Emissions of inorganic pollutants - Tons of inorganic pollutants equivalent per million EUR investment, expressed as a weighted average	1.025
	Air pollutant emissions - tons of air pollutant equivalent per million EUR investment, expressed as a weighted average	1.063
	Emissions of substances that damage the ozone layer - tons of equivalent substances that damage the ozone layer per million EUR of investment, expressed as a weighted average	1.100
	Initiative to reduce carbon emissions - Does the issuer have an initiative to reduce carbon emissions in accordance with the Paris Agreement	1.600
<b>Energy management</b>	Display of energy consumption by type of non-renewable energy source - share of energy from non-renewable sources used by issuers shown for each non-renewable energy source	1.525
<b>Water, waste and material emissions</b>	Does the issuer have a process in place water management?	1.500

	The issuer's average amount of consumed and reused water expressed in cubic meters per million EUR of the issuer's revenue	1.125
	Weighted average percentage of recycled and reused water in the issuers	1.075
	Does the issuer carry out activities in areas with scarce water without established water management processes	0.938
	Production of chemicals - Does the issuer carry out activities that fall within the scope of Part 20.2 of the Annex and Regulation (EC) no. 1893/2006? (production of pesticides)	0.875
	Does the issuer carry out activities that affect land degradation, desertification or land cover?	0.963
	Does the issuer have land/agricultural sustainability processes or practices in place?	1.050
	Does the issuer have ocean/marine sustainability processes or practices in place?	1.113
	Non-recycled waste in tons, generated by issuers per million EUR investment, expressed as a weighted average (share of non-recycled waste)	1.250
	Do the activities of the issuer affect the vulnerable	1.000
	Does the issuer have a policy to protect the biological diversity of the areas where it operates activities, which are owned, leased, managed or in the vicinity of protected areas or areas of high biological diversity value outside protected areas?	1.225
	Does the issuer have established processes that include an area of deforestation?	0.975
<b>Green securities</b>	Has the issuer issued a security with a green label?	0.963
<b>Social and anti-corruption and human rights indicators</b>		
<b>Society (social values) and rights workers</b>	Does the issuer have an established occupational injury protection policy?	2.160
	The rate of injuries at work in publishers expressed as a weighted average	1.750
	The number of days lost due to injuries, accidents, serious injuries or illnesses is reported to the issuer as a weighted average	1.700
	Does the issuer have an established code of conduct for suppliers (against unsafe working conditions, hazardous work, child labor or forced labor)?	2.025
	Does the issuer have a mechanism in place to manage objections or complaints related to workers' rights?	2.113
	Does the issuer have whistleblower protection policies in place?	1.600
	The number of incidents of discrimination reported in issuers expressed as a weighted average	*1

<sup>1</sup> \* 20% of companies reported on this topic, and 80% did not report on it

	The number of incidents of discrimination that resulted in issuer sanctions expressed as a weighted average	**2
	The average within-issuer ratio of the total annual compensation of the highest-paid individuals relative to the median of the total annual compensation of all employees (excluding the highest-paid individuals - e.g. excessive CEO compensation)	1.000
<b>Human rights</b>	Has the issuer established human rights management policies	2.100
	Does the issuer have an established process of in-depth analysis to identify, prevent, mitigate and manage the negative impact on human rights and children's rights	1.563
	Does the issuer have an anti-trafficking policy in place	1.250
	Is the issuer exposed to operational and supplier significant risk of child labor incidents, exposed to hazardous work in terms of geographical areas or type of operation?	0.975
	Is the issuer exposed to operational and suppliers	0.950
	significant risk of incidents of forced or compulsory labor in terms of geographical areas or type of operation?	0.913
<b>Prevention of bribery and corruption</b>	Does the issuer have an anti-bribery policy i	2.900
	corruption in accordance with the United Nations Convention against Corruption	***3
	Has the issuer had cases in which deficiencies were identified in the actions taken against violations of procedures and standards for the prevention of bribery and corruption	****4

*Table 2: Presentation of the average rating by individual ESG indicator for companies from the sample  
(Source: Author's own research)*

Since the European Sustainability Reporting Standard (ESRS) will apply from January 1, 2024, and the first reports according to it will be available during 2025, the new report according to the same or be prepared in August 2025 with the then valid indicators and metrics. However, despite the prescribed regulation, not a big change in the value of the indicator is expected, the value of the indicator will not change significantly. The problems that arose during the implementation of this research are: uneven term names, differently published data in relation to what is required in the metric (e.g. not expressed: as a weighted average, as a percentage, in millions of EUR of the issuer's income, etc.), non-uniform report formats made it difficult to search and determine the existence of data, not indicating whether the data is being tracked at all, etc. Since the ESRS will be applied from January 1, 2024 and the first reports according to it will be available during 2025, a new report according to the same or then valid indicators will be prepared in August 2025.

<sup>2</sup> \*\* 98.75% either did not report it or reported that there were no sanctions; 1.25% reported the number of sanctions

<sup>3</sup> \*\*\*2.5% yes, 11.25% no; 86.25% did not report this; 2.4% of companies reported that there were cases. 11% reported that there was not a single case

<sup>4</sup> \*\*\*\* 98.75% either did not report it or reported that there were no sanctions; 1.25% reported the number of sanctions

## 6. CONCLUSION

In the past, entrepreneurs solely sought to maximize profits in order to enable owners to increase the value of the company. The only measure of success was achieving profitability, while social goals and acting in accordance with the welfare of the wider social community represented additional costs and a business burden. It was considered that care for the social community, it results in an increase in business costs and thus a decrease in profit. This is precisely why the private sector left social issues to the public sector and non-profit organizations. Over time, the general public became aware that the private sector has a significant impact on the environment and society as a whole. Large corporations have begun to see their significant impact on ecosystem sustainability, and the importance of ethical and social issues. One comes to the realization that profit is not the only measure of a company's successful operations, the issues of the company's impact on the wider social community and the implementation of a long-term sustainable business strategy become much more important. Over the past few decades, the academic community, managers, non-profit organizations and the wider world public have shown a progressive interest in a sustainable way of doing business. People are coming to the realization that long-term sustainability is the only possible way of doing business, and only those companies that strive for environmental and social sustainability will survive on the market and become resistant to the challenges of modern business environments. Recognizing the necessity of long-term sustainable development, the European Union adopted a strategy in favor of sustainable development in 2001, while already in 2015 the United Nations General Assembly adopted the Sustainable Development Program until 2030, which includes three dimensions of sustainability: Environmental, Social and Governance (ESG). Precisely those companies that already apply ESG standards today are at an advantage over those that have not yet adapted to the new paradigm. Because of that, this research was conducted, which included 80 Croatian companies listed on the Zagreb Stock Exchange. The goal of this research was to determine how transparent Croatian companies are when publishing ESG information, by analyzing 48 indicators, to determine whether and to what extent the indicators are published according to the HANFA Guidelines for the preparation and publication of ESG-relevant information by issuers. It was determined that the total sustainability index for the 80 companies included in the research is 1.40, which is currently an extremely low sustainability index, well below the average index of 2.5 out of the possible maximum index of 5. Looking at the indicators individually, for the group of indicators "prevention of bribery and corruption " an average index of 2.9 was obtained. From the obtained data, it can be concluded that the majority of companies listed on the Zagreb Stock Exchange do not report sufficiently on their business sustainability, and/or report according to different criteria or almost never report on sustainability. In the coming period, there will be an adjustment, and companies that do not adapt to the new taxonomy will have considerable problems in achieving competitiveness on the international market. Sustainable operations and adequate sustainability reporting are the only correct way to achieve a competitive advantage and the only possible way to obtain cheaper investment funds.

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## THE ATTITUDE OF AGRONOMISTS AND FAMILY FARMERS ON THE USE OF SATELLITE TECHNOLOGIES IN AGRICULTURE

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### ABSTRACT

*The challenges of food safety, green economy, circular bioeconomy and climate change mitigation have become additional challenges of agricultural production. Overcoming the above mentioned challenges inevitably involves technological, technical, environmental, economic and social aspects of agricultural production. At the same time, the integration of technologies into digital agriculture represents a considerable potential for improving the efficiency, productivity and sustainability of agricultural production at the farm and global level. However, due to large differences in the capacities of applying digital technologies between small and medium-sized farmers and large agricultural producers, the scenario of digitalization of agriculture in rural areas is very uncertain and questionable. Services using satellite systems have a special place in the precise and smart agriculture. For stakeholders in Croatia, several different services are available. The possibility of using satellite services, as well as stakeholders' attitudes about them, are expected to be related to the price, the type and amount of data within the service, the type of production, the size of production areas and the IT literacy of service users. Therefore, a survey was conducted on the possibility of using satellite services and technologies in agricultural production in Croatia. The target group of respondents were agronomists and/or owners of family farms, irrespective of age and agricultural education. In the survey, a series of questions determined their opinion on the possibility and willingness to use the services of satellite technologies in agricultural*

*production, with special emphasis on the potential advisory role of agronomists and the reasons for possible non-use of satellite technologies. In total, the answers of 229 respondents were collected, of which 56 are agronomists. The conclusion is that there are great opportunities in increasing the use of satellite services, that stakeholders are interested in education, especially in courses and seminars and advisory education, both with an agronomist and with an internet advisory service. In this, the role of agronomists is very important, but there are significant differences in the views of agronomists and other stakeholders, which should definitely be taken into account when creating a strategy and realizing the digitalization of agriculture.*

**Keywords:** *advisory, applications, education in agriculture, extension services, training*

## 1. INTRODUCTION

In the last few decades, agricultural production has undergone significant positive changes due to information technology along with new challenges, primarily due to climate changes and the depopulation of rural areas. The challenges of food safety, green economy, circular bioeconomy and climate change mitigation have become additional challenges of agricultural production in addition to sufficient and sustainable food production patterns while preserving the soil fertility and environment. This is of particular importance in Croatia due to advanced soil degradation, i.e. soil acidification together with low levels of organic matter and available phosphorus in the soil (Hefer et al., 2023., Lončarić et al., 2023). Overcoming the abovementioned challenges inevitably involves technological, technical, environmental, economic and social aspects of agricultural production. At the same time, the integration of technologies such as the Internet of Things, data science, deep learning, artificial intelligence into digital agriculture represents a huge potential for improving efficiency, productivity and sustainability of agricultural production at the farm and global level (Abbasi et al., 2022, Catal and Tekinerdogan, 2019, Liu et al., 2021, Sott et al., 2020, Wolfert et al., 2017, Zhai et al., 2020). However, due to large differences in the capacities of applying digital technologies between small and medium-sized farmers and large agricultural producers, the scenario of digitalization of agriculture in rural areas is very uncertain and questionable. Thereby, the ability and willingness of agronomists and farmers to acquire and transfer knowledge and competences in the application of digital technologies, play a very significant role in the digitalization of rural areas. Services provided by satellite systems have a special place in digital agriculture, especially in the application of precise and smart agriculture. Satellite images, agrometeorological data, vegetation indices (Bannari et al., 1995), applications for analysis and interpretation of satellite images, applications for decision-making (Aubert et al., 2012) are of great importance in the digitalization of agriculture, and at the same time, they are often included in the data and information offered by satellite services in Croatia. Some of the services are not charged, while more complex and precise services are charged depending on the area of production for which the service is purchased and the type of service. The type, complexity and price of the service are most often correlated with the amount of data and information, and the quality of the service, i.e. the practical applicability of the information in decision-making or the direct implementation of agrotechnical measures. The possibility of using satellite services, as well as stakeholders' attitudes about them, are expected to be related to the price of services, the type and amount of data within the service, the type of production, the size of production areas and the IT literacy of service users. Likewise, we assumed that stakeholders' attitudes and applicability of services depend on the level of education of stakeholders, especially education in the field of agriculture (Nizametdinov Akramovich, 2022) and some other socio-demographic characteristics (e.g. age and gender of service users). We additionally wanted to emphasize the importance of education, since the digitalization opportunities in agriculture might not be fully realized without enhanced education, (Várallyai and Szilágyi, 2020) and joint efforts of researchers, technology developers, suppliers, farmers, advisors, digital

innovation hubs, and start-ups (Hansen et al., 2022, MacPherson et al., 2022). Therefore, a survey was conducted on the possibility of using satellite services and technologies in agricultural production in rural areas of Croatia. The target group of respondents were agronomists and/or owners and employees of family farms and other production entities, irrespective of age, global and agricultural education and preferences for digital technologies. In the survey, a series of questions were included to determine and evaluate their opinion on the possibility and willingness to use the services of satellite technologies in agricultural production. Special emphasis was on the types of different education including extension services, the advisory role of agronomists and the reasons for non-use of satellite technologies.

## **2. MATERIAL AND METHODS**

### **2.1. Data collection**

In this research, the data were collected using an online questionnaire (n = 229) as the research instrument. This online survey method was carried out using the information system Agrokлуб, an agricultural portal of an informative and educational nature on, agricultural production, rural area and the food industry. The target group of respondents were all stakeholders in agricultural production. The full questionnaire contained a total of 26 open and closed questions, divided into 5 groups. These groups include socio-demographic issues, type and extent of production, frequency of use and attitudes towards satellite services, willingness to use and education about satellite services, and the role of agronomists and advisory activities. Statistical analysis was carried out using Excel, the spreadsheet program from Microsoft and a component of its Office product group for business applications. The collected data were analysed using descriptive statistics (frequency analysis, arithmetic mean, mode, median and standard deviation). Descriptive statistical analysis was used to describe the socio-demographic characteristics of the sample, agricultural production characteristics, and the evaluation and opinions of respondents on the current use and possibilities of using satellite services in agriculture.

### **2.2. The target group**

The target group of respondents were all stakeholders in agricultural production, starting from owners and employees on family farms, up to agronomists employed in agricultural production, agricultural institutions, agencies, educational institutions or agronomists outside agricultural activity. There were no restrictions regarding the type of connection of the respondents with agricultural production, nor their type and level of education. In total, during 3 weeks in August 2023, the answers of 229 respondents were collected, of which 56 are agronomists (24,5 %), while the other 173 respondents (75,5 %) do not have an academic agronomic education. This paper presents an analysis for the entire group of respondents (most often expressed as "all respondents" or "all stakeholders"). Results that specifically show a group of agronomists are labeled "agronomists" and refer to a group of 56 agronomists (unless otherwise noted). The results and characteristics of the responses of other respondents who are not agronomists are marked as "other respondents", "other stakeholders" or "non-agronomist respondents". Characteristics refer to the entire group of 173 respondents who are not agronomists, unless otherwise stated. The group of respondents refers to the entire geographical area of the Republic of Croatia, i.e. it includes the area of all 20 counties and the City of Zagreb.

## **3. RESULTS AND DISCUSSION**

### **3.1. Gender, age and regional affiliation of the respondents**

A quarter of respondents (24.5%) were female, and three quarters (75.5) were male. The gender ratio is very similar among respondents who are agronomists (25.5% vs. 74.6%) and other respondents who are not agronomists (24.1% vs. 75.9%). The average age of all respondents is 42 years, and most respondents (31.9%) are aged 33-42, followed by 43-52 (29.7%) and 23-32

(19.7%). In total, 81.2% of respondents are aged 23-52, which with 14.4% of respondents aged 53-62 makes 95.6% of respondents aged 13-62. The age structure of the agronomist respondents is somewhat different, with an average age of 37.5 years, with the majority of agronomist respondents (40.0%) aged 23-32. Respondents are from all 21 regional units of Croatia, i.e. all 20 counties and the City of Zagreb. The majority of respondents are from Osijek-Baranja County (27.1%) and Vukovar-Srijem County (10.9%), followed by Bjelovar-Bilogora County (7.9%), Brod-Posavina County (6.6%), Virovitica-Podravine County (5.2 %), Koprivnica-Križevačka (4.8 %) and Požega-Slavonia County (4.4 %). In total, there were 54.2% of respondents from the 5 Slavonic counties, 32.3% from the other 9 continental counties and 13.5% from the coastal counties. According to the geographical affiliation of non-agronomist respondents, the dominance of Slavonian counties is slightly lower (51.2%), but the representation of agronomists from Slavonian counties is significantly higher (63.6%), the highest from Osijek-Baranja (38.2%).

### 3.2. Level of education of the respondents

The largest number of respondents (49.3%) have completed secondary school as their final level of education, 10.5% have completed professional higher education, 26.6% university, 10.9% a master's degree or doctorate, and 2.6% of respondents have only completed elementary school. The most common level of education of agronomists (63.6%) is completed undergraduate or graduate studies at universities, 12.7% of agronomists completed professional studies, and 23.6% of the agronomists surveyed have a master's or doctorate degree. Among respondents who are not agronomists by profession, i.e. other stakeholders, the majority have completed secondary school (63.4%), 3.5% only primary school, 10.3% professional higher education, 14.9% university graduate studies and 6.9% master's degree or doctorate (but not in the field of agriculture).

### 3.3. Type and degree of agricultural education of the respondents

A total of 70.7% of respondents have some agricultural education (night school, course, high school or higher education), and among producers and other stakeholders who are not agronomists, 62.2%. Family tradition, which we do not count as an official form of education, is the most common form of acquiring skills, a total of 149 respondents, i.e. 65.1% (40.4% of agronomists and 72.3% of other stakeholders who are not agronomists). At the same time, for 54 respondents (23.6 %) it is the only form of agricultural education, but 95 respondents (41.4 %) have some official education in agriculture in addition to family tradition.

No.	Types of agricultural education	Non-agronomist respondents		Agronomists		All respondents	
		No.	(%)	No.	(%)	No.	(%)
1	Family tradition	126	72,8	23	41,1	149	65,1
2	Night schools, courses and seminars	71	41,0	12	21,4	83	36,2
3	High school	51	29,5	16	28,6	67	29,3
4	Incomplete studies	12	6,9	-	-	12	5,2
5	Professional studies	-	-	11	19,6	11	4,80
6	Undergraduate university studies	-	-	34	60,7	34	14,9
7	Graduate studies	-	-	42	75,0	42	18,3
8	Master's and doctorate degrees	-	-	5	8,9	5	2,2
TOTAL		173		56		229	

*Table 1: Types of agricultural education of respondents*

Following a family tradition, the most common types of agricultural education are night schools, courses and seminars, then high school, graduate, undergraduate or professional studies, incomplete studies, and master's and doctorate degrees (Table 1).

However, the structure of the respondents' final agricultural education is somewhat different, i.e. the highest level of education in agriculture achieved by individual respondents (Table 2). In addition to 23.6% of all respondents (31.2% of non-agronomists) who state only family tradition, there are 25.8% of all respondents (34.1% of non-agronomists) with night school or courses as the highest level of agricultural education. This means that 49.4% of all respondents (as much as 65.3% of respondents who are not agronomists) have no high school or academic agricultural education (Figure 1). High school agricultural education is the highest level of agricultural education for 21.0% of all respondents (27.8% for non-agronomists). If we include in this group respondents with incomplete studies in agriculture, there are a total of 116 respondents with secondary or higher education in agriculture, i.e. 50.6% (Figure 1).

No.	Types of agricultural education	Non-agronomist respondents		Agronomists		All respondents	
		No.	(%)	No.	No.	(%)	No.
1	Family tradition	54	31,2	-	-	54	23,6
2	Night schools, courses and seminars	59	34,1	-	-	59	25,8
3	High school	48	27,8	-	-	48	21,0
4	Incomplete studies	12	6,9	-	-	12	5,2
5	Professional studies	-	-	7	12,5	7	3,1
6	Undergraduate university studies	-	-	8	14,3	8	3,5
7	Graduate studies	-	-	36	64,3	36	15,7
8	Master's and doctorate degrees	-	-	5	8,9	5	2,2
TOTAL		173	100	56	100	229	100

Table 2: Types of final agricultural education of respondents

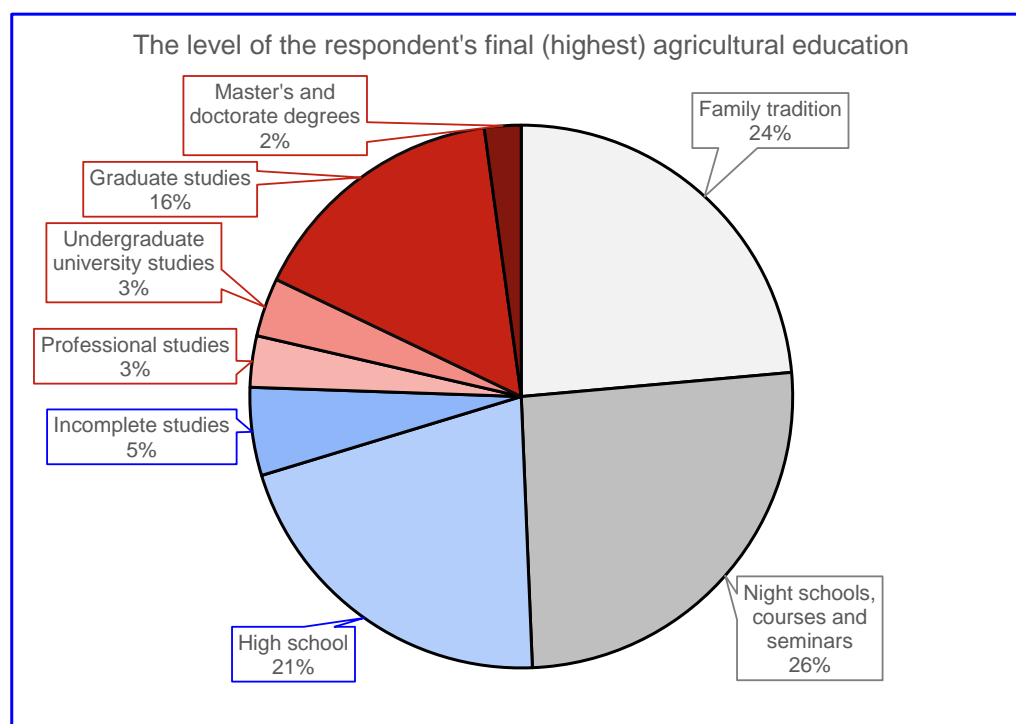


Figure 1: The level of the respondent's final (highest) agricultural education

### 3.4. Frequency of use of satellite services

Less than 50% (47.6%) of respondents declared that they do not use satellite services, 31.4% do, and 21.0% are not sure, i.e. they use services but do not know if they are connected to satellite technologies. Just slightly more agronomists (37.5%) use satellite services.

There are even fewer users who pay for satellite services (8.7%), 47.2% of respondents declared that they use such services for free, and the other 44.1% also do not pay because they do not use such services. Among agronomists, there is a slightly higher proportion of respondents who pay for services (10.7 %) and who use these services for free (53.6 %) than among respondents who are not agronomists (8.1 % and 45.1 %). Respondents evaluated the frequency of use of five different types of services with grades in the range of 1-5. They most often use agrometeorological data (rating 3.35), followed by satellite images of production areas (2.66), and much less often applications to help in decision-making (1.90), vegetation indices (1.87) and applications for processing and interpreting satellite data and images (1.73) (Figure 2). Respondents who are agronomists use agrometeorological data, satellite images and vegetation indices somewhat more often than other respondents.

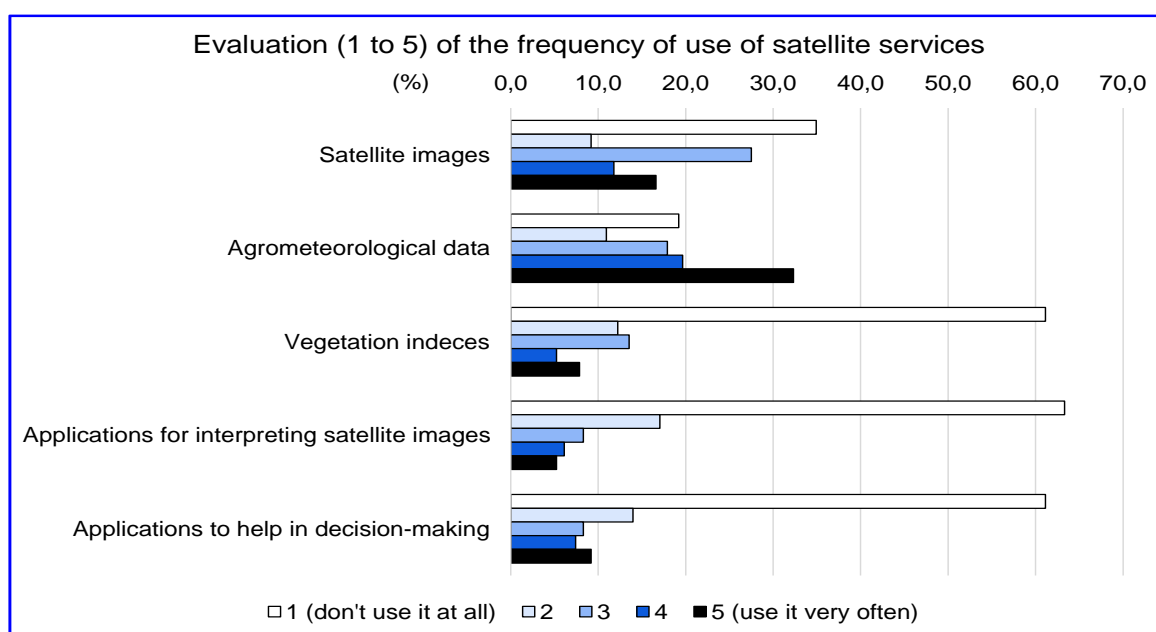


Figure 2: Evaluation of the frequency of use of different satellite services

### 3.5. Evaluation of the necessary IT literacy and the price of the service

14.9% of the respondents could not answer whether there is a need for a high level of IT literacy to use the satellite services, while the rest rated the need as 3.25. At the same time, 10.9% of respondents do not agree at all or agree to a small extent (11.8%) that a high level of IT literacy is necessary, and to a large extent (24.0%) or completely agree with that (15.3 %) of respondents. Thus, almost twice as many respondents (1.7 times more) believe that using satellite services requires a high level of IT literacy. 33.6% of respondents could not evaluate the justification of the price of satellite services. However, a significantly larger number of respondents (25.8%) disagree, and a smaller number (16.2%) agree with the statement that the prices of services are in line with the expected benefit and success in production. At the same time, almost a quarter of respondents (23.7%) do not know whether they would recommend the use of satellite services to small and medium-sized farmers, 34.5% of respondents would recommend, and 24.0% of respondents would not recommend the use of satellite services to small and medium-sized farmers.

### 3.6. Possible reasons for non-use or less use of satellite services

Respondents were asked to what extent they agree with certain reasons for lower use or generally not used satellite services. The offered reasons for not using these services are: 1) using them requires too much time, 2) using them requires too much training and IT skills, 3)

using them is too expensive, 4) using them cannot significantly help production, 5) the scope of the respondent's production is too small to use the satellite services. Respondents to the greatest extent (45.9%) agreed with the reason that the scope of their production is too small to use the satellite services, 28.4% of respondents disagreed with this, and 25.8% chose a neutral answer. More respondents agree (39.8% vs. 30.6%) that the price of services is unjustifiably high. In their research, Linsner et al. (2021) also found that farmers identify lack of knowledge, lack of availability, high prices that are not affordable for owners of small and medium-sized farms as problems in the digitalization of agriculture. At the same time, in this research, only 25.3% of respondents believe that the use of these technologies requires too much time, and 44.%% disagree, while 38.9% of respondents disagree and 29.3% believe that it requires too much training and IT skills. Finally, 31.0% of the respondents believe that the use of these technologies cannot significantly help them, while 38.6% of the respondents believe that using satellite services can help them.

### **3.7. The probability of using certain satellite services in the future**

Assuming that the problem or obstacle that prevents them from using satellite services is solved, regardless of what the problem is, the respondents would use satellite services to a significantly greater extent than they currently do. They would use agrometeorological data to the greatest extent (71.6% of respondents), followed by satellite images of production areas (52.8%), applications to help in making decisions (50.7%), vegetation indices (49.3%) and the least (48.5 %) applications for processing and interpreting satellite images. Nevertheless, despite the presumed removal of the problem, agrometeorological data would still not be used by 13.5% of the respondents, and other services by about a quarter of the respondents (22.3% for satellite images, 27.7% for decision-making applications, 28% for vegetation indices and 26.2 % for applications for processing and interpretation of satellite images). A significantly higher percentage of agronomist respondents would use the above services: 80.4% agrometeorological data, 60.7% vegetation indices, 58.9% satellite images of production areas, 55.4% decision-making support applications and 53.6% of agronomist respondents would use applications for process and interpreting satellite images.

### **3.8. Readiness for education or training, payment for services and engagement of agronomists in the future**

A total of 21.8% of respondents have no interest in being educated in the field of using satellite services, and 23.6% are currently not interested, but they might decide to do so if they had more information about this type of service. The majority of respondents (54.6%) are ready for education or training, where 16.6% are ready to attend a course, 12.7% are for a lifelong education, 14.9% want training using an online advisory service, 9.6% by working with an agronomist consultant, and 0.9% by attending studies (Fig. 3). A significant difference was found between agronomists and other respondents (Fig.4 ), as a smaller share of agronomists than other respondents stated that they had no interest in education at all (19.6% vs. 22.5%) or currently (17.9% vs. 25.4%). At the same time, a larger share of agronomists is ready for lifelong education (19.6 % vs. 10.4 %) and with an agronomist consultant (17.9 % vs. 6.9 %). Other respondents in larger proportion than agronomists (17.3% vs. 7.1%) are ready for training using an online consulting.

*Figure following on the next page*



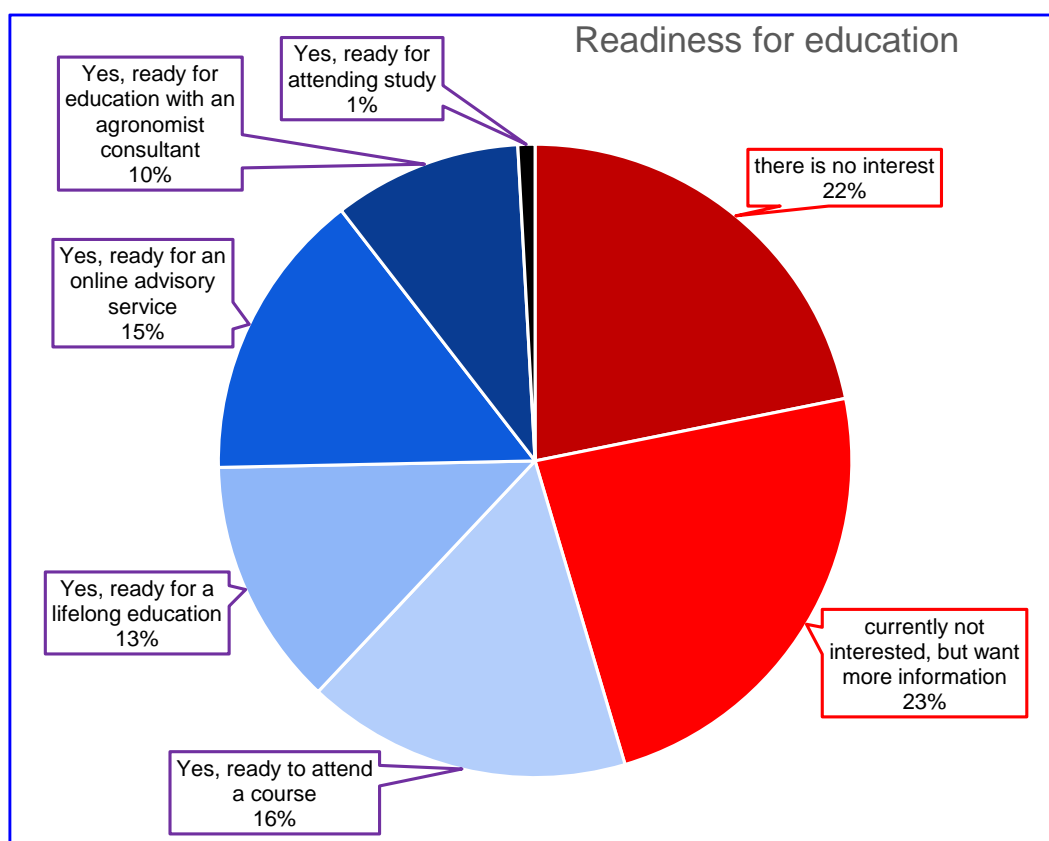


Figure 3: Readiness of respondents for different types of education about satellite services

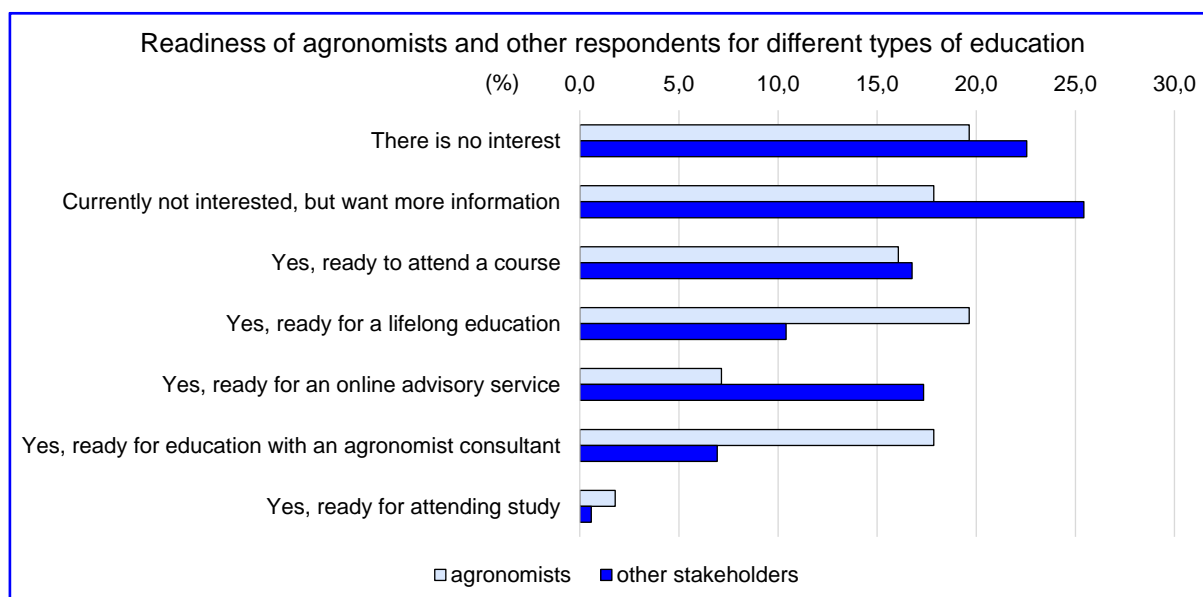


Figure 4: Readiness of agronomists and other respondents for different types of education on satellite services

As many as 58.1% of respondents believe that the organized advisory role of agronomists would significantly increase the use of satellite technologies, i.e. satellite services, 30.6% cannot estimate, and only 11.4% of respondents answered negatively. It was expected that a higher proportion of agronomists answered positively (66.1%) than other respondents (55.5%), and that a larger proportion of other respondents than agronomists could not estimate (34.1% vs. 19.6%), but it is interesting that a larger share of agronomists (14.3%) than other respondents

(10.4%) believes that an organized advisory role of agronomists would not increase the use of satellite services. Only 15.3% of respondents (21.4% of agronomists and 13.3% of other respondents) would hire an agronomist for help in the use of satellite technologies, i.e. satellite services, and the largest share of respondents (44.1%) would maybe hire an agronomist, but they are not sure (26.8% of agronomists and 49.7% of other respondents). Only 2.2% of respondents' business entities have already engaged an agronomist for satellite services. 38.4% of all respondents would not hire an agronomist, of which 17.5% because they do not need the services of satellite services at all, and 21.0% because they personally already know enough. Also, 37.5% of agronomists would not hire an agronomist for help because 30.4% of all agronomists already know enough, and 14.3% believe that they do not need satellite services. Among the other respondents (who are not agronomists), there are 17.9% of those who would not hire an agronomist for help because they already personally know enough about the services of satellite services. Regarding the willingness to pay for the satellite services in the future, 50.2% of respondents (69.6% of agronomists and 43.9% of other respondents) would pay for the services if the price is appropriate for the benefit achieved, 28.4% of respondents (10.7% of agronomists and 34.1% of other respondents) want to use, but do not want to pay, and 21.4% of respondents (19.6% of agronomists, 22.0%) do not want to use or pay for satellite services. There is a very significant difference between agronomists and other respondents, agronomists to a greater extent (1.6 times) are willing to pay for services, and other respondents to a greater extent (3.2 times) want to use, but do not want to pay for the satellite services.

#### 4. CONCLUSION

The conclusions were drawn based on the responses of 229 respondents from all over Croatia, although most of them were from the Eastern Croatian region (54.2%). Among the respondents, 24.5% are agronomists and 75.5% of stakeholders do not have an agronomic education, and 75.5% of the respondents are male. The average age of all respondents is 42 years, and 49.3% of respondents have completed high school, 2.6% only primary school, 10.5% higher school, 26.6% college, and 10.9% have a master's degree or doctorate. However, 49.4% of all respondents have no high school or academic agricultural education, with 23.6% only having a family tradition, and another 25.8% attended certain seminars or night schools in the field of agricultural education. 21% of the respondents have an agricultural secondary school as the highest degree, and 24.5% of the respondents have an academic degree in agricultural education. According to the results of the survey, we can conclude that almost a third of stakeholders in agricultural production use satellite services, half of the stakeholders do not use satellite services, while a fifth of stakeholders are not sure whether the services they use are related to satellite services. A very small number of stakeholders, less than a tenth pay for satellite services, and slightly less than half of the stakeholders use only free services. Relatively satisfactory is only the current use of agrometeorological data and, to a lesser extent, the use of satellite images. The most frequently used are agrometeorological data, which more than half of the stakeholders use often while a third of stakeholders use satellite images often. Stakeholders use vegetation indices and applications the least, almost two-thirds do not use them at all, and often use them less than a fifth of stakeholders. Agronomists use agrometeorological data, satellite images and vegetation indices more often than other stakeholders in agriculture. According to the majority of stakeholders, a high level of IT literacy is necessary to use the satellite services. More than a third of stakeholders would recommend the use of satellite services for small and medium-sized farmers, a quarter would not recommend it, while another quarter of stakeholders do not know. Almost half of the stakeholders believe, and a quarter do not, that the scale of their production is too small to use the satellite services. Stakeholders rated the unjustifiably high price of services as a significant obstacle.

About a quarter of stakeholders believe that using these technologies requires too much time and too much training and IT skills. It is possible to significantly increase the use of the services by solving existing problems and obstacles. Thus, agrometeorological data in that case would be used by almost three quarters, and all other services by about half of the stakeholders. There would be an even greater increase in the use of services by agronomists than by other stakeholders. But, even if the problem is removed, the services would still not be used by about a quarter of the stakeholders. Interest in education in the field of satellite services is on average very good, although a fifth of the stakeholders have no interest at all, and a quarter are currently not interested. However, those currently not interested for education are interested in obtaining additional information about satellite services. More than half of the stakeholders are interested in education, mostly in courses, and somewhat less by an advisory internet service or working with an agronomist consultant. Agronomists are to a greater extent ready for additional education than other stakeholders, especially in the framework of lifelong education and with agronomist advisors, and other stakeholders are to a greater extent ready for training using the advisory internet service. More than half of the stakeholders believe that the organized advisory role of agronomists would significantly increase the use of satellite technologies, and only a tenth of them disagree. However, an almost negligible number of agronomists are currently engaged in tasks related to satellite services. Just a fifth of the stakeholders are ready to engage an agronomist in relation to satellite services, and almost half of the stakeholders might still engage an agronomist. More than a third of the remaining stakeholders would not engage an agronomist, a smaller part because they do not need these services at all, and a fifth of the stakeholders because they believe that they already know enough about the satellite services. Also, more than half of the stakeholders would pay for satellite services if the price is appropriate, more than a quarter would use but not pay for the service, and a fifth of the stakeholders neither want to use nor pay for satellite services. Agronomists are willing to pay for services to a greater extent (1.6 times) than other stakeholders, and other stakeholders are to a greater extent (3.2 times more than agronomists) willing to use, but not to pay for satellite services. Finally, the general conclusion is that there is a lot of room for increasing the use of satellite services, that stakeholders are interested in education, especially in courses and advisory education, both with agronomists and by an Internet advisory service. In this, the role of agronomists is very important, but there are significant differences in the views of agronomists and other stakeholders, which should definitely be taken into account when creating a strategy and realizing the digitalization of agriculture.

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## MEASURING EFFICIENCY OF MUNICIPALITIES IN NORTH OF CROATIA USING DATA ENVELOPMENT ANALYSIS MODEL

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### ABSTRACT

*In this paper, the efficiency of municipalities situated in the north of the Republic of Croatia is measured. The research is focused on municipalities from the counties of Međimurje and Varaždin in the year 2022. The quality of work of local government entities is significant for regional development as it depends not only on the development of the economy but also on the quality of life in that particular area. In the Republic of Croatia, local self-government units are municipalities and cities. In this paper solely the efficiency of municipalities is measured due to significant differences in the work of municipalities and cities. The most important document for each municipality is the municipal budget, which is proposed by the municipal mayor and adopted by the municipal council for each calendar year. The budget determines the financial plan, with a report on budget execution issued at the end of the fiscal year. The data used for the purposes of measuring efficiency includes information retrieved from these reports and the data on the number of inhabitants of each municipality. The scientific methods used are data envelopment analysis with descriptive statistics and Pearson's correlation coefficient as statistical methods. The CCR model is used for data envelopment analysis. Variables, more precisely, inputs and outputs, are analyzed using statistical methods, followed by measuring efficiency by using the data envelopment analysis model. The obtained efficiency is additionally analyzed and compared with the given inputs and outputs. By further analysis, projections of improvement are calculated, providing each inefficient municipality with a set of guidelines on how to improve its efficiency.*

**Keywords:** *municipality, data envelopment analysis, efficiency*

### 1. INTRODUCTION

The economic development of a particular region stems from economic investments as well as the overall quality of life in that region. The Republic of Croatia consists of 20 counties and the City of Zagreb as an independent administrative unit. Each county has a city or town appointed as the county seat, and other settlements and municipalities. In the economic sense, counties are the smallest microregions whose economies are mainly concentrated around cities and towns. The labor force gravitates to both municipalities and cities, in proportion to the number of inhabitants. Therefore, the quality of life in municipalities increasingly depends on economic growth. According to the Law on Local and Territorial (Regional) Self-Government [22], the units of local self-government are municipalities and cities, while the units of territorial (regional) self-government are counties. All self-government units are established by law. Municipalities are established for the area of several settlements that form a social, economic and natural whole and are connected to the common interests of the population.

The foundation of the municipality, its name, area and county seat are regulated by a separate law. Each municipality has its own statute, which regulates the scope of self-government, organization, powers, administrative departments and units, performance of duties, local self-government and work of public services. Each municipality can establish associations to ensure a better quality of life and achieving mutual interests. According to the Law on Associations [24], an association is any form of free and voluntary association of several physical or legal persons who, for the sake of common interest, advocate for the protection of human rights and freedoms, the protection of the environment and nature, and sustainable development, as well as for humanitarian, social, cultural, educational, scientific, sports, health, technical, informational, professional or other beliefs and goals, without the intention of making a profit. Municipalities carry out tasks of local importance that meet the needs of citizens, such as:

- Development of settlements and housing
- Spatial and urban planning
- Communal economy
- Childcare
- Social care
- Primary health care
- Education
- Culture and sports
- Consumer protection
- Environmental protection
- Civil protection
- Traffic

Each municipality has its own representative and administrative body, the municipal council, with the number of council members depending on the number of inhabitants of the municipality. Municipalities with less than 1,000 inhabitants have 7 members of the Municipal council, municipalities with 1,000 to 2,500 inhabitants have 9 members, municipalities with 2,500 to 10,000 inhabitants have 13 members, while municipalities with more than 10,000 inhabitants have 15 members. The municipal mayor acts as the executive body of the municipality. All members of municipal bodies are elected in direct elections. The mandate of each body is 4 years, unless early elections are held. In that case, the newly elected bodies have a mandate until the end of the four-year mandate defined by law. Each municipality adopts a budget [23] for the calendar year. The budget is the basic financial and legal document that determines all income and expenses for the budget period. The budget is proposed by the executive body, and adopted by the representative body, i.e. the municipal council. All data for this paper, except the data on the number of inhabitants, is taken from the Report on the implementation of the municipal budget for 2022. Data envelopment analysis combined with statistical analysis is used for research. As for statistical methods, descriptive statistics and the Pearson correlation coefficient are used, for the purpose of input and output analysis.

## **2. RESEARCH**

### **2.1. Data Envelopment Analysis**

Data Envelopment Analysis (DEA) [7] [9] [16] is nonlinear method that uses multiple inputs and outputs. DEA is used to empirically measure productive efficiency of decision-making units (DMUs). DEA methodology has been used in theoretical development of numerous studies as well as measuring the relative efficiency of different social activities and industries, including retailing, banking, and energy sector. DEA has also been used for measuring efficiency of providing public services such as education, health care, municipal services and

other types of services, or to assess the relative efficiency of national economies. The most commonly used models are CCR model [8] and BCC model [5]. The model chosen for research purposes is the CCR model [8], developed and first presented by Charnes, Cooper and Rhodes in 1978, in an article published in the European Journal of Operational Research. The model was named after the authors' initials. This particular model calculates the total efficiency for each decision making unit (DMU), including technical efficiency and efficiency as dependent on the volume of business. Technical efficiency and efficiency measures are combined into one value. DMU for each unit is to be maximized so that each variable of the selected indicators is assigned with the most suitable weighting coefficient. Virtual inputs and outputs stem from assigning each variable with the most favourable weighting coefficients [8]

$$\text{Virtual input} = v_1x_{10} + \dots + v_mx_{m0}$$

$$\text{Virtual output} = u_1y_{10} + \dots + u_my_{m0}$$

Non-negative weighting coefficients need to be found via linear programming to maximize the virtual output/virtual input ratio, which cannot be greater than one for each observed DMU. Charns, Cooper and Rhodes [8] proposed a model for the optimization of each DMU as:

$$\text{Max } h_k = \frac{\sum_{r=1}^s u_r y_{rk}}{\sum_{i=1}^m v_i x_{ik}} \quad (1)$$

Subject to :

$$\frac{\sum_{r=1}^s u_r y_{rj}}{\sum_{i=1}^m v_i x_{ij}} \leq 1 \quad (2)$$

$$u_r, v_i \geq 0, \quad \begin{matrix} j = 1, \dots, n \\ r = 1, \dots, s, i = 1, \dots, m \end{matrix} \quad (3)$$

wherein:

- $h_k$  relative efficiency k-DMU
- $k$  number of DMU
- $m$  number of inputs ( $x$ )
- $n$  number of outputs ( $y$ )
- $v$  input weight ( $x$ )
- $u$  output weight ( $y$ )

k-DMU efficiency maximization (1-3) is requested with the condition that the weighted output sum is smaller than the weighted input sum (2), followed by  $0 < h_k \leq 1$ . If the function equals  $h_k = 1$  then k-DO is relatively efficient, and if  $h_k < 1$  then k-DMU is relatively inefficient. The value itself represents the extent of necessary rationalization of resource consumption or results' increase in order to achieve k-DMU efficiency. DMU unit can be valued as efficient if no other unit from the k-set with its optimal weighting coefficients can achieve a higher output value for a given input and such units define the efficiency limit [8].

## 2.2. Previous Research

Bernardino Benito, Francisco Bastida, and José A. García [6] (2010) investigated the efficiency in the municipal sector of the Spanish region of Murcia by analysing the data of 31 municipalities (69% of the response rate). The data gathered from several services was gathered, as follows: police, culture, sports, green areas, refuse collection and water supply. Ratios of efficiency were related to other control variables, such as economic level, size of the municipality, decentralization, political sign and financial situation. Sampaio de Sousa and Stošić [15] (2005) analysed the technical efficiency of the Brazilian municipalities by correcting nonparametric frontier measurements for outliers. DEA technical efficiency was established for 4,796 Brazilian municipalities, by applying a “Jackstrap” method, which combines Bootstrap and Jackknife resampling technique. Calculations were performed to identify and eliminate high leverage municipalities, using different variants of Data Envelopment Analysis (DEA), as well as Free Disposal Hull (FDH). Taïrou [18] (1997) [19] (2020) discussed the financial distress (vulnerability) of French municipalities with special focus on municipalities of 2,000 to 10,000 inhabitants. The results show that vulnerability is a frequent, repetitive, and durable phenomenon and there are significant differences in socio-economic characteristics between vulnerable municipalities and non-vulnerable ones. The paper „Explaining differences in productive efficiency: an application to Belgian municipalities“ [11] (1994) measured and explained variations in productive efficiency of Belgian municipal governments by using a non-parametric method based on the Free Disposal Hull (FDH) reference technology. De Borger and Kerstens [10] (1996) analysed the efficiency of local governments in Belgium using a broad variety of non-parametric and parametric reference technologies. Specifically, indices of cost efficiency for five different reference technologies, two non-parametric ones (Free Disposal Hull (FDH) and variable returns to scale Data Envelopment Analysis (DEA)) and three parametric frontiers (one deterministic and two stochastic) were calculated. Vanden Eeckaut, Tulkens, and Jamar [20] (1993) measured cost efficiency in Belgian municipalities. Worthington [21] (2000) wrote about cost efficiency in Australian local government. The data of 177 New South Wales’ local governments was used to compare the data envelopment analysis (DEA) and stochastic frontier approaches to cost efficiency measurement, with DEA and stochastic frontiers as complementary to OLS in the analysis of local public sector efficiency. O’Loughlin and Wilson [14] (2021) examined the performance of US municipal governments over 1997–2012, and during and following the financial crisis of 2007–2008. Fully nonparametric methods were employed to estimate technical efficiencies of cities utilizing recently developed statistical results. The results suggest strong evidence that production sets for municipal governments are different across time and regions of the USA. Overall, municipalities in the Midwest and South on average out-performed those in the Northeast and West in terms of both efficiency and productivity, both before and after the financial crisis. Afonso FS. [1] (2008) measured the relative efficiency of Portuguese local municipalities in a non-parametric framework approach using Data Envelopment Analysis. Athanassopoulos and Triantis [3] (1998) Assessed the aggregate cost efficiency and the related policy implications for local municipalities in Greece. Balaguer-Coll, Prior and Tortosa-Ausina [4] (2007) analyzed the efficiency of local governments in the Comunitat Valenciana (Spain) and their main explanatory variables in two stages. Firstly, efficiency is measured via (nonparametric) activity analysis techniques (both Data Envelopment Analysis (DEA) and Free Disposable Hull (FDH) techniques). The second stage identifies some critical determinants of efficiency, focusing on both political and fiscal policy variables. Alper, Sinuany-Stern and Shinar [2] (2015) estimated the relative efficiency of 197 local municipalities in traffic safety in Israel during 2004–2009, using Data Envelopment Analysis (DEA) based on multiple inputs and multiple outputs, when their weights are unknown. DEA was used for the first time to measure the efficiency of local municipalities in improving traffic safety.



Skica, Lesniowska and Miszczyńska [17] (2019) measured the efficiency of Polish municipalities. The municipalities were ranked by their level of efficiency and crucial factors of efficiency in terms of sustainability were detected by DEA approach. The sample included 2044 Polish municipalities in the year 2016. DEA made it possible to determine goals for inefficient municipalities to improve their performance. Doumpos and Cohen [12] (2014) focused on efficiency and effectiveness of local governments by introducing an efficiency analysis framework based on accrual accounting data. Data envelopment analysis was used to calculate efficiency estimates from the data of Greek municipalities over the period 2002–2009.

### 2.3. Municipalities and variables

For research purposes, 28 municipalities from the counties of Međimurje and Varaždin counties were selected. The following inputs and outputs were chosen as variables - inputs: total income, population and general public service. Outputs: defense, public order and safety, economic affairs, environmental protection, housing improvement, healthcare, recreation, culture and religion, education and social protection. Total income includes business income and income from the sale of non-financial assets. General public services refer mainly to the expenses of executive and legislative bodies, financial and fiscal affairs, external affairs, and general services of civil services. Defense expenses, if there are any, refer to civil defense. Public order and safety include fire protection services and research and development in the field. Economic affairs include general economic, commercial and work-related affairs, agriculture, forestry, fishing and hunting, fuel and energy, mining, production and construction, communications, tourism, and other industries. Environmental protection refers to waste management, waste water management, pollution reduction, biodiversity and landscape protection. Housing and community improvement services include housing and community development, water supply and street lighting. Healthcare is the primary source of expenditure of the state and counties, not municipalities, and these items are smaller than other outputs. Given the fact that municipalities are responsible for pre-school education, this is also the biggest item. Primary school education is also among major sources of expenditure. Social protection refers to categories of illness and disabilities, old age, family and children, unemployment and housing. Given that some items are smaller, as observed from the mean, and municipalities make decisions on the classification of these funds in a similar way, they are combined into joint outputs. Therefore, the following outputs are defined:

- Defense, public order, safety and environmental protection
- Economic affairs
- Housing and community improvement services
- Social protection, healthcare, recreation, culture and religion
- Education

*Table following on the next page*

Municipality	Total income	Population	General public service	Defense, public order, safety and environmental protection
Dekanovec	2,643,877	739	1,019,626	157,995
Donja Dubrava	8,052,243	1,658	1,656,055	1,298,773
Donji Kraljevec	17,406,119	4,043	7,812,005	1,146,634
Kotoriba	11,547,381	2,938	2,745,490	626,981
Mala Subotica	13,335,580	4,344	3,048,087	838,574
Nedelišće	34,918,982	11,017	4,851,573	6,072,076
Orehovica	7,699,667	2,720	1,728,122	1,395,392
Podturen	9,956,706	3,517	2,637,654	1,100,643
Pribislavec	9,732,767	2,963	3,244,844	247,094
Strahoninec	8,116,845	2,598	1,230,315	324,681
Sveta Marija	6,936,081	1,990	1,245,283	1,177,670
Sveti Juraj na Bregu	18,614,663	4,929	5,962,069	91,806
Štrigova	25,456,928	2,357	1,894,963	223,043
Vratišinec	6,680,976	1,673	2,286,943	998,842
Bednja	16,951,722	3,389	2,168,797	577,266
Beretinec	7,021,018	2,049	943,103	401,667
Breznica	6,306,098	1,970	1,152,616	457,589
Breznički Hum	4,256,401	1,132	1,287,000	224,637
Donja Voća	9,286,979	2,030	2,639,830	183,940
Martijanec	9,885,127	2,638	1,732,927	686,307
Gornji Kneginec	22,260,505	4,900	3,053,416	1,176,812
Jalžabet	13,032,891	3,183	3,166,844	948,365
Klenovnik	7,928,022	1,793	1,316,887	325,278
Ljubešćica	8,513,418	1,689	1,761,276	612,111
Mali Bukovec	7,325,315	1,809	1,747,642	705,695
Sveti Đurđ	10,921,510	3,326	2,734,221	630,078
Sveti Ilija	19,645,565	3,242	2,496,753	731,430
Trnovec Bartolovečki	19,691,173	6,145	3,834,333	2,228,493

Municipality	Economic affairs	Housing and community improvement services	Social protection, healthcare, recreation, culture and religion	Education
Dekanovec	377,704	387,444	239,815	403,466
Donja Dubrava	1,340,555	2,935,747	647,845	2,703,578
Donji Kraljevec	202,749	4,515,042	1,731,202	589,584
Kotoriba	1,579,188	2,769,465	2,894,892	1,464,364
Mala Subotica	5,829,281	144,027	1,790,780	453,059
Nedelišće	1,043,811	8,866,192	4,521,106	5,795,042
Orehovica	0	2,271,540	378,491	1,253,221
Podturen	657,682	2,412,159	3,653,664	1,697,223
Pribislavec	2,593,714	150,192	635,845	1,415,237
Strahoninec	64,313	2,961,377	929,436	1,975,040
Sveta Marija	110,381	4,494,663	537,564	1,601,188
Sveti Juraj na Bregu	1,430,722	3,750,751	635,247	2,618,604
Štrigova	355,817	2,935,101	7,647,281	1,467,838
Vratišinec	1,413,050	1,770,923	576,506	620,132
Bednja	4,657,600	1,807,932	1,785,289	2,234,551
Beretinec	160,831	3,734,049	357,491	1,620,877
Breznica	1,036,365	905,045	449,502	1,960,810
Breznički Hum	944,944	322,619	205,496	297,069
Donja Voća	335,463	651,050	1,874,736	1,202,165
Martijanec	152,375	5,318,503	621,773	3,317,295
Gornji Kneginec	2,703,999	5,021,459	1,200,820	433,422
Jalžabet	2,707,880	2,579,148	3,180,433	741,784
Klenovnik	1,261,179	1,263,771	454,502	130,444
Ljubešćica	1,590,066	936,283	382,099	1,932,888
Mali Bukovec	421,627	987,108	835,719	1,798,359
Sveti Đurđ	501,096	2,644,233	2,253,164	2,933,912
Sveti Ilija	707,571	2,712,718	696,129	3,336,001
Trnovec Bartolovečki	465,623	7,004,584	2,768,649	4,390,019

Table 1: Municipalities with input and output values in 2022  
(source: [13])

	Total income	Population	General public service	Defense, public order, safety and environmental protection
Mean	12,290,163	3,099	2,549,953	913,924
Median	9,808,947	2,679	2,227,870	658,193
Minimum	2,643,877	739	943,103	91,806
Maximum	34,918,982	11,017	7,812,005	6,072,076
Standard deviation	7091638.783	1947.551266	1526215.479	1098599.029
Coefficient of variation	0.57701748	0.628379892	0.59852699	1.202068256

	Economic affairs	Housing and community improvement services	Social protection, healthcare, recreation, culture and religion	Education
Mean	1,237,342	2,723,326	1,567,338	1,799,542
Median	826,258	2,611,691	765,924	1,611,033
Minimum	0	144,027	205,496	130,444
Maximum	5,829,281	8,866,192	7,647,281	5,795,042
Standard deviation	1359543.796	2062934.315	1628764.6	1283553.325
Coefficient of variation	1.098761219	0.75750549	1.03919139	0.713266724

*Table 2: Descriptive statistics of inputs and outputs  
(Source: authors)*

Table 2 shows the descriptive statistics of the variables. The coefficient of variation for all variables is between 0.57 and 1.1, so it can be concluded that the dispersion is within the limits required for further analysis.

*Table following on the next page*

	Total income	Population	General public service	Defense, public order, safety and environmental protection
Total income	1	0.842304295	0.594670792	0.629601404
Population	0.842304295	1	0.633550121	0.837436168
General public service	0.594670792	0.633550121	1	0.352349739
Defense, public order, safety and environmental protection	0.629601404	0.837436168	0.352349739	1
Economic affairs	0.170644698	0.172027786	0.11327777	-0.032705081
Housing and community improvement services	0.677248167	0.746594868	0.435241684	0.725451193
Social protection, healthcare, recreation, culture and religion	0.65832663	0.436703383	0.2592433	0.343381095
Education	0.540290599	0.64972869	0.209866131	0.647122781

	Economic affairs	Housing and community improvement services	Social protection, healthcare, recreation, culture and religion	Education
Total income	0.170644698	0.677248167	0.65832663	0.540290599
Population	0.172027786	0.746594868	0.436703383	0.64972869
General public service	0.11327777	0.435241684	0.2592433	0.209866131
Defense, public order, safety and environmental protection	-0.032705081	0.725451193	0.343381095	0.647122781
Economic affairs	1	-0.273156526	0.022800217	-0.210192986
Housing and community improvement services	-0.273156526	1	0.342637396	0.677739474
Social protection, healthcare, recreation, culture and religion	0.022800217	0.342637396	1	0.252124457
Education	-0.210192986	0.677739474	0.252124457	1

*Table 3: Pearson correlation coefficient of inputs and outputs  
(Source: authors)*

Table 3 displays Pearson correlation coefficients of inputs and outputs. There is a high correlation between income and the number of inhabitants, which is expected. All other correlations are lower, so the selection of inputs and outputs is suitable for further research.

## 2.4. Empirical results

The table below shows the relative efficiency of municipalities from the north of Croatia. It can be concluded that municipalities whose relative efficiency equals 1 are efficient, and the others are not.

Municipality	Relative efficiency
Dekanovec	0.653
Donja Dubrava	1.000
Donji Kraljevec	0.580
Koto riba	0.989
Mala Subotica	1.000
Nedelišće	1.000
Orehovica	1.000
Podturen	1.000
Pribislavec	0.849
Strahoninec	0.917
Sveta Marija	1.000
Sveti Juraj na Bregu	0.500
Štrigova	1.000
Vratišinec	1.000
Bednja	1.000
Beretinec	1.000
Breznica	1.000
Breznički Hum	0.668
Donja Voća	0.754
Martijanec	1.000
Gornji Kneginec	0.757
Jalžabet	1.000
Klenovnik	0.687
Ljubešćica	0.914
Mali Bukovec	0.811
Sveti Đurđ	1.000
Sveti Ilija	0.745
Trnovec Bartolovečki	0.891

*Table 4: Relative efficiency of municipalities in 2022  
(Source: authors)*

Table 4 demonstrate that 14 municipalities are efficient, while 14 are not. The average relative efficiency is 0.8827, while the minimum is 0.5. Given that the coefficient of variation is 0.17, the dispersion is small, and it can be concluded that the relative efficiency of municipalities in the north of Croatia is quite high.

Mean	0.8827
Median	0.9945
Minimum	0.5000
Maximum	1.0000
Standard deviation	0.1511
Coefficient of variation	0.1711

*Table 5: Descriptive statistics of relative efficiency  
(Source: authors)*

Total income	-0.00979
Population	0.055369
General public service	-0.40721
Defense, public order, safety and environmental protection	0.26377
Economic affairs	0.143121
Housing and community improvement services	0.130149
Social protection, healthcare, recreation, culture and religion	0.316741
Education	0.26615

*Table 6: Pearson correlation coefficient of relative efficiency and inputs and outputs  
(Source: authors)*

Pearson correlation coefficients of relative efficiency and inputs and outputs is demonstrated in the table above, and all correlations are weak. Without reducing generality, this data shows that relative efficiency does not depend on any of the variables, that is, on any input or output, but the combination of all inputs and outputs. It can also be concluded that this study defined a research design measuring the relative efficiency of municipalities.

Municipality	Total income	General public service	Defense, public order, safety and environmental protection
Dekanovec	2643877 to 1725606.89	1019626 to 380893.85	157995 to 221816.69
Donji Kraljevec	17406119 to 10091483.58	7812005 to 1558416.77	1146634 to 1156941.84
Kotoriba	11547381 to 11424169.82	2745490 to 2563163.66	626981 to 1044332.99
Pribislavec	9732767 to 8261318.35	3244844 to 1802162.95	247094 to 889475.44
Strahoninec	8116845 to 7443724.06	1230315 to 1128286.34	324681 to 409437.71
Sveti Juraj na Bregu	18614663 to 9306458.61	5962069 to 1872641.13	91806 to 1435969.96
Breznički Hum	4256401 to 2842315.71	1287000 to 562909.90	224637 to 224637
Donja Voća	9286979 to 6999212.01	2639830 to 1253606.27	183940 to 602799.27
Gornji Kneginec	22260505 to 15784058.43	3053416 to 2311728.58	1176812 to 1311314.04
Klenovnik	7928022 to 5445431.95	1316887 to 904515.47	325278 to 479020.7
Ljubešćica	8513418 to 7589094.94	1761276 to 1326342.4	612111 to 840243.64
Mali Bukovec	7325315 to 5941853.06	1747642 to 1328989.27	705695 to 751250.17
Sveti Ilija	19645565 to 9946898.27	2496753 to 1860674.87	731430 to 1046769.55
Tmovec Bartolovečki	19691173 to 17548815.03	3834333 to 3417165.68	2228493 to 2228493

Municipality	Economic affairs	Housing and community improvement services	Social protection, healthcare, recreation, culture and religion	Education
Dekanovec	377704 to 377704	387444 to 442255.71	239815 to 239815	403466 to 403466
Donji Kraljevec	202749 to 202749	4515042 to 4515042	1731202 to 1731202	589584 to 1732071.41
Kotoriba	1579188 to 1579188	2769465 to 2769465	2894892 to 2894892	1464364 to 1464364
Pribislavec	2593714 to 2593714	150192 to 1419315.31	635845 to 906997.738	1415237 to 1415237
Strahoninec	64313 to 116566.44	2961377 to 3205590.57	929436 to 929436	1975040 to 1975040
Sveti Juraj na Bregu	1430722 to 1430722	3750751 to 3750751	635247 to 788327.76	2618604 to 2618604
Breznički Hum	944944 to 944944	322619 to 337103.07	205496 to 324866.88	297069 to 369326.14
Donja Voća	335463 to 510414.81	651050 to 1589872.78	1874736 to 1874736	1202165 to 1202165
Gornji Kneginec	2703999 to 2703999	5021459 to 5021459	1200820 to 1466183.9	433422 to 2707348.35
Klenovnik	1261179 to 1261179	1263771 to 1263771	454502 to 535967.27	130444 to 1021887.04
Ljubešćica	1590066 to 1590066	936283 to 1988810.18	382099 to 685576.64	1932888 to 1932888
Mali Bukovec	421627 to 728592.43	987108 to 1892063.51	835719 to 835719	1798359 to 1798359
Sveti Ilija	707571 to 739987.36	2712718 to 4674084.12	696129 to 696129	3336001 to 3336001
Tmovec Bartolovečki	465623 to 1387863.4	7004584 to 7004584	2768649 to 2768649	4390019 to 4390019

*Table 7: The projection of relatively inefficient municipalities in 2022  
(Source: authors)*

Projections of improvement of relatively inefficient municipalities in 2022, displayed in Table 7, offer a set of instructions on how to improve the work quality of municipalities in order to achieve efficiency. For example, in terms of inputs, the Municipality of Dekanovec should reduce revenues from 2643877 to 1725606,891, general public services from 1019626 to 380893,854, and in terms of outputs, increase defense, public order and safety, environmental protection from 157995 to 221816,694 or housing and community improvement services from 387444 to 442255.71. Other outputs, that is, economic affairs, healthcare, recreation, culture and religion, social protection and education do not require any improvements.

### 3. CONCLUSION

This paper contains a dual scientific contribution. The first contribution is given by defining a research design for measuring the relative efficiency of municipalities, and the second is measuring the relative efficiency of 28 municipalities from the north of Croatia, more precisely, several municipalities from the counties of Međimurje and Varaždin in the year 2022. Variables and research methods were defined for research design purposes. The research methods used are data envelopment analysis, descriptive and correlational analysis. A total of 3 inputs were taken as variables, total income, population and general public services. Outputs were, as follows, defence, public order and safety, environmental protection, economic affairs, housing and community improvement services, healthcare, recreation, culture and religion, social protection and education. There is a large dispersion of all variables, and the correlations between variables, except income and population, are small. The paper has managed to obtain necessary and sufficient prerequisites for further research, that is, for measuring relative efficiency using data envelopment analysis CCR model. Of the 28 municipalities in the north of the Republic of Croatia, 14 of them are relatively efficient, while the mean is 0.88. It can be concluded that efficiency is high, on average. Projections of improvements were calculated for inefficient municipalities, and each inefficient municipality can use these guidelines to create a plan to improve its work quality. In further research, the set of variables can be changed, that is, inputs or outputs can be increased or decreased. Another data envelopment analysis model can also be applied. Likewise, this research model can be used in other municipalities, but also in cities and counties, both in the Republic of Croatia and other countries.

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23. Zakon o proračunu, NN 144/21
24. Zakon o udrugama, NN 74/14, 70/17, 98/19, 151/22



## AUDITOR ROTATION DETERMINANTS IN THE REPUBLIC OF CROATIA

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### **ABSTRACT**

*Ethical behavior and auditor independence are pillars of quality external audit. How long an auditor can continuously audit his client's financial statements is a question that has been debated for many years by the auditing profession, especially regulators. Those who advocate the mandatory rotation of auditors believe that longer mandates of auditors reduce the quality of external audits. Such positions are based, due to the increasingly long time intervals of audit engagements, on the auditor's increasing dependence on the client whose financial statements are being audited. Multiannual engagements of auditors with the same client are a suitable framework for the greater financial interests of the auditors, which inevitably put their independence, and thus quality of the work performed, to the test. Frequent corporate scandals for a reason repeatedly raise the question of trust in the auditing profession. In this regard, the need for a faster rotation of auditors emerges, among other things, as an effective measure to ensure auditor independence and audit quality. The rotation of auditors and the desired time frame for client retention are influenced by numerous factors, among which, for the purposes of this research, are analyzed: indebtedness, classification of the audit firm in the "Big Four", return on assets and opinion of the independent auditor. In this context, an appropriate research model was designed and tested on companies based in the Republic of Croatia that are listed on the Zagreb Stock Exchange.*

**Keywords:** *external audit, auditor rotation, determinants of auditor rotation, Republic of Croatia*

### **1. INTRODUCTION**

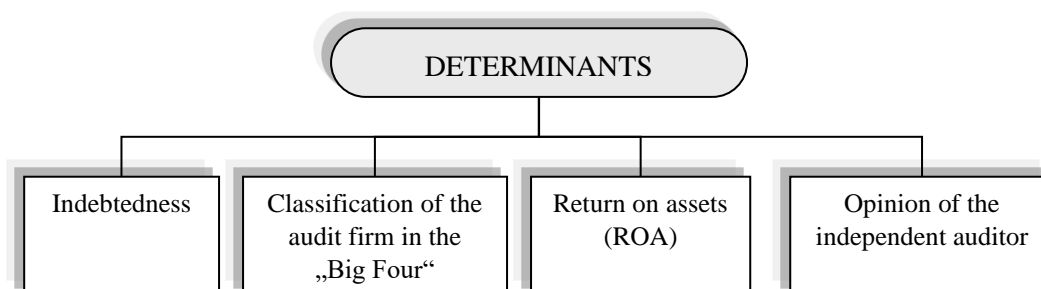
The length of cooperation between the auditor and the client is one of the key issues that has a direct impact on the quality of the external audit. As a rule, long mandates of auditors with the same client are correlated with the auditors with the auditor's leniency towards the client's management, which tends to "move the boundaries" of veritable financial reporting (Soltani, 2009, pp. 596). The leniency of the auditor as a consequence of his compromised independence is directly reflected on the true and fair presentation of the client's financial statements. Such cooperation of auditors is most often motivated by financial motives directed by a generous client in the form of inappropriate levels of fees for performed (non)audit services that undermine the auditor's independence, without which there is no desired quality of external audit. "Therefore, it is important to ensure that the fees for the performed audit do not depend in any way on the outcome of the audit" [Regulation (EU) No. 537/2014, (7)]. Any form of vulnerability of the auditor's independence is reflected in the quality of his report on the client's financial statements that are the subject of his engagement. Users of information from financial statements need a report from an independent, not a dependent, auditor. Therefore, it is in the public interest to form such a regulation that will strengthen the independence of auditors who, in accordance with ethical norms, will meet the expectations of the public in a professional manner. In this sense, with the development of the audit profession, as an important support for the auditor's independence, the question of time limitation of the cooperation between the auditor and the client was imposed – along with others. Namely, the prevailing point of view is that shorter time frames of such cooperation support greater independence of auditors and the

quality of their reports. Equally, longer time intervals of cooperation support the impairment of the independence of the auditors, thus the lower quality of their engagements. Mautz and Sharaf (1961, pp. 248) thought in a similar way more than sixty years ago, pointing out that the auditor's objectivity regarding the client decreases over time.

On this track, this paper tries answer on the question what affects and to what extent the rotation of auditors in the Republic of Croatia. In this sense, the following were selected and analyzed as important determinants of auditor rotation: indebtedness, classification of the audit firm in the "Big Four", return on assets and opinion of the independent auditor. The aforementioned determinants of auditor rotation are discussed, after the introduction, in the second part of the paper. The research sample and methodology are presented in the third part of the paper. The fourth part presents the results of the research, while the last, fifth part of the paper contains the concluding considerations of the conducted research.

## 2. DETERMINANTS OF AUDITOR ROTATION

Auditor rotation is influenced, among others, by the following factors (Figure 1): indebtedness, classification of the audit firm in the "Big Four", return on assets and opinion of the independent auditor.



*Figure 1: Determinants of auditor rotation*

Each of the stated determinants of auditor rotation is presented below.

### 2.1. Indebtedness

Financing with own funds is an ideal way of growth and development of any company. However, there are few such examples in practice. In real life, the business activities of companies are most often raised to a higher level with the help of other sources of funds. It is even advisable to do so, especially if long-term assets are financed from long-term sources and short-term assets from short-term sources. In addition to that, in order to ensure a certain margin of safety, it is desirable to finance part of short-term assets from long-term sources. Therefore, the indebtedness of a company that takes into account the previously mentioned method of financing is not something that should worry anyone. Such borrowing can be considered controlled and acceptable to all entities interested in its operations. The moment the company's management loses control over acceptable debt level, worst scenarios, such as bankruptcy, are not impossible. The debt ratio, which is calculated as the ratio of the company's total liabilities and total assets, shows how much of the assets are financed from other sources (Žager, et al., 2008, pp. 250-251). According to experience, this coefficient should not be higher than 0,5 (Belak, 1995, pp. 80). A level of the company's debt ratio above 0,5 is a warning signal that investing and doing business with that entity is risky. Škrtić and Tisovec (2006, pp. 59) draw attention to contemporary research that shows that a company is not over-indebted as long as its debt ratio is below 0,7. In addition, they state that companies with a debt ratio higher than 0,7 very often go bankrupt due to the inability to pay their obligations.

Regardless of the authors' different points of view regarding the desirable values of this coefficient, creditors are safer in the context of collecting their claims if this indebtedness indicator is as low as possible. The auditors who perform the statutory audit of the company also belong to the group of creditors and are directly interested in the payment of the services rendered. An over-indebted client is a sort of an alarm for the auditor to think about ending cooperation and not renewing the contract for the next financial year with such a client, given that he may run into problems with the collection of his claims. In addition, the management of an over-indebted client tends to embellish financial statements in order to continue to be able to count on the support of creditors and the cooperation of its business partners. Therefore, manipulations in financial statements, as a consequence of unjustified reduction of the client's indebtedness, are also one of the important reasons to rotate auditors. Guided by the code of ethics, the auditor is not ready to understand such actions and put his reputation in question. It is more appropriate for him to thank his client for his cooperation in the previous period and not to engage in unnecessary business risks in the future.

## **2.2. Classification of the audit firm in the „Big Four“**

The audit market is unthinkable without its biggest participants. The key actors of that market, due to their strength, are audit firms PricewaterhouseCoopers, Deloitte, Ernst & Young and KPMG, which are called the “Big Four”. These companies demonstrate their superiority over other audit companies primarily by the revenues and the number of employees. Considering that they have a respectable staff, the members of this “club” carry out financial statements audits of the largest corporations from the public and private sectors around the world. Other “auditing companies cannot be compared with them in any way” (Filipović, 2014, pp. 469). It is precisely because of this position that the “club of the chosen” enjoys an exceptional reputation in the business world. Therefore, the signature of any audit company from that circle on the report represents added value to the information contained in the annual financial statements of the clients that are the subject of their engagement. As a consequence, the prices of the services provided by these audit companies are generally more expensive than the competition. Independently of that, the audit obligees tend to cooperate as long as possible with an auditor from such a reputable club. Due to the public's perception of the quality of the services they provide, audit firms from the “Big Four” are exposed to numerous requests for business cooperation. In doing so, they carefully choose their clients, first of all, so as not to expose themselves to unnecessary reputational risk. On this track, these companies are generally committed to accepting and extending engagements with clients who are ready to present their financial statements truthfully and objectively. Namely, the evaluation of the ethics of the client's management increasingly determines the establishment or continuation of its business cooperation with some of the largest audit firms. In addition, the high degree of concentration of the audit market limits the scope for rotation of audit firms.

## **2.3. Return on assets (ROA)**

Return on assets (ROA) is an indicator of profitability. In contrast to the debt ratio, which is calculated using data contained in the balance sheet, ROA is calculated “on the basis of data from the balance sheet and the profit and loss account” (Žager and Žager, 1999, pp. 180). There are two indicators of return on assets – net profitability of assets and gross profitability of assets. Net asset profitability is determined as the ratio of the sum of net profit and interest to total assets, while gross profitability is calculated as the ratio of the sum of profit before tax and interest to total assets (Žager and Žager, 1999, pp. 180). When calculating both indicators of return on assets, the result of the above ratios is multiplied by 100. In order to meet the expectations of the owner, the management of the client, whose financial statements are subject to external audit, is interested in higher values of the return on assets indicator.

Higher values of this indicator are a sign that part of the profit can be paid to the owners. In this regard, the auditor should pay attention to whether the financial result, interest and all asset items are truthfully presented in the financial statements. If higher values of the return on assets indicator reflect the real financial picture of the client, the auditor is motivated to continue business cooperation. Understandably, untruthful presentation of the client's financial position and business success encourages the auditor not to extend the business cooperation.

## 2.4. Independent auditor's opinion

"The auditor's report, like any other report, is essentially a communication tool" (Carmichael and Willingham, 2000, pp. 6). The key part of that report is undoubtedly "the auditor's opinion on the reality and objectivity of the financial statements, which is based on audit evidence" (Filipović, 2009, pp. 145). The auditor's opinion is a summary confirmation "on whether the financial statements have been prepared, in all significant aspects, in accordance with the applicable financial reporting framework" (ISA 700, item 10). In this regard, the auditor may express an unqualified or qualified opinion (ISA 700, items 16 and 17). In accordance to ISA 705 (item 2), there are three types of qualified opinions: "qualified opinion, adverse opinion and disclaimer of opinion." As a rule, those who manage a business entity whose financial statements are the subject of an audit engagement are interested in an unqualified opinion. Such an opinion contained in the auditor's report makes them satisfied, which cannot be said for any of the qualified opinions – especially for the adverse opinion and disclaimer of opinion. However, the auditor does not sell his opinion, but his services in order to present his conclusion on the veracity and objectivity of audited financial statements to the management structures of the client and the public through a report. In this context, potential disputes between the client's management and the auditor when communicating any qualified opinion, especially a negative and reserved one, can be – and often are – a reason for changing the auditor and a reason for choosing a new one for future audit engagement. Research conducted by Filipović, Šušak and Lijić (2021, pp. 97) considers "the moderating effect of auditor rotation on the relationship between the extent of financial manipulation and the type of auditor's opinion."

## 3. SAMPLE AND METHODOLOGY

For the purposes of this paper, a regression model was created, which will be used to determine the direction and strength of the connection between the dependent and independent variables that are the focus of the research. 46 companies listed on the Zagreb Stock Exchange were selected as a random sample. The equation of the research model is as follows:

$$ROT = \beta_0 + \beta_1 * IND + \beta_2 * BF + \beta_3 * ROA + \beta_4 * AO + e$$

Research model labels have the following meaning:

- ROT – rotation of an audit company comparing to the previous year (1 = YES; 0 = NO)
- IND – indebtedness (total liabilities/total assets)
- BF – classification of the audit company in the "Big Four" (1 = YES; 0 = NO)
- ROA – return on assets (net income/total assets)
- AO – independent auditor's opinion
- e – model error.

## 4. RESEARCH RESULTS

This chapter presents the results of the regression analysis. Regression models were created for 2016 and 2015. Tables 1 and 3 show an overview of the R values of the regression models, while tables 2 and 4 show regression coefficients, t-values and significance levels for the created models.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,230 <sup>a</sup>	,053	-,039	,321

a. Predictors: (Constant), AO, ROA, BF, IND

*Table 1: Model Summary - 2016*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,305	,176		1,730	,091
	AO	-,054	,128	-,069	-,423	,674
	BF	,010	,099	,016	,099	,922
	ROA	-,487	,851	-,090	-,572	,570
	IND	-,355	,239	-,243	-1,481	,146

a. Dependent Variable: ROT

*Table 2: Coefficients – 2016*

The results presented in Table 2 for 2016 showed that the considered predictor variables of the regression model are not statistically significant because their p-values are higher than the value of 10%, which is taken as the upper limit of statistical significance.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,187 <sup>a</sup>	,035	-,059	,212

a. Predictors: (Constant), AO, ROA, BF, IND

*Table 3: Model Summary – 2015*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,011	,111		,099	,922
	BF	,003	,065	,009	,054	,957
	ROA	,117	,281	,065	,417	,679
	IND	,132	,160	,137	,824	,415
	AO	-,033	,079	-,070	-,414	,681

a. Dependent Variable: ROT

*Table 4: Coefficients – 2015*

Identical to 2016, the results presented in Table 4 for 2015 showed that the considered predictor variables of the regression model are not statistically significant because their p-values are higher than the 10% value, which is taken as the upper limit of statistical significance.

## 5. CONCLUSION

Auditor rotation will continue to be a topic of discussion. Everyone who is interested in elucidating the factors that influence the change of auditors will try to get an answer to the question of what and to what extent affects the decision on the rotation of auditors. As important factors in the rotation of auditors, in this paper, indebtedness, classification of the audit firm in the “Big Four”, return on assets and the opinion of the independent auditor are put in the foreground. For research purposes, regression models for 2015 and 2016 were created on a random sample of 46 companies listed on the Zagreb Stock Exchange. The regression analysis performed for both years showed how the considered predictor variables of the formed regression model are not statistically significant. In the context of future research, it seems appropriate to include other business years and, if possible, to expand the circle of determinants that influence auditor rotation.

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## TOURISM, NATIONAL PARKS, AND CLIMATE CHANGE: IS THERE A NEED FOR AN EU DIRECTIVE ON OVER-TOURISM?

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### ABSTRACT

*The article is written as a conceptual paper reflecting on interrelation of nature protection and tourism in the context of European Green Deal. A focus of the article is the problem of overtourism present in specific EU destinations and in Croatia as a whole. The argument supporting the hypothesis that Croatia as a country is burdened with overtourism is linked to the statistical evidence showing that tourism contributes roughly 25% of country's GDP. Overtourism is perceived as structural problem inherent to unregulated flow of tourists in Europe and additionally supported by chaotic contraction of public sector in transitional economies. Thus, it is suggested that overtourism is an EU problem. The context of European Green Plan as a strategic EU development choice in the era of climate change is addressed. Within this context the growth of tourist visits to National Park "Plitvička jezera" is discussed as an empirical example of overtourism where the context of European Green Plan, two Directives on Biodiversity and overtourism interrelate. Cases of overtourism in Barcelona, Venice, Amsterdam and Prag are also tackled as examples of scope of overtourism problems in Europe. It is concluded that body of secondary laws which ensure the rule of law in the EU are tools to regulate (negative) externalities immanent to overtourism. Therefore, a Decision on overtourism in Croatia and an EU Direction on overtourism is suggested.*

**Keywords:** *Nature protection, overtourism, European Green Deal, National Park "Plitvička jezera, Decision, Direction, European Union*

### 1. INTRODUCTION

The purpose of this article is to reflect on the interrelation of nature protection and tourism in the context of European Green Deal, while the aim of the article is to develop an argument endorsing the issuing of a Decision on overtourism for Croatia followed by the Directive on overtourism relevant for the all EU countries. The article is based on an insight that all EU member states adhere to the EU Green Deal (European Commission, 2023a) which plans to adapt EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels (European Commission, 2023a). Also, it is based on the understanding of EU legal system relays on primary (Treaties) and secondary laws which encompass the body of legislature that comes from the principles and objectives of the Treaties. These secondary laws include Regulations<sup>1</sup>, Directives<sup>2</sup>, Decisions<sup>3</sup>, Recommendations<sup>4</sup>, Opinions<sup>5</sup>, Delegated Acts<sup>6</sup> and Implementing acts<sup>7</sup> (European Commission, 2023b) and are the tools to enforce rule of law as well as EU strategic development choices under the rule of law.

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<sup>1</sup> Regulations are binding in their entirety on all EU countries.

<sup>2</sup> Directives require EU countries to achieve a certain result but leave them free to choose how to do so.

<sup>3</sup> A decision which specifies those to whom it is addressed is binding only on them.

<sup>4</sup> Recommendations allow the EU institutions to make their views known and to suggest a line of action without imposing any legal obligation on those to whom it is addressed. They have no binding force.

<sup>5</sup> An 'opinion' is an instrument that allows the EU institutions to make a statement it has no binding force.

<sup>6</sup> Delegated acts are legally binding acts that enable the Commission to supplement or amend non-essential parts of EU legislative acts in order to define detailed measures.

<sup>7</sup> Implementing acts are legally binding acts that enable the Commission to set conditions that ensure that EU laws are applied uniformly.

The article should be regarded as concept paper with the primary purpose of identifying and explaining the perspective in which problems of overtourism should be tackled within EU. In this article European Green Deal is treated as a strategic choice relevant for the entire EU and all sectors of the economy. Thus, it is also relevant for tourism on the territory of the EU. Several EU member states are financially dependent on tourism and hospitality industry. While countries of North Mediterranean coast such as: Spain, Portugal and Greece are well known for their macro-economic dependance on tourism, it is less known that Croatia is by far the most dependent country on tourism within the EU as travel and tourism generate 25,8 % of Croatia's GDP. Paradoxically, Croatia's dependance on travel and tourism is 2 times higher than the dependance of two island states Malta (12,6% travel and tourism share of the GDP) and Cyprus (12,2% travel and tourism share of the GDP) (Statista, 2023a). Such dependence creates larger socio-economic problems for the country such as: deteriorating ability of residents to afford housing, employment fluctuations, revenue instabilities and common (negative) externalities (Mikulić et al., 2021). What is true for Croatia as a country is true for various locations in other EU member states dependent on tourism in which specific locations such as Venice in Italy, Barcelona in Spain, Amsterdam in Netherlands and Prague in Czech Republic are fighting with overtourism problem already for a decade. In 2014 Salvatore Settis published a compelling book entitled “Se Venezia muore”<sup>8</sup> discussing the aspects of “false modernity” driven by overtourism which is destroying the livability of Venice. In 2018 British journal “Guardian” published a lengthy article on overtourism in Barcelona (Burgen, 2018). Similar article was published on Prague in 2019 (Tait, 2019) in the same journal and in 2023 World Economic Forum published an article announcing ban on cruise ships in Amsterdam in an effort to fight overtourism (Thesing, 2023). Thus, evidence shows that overtourism is a heterotopic European problem gaining ground in Western and Eastern Europe while in Croatia the country which connects Central, East and Southeast Europe it became a problem of national proportions due to its share in the country's GDP. Overtourism could endanger biodiversity, habitats and integrity of national parks sooner than „urban habitats“ in which problems are been discussed in relevant literature (Settis, 2014) and already tackled by concrete steps in Barcelona (Hughes, 2022) and Amsterdam (Thesing, 2023). However, to develop an argument in favour of creating an EU Decision focusing Croatia and a Directive aiming at all EU countries some contextual aspects of overtourism should be tackled by analysing the case of a well-known national park in Croatia. For this reason the article is composed of five chapters. Suite to introduction, second chapter reflects on wider socio-economic conditions that paved the way to overtourism in Europe of which Croatia is an impressive example. Third chapter analyses the growth of number of visitors to National Park „Plitvička jezera“ in two time series in order to put the tourism growth in a relevant empirical context. Fourth chapter discusses the issues rising from overtourism in Plitvička jezera relevant to the goals of the European Green Deal and fifth concludes by connecting need for actions related to overtourism to the EU strategic development context and institutional setting.

## 2. OVER TOURISM AS A REFLECTION OF UNLIMITED DEMAND

Far from being a current phenomenon, overtourism has a rather long history. Wall (2020) suggested that phenomena originated within park and recreation settings in North America and then developed the trajectory aiming at urban areas of historic towns, particularly in Europe. Cappochi, Vallone, Pierotti and Amaduzzi (2019) argued that overtourism is related to the growth of tourism which is characterized by “concentration of tourist flows to specific areas, causing crowding and problems with carrying capacity and environmental sustainability and by the “imitation effect”, whereby emerging economies mimic the tourist behavior of Western economies“ (Cappochi et al. 2019:1).

<sup>8</sup> In english: „If Venice dies“.



Some authors suggest that digital technology plays a substantive role in spread of overtourism by facilitating rapid spread of comments and reviews about attractions and venues (Bourliataux-Lajoie, Dosquet, and del Olmo Arriaga, 2019). The mentioned sources provide enough evidence to hypothesize that current ubiquitousness of overtourism on European continent is facilitated by digital revolution (Merritt, 2016), globalization of markets (Levitt, 1983) and high mobility of tourists through all kinds of transport channels. In short overtourism reflects unlimited demand for selected European destinations and is pertinent to unregulated regimes of global tourism flows. By default such situation creates governance issues with respect to the resources of destination countries and specifically for the environmental protection because overtourism always implies increasing waste generation, water problems, air pollution, threats to biodiversity and cultural heritage. Informed predictions indicate that that tourism will grow over the next decade (Croce, 2016, 2019). Such a trend will inevitably produce externalities (Mikulić et al., 2021). Statistic evidence suggests that Croatia as a youngest EU member state has overwhelming problems with overtourism (Statista, 2023a). Also, limited search of media coverage related to overtourism in Croatia shows that major media outlets including Euronews (Hughes, 2023), DW (Jackson, 2022), France 24 (AFP, 2023) have covered the problems of overtourism in Croatia and focused on Dubrovnik to corroborate their statements. However, in order to link the media coverage on Dubrovnik to the full scope of the problem of overtourism in Croatia, it is important to stress that transitional and post-transitional small and open economy Southeast Europe' economies (Bartlett, 2023) are predestined to rely on tourism (Buckley, 2012). The chaotic contraction of public sector being a pertinent characteristic of transitional economies (Nellis, 1998) and of countries with belated accession to the EU (which is precisely a Croatian case<sup>9</sup>), it is not surprising that such a transitional macro-economic technique is producing (negative) externalities through rapid and unregulated tourism growth (Mikulić et al., 2021). By default rapid and unregulated growth of tourism leads also to overtourism in protected sites, which in transitional open economies rely on over visitation to maintain financial viability of the very protection. Such an understanding of the overtourism "vicious circle" is crucial to assess the efficacy with which the strategic EU development choices related to the European Green Deal in which Directives on Biodiversity<sup>10</sup> as well as fulfilment of the goal of protecting the nature play an important role, could be met in a small open economy such as Croatian one. It is in this very context that the situation with overtourism in "Plitvička jezera" should be analysed and assessed when considering institutional actions to implement various steps consistent with implementation of the European Green Deal.

### 3. NATIONAL PARK "PLITVIČKA JEZERA" AND "OVERTOURISM"

National Park „Plitvička jezera“ is the biggest and oldest national park in Croatia (Ministarstvo graditeljstva i prostornog uređenja<sup>11</sup>, 2014). It was pronounced a national park in 1949 and it encompasses 16 smaller and bigger lakes of crystal clear blue-green water. The lakes are created by the flux of a number of streams and rivers linked by cascades and waterfalls. The park was declared to be a world heritage site by UNESCO, thus becoming one of the first natural heritage sites in the world (MINGO, 2014). Tourism activity started in the park from the end of 19<sup>th</sup> century. "Developed infrastructure of current visitor system includes hiking trails, wooden bridges over lakes and tufa barriers which enclose water to the visitors. Electro boats on Kozjak Lake drive since 1978. The most of the hiking trails are constructed at the end of nineteenth and beginning of last century completed during the 1930s with some enlargements in 1960s, and

<sup>9</sup> Croatia applied for EU membership in 2003 and was in negotiations from 2005 until 2011.

On 9 December 2011 leaders from the EU and Croatia signed the accession treaty. The country became the 28th EU member country on 1 July 2013.

<sup>10</sup> Cf. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

<sup>11</sup> In further text: MINGO.

some very new, established in 2010“(Čulinović, 2012:226). With regard of the numbers of tourists, it is a specific interest of this article to focus on trends characteristic for period in which it was already obvious that Croatia will thrive to become EU member, thus from 2005<sup>12</sup>. Table 1 shows the steady growth of visits in the park from 2005 – 2008.

Year	2005	2006	2007	2008
Number of visitors	855 866	866 218	927 661	948 891

*Table 1: The number of visitors in National Park Plitvička jezera 2005 - 2008  
(Source: MINGO, 2014: 89)*

In order to avoid presentation of lengthy tables, it is of interest to show a table which encompasses pre-Covid 19 pandemic and post-pandemic figures thus delimiting the period of interest to 2019 – 2022.

Year	2019	2020	2021	2022
Number of visitors	1 771 523	445 841	804 800	1 036 000

*Table 2: The number of visitors in National park Plitvička jezera 2019 – 2022 (Figure/Table name style)  
(Source: Imbrišić, 2022:15 (2019 – 2021) and for (2022) Smolčić, Novi list, published on October 5, 2022)*

Two insights become relevant when comparing Table 1 and Table 2. First, the number of visitors recorded in 2019 (1 771 523 visitors) doubled regarding the number recorded in 2005 (855 866 visitors). Second, the pace of recovery from the Covid 19 pandemic crisis was much faster than the growth recorded in 2005 – 2008 period. The comparative perspective suggests that: a) visitation to the National Park recovered already (despite pandemic) in 2021, b) that visitation doubled (thus increased by roughly 400 000 visitors in one year) while pandemic crisis was still a threat c) that visitation is recuperating from the pandemic at very fast pace as it increased in 9 months of 2022 by 200 000 visitors when compared to the number of visitation in 2021. Given the fact that the difference between the number of visitors recorded in 2005 and in 2019 is 915 657, it is relevant to wonder what is projected carrying capacity for the National Park Plitvička jezera if such elasticity related to the number of visitors is acceptable in Croatia as an EU member state? An internet search for documents that would tackle the carrying capacity of National Park “Plitvička jezera” using relevant key words<sup>13</sup> produced weak results. Only two documents were tackling the carrying capacity issue. First, a presentation published by Čulinović (2012) at the 6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas, held in Stockholm, Sweden, August 21-24, 2012, and second published by National park “Plitvička jezera” in 2019. Even though two documents are totally different regarding the purpose and length, several points stemming from both documents are of interest for this article. First document, authored by Čulinović (2012) states that a Physical Plan developed in 1986 projected a total annual number of 1 657 000 visitors and that, in 2012, no more recent carrying capacity estimations for the Park were available (Čulinović, 2012:226). Second document, entitled “Plitvice Lakes National Park Management Plan 2019 – 2028” does not have chapters related to carrying capacity of the Park but does have a Chapter 2.4. devoted to Characteristics of Park visitation (Plitvice Lakes National Park,

<sup>12</sup> Cf. Footnote 9.

<sup>13</sup> Key words used in Croatian were: „kapacitet opterećenja“, „nacionalni park“, „Plitvička jezera“. Key words used in English were: „carrying capacity“, „national park“, „Plitvice lakes“.

2019:75). In that chapter the following citation is of specific interest: “It is worth pointing out that days with increased number of visitors are no longer an exception; rather, they are increasingly becoming a standard scenario in the course of peak season. For example, the number of visitors in July and August 2017 was approximately 335,000 and 385,000 respectively, which gives daily averages of 10,800 and 12,400 visitors respectively. The record was set on a day in August 2017 when the number of visitors exceeded 16,000....It was ten years ago that the number of visitors in one day exceeded 10,500 visitors. In 2017, the maximum recorded number of visitors in one day exceeded 16,000 visitors.” (Plitvice Lakes National Park, 2019:80). Given the fact that in 2019 the number of visitors to the Park increased by roughly 50 000 when compared to the peak reached in 2017 (Imbrišić, 2022: 15) it is obvious that the document from 2019 reports on clear case of “overtourism” within the Park at least as of 2017. What is more, the document reports that “The situation that the Park is increasingly facing is the number of visitors exceeding the designed capacity of the existing visitation system in the lake zone that represents the main attraction, outstanding universal value of world natural heritage and the main reason of visit for all Park visitors... that... Inevitable consequences of letting more visitors enter the Park per hour include crowding, waiting and, in general terms, decreasing quality of visitor experience and quality of presentation of Park values...and that .... The determined symptoms worsen with each consecutive hour during which the system is overloaded with the number of visitors that exceeds the designed capacity.” (Plitvice Lakes National Park, 2019:79). Going back to the Tables 1 and 2 previously shown in this chapter, where the pace of post pandemic recovery of visitation to National park “Plitvička jezera” is extremely fast, it is of relevance to put rapid recovery of tourism growth in the context of capacities of small open economies such as Croatian one to deal with overtourism issues. In this context it is hard to imagine that Croatia will be able to adhere not only to the goals of EU Green Deal but also to the two Directives on biodiversity which are in turn vital for the integrity of country's national parks, as situation in National park “Plitvička jezera” clearly show continuing problem of overtourism in 2022.

#### 4. DISCUSSION

Small open post-transitional economies typically have problems with public sector performances (Bayar, 2016). What is true for all post-transitional economies is relevant also for Croatia. The research showed that Croatia as well as the other countries of Southeast Europe had a number of issues to deal regarding the quality of public sector performance when compared with EU standards (Matei, Lazar, 2011). However, it has also been established that political connectedness has no overall impact on firm performance in the EU members states in Southeast European countries: Slovenia, Bulgaria and Croatia (Bartlett, 2023). This suggests that membership in the EU has positive impact on the performance of public sector in Croatia. This finding should be of guidance to the EU initiatives related to overtourism. Accounting for roughly two-thirds of worldwide international tourist arrivals Europe is the global leader in international tourism. Europe reported a peak of 745 million international visitors in 2019 thus making tourism a major job creating activity (roughly 35 million jobs) and important contributor to continent's GDP that reached nearly 2.1 trillion U.S. dollars in 2019 (Statista, 2023b). Covid 19 pandemic was characterized as a major disruption for the continent which led to the development of the European Green Deal, a strategic document that would have to guide the EU until 2050 in the direction of green transition (European Commission, 2023a). Within mentioned context it is reasonable to assume that the results of this redirection of strategic trajectories and development priorities would be applied also to tourism and hospitality industry. UNWTO (2023) statistics show that Europe reached 90% of pre-pandemic levels, driven by strong intra-regional demand in first quartal of the 2023.

Therefore, there are reasons to assume that in 2024 recovery and even growth of arrivals within and to Europe will continue, thus driving the growth of arrivals to all established European tourism destinations. In such circumstances the pressure on National park “Plitvička jezera” will soon become similar to the one recorded in 2017 and surpassed in 2019 when Croatia together with Europe reached a peak in tourist arrivals. Consequently, overtourism will continue to endanger biodiversity in the National Park “Plitvička jezera” and compromise the spirit of European Green Deal which considers EU Biodiversity Strategy for 2030 consistent with other European Green Deal strategies (European Parliament, 2023). As Croatia already has the highest dependency on tourism measured by the contribution of tourism to country’s GDP (25,8% in 2022); has been the only country which recorded growth in the contribution of tourism industry to the country’s GDP in 2022 when compared to 2019<sup>14</sup>, it is almost certain that the country will continue to face serious problems with overtourism that already entangles spatial spillover effects (Vizek, Stojčić, Mikulić, 2022). In the case of Plitvička jezera this means not only the problems with biodiversity but also problems with sociospatial restructuring and gentrification that distort social harmony, prevent upward social mobility and create conflict with the needs of locals. Such effects are pronounced among low and middle class residents thus entangling migration of local residents to less tourism-intensive areas (Vizek, Stojčić, Mikulić, 2022: 4). On the other hand land use changes in agriculture and urban development can exert a strong influence on the resilience of protected habitats (Rannow et al., 2014), therefore they should be monitored and controlled. At present levels of overtourism characteristic for Croatia and given that in “in many developed nations, the costs of recreation management are significantly greater than the direct revenues raised from recreational fees and charges” while the country still has the situation in which “few of the countries’ own citizens yet engage in park-based outdoor recreation, direct revenues from international tourism may be a critical factor in keeping parks operational” (Buckley, 2012), it is foreseeable that country will have problems to operationalize the effective management of overtourism in National Park “Plitvička jezera”. Given that “protected areas cannot be managed in isolation from each other. When making (sometimes difficult) decisions about adaptation in a particular protected area, conservation managers will need to take into consideration what is happening, or likely to happen, at other sites” (Rannow et al., 2013:8) and that consequently “sites will need to be managed increasingly as part of an overall protected area strategy over large areas” (Rannow et al., 2013:8), it is rational to conclude that critical overtourism situation in Croatia and particularly vulnerable site of National park “Plitvička jezera” could compromise the effective realization of the “working with nature to protect our planet and health” goal essential to delivering the European Green Deal (European Commission, 2023c). Given that a deficit in delivering the European Green Deal in place such as National park “Plitvička jezera” one of the most spectacular and oldest natural heritage protected site in the EU, could create a reputational risk not only to Croatia but to EU as a whole, an EU institutional action of overtourism is needed, as the failure to act could have wider consequences to the consistency in application of the European Green Deal.

## 5. CONCLUSION

EU membership as well as EU law implementation system has many consequences one of which is the a possibility to monitor the effectiveness of various strategic choices in specific sites of interest for the very strategy on the territory of the EU. European Green Deal strategy represents one of the defining EU strategies in 21<sup>st</sup> century in the era of climate change that is becoming so obvious globally. Given the fact that all current EU member states adopted European Green Deal as relevant for 21<sup>st</sup> century (European Commission, 2023a) it has an uncontested legitimacy among member states.

<sup>14</sup> In 2019 contribution of tourism to Croatia's GDP was 25,6% (Statista, 2023a).

Respect of nature and decoupling of growth from the overuse of resources is a trajectory consistent with European Green Deal (European Commission, 2019). Within mentioned context it is reasonable to assume that UNESCO protected natural heritage sites would be of specific interest for the consistent implementation of the European Green Deal. National Park “Plitvička jezera” in Croatia is assumed to be one of the most admired UNESCO protected natural site in Europe. A secondary body of law aiming, among other things, at navigating EU member states in particular issues was devised in the EU in order to strategically act when necessary. Given that Croatia as a country shows consistent signs of overtourism by having the biggest share of tourism contribution to the GDP in EU, and that overtourism problems have been recorded in a leading EU nature protected site such as “Plitvička jezera”, there are rational grounds to contemplate how to decrease growth of visits to Croatia. On the other hand there is a sense of urgency to show efficacy in implementing elements of European Green Deal in specific locations which could immediately reflect the success of the chosen strategy. Therefore, it should be of interest to deal with overtourism problem in Croatia for the EU too. A Decision tackling overtourism for Croatia could be a tool to curve down the risks related to current situation with overtourism in the country. Parallely to this situation, growing and pressing evidence of what is known as Venice syndrome (Talk, Ojamäe, Paadam, Alatalu, 2023) should urge relevant EU bodies to develop the EU Directive on overtourism that would incorporate best practices already in progress in Barcelona and Amsterdam. Such a Directive could help streamline the tourism development in the younger EU member states in which institutional capacity to deal with negative externalities of overtourism has been diminished for reasons inherent to transition (Bartlett, 2023).

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## THE IMPACT OF COVID-19 ON CARING IN THE UK

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### ABSTRACT

*This study was commissioned to examine how COVID-19 has affected caregiving in the UK. For the examination of the subject, the author reviewed the relevant literature and examined the secondary data provided by the Office for National Statistics (2020). The investigation revealed an issue with the COVID-19's effect on caring in the UK in April 2020. During this time, males did contribute more to providing care, but women continued to provide more care. Despite the fact that both men and women who supported someone living outside of their household in April 2020 compared to the prior years experienced poor mental health, the proportion of women who suffered from mental health was higher than men, which was highlighted as an additional issue when 65% of sandwich carers were women. The COVID-19 epidemic clearly had a significant effect on women who provided informal care. The three implications listed below are those that suggests. First, expanding supermarkets' delivery capabilities would help to lower caregiver stress levels because during the first month of the lockdown, shopping was the most important form of support. Second, additional government assistance for sandwich caregivers must be taken into consideration, such as online video/phone counseling for people with mental illnesses. Third, the government's responsibility for increasing public understanding of shared childcare duties between men and women needs to be addressed. The research is limited by the lack of assurance regarding the sincerity with which male survey participants stated their emotions at the time they completed the survey questionnaires. Future study may need to figure out how to account for the fact that men are less likely to talk about their stress and worries during the data analysis process.*

**Keywords:** *Caring, COVID-19, mental health, well-being*

### 1. INTRODUCTION

The COVID-19 outbreak in the UK had a negative impact on society as well as the economy. Throughout the pandemic, people supported one another because the local governments were unable to provide enough assistance at the beginning of the sequence of lockdowns. This research examines COVID-19's effects on caregiving in the UK in order to pinpoint issues that materialized in April 2020. The survey discovered that women who provided informal care, particularly those who provided sandwich care, were more adversely affected by the epidemic. As a result, policy implications include expanding supermarkets' delivery systems, providing more support for sandwich caretakers, and increasing public awareness of shared care obligations.

### 2. FINDINGS AND ANALYSIS

The examination of COVID-19's impact on caregiving in the UK during April 2020 revealed a remarkable surge in community support amid local government limitations. People rallied to provide assistance, showcasing resilience in the face of adversity.



Gender disparities were notable, with both men and women contributing, but women, who comprised a significant portion of sandwich caregivers, faced a higher mental health burden. Implications include expanding supermarket delivery services, enhanced government aid for sandwich caregivers, and a call for broader gender role awareness. Further exploration is warranted to address male emotional disclosure reticence.

## 2.1. Gender and formal cares

In the UK, nearly half of the population (48%) supported those who were not family members during the lockdown's first month, April 2020, according to the Office for National Statistics (2020). This is a considerable number considering that between 2017 and 2018, 11% of individuals supported a person who did not live with them. Both men and women actively helped outside of their homes in April 2020, according to the data, but overall, women were more involved than males. It reveals that whereas 45% of males and 51% of women supported a person who did not live in the same home, respectively (Figure 1). Both males and women had a noticeable increase when compared to the percentages in 2017–18, with the former experiencing a higher increase. Women have historically been more likely to be responsible for caring for others. According to official statistics, women make up about 60% of informal carers in the UK (Foley et al., 2021). According to the Department of Health and Social Care (2016), informal carers are persons who offer unpaid assistance to friends or family members who need it. The primary support activities are often meal preparation and grocery buying. In April 2020, those who gave care to people outside of their family can be categorized as informal carers.

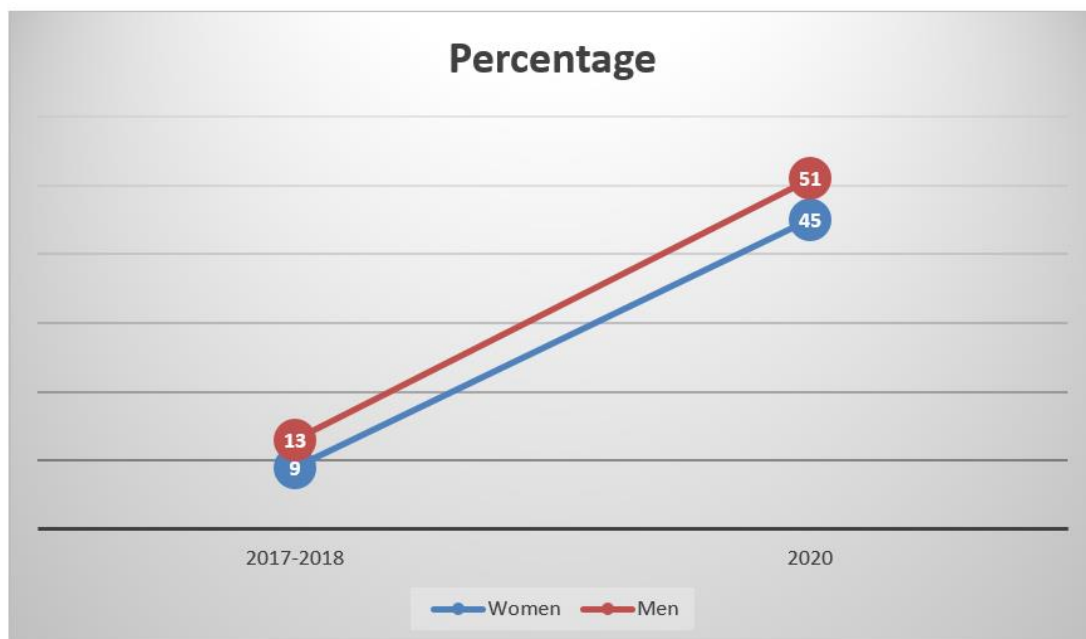


Figure1: Percentage of adults, broken down by gender, who offered assistance

(Source: Understanding Society Covid-19 Study, 2020)

According to data from April 2020 (ONS, 2020), 58% of persons with dependent children provided care to people who did not live in their own home, compared to 45% of adults without dependent children. Therefore, it may be concluded that the former group took a more active role in demonstrating care. According to Carers UK (2012), sandwich carers are individuals who provide care for both dependent children and elderly or disabled family members. In the past, women were more likely than males to become sandwich caretakers.

In the UK, there are 68% more female sandwich caregivers than male sandwich caregivers (Age UK, 2020). The statistics from April 2020 showed that there was still a striking gap. According to the data, women made up 65% of the sandwich carers who provided care in April 2020 (Figure 2). In the past, ONS (2019) found that sandwich caretakers are more likely to experience depression the more time they spend providing care for others. Those who provided adult care for between 10 and 19 hours per week saw a sharp decline in their level of life and health satisfaction (Appendix 1). Since sandwich makers were already known to experience stress prior to the pandemic, COVID-19 must have had a major effect on them, particularly on women.

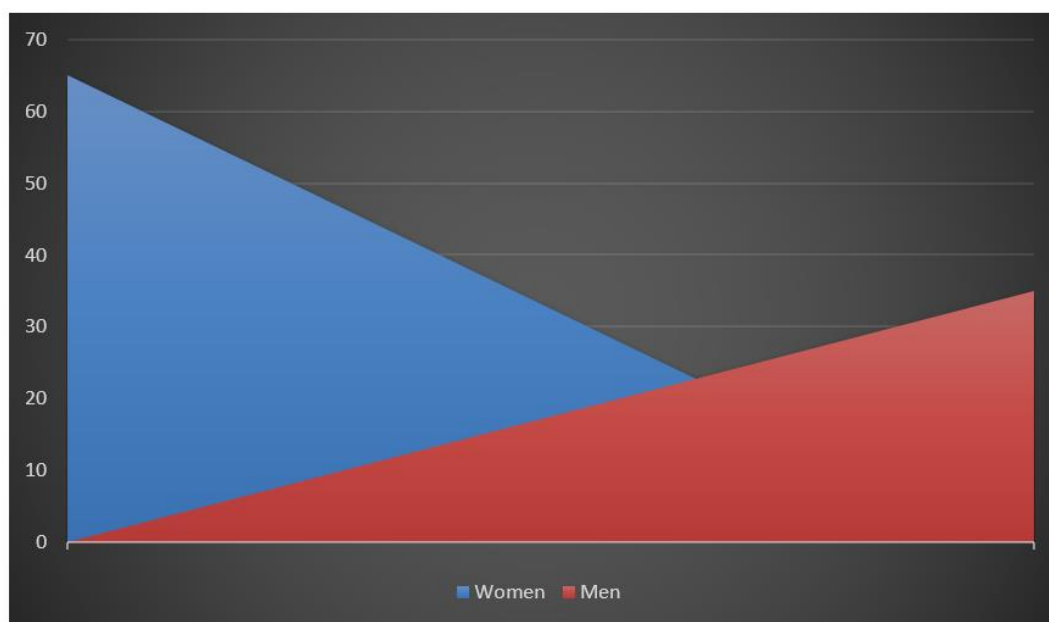


Figure 2: Percentage of sandwich carers provided support in April 2020 by gender

(Source: Understanding Society Covid-19 Study, 2020)

\*Sandwich carers have been defined as people who spend 10 or more hours per week on childcare or home-schooling and provides help or support for parents/grandparents/in-laws outside of the household

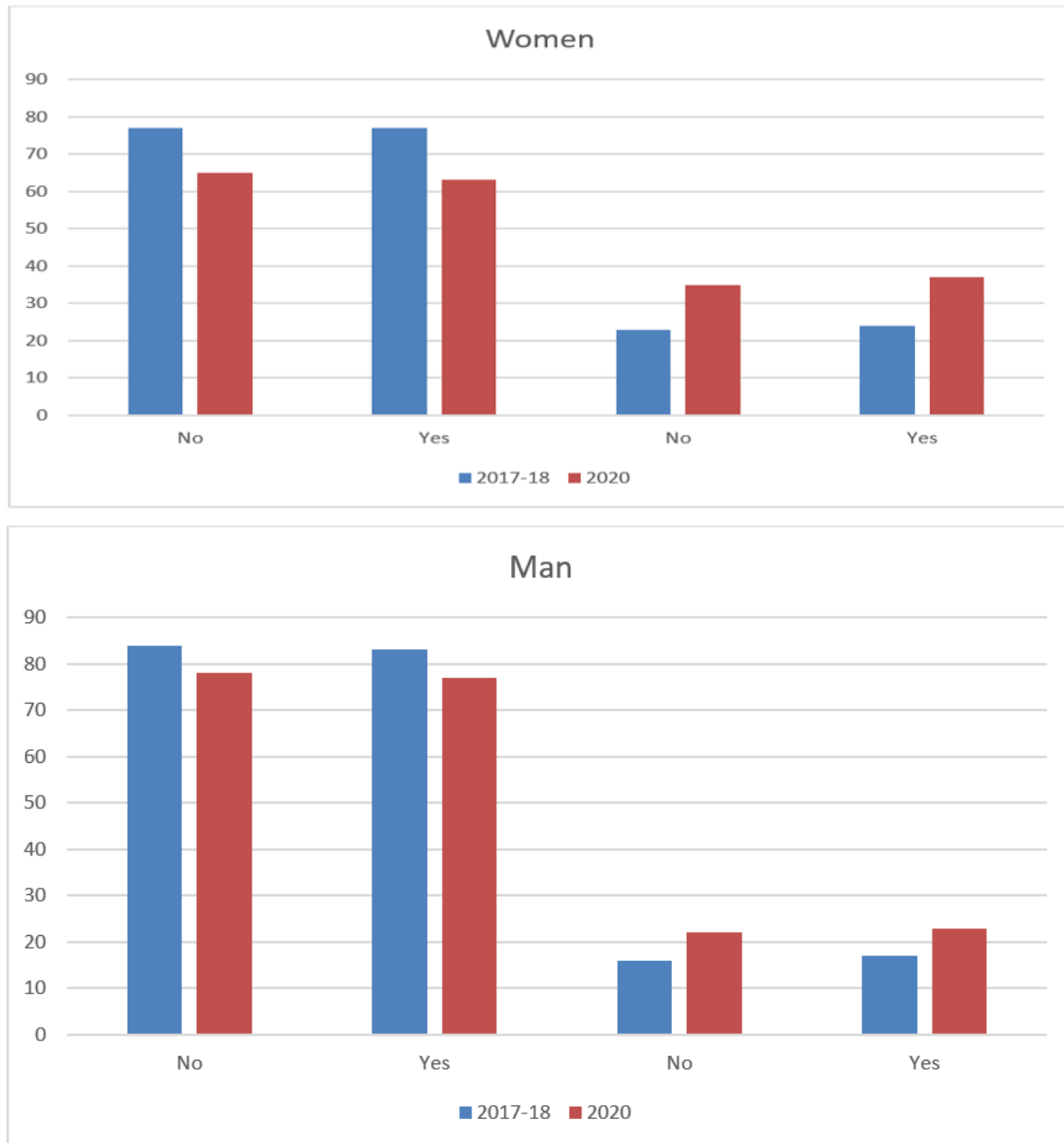
## 2.2. Caring roles and emotional well-being

During the lockdown, it is obvious that people helped one another, and those who contributed support took care of the weaker members of society. Informal caregivers provided assistance to persons outside of their own households since the local authorities were unable to provide those in need of care with enough help. The nation recognized the invaluable assistance provided by informal carers; nonetheless, a dilemma existed in that these informal carers' demands and expectations were disregarded, particularly during the pandemic (Onwumere et al., 2021). Whitley et al. (2021) examined the mental health of unpaid family caregivers (home-carers) during the pandemic and found that it was already worse than that of non-carers before the lockdown, but that it worsened even more and to a greater extent than that of non-carers during the lockdown. Therefore, it is feasible for informal carers who offered assistance to individuals outside of their family in April 2020 to experience the same results.

## 2.3. Gender's impact on mental health

A self-administered questionnaire called the General Health Questionnaire (GHQ) is used to determine whether a person's present mental health deviates from their usual state. According to NHS Digital's 2017 report, a score between 0 and 3 denotes the absence of any symptoms of a mental disease, while 4 and 12 denotes the presence of poor mental health.

In terms of mental health, the data (ONS, 2020) showed variations in GHQ wellbeing depending on sex and whether assistance or support was provided to individuals who did not reside in the same home between April 2017 and April 2020 (Figure 3). In comparison to men, women typically have worse mental health. Whether or not they offered support, men and women's mental health declined in April 2020 as a result of the psychological discomfort brought on by the lockdown (Niedzwiedz et al., 2020).



Yes= Respondent provided help or support

No= Respondent did not provide help or support

**Figure 3:** GHQ score by whether support provided to someone not living in the same household by sex, 2017-2018 and 2020 – 0-3 and 4-12

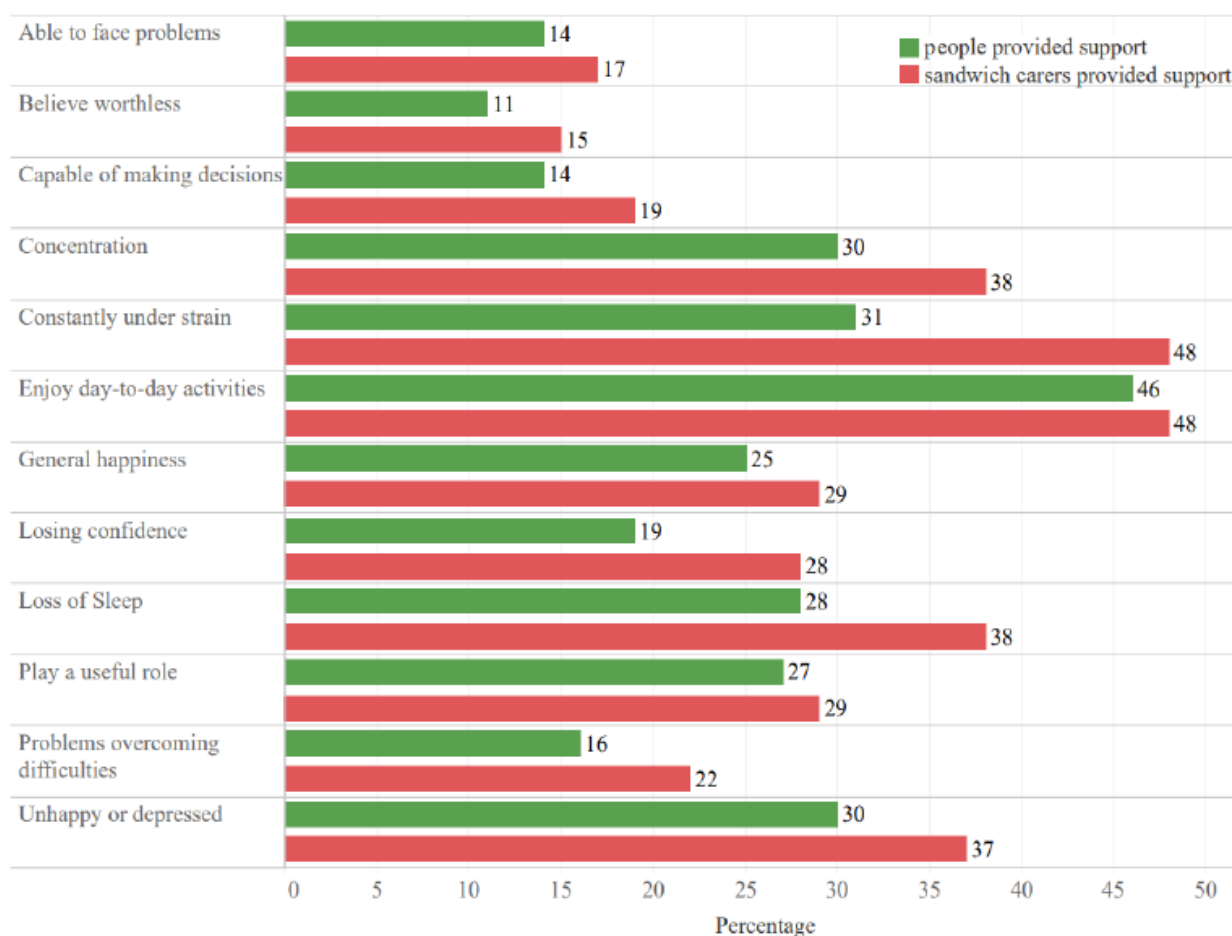
(Source: Understanding Society Covid-19 Study, 2020)

Women saw a greater increase than men, though. The mental health of men worsened with an increase of 6%, reaching 23% in April 2020 as opposed to 17% between 2017 and 2018, for men and women who replied "yes" and had a score between 4 and 12 and also provided care.

On the other hand, women's mental health also declined by 13%, rising to 37% in April 2020 from 24% between 2017 and 2018. Which demonstrates unequivocally that women suffered more harm than men.

## 2.4. Mental health of sandwich carers

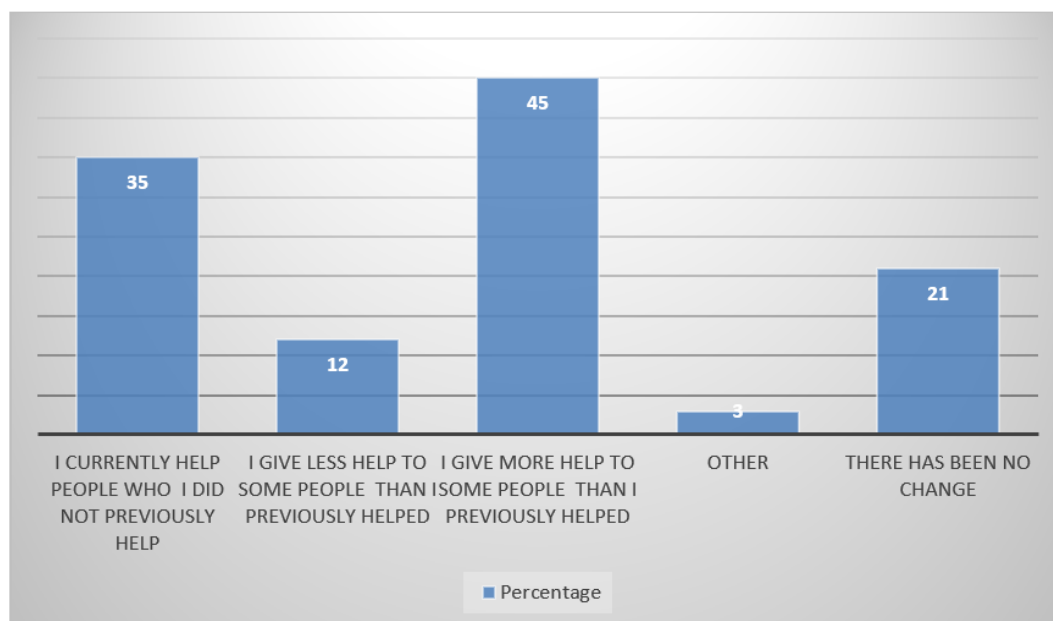
Figure 4 compares the GHQ wellbeing score between sandwich carers who supported persons who did not live in the same home as them and those who did not help people who did not live in the same household. It demonstrates that those who are sandwich carers typically have worse mental health conditions. Women were more likely than males to have mental illnesses in the first month of the lockdown, according to the fact that 65% of the caretakers who offered support in April 2020 were female. The amount of care that sandwich caregivers had to give during the lockdown may be the cause of their bad mental health.



**Figure 4:** GHQ comparison (feeling worse or much worse than usual) between people provided support and sandwich carers provided support in April 2020

(Source: Understanding Society Covid-19 Study, 2020)

In addition, Figure 5 demonstrates that 45% of sandwich carers ultimately provided further assistance to the individuals they had previously assisted. Furthermore, 35% of them extended assistance to individuals they had not before helped. Basically, this means that even though they were already under stress from the lockdown, sandwich caretakers had to shoulder significantly more caring duties during the epidemic than they had in prior years.



**Figure 5:** Changes in the support that sandwich carers gave to someone not living in the same household in April 2020

(Source: Understanding Society Covid-19 Study, 2020)

## 2.5. The primary form of help provider by informal caregivers

The domestic constraints on safety and cleanliness during the epidemic forced a number of commercial establishments, including restaurants, cafes, and hotels, to cease operations. During the lockdown, a few activities were permitted, such as going shopping for necessities. However, people were asked to stay at home and quarantine when necessary. Supermarkets were permitted to remain open throughout the whole shutdown period because they sell food and other necessities for daily living (GOV, 2020). As seen in Figure 6, cooking meals came in second place (19%), with shopping ranking first (85%) in April 2020. However, there was often a cap on the number of customers who could enter a grocery store at once (HM Government, 2020; Appendix 2). It required individuals to wait in a lengthy line starting in the morning until their turn to enter the supermarket arrived (Whiteside, 2020). Shopping was described in a number of articles as being unpleasant and exhausting to perform during the lockdown (Verney, 2020; Pugh, 2020), suggesting that while it was the most common form of support during the first month of the lockdown, it was also the most stressful.

*Figure following on the next page*



**Figure 6:** Main help and support activities provided by people in the UK, April 2020

(Source: Understanding Society Covid-19 Study, 2020)

## 2.6. Volunteer's essential role as informal carers

Numerous publications claimed that COVID-19 had a considerable impact on community-level healthcare delivery as well. Local residents' associations had to step in to provide support because they were in desperate need at the beginning of the outbreak because local health organizations and social care services were unable to adequately care for the severely affected people (Stansfeld et al., 2020; Stevenson et al., 2021, p. 1404). Additionally, Covid-19 Mutual Aid Groups were established to battle the epidemic locally (Booth, 2020). The volunteer-led groups significantly lessened the effects of COVID-19 on the physically and psychologically weak people in the UK (Tiratelli and Kaye, 2020; Wakefield et al., 2022). The groups assisted their communities by offering assistance such as shopping, medication delivery, companionship, and other services. During the pandemic crisis, volunteer assistance and their interactions with local and federal authorities were crucial. At a community level, it is debatable whether volunteers should be viewed as informal caregivers.

## 3. CONCLUSION

After evaluating the prior research and the dataset provided by ONS (2020), it appears that there is a concern with the effect that the lockdown had on caring in the UK during the first month. While helping one another kept the community going during the pandemic, there was a definite drawback. It has been determined how informal caregivers, particularly women, affect mental health. Everyone had experienced psychological discomfort due to the outbreak. It was noted as a further issue when 65% of sandwich carers were women that the mental health of women who offered support to people residing outside of their household in April 2020 had deteriorated to a larger level than that of their male counterpart.

## 4. RECOMMENDATIONS

We suggest the following policy implications based on the analysis.

Since shopping was the most popular pastime, it should be the main focus of efforts to reduce caregivers' stress levels. It is essential to expand supermarkets' delivery capabilities (systems) in order to enable more people to make online purchases and arrange delivery to their homes,

especially in light of the fact that customers were forced to wait in a lengthy line outside during the lockdown. The government must actively participate in putting this proposal into action. In order to support sandwich caregivers, the government must pay attention to their requirements. Further research is required to determine the best forms of support, but providing free video/phone counseling online to sandwich caregivers in need of mental health assistance might be a good place to start. Last but not least, it is inevitable that the government will play a role in raising awareness of shared care obligations between men and women. Because an unequal division of care could limit women's employment opportunities, the load must be lessened through increasing male involvement.

## 5. LIMITATIONS

Due to the small sample size, it is not feasible to carry out comprehensive analyses of the various sub-groups and national geographies. The comparisons between groups and periods must be carried out with caution since estimates are based on a sample survey. Also, since the sampling variability can be presented in the datasets, it should be considered when making comparisons.

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# THE COLOR OF DENG XIAOPING CAT: CAPITALIST CHINA OR SOCIALIST CHINA?

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## **ABSTRACT**

*After presenting the developmental success of communist-led China, this article defines the economic system of this country. It argues that its mixture of socialism and capitalism is more efficient than not only China's own past of complete state control over the economy but also more efficient than the modern Western economic model based on neoliberal economic theory. In fact, China's main advantage is a mixture of state interventionism (visible hand) and market (invisible hand), a unique socialist system balanced with many elements of capitalism which allows both hands to function together.*

**Keywords:** *China's economic system, capitalism, socialism, state, state-owned enterprises*

*It does not matter whether a cat is white or black. It is a good cat so long as it catches mice.  
(Deng Xiaoping)*

## **1. INTRODUCTION**

China blazed a unique developmental trail to success since the founding of the People's Republic of China (PRC) in 1949. According to the World Bank, the Middle Kingdom became, in 2014, the world's largest economy, measured in purchasing power parity.<sup>1</sup> Its developmental achievement, to be resented in the following pages, demonstrates a distinctive model enabling the country to leap from the third world into rivaling the superpower of the United States.

## **2. THE MICE THAT THE CHINA CAT CATCHES, IN COMPARATIVE LENS (1949-2023)**

At the end of WWII, China joined the United Nations (UN) as a founding member and was made a permanent member of the UN Security Council (UNSC). However, the ensuing Civil War (1946-1949) shattered the dream of a united government. China was split into a nationalist China (based in Taiwan) and a communist China (PRC). The former shipped all of the Chinese gold reserve<sup>2</sup> and major industrial capacity into Taiwan, leaving the latter with almost nothing to build the war-ravaged nation with.<sup>3</sup> After the Korean War (1950-3), the United States, and its allies imposed on PRC two-decades-long trade embargo. Excluded from the UN for two decades, the PRC thus started to build its economy and national defense eventually into a formidable industrial superpower we see today. In the process, it also recovered the sovereignty of former British and Portuguese colonies Hong Kong and Macau before the turn of this century. In 1950, with a population of 21 percent of the world, the estimated share of China's total GDP was just 5.5 percent of the world's GDP (Maddison, 2002, p. 173, 214). In 2023, with a slightly reduced cut of the population (18.98%), China's share of the world's total GDP

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<sup>1</sup> The United States is still the leading economy (\$26.85 trillion) based on current USA dollars, compared with the overall GDP of China (\$19.37 trillion). However, the picture is different if purchasing power parity (PPP), a more accurate indicator, is used. On the basis of PPP, China's GDP is higher (\$33.01 trillion) than that of the USA (\$26.85 trillion, "World Economic Outlook Database, April 2023 Edition". *IMF.org*. International Monetary Fund. Retrieved 11.04.2023.

<sup>2</sup> In this Taiwanese government website about President Chiang Kai-shek, it states that on January 10, 1949, Chiang 'Order[ed] Central Bank to ship [China's] entire gold reserves to Taiwan'. See <http://english.president.gov.tw/Page/83> (Retrieved on August 7.08.2017).

<sup>3</sup> Jan Skoyles, 'How one man took China's gold,' *The Real Asset Co*, September 24, 2013, <http://therealasset.co.uk/nationalist-china-gold/> (Retrieved 7.08.2017).

(PPP) has climbed to 19.27 percent (including Hong Kong and Macao).<sup>4</sup> This means that China increased its share of the world's total income by 3.45 times after 73 years. In 1950, China's per capita income was only 21 percent of the world's average, with 541 million people. Today, with a population of 1.49 billion (including Hong Kong and Macao), the same figure has soared to 102 percent.<sup>5</sup> A vertical comparison with its past is equally meaningful. It was no surprise that, prior to the communist takeover, China had a negative growth rate in terms of GDP per capita. Available statistics show that during the 1870-1950 period, Chinese people's average income per head shrunk by 0.23 percent year by year. In contrast, during the 1950-2022 period, the average annual growth of GDP per capita in China was 4.23 percent a year.<sup>6</sup> The People's Republic has also made great strides in socio-economic development. China's average life expectancy in 1949 was about 35 years, compared to the world's average of 49 years (Angus Maddison, 2002, p. 30; Chunjuan Nancy Wei 2013, p. 254; Peter Stephen Wilenski, 1977, p. 7).<sup>7</sup> Hence, the PRC had at its beginning, a life expectancy 14 years below the world average. Today, the same figure is 78,79 years (5.4 years above the world average). This means that in PRC history, China needed just 1.7 years to increase its life expectancy by one year. In 1950, an average American might have expected to live 33 years longer than an average Chinese. Today, Americans live just 1 year longer than the Chinese.<sup>8</sup> Finally, China was much more efficient in dealing with COVID-19 epidemics than Western countries. It is really astonishing that China is having 47 *times* fewer deaths per million inhabitants than, for example, the USA, although China was in the worst situation because pandemics started on its territory. China's success shows the efficiency and superiority of its organization of public health in comparison with most Western countries.<sup>9</sup> As a result, China is the only major economy that had economic growth in 2020.<sup>10</sup> Achievements in education are equally impressive. When the communist took power, between 85 and 90 percent of Chinese were illiterate. The same figure today is just 3.2 percent,<sup>11</sup> with primary school enrolment in China at 100 percent. School life expectancy in China is 14 years and that expectancy is the same for males and females (which shows gender equality).<sup>12</sup> Today, 23 percent of adults aged 18 to 22 attend tertiary education. Moreover, China is now the world's largest producer of Ph.D.s. (Ronald Coase and Ning Wang, 2012, p. 155). Finally, according to the Program for International Student Assessment (PISA), China's schools and students are today the best in the World.<sup>13</sup> In the 74 years, China has also drastically improved its position in the international hierarchy, politically and militarily. Maddison, (1995, p. 53) summarized China's pre-1949 global standing: "For a century after the 1840s China was a quasi-colony of the West, ceding extra-territorial rights in treaty ports to 20 foreign countries, its customs revenue collected by foreigners, surrendering territory to French, British and Japanese colonists." In barely three years of its founding, the PRC was able to stand up against the US-led UN troops, forcing America and its 15 allies to a stalemate in Korea.<sup>14</sup> In the two decades that followed, China successfully challenged India and the Soviet Union, the other

<sup>4</sup> See <https://www.imf.org/external/datamapper/PPPSH@WEO/OEMDC/ADVEC/WEOWORLD> (Retrieved 14.08.2023).

<sup>5</sup> Maddison (2002) and <https://www.imf.org/external/datamapper/PPPSH@WEO/OEMDC/ADVEC/WEOWORLD> (Retrieved 14.08.2023).

<sup>6</sup> Maddison project, 2020 and The World Bank (for years 2019-22).

<sup>7</sup> Maddison (2002, p. 30) put life expectancy in China, in 1950, as 41 years. However, compared with other sources of China's life expectancy, this article adopts the data by Wei and Wilensky.

<sup>8</sup> <https://www.worldometers.info/demographics/life-expectancy/> (Retrieved 14.08.2023).

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<sup>11</sup> Ross (2006) and The CIA *World Factbook*, <https://www.cia.gov/the-world-factbook/countries/china/#people-and-society> (Retrieved 15.08.2023)

<sup>12</sup> The World Bank and The CIA *World Factbook*, *ibid*.

<sup>13</sup> This program compares student's scholastic performance in mathematics, science, and reading (see: <https://worldpopulationreview.com/country-rankings/pisa-scores-by-country>, Retrieved 15.08.2023).

<sup>14</sup> The Korean War, which was also a conflict between China and the United States, ended without a winner.

superpower, on border wars; became the world's fifth nuclear power, and replaced Taiwan as a permanent member of the UNSC. Today, it has the third strongest military in the world (after the USA and Russia). Such impressive performance and its stellar rise in the international system are by no means common among the world's major powers. It begs scholarly inquiry and investigation into the type of economic system that enabled China's development.

### 3. WHAT CAUSED CHINA'S DEVELOPMENTAL SUCCESS?

So, what caused such a phenomenal development of communist-led China? Three hypothetical explanations often surface. The easiest possible account is that China developed rapidly because of its low starting point. According to the law of diminishing returns, poor countries develop at a faster rate than developed ones. To quote Paul Samuelson and William Nordhaus (1989, p. 33), "we will get less and less extra output when we add successive doses of inputs while holding other inputs fixed." In other words, it is easier for low-income countries to achieve high levels of economic growth. Indeed, when Mao declared on the Tiananmen in October 1949 that 'the Chinese people have stood up,' very few countries had a lower GDP per capita than China. Naturally, it was easier for China to achieve a high level of GDP per capita growth than for other countries that had a higher starting point. It would lend credence to this theory if all countries like China had achieved fast economic growth. According to Maddison (2002), just ten countries were poorer than China in 1950. Burma had a lower GDP per capita in 1950 (\$396) than China (\$439). China has today retained this advantage and expanded its lead to a 4.6 times higher GDP per capita (23,380\$) than Burma (aka Myanmar, \$5,130). Burkina Faso had, in 1950, 14 percent lower GDP per capita than China. Today, China has 8.6 times higher GDP per head than Burkina Faso. Burundi's GDP per capita in 1950 was 34 percent lower than that of China. Today China's GDP per person is 26 times higher. Similarly, Ethiopia, Eritrea, Guinea, Guinea Bissau, Lesotho, and Malawi all had, in 1950, lower GDPs per capita than China.<sup>15</sup> Yet, a lower starting point for these countries has not enabled faster economic growth than China. On the contrary, today's China is far ahead of all these countries than it used to be in 1950. Obviously, statistics from these nine countries do not seem to support the claim that China developed so fast just because of its low starting point. Furthermore, the most developed countries experienced much lower rates of growth than China when they were at the same level of GDP per capita. To illustrate, China needed just 30 years to increase its GDP per capita from \$2,000 to \$12,000 (calculated on the basis of constant 2011US\$). In contrast, the USA needed 140 years, France 139, and the UK needed 245 years for the same achievement.<sup>16</sup> In addition, it is logical to ask why the law of diminishing returns had not helped China to have high rates of growth before 1949. Enters the second explanation: China's success is a result of the size of its population and territory. This account quickly runs into logical problems. Why did not these two factors contribute to China's economic growth prior to 1949? In addition, some of the most successful countries in the promotion of economic growth are relatively small (Singapore and Taiwan, for example) and both have much smaller populations than China.<sup>17</sup> This means that China's economic growth has been a consequence neither of its population size nor its size of territory. The third and final hypothesis emphasizes a country's natural resources and factor endowment. However, China has neither large reserves of oil nor gold or diamond. In fact, it must import oil and gas; and its natural resources – if one considers the huge number of its

<sup>15</sup> Data for 1950 are from Maddison (2002) in 1990 international dollars and for 2023 from International Monetary Fund (<https://www.imf.org/external/datamapper/PPPPC@WEO/OEMDC/ADVEC/WEOWORLD>, Retrieved 15.08.2023) in PPP. Therefore, it is not possible to compare absolute numbers, but it is possible to compare relative numbers for a given year.

<sup>16</sup> Maddison Project Database 2018, available at: <https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018> (Retrieved 15.08.2023).

<sup>17</sup> David Landau (1986) found that total population has a negative influence on growth – less populous countries have higher rates of GDP per capita growth. However, Antić (2010) found that the total population does not have a significant influence on GDP per capita growth.

inhabitants – are below the world average. It is perilous in shortage of water and arable land. China is thus not qualified - as, for example, oil-exporting countries - of basing its development solely on the exploitation of limited resource possessions. In short, China's developmental success in the last 74 years can neither be explained away on the basis of the 'law of diminishing returns' nor on the basis of population, territory, or natural resources. The more plausible explanation comes from China's unique economic systems.

#### 4. COLOR OF THE CAT: THE ECONOMIC SYSTEM OF CHINA

China terms its system 'socialism with Chinese characteristics.' Yet, socialist regimes are typically portrayed as producing economic catastrophes. For example, Lester Thurow (1996, p. 1) asserts that "no economic system other than capitalism has been made to work anywhere." Not just Thurow, but almost the entire literature published in the West during the 1990s claimed that the socialist system caused economic catastrophes everywhere.<sup>18</sup> As a result of the Soviet collapse in 1991, Eastern European countries have all switched to the capitalist system. So, how is it possible that a socialist system causes economic catastrophes in other countries and, yet China achieved tremendous success under a socialist regime? The easiest possible answer is that China is not a socialist country anymore. Indeed, the very title of the book *How China become capitalist* – written by Nobel laureate Coase and by Wang (2012) - suggests that China economically developed since it became capitalist. Indeed, post-Mao China has gradually introduced a market economy; and reforms have spurred economic growth. According to Coase and Wang (2012, p. 129), the "disastrous economic record of Mao's socialism" was later replaced by the economic success of China's capitalism (after 1976). This statement raises two important questions. First, was the record of Mao's socialism in its 27-year practice disastrous? Second, is today's China a capitalist country? Evidence does not seem to suggest positive answers to either question.

##### 4.1. The 'Simply Disaster' Thesis of Mao's Socialism

Concerning the first question, advocates of the disaster thesis often cite the Great Leap Forward (1958-1961) and the Cultural Revolution (1966-1976) as evidence. Indeed, these two events brought China backward rather than forward. However, these two events do not prove that the entire Mao Zedong era (1949-1976) was simply a disaster and that China's spectacular growth should be solely credited to Deng Xiaoping and his cat-theoretic pragmatism.

On Mao's death, *The Economist* wrote:

Mao must be accepted as one of history's great achievers... for directing the transformation of China from a feudal society, wracked by war and bled by corruption, into a unified, egalitarian state where nobody starves; and for reviving *national pride and confidence* so that China could, in Mao's words, 'stand up' among the great powers.<sup>19</sup>

While the 'nobody starves' comment is purely fiction (think of the millions who died during the disastrous Great Leap Forward during 1958-1960), it is equally wrong to equate his 27-year rule as simply producing starvation and chaos year after year, as during most of the Century of Humiliation. Overall, the *Economist* appraisal largely holds true, considering that Mao had helped defend three of the four core national interests—*physical survival* (the life of a state), *autonomy* (liberty from foreign interference), and *collective self-esteem* (national pride). In terms of *economic well-being*, it is important to point out rural infrastructure development, which enabled the initial success of post-Mao rural reform. Statistics from the Ministry of

<sup>18</sup> See, for example, Ericson (1991) and Nordhaus, Peck, and Richardson (1991). However, some authors challenge the idea that socialism was unsuccessful in promoting development. See, for example, Antić (2010).

<sup>19</sup> 'Mao is Dead,' *The Economist*, September 11, 1976. Emphasis added.

Agriculture found that China had 87,085 dams in 2009, but only 827 of them were built since 1978. In other words, over 99 percent of Chinese dams (86,258) were built during the 1949-1978 years.<sup>20</sup> Furthermore, during Mao's rule, China's average economic growth was 4.71 percent, slightly above the world average (4.67 percent). However, Mao's success is much more impressive when compared with his predecessors. During the 1870-1950 period average rate of growth (total GDP) was just 0.3 percent a year; and during the 1913-1949 period – when China was a capitalist country, following the Anglo-American model - China had a negative growth (Maddison, 2002). Earlier, in Section II, it was shown that during Mao's rule illiteracy was drastically reduced. In just fifteen years (from 1949 to 1964) rates of illiteracy fell from approximately 85-90 percent to 33.58 percent. By 1982 (six years after Mao's death), this figure further dropped to 22.81 percent (Li, 1992; Meng, 2002). From 1949 to 1976 life expectancy increased from 35 years to 65, total population increased from 541 million to 937 million.<sup>21</sup> This indicates that in Mao's China, the population grew by nearly 400 million; life expectancy increased every year, on average, for more than one year. In Wei's article 'Barefoot Doctors,' she noted that Mao was an advocate of gender equality, rural education, and epidemic prevention. The elimination of opium addiction and most infectious diseases, coupled with his effort to promote literacy among the Chinese population, left behind "a physically solid and moderately educated population on which Deng Xiaoping could build for successful agrarian reform" (Wei, 2013, p. 274). In other words, Mao made China stand up, yet his country remained poor, isolated, and trapped in political "correctness".

#### 4.2. The 'Simply Capitalist' Thesis

Deng Xiaoping's brilliance was his ability to steer China away from its radical political conviction to focus on economic development. Instead of spending all day checking out the color of the cat, he told his nation that the cat's color was unimportant; what mattered most was whether China allowed the mice (economic opportunities) to slip away. There is no doubt that market reforms, initiated after Mao's death, allowed China to introduce Western capitalist elements, thus boosting its economic growth (with an average growth rate during the 1977-2019 period being 8.24% a year).<sup>22</sup> So, is today's Chinese economy capitalist? Nobel laureate Coase and his colleague (2012) believe so. However, this assertion is problematic because it first contradicts China's self-identity. China's Constitution stipulates that the PRC is 'a socialist state under the people's democratic dictatorship led by the working class' and that 'the socialist system is the basic system' (Article 1). Although Beijing rejects to identify itself as a capitalist country, it is possible that the Constitution does not reflect reality. Sometimes, constitutions - especially those of former communist countries - were more a list of wishes and promises than reflections of reality.<sup>23</sup> Therefore, it is important to get to the bottom of the real structure of the Chinese economy. The first step, naturally, is to define such terms: capitalism and socialism. Encyclopedia Britannica defines capitalism as an economic system "in which most of the means of production are privately owned." In contrast, socialism is an "economic doctrine that calls for public rather than private ownership or control of property and natural resources."<sup>24</sup> In China, both types of ownership exist (though not in the Western sense of the term private property, as will be later explained). The question is, therefore, which kind of ownership dominates in China today.

<sup>20</sup> Kaibin Xu, 'Weishenme jueadaduoshu shuiku haishi sanshi nian qian xiu de?' [Why majority of the dams were built thirty years before?], *Xinjing Bao* [The Beijing News], February 10, 2009, [http://www.snzg.cn/article/2009/0210/article\\_13384.html](http://www.snzg.cn/article/2009/0210/article_13384.html) (Retrieved 26.08.2017).

<sup>21</sup> Data from National Bureau of Statistics of China, <http://data.stats.gov.cn/easyquery.htm?cn=C01> (Retrieved 26.08.2017).

<sup>22</sup> Maddison (2002) and the World Bank, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=CN> (Retrieved 15 August 2023).

<sup>23</sup> See, for example, the Constitution of The Socialist Federative Republic of Yugoslavia, from 1974, which proclaimed that the working class ruled that country though it was the Communist party that had the monopoly of power in practice.

<sup>24</sup> See entry for capitalism <https://www.britannica.com/topic/capitalism> (Retrieved on 15.08.2023).

In 2019, 80.2 percent of Chinese companies on the Fortune Global 500 (119 in total) were SOEs.<sup>25</sup> Economists tend to support the view that Chinese SOEs remain inefficient; they generally attribute China's economic success to the performance of private enterprises (Minxin Pei, 2016; Coase and Wang, 2012; Sourafel Girma and Yundan Gong, 2008). However, according to Massimo Florio (2014, p. 4), the SOEs on Fortune Global 500 list have 11% higher revenue, 35% higher profit, 64% more valued assets, and 34% higher market value compared to the top 500 average. The SOEs also have better results in return on sales and slightly better results in return on equity indicators. In other words, state-owned enterprises (SOEs), especially those in internet, retail, finance, energy, and property, still dominate in China's economy and their revenues increase faster than the growth of GDP. Overall, it is not easy to assess the exact contribution of SOEs to the economic development of China, because of different types of these enterprises. However, according to Andrew Szamosszegi and Cole Kyle (2011, p. 1), 50 percent of the Chinese economy is state-owned. Similarly, according to Piketty (2020, p. 643), China's state controls 55 percent of the capital of enterprises in the country. Hence, China is the country with the highest number of big SOEs in the world and this number is still growing. That SOEs are an important socialist element of the Chinese economy is evident not just from percentages of total enterprises but also from the way how they function. According to Zhiming Long, Remy Herrera, and Tony Andreani (2018), "most Chinese SOEs are, or have become, profitable because the principle that guides them is not enrichment of shareholders, but productive investment and service rendered to customers... they serve in part to stimulate the rest of the economy." The authors claim that SOEs are a very important factor that contributes to excellent results of the Chinese economy. "This is probably also related to the size of SOEs: giants that benefit from economies of scale that reduce cost at all levels." It is out of the scope of this article to analyze which authors better assess the value and contribution of SOEs (those who support them or those who oppose them). However, it is logical to ask the following question: knowing that based on SOEs China has had annual growth of, on average, more than eight percent a year (during the last forty-six years), could China have performed better if it had privatized almost entire economy (as the Eastern European countries did)? The reality is, in the past three decades, none of these countries has outperformed China. A logical answer to the question above is that the combination of the SOEs and private ownership has been a Chinese advantage. In addition to SOEs, local and regional governments have played active roles in the Chinese economy. Moreover, according to Article 9 of the PRC Constitution, 'all mineral resources, waters, forests, mountains, grasslands, unreclaimed land, beaches, and other natural resources are owned by the State.' And this is not only on paper. Two out of the three biggest China's state-owned companies are *Sinopec Group* and *China National Petroleum*. Both exploit and process oil. Furthermore, the Chinese government still controls many important economic resources, particularly bank loans and transport infrastructure. Besides, a great majority of universities and hospitals are also state-owned. Long, Herrera, and Andreani (2018) cite an additional socialist element of the Chinese economy: "A remarkable feature of China's political and economic system is its powerful planning... The speeches given before the National People's Congress every year indicate whether the quantified objectives set out in the Five-Year Plan have been achieved." Finally, China does not have private property in the Western sense of the word.<sup>26</sup> According to the Constitution and the land laws, Chinese individuals cannot privately own land and natural resources.<sup>27</sup> Peasants may have only a long-term lease of land.

<sup>25</sup> <https://www.scmp.com/business/companies/article/3019632/first-china-has-more-companies-fortune-global-500-list-us> (Retrieved 15.08.2023).

<sup>26</sup> For example, an individual cannot buy an apartment. He/she can only have a long-term lease (70 years). (The author is grateful to professors Meng Zhenhua and Yu Chen, from University of Nanjing, for explaining to him China's property rights).

<sup>27</sup> See <https://www.loc.gov/law/help/real-property-law/china-real-property-law.pdf> (Retrieved 26 May 2019)

Foreigners cannot buy land in China; they may also have only a long-term lease. Until 2000, private firms did not have the right to list on the stock market (Business Monitor, 2000) and, by then, China already had a very fast economic development. There is no doubt that – since 1977 – China incorporated into its economic system many elements of capitalism. Property rights were recognized in the 1986 General Principles of Civil Law. Though private ownership does not exist in the Western sense of this term, many SOEs have been privatized; private companies participate in the stock market; many people are self-employed; and foreign companies have their branches everywhere in China. In addition, social differences in China have increased significantly.<sup>28</sup> However, poverty in China has also decreased rapidly. In 1990, 47 percent of people in China lived with less than \$3.2 a day (in constant 2011 US dollars). Today, only one percent of people in China belong to this category.<sup>29</sup> Obviously, rapid economic growth enabled many Chinese to become rich and even very rich. Nevertheless, poor people in China also benefited greatly from economic growth. After observing public facilities (parks, sidewalks, roads, railways, subways, high-speed trains), preventive medicine, public medical posts, education, housing, access to drinking water and sanitation, and solar panels on the roofs of villages, Noam Chomsky refuted what he called “a lot of propaganda in the West [which] presents China as more capitalist than capitalist countries.” He concluded that ‘Chinese-style socialism’, which has raised 700 million people out of poverty, represents ‘a very unique model, with central planning, and the majority of the economy in government’s hand’ (Chomsky and Andre Vltchek, 2013, p. 87-89). Interestingly enough, the European Union institutions deny China the market economy status.<sup>30</sup> So, is it logical to claim that China is ‘more capitalist than capitalist countries’ denying at the same time the market economy status of this country? The World Factbook (2021) correctly noted that “China has renewed its support for state-owned enterprises in sectors considered important to ‘economic security,’ explicitly looking to foster globally competitive industries. Chinese leaders also have undermined some market-oriented reforms by reaffirming the ‘dominant role of the state in the economy’ (italics added).”<sup>31</sup> From the facts presented above, it can be concluded that socialist elements and ideals still prevail in China (as Chomsky and Vltchek argue); state-owned enterprises remain the backbone of the Chinese economy; and the state still plays a proactive role in promoting economic development. There is no doubt that China’s economy is a mixture, but it seems to combine the best from both worlds of socialism and capitalism. China’s leadership, obviously, has followed Deng Xiaoping’s philosophy of pragmatism: the color of the cat is unimportant; what matters is whether the cat can solve China’s problems at hand. However, this does not mean that scholars should be color-blind. On the contrary, appropriate classification is a very important element of the scientific approach. So, the answer to our question about the color of the Chinese cat is: It is red with plenty of black stripes, with red representing socialist elements in the economy and black the capitalist.

## 5. PRESCRIPTIONS TO DEVELOPMENTAL POLICY

Since the end of the Cold War, China is expected to make reforms and transform itself on the basis of western models, despite the fact that it is much more successful in promoting growth than its Western counterparts. This is due to the dogmatic neoliberal economic theory that expects all other countries to follow it. An acronym captures the sentiment of this new ideology well: ‘TINA’, meaning ‘there is no alternative’ (Claire Berlinski, 2011). China’s success has falsified this dogma, showing an alternative does exist.

<sup>28</sup> Inequality in China is lower than in the USA but higher than in Europe (Piketty, 2020: 653).

<sup>29</sup> <https://data.worldbank.org/indicator/SI.POV.LMIC.GP?locations=CN> (Retrieved 15.08.2023)

<sup>30</sup> <https://www.euractiv.com/section/trade-society/news/eu-lawmakers-reject-granting-china-the-market-economy-status/> (Retrieved 15 August 2023)

<sup>31</sup> The CIA World Factbook, <https://www.cia.gov/the-world-factbook/countries/china/#economy> (Retrieved 21.03.2021).

China's main advantage is the strong state, including state ownership of strategic sectors of the economy. However, the economic successes of Japan, Taiwan, and Korea – after WWII – have also resulted from a proactive state in promoting economic and social development. In Korea, the government invested in public enterprises. In Taiwan, the percentage of gross domestic investment, originating in public corporations and government enterprises, was between 23 and 40 percent during the 1951-73 period (Alam 1989, p. 61).<sup>32</sup> So, Asian tigers became - on the basis of state interventionism and SOEs – the most successful countries in the world in promoting development. Similar processes occurred also in Europe. After WWII, not only East European countries but also many West European countries nationalized the most important branches of the economy. According to Thomas Piketty (2014, p. 100), in the industrial and financial sectors most directly affected by the postwar nationalizations, the state's share of national wealth exceeded 50 percent from 1950 to 1980... In 1950, the government of France owned 25–30 percent of the nation's wealth, and perhaps even a little more. What was the result of such a policy? According to the same author, Continental Europe and especially France have entertained considerable nostalgia for what the French call the *Trente Glorieuses*, the thirty years from the late 1940s to the late 1970s during which economic growth was unusually rapid... Throughout the *Trente Glorieuses*, during which the country was rebuilt and economic growth was strong (stronger than at any other time in the nation's history). (p. 73, 100). The Great Depression (1929-32) challenged the idea - even in the West - that the market alone, without state intervention, could solve economic problems. Large-scale infrastructure projects, financed by the state, were one of the most important elements of the New Deal. State-financed infrastructure programs consumed roughly half of the concrete and a third of the steel of the entire nation (George McJimsey, 2000, p. 221). Based on this system, the USA's share of the world's GDP was, in 1945, 50 percent (Antić, 2010, p. 157). State interventionism also produced rapid economic growth, prior to WWII, in Germany and the Soviet Union. So, China's present economic system has many similarities with the systems that were established after WWII. The main difference is that the above-mentioned countries – in contrast to China - completely changed their policy and attitudes toward SOEs. Comprehensive privatization started not just in Eastern Europe but also in Western Europe. Asian tigers also privatized their economies during the 1990's and, after privatization, GDP growth slowed down. Narrowing the gap was not just the result of the tremendous economic success of Mainland China, during the last 30 years, but also a consequence of lower growth rates of these countries after privatization.<sup>33</sup> In short, China, which has not privatized the key sectors of its economy, achieved much better economic results than its neighbors that privatized almost all their SOEs. However, what is the causal link? Why is privatization bad for growth? Guriev and Megginson (2007, p. 252) summarize the arguments against privatization claiming that “private ownership may involve substantial cost: there can be market failures related to externalities, market power, and public goods. These market failures provide a rationale for public ownership.” One additional advantage of SOEs should also be mentioned. Paradoxically, they may help a private initiative. For, if the profit of SOEs goes to the state budget, the government may lower the taxes, and a low level of taxation stimulates private investments. Furthermore, the profit of SOEs stabilizes the state budget.<sup>34</sup> It is not a coincidence that the debt crises erupted after privatization around the world. In situations when tax evasion and tax havens deplete the state budgets from revenues, a lack of profit from SOEs makes a balance between the state

<sup>32</sup> These figures were underestimated because they do not include investments in enterprises in which the share of state ownership was less than 51 percent.

<sup>33</sup> <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG> (Retrieved 21.03.2021).

<sup>34</sup> Two thousand years ago, great Chinese thinker, Sang Hongyang, asked the following question: without these state-owned enterprises, where would the state finances come from? (Original source: *Yantie lun* [Discourses on salt and iron], Wagner, 2001, p. 8-31). Obviously, Chinese government took this question much more seriously than majority of European governments.



expenditures and the state revenues even harder to achieve. In the end, one comparison: The New Deal and economic reforms in China– in spite of their significant differences - have one thing in common. According to Thurow (1995, p. 4), “Roosevelt designed the social welfare state that saved capitalism after it collapsed in America...Socialism was invented shortly after capitalism as a remedy to the visible defects of 19th-century capitalism – widening inequalities, rising unemployment, a growing workforce of castoffs.” From the opposite direction, China introduced many elements of capitalism. Economic reforms opened China’s socialism to foreign investment, strengthened the role of the market, and enabled private initiatives. In Deng Xiaoping’s China and Roosevelt’s America, reforms produced a convergence of capitalism and socialism. Similarly, state interventionism brought prosperity to East Asian countries. All these cases show that prudent and comprehensive state interventionism, supported by the free market, produces better results than neoliberal capitalism. This is the main lesson that China teaches us today.

## 6. CONCLUSION

In comparison to the pre-Mao period, China achieved tremendous social development since 1949. Partha Dasgupta (1993) claims that the economic well-being in every country depends mostly on three factors – income, health, and education. In all these three fields, China has made drastic achievements during the last 74 years. During the period when China was completely red (Mao’s ruling), this country achieved political unity, it became a nuclear power, and it was very successful in increasing life expectancy and eradicating illiteracy. However, economic growth was not impressive during that period. Things changed when China started with market reforms. From that period, China became the most successful country in the world in the promotion of economic growth. In other words, a spotted cat became more successful than a one-colored (red) cat. However, China has been much more successful than countries that changed their color completely from red to black. The combination of market and state interventionism in China has produced much better results than the neoliberal capitalism that has prevailed around the world. Furthermore, China’s decision not to privatize the key state assets and enterprises turned out to be a smart decision. If economic systems are evaluated on the basis of their efficiency, then the economic system of China is now better than any alternative in the world. Therefore, the right question is not anymore what China can learn from other countries but rather what other countries can learn from China.

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## TRANSFORMATION OF MEMORABLE GASTRONOMIC EXPERIENCE: APPLICATION OF STORYTELLING AND BRAINSTORMING APPROACH

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### ABSTRACT

*As the COVID-19 crisis affected changes in tourists' preferences, the purpose of this research was to examine the key elements of tourists' memorable gastronomic experience (MGE). Data collection was carried out in the "User interviews" template of the Mural online platform, in which each of 16 respondents wrote their story about the MGE. The results of the research indicate that the respondents identified the following 7 elements of the MGE: facility aesthetics, service quality, local food, social distance, novelty, enjoyment, and relaxation. The contribution of this research is reflected in the improvement of theoretical knowledge about importance of social distance element in creating MGE for tourists.*

**Keywords:** *gastronomy, transformation, brainstorming*

### 1. INTRODUCTION

The COVID-19 crisis has transformed the way the tourism sector functions (Pinos Navarrete, & Shaw, 2021; Rašan & Laškarin Ažić, 2022). This was especially visible in the context of gastronomic tourism (Garibaldi & Pozzi, 2020; Lazaridis et al., 2022). An example of the transformation in the preferences of gastro tourists is growing need for a solo dining experience (Moon et al., 2020; Brown et al., 2020). Due to changes in the preferences of gastro tourists, the conceptualization of MGE has also changed. It is generally accepted in the literature that MGE marks the way tourists remember a past event (Antón et al., 2019; Santos et al., 2020; Badu-Baiden et al., 2022; Cao et al., 2019), strongly influencing to their intention to recommend visited destination (Badu-Baiden & Kim, 2022; Di-Clemente et al., 2019; Laškarin Ažić et al., 2023). Tourists may recommend a visited destinations in number of ways, but the importance of storytelling about tourist events to family, friends, and colleagues is increasingly mentioned in the literature (Fana & Ambarwati, 2022; Fusté-Forné & Masip, 2019). Tourists recount close people stories about their tourist experience based on their own memories (Marschall, 2015). Almost all travelers are storytellers of their own travel experiences (Moscardo, 2017), which they elaborate on to their friends, family or colleagues. As stories are used to present the memory of impressive travel events (McCabe & Foster, 2006), it is not surprising that the recent use of the word "story" in tourism literature has increased (Moscardo, 2020). Therefore, in this study, a storytelling approach in interviewing tourists was chosen in collecting information about their MGE. The specific goals of this research are:

- exploring profil of respondents;
- exploring key elements of MGE; and
- identify directions for future research.

The contribution of this research is multiple because it can be seen from a theoretical and practical aspect. Based on the brainstorming analysis, scholars will gain insight into the key elements that will advance the theoretical knowledge in the literature on MGE. From a managerial point of view, this research enables the providers (restaurateurs, winemakers, DMOs) to examine the MGE of tourists by implementing the proposed model.

## 2. METODOLOGY

As a tool for data collection, the "User interviews" template was set up, the online platform Mural, in which the respondents could at any time during the day describe a story based on their memory about the lived gastronomic experience in the area of the tourist destination Kvarner. The invitation to participate in the research was sent by the authors via email to personal contacts. Those contacts who agreed to participate in the research first had to answer two filter questions: a) "Do you consider yourself a gastronomic tourist?" and "Have you ever visited the destination Kvarner?". If the contacts answered "yes" to both questions, they met the criteria for participation in the further stages of the research. A total of 16 respondents accessed the "User interviews" template in which they filled in their socio-demographic characteristics, wrote their personal story about the MGE during their stay in the Kvarner destination and highlighted 3 to 6 key words based on their story. Then, based on the keywords from all the stories, the respondents brainstormed in the chat of the Mural platform. By summarizing the viewpoints of the respondents, important elements of the MGE for tourists who visited the destination of Kvarner were identified.

## 3. RESULTS

The socio-demographic characteristics of the respondents show that 73% of women and 27% of men participated in the survey. The age distribution shows that almost half of the respondents are in their twenties (47%). In the sample, 13.33% of the respondents are in their thirties and forties, 20% in their fifties and 6.67% in their sixties. More than half of the respondents have a university degree (53%), followed by respondents with secondary education (47%). Obtained results are presented in table 1.

<p><b>Respondent 1 - 27 years old, lawyer</b></p> <p>During a visit to the beautiful town of Opatija, I went with a friend to the famous restaurant Roko. When we entered the restaurant, we were warmly greeted by the staff, who assigned us a free table. The waiter in charge of us was unobtrusive but also very cordial. When we asked him for advice on the best order, he first asked us about our preferences. We explained that we liked pasta dishes and he recommended dishes that we might like. Somehow his way of serving me added to the feeling of comfort. I do not remember the exact name of the wine, but I know he recommended a local wine with a sweet taste. As my girlfriend is a bigger foodie than me, she was delighted with the presentation and taste of the dish. We were both pleased with the food served. One minor complaint is the small distance between the tables. All in all, the day was wonderful, I felt very relaxed. I recommend Roko restaurant and Opatija as a place to visit to everyone.</p> <p><b>Keywords:</b> helpfulness of the waiters, delicious food, feeling of relaxation, small distance between the tables</p>	<p><b>Respondent 2 - 61 years old, bookshop owner</b></p> <p>What intrigued me as a guest and why I recommend the restaurant &amp; wine bar In vino veritas is the exceptional friendliness of the staff, who kindly guide me through the whole story and explain the possible choices of wines and food. The interior is beautifully decorated. I remember having a lot of fun that time.</p> <p><b>Keywords:</b> local food, entertainment, friendliness of the staff</p>
<p><b>Respondent 3 - 25 years old, cook</b></p> <p>A few months ago I was in Viškovo with my friends, where we decided to go to a tavern called Ronjgi. It is a restaurant that resembles a beautifully decorated estate with its beautiful exterior full of different flowers, old wooden benches, chairs and tables. The staff were very friendly and the waitress who served us is the owner of the restaurant. The restaurant offers a good selection of local dishes as well as a choice of beverages. After we finished eating, the owner surprised us with a portion of doughnuts. I would definitely recommend everyone to visit this place and restaurant as you will not be disappointed, very</p>	<p><b>Respondent 4 - 52 years old, hairdresser</b></p> <p>I visited Lopar with my husband in March 2022. As we are usually big foodies, we decided to go to the restaurant with the best rating on Tripadvisor. I can say that we did not make a mistake in choosing a restaurant because Laguna was a great place to eat. Where to start? The waiter was more than friendly - he joked with us and showed us how to remove the bones from the fish. We asked him to suggest what we should order and he recommended the Mediterranean Dentex fish, which was really delicious. He also recommended a local wine for us. At the end</p>

<p>friendly people, beautiful surroundings, exquisite food, all in all a very pleasant atmosphere.</p> <p><b>Keywords:</b> friendly staff, exquisite local cuisine, beautiful surroundings and pleasant atmosphere</p>	<p>of the dinner we got another glass of local liquor of the house. Really all the recommendations!</p> <p><b>Keywords:</b> friendly staff, delicious food, local wine</p>
<p><b>Respondent 5 - 48 years old, owner of an accounting service</b></p> <p>I was on holiday on the island of Krk with my wife. Family friends recommended us to visit the restaurant Bistro Bukarica. We booked a table in advance and I must admit that everything was more than expected. The restaurant had a very relaxed atmosphere and the ambience was rustic style, just the way we like it. The waiter was very professional and friendly. We learned a lot about the cheeses of the region from the waiter. We opted for the lamb shank as our main course, which was fantastic. Everything we tried was very tasty and when we come back to Krk we will return to this restaurant.</p> <p><b>Keywords:</b> relaxed atmosphere, pleasant ambience, professional and friendly waiter, new knowledge, delicious food</p>	<p><b>Respondent 6 - 32 years old, professor of geography</b></p> <p>I visited the small family restaurant Malo Misto wine &amp; dine Krk with my friend. When we entered the restaurant, I immediately thought that everything was aesthetically perfect. We ordered a local dish made from fresh and quality ingredients, and I can say it was fantastic. The restaurant offers a wide selection of wines from all over Croatia. Moreover, the hospitable owner has a great knowledge about wines, which makes the whole experience excellent. We ate there twice and each time we left satisfied. We hope to visit again when we return to Krk.</p> <p><b>Keywords:</b> great aesthetics, local food, owner's knowledge, hospitality</p>
<p><b>Respondent 7 - 36 years old, physiotherapist</b></p> <p>Now that I remember how much I enjoyed that dinner, I would do it again in a heartbeat. I have not seen my friends for a long time, so we organised a weekend get-together in Rijeka. We visited the Mornar restaurant, where the atmosphere was relaxed. Excellent wine, fresh fish and a nice restaurant, what more could you want? The waitress was friendly and accommodating. I hope we will have the opportunity to come back soon.</p> <p><b>Keywords:</b> enjoyment, relaxed atmosphere, fresh fish, nice restaurant, friendly staff</p>	<p><b>Respondent 8 - 29 years old, Master of Mechanical Engineering</b></p> <p>When I was in Rijeka because of business meeting last year, at the urging of a colleague, I decided to go to the Ribarnica tavern in Volosko. I was under the impression that it was a restaurant for locals, so my experience was even greater. I remember the experience because it was the first time I tried octopus salad - it was very tasty! Is there anything better? Try something new, enjoy good food, excellent red wine and good company.</p> <p><b>Keywords:</b> delicious octopus, local restaurant, something new</p>
<p><b>Respondent 9 - 56 years old, teacher</b></p> <p>Novi Vinodolski</p> <p>Our evening was fantastic and that made our holiday perfect. By far the best experience, from the food, the service and the relaxed atmosphere!</p> <p><b>Keywords:</b> food, service, relaxed atmosphere</p>	<p><b>Respondent 10 - 27 years old, seamstress</b></p> <p>Oh, now that I am starting to think about it, my feelings are changing. Three years ago, when I did not have children, I went on holiday to Senj with my husband. I do not remember how, but we chose Bistro Velebit, a small family restaurant. The service was friendly, fast and professional. The taste of the food was amazing. When we have come back to our hometown, my husband told everyone about delicious smoked chicken thighs and pork tenderloin were. Since my husband and I work a lot, we could really relax with good food. I can only highly recommend everyone to visit this restaurant.</p> <p><b>Keywords:</b> professional service, divine food, relaxation</p>
<p><b>Respondent 11 - 26 years old, nurse</b></p> <p>I visited the Bonaparte tavern with my friends. It may not be the most visually appealing establishment, but the food and wine were excellent. There was live music that day. We really enjoyed it and had fun singing the klapa. The staff were very friendly, all recommendations.</p>	<p><b>Respondent 12 - 59 years old, economist</b></p> <p>We are all always in a hurry and rarely find time for ourselves. Last summer I told myself enough was enough and went on a day trip to Crkvenica with the singles club. The restaurant I went to with my friends from the club was traditionally decorated. Although we liked it, we decided to sit outside on the terrace because of the nice weather. We ordered a meat platter, salad and two bottles of red wine. Everything was excellent, polite</p>

<b>Keywords:</b> friendliness of the staff, food, enjoyment, entertainment	waiter, nice weather and relaxed atmosphere and fun staff. A day for 10!  <b>Keywords:</b> traditional decoration of the restaurant, excellent food and wine, polite waiter, relaxed atmosphere
<b>Respondent 13 - 41 years old, co-owner of a construction company</b>  When you see this restaurant in Pogane, it's like you have gone back in time. It's nothing new and fancy, but it really has a soul. The staff are good and very friendly and the location of the restaurant is right by the sea. We had freshly grilled fish and it was cooked perfectly. If you want to feel the Mediterranean, you have to go here. I recommend this place to everyone.  <b>Keywords:</b> fresh fish, good staff, traditional restaurant	<b>Respondent 14 - 25 years old, Master of Economics</b>  The staff at Nadia restaurant were polite and courteous. Even the waiters helped us choose the best table to have the best view of the sea. The food was beautifully presented and delicious. But perhaps the owners could make the restaurant more aesthetically pleasing with a few extra plants and pretty table decorations. All in all, we enjoyed the food, the wine and the beautiful view. On our next visit to Stara Baška, we will go to Restaurant Nadia again.  <b>Keywords:</b> food, wine, enjoyment, friendly staff
<b>Respondent 15 - 23 years old, cook</b>  The Mare & Mons restaurant is located on Krk and has a beautiful view of the sea. The food is very good, try the salad with marinated steak, it's something special... I must also say that the team of waiters is the best, friendly and helpful... The girl and I had a really good and relaxed meal. When we come back to Krk on holiday, we will definitely visit this restaurant.  <b>Keywords:</b> beautiful view, good food, the best team of waiters, relaxation.	<b>Respondent 16 - 27 years old, Master of Economics</b>  The last time I visited Pizzeria Roko. The service in the restaurant was great, but the lack of social distancing worried me. I kept asking myself - what if I get a cold? So I would recommend the owners to create more distance between the tables.  <b>Keywords:</b> excellent service, lack of social spacing

*Table 1: Results of respondents' storytelling analysis (N=16)  
(Source: Authors research)*

After the storytelling analysis, the respondents identified the following 7 elements of MGE by brainstorming on the key words:

- Aesthetics of the establishment - excellent aesthetics, beautiful restaurant, traditional decoration of the restaurant, traditional look of the restaurant, beautiful environment;
- Quality of service - helpfulness of waiters, friendliness of staff, professional and friendly waiter, hospitality, professional service, polite waiter, good staff, approachable staff, best team of waiters;
- Local food - delicious food, local food, delicious food, local food, fresh fish, delicious octopus, divine food, excellent food, fresh fish, good food, exquisite local food;
- Novelty - new knowledge about cheese, new knowledge about wine, something new;
- Pleasure - enjoyment of food and wine; fun, pleasant ambience, enjoyment;
- Relaxation - feeling relaxed, relaxed atmosphere, relaxation;
- Social distance - small distance between tables, lack of social distance.

Each of the identified elements is described in detail in the following subsections.

### 3.1. Facility aesthetics

Upon entering the restaurant, the first impression a tourist gets is the aesthetics of the facility (Hwang & Ok, 2013; Hwang et al., 2022; Horng & Hsu, 2020, 2021), which is also confirmed by the respondent 6 statement: *“When we entered the restaurant, I immediately thought that*

*everything fit perfectly aesthetically*". Facility aesthetics refers to the function of architectural design, interior design and decor (Tüver et al., 2018; Yan & Felicen, 2021) which affect the attraction and retention of tourists in the restaurant (Yang & Lo, 2021; Wall & Berry, 2007). Interior design, such as wall paintings, can help increase the perceived authentic quality of a facility (Türker et al., 2019; Horng & Hsu, 2020; Walter & Edvardsson, 2012). The importance of the aesthetics of the building to the tourists is proven by the suggestion of respondent 14: "Maybe the owners could make this restaurant more aesthetically pleasing with a few extra plants and nice table decorations". Several respondents even pointed out that they were impressed by the rustic/traditional style of the restaurant:

- the ambience was rustic style, just the way we like it (Respondent 5);
- when you see this restaurant in Pogane you feel like you are going back in time, it is nothing new and fancy but it really has a soul (Respondent 13);
- The restaurant I went to with my friends from the club was traditionally decorated, which we liked (Respondent 12).

### 3.2. Service quality

In addition to the aesthetics of the interior, a warm welcome by the staff when entering the restaurant is also important to the tourists (Respondent 1). In the service environment, employees, as a fundamental part of the process of creating and providing services (Mulyani et al., 2020), mainly have roles to play and a well-defined and applicable script to follow (Brocato et al., 2012). Positive outcomes of the service process (Tuncer et al., 2021) will occur if employees play their roles in line with the expectations of tourists. During service delivery, employee behaviour strongly contributes to the tourists' perceptions of the quality of the service itself (Line & Hanks, 2019; Slack et al., 2022; Uslu, 2020), which is indicated by the following statements of the respondents:

- What fascinated me as a guest and why I recommend the restaurant & wine bar in vino veritas to others is the exceptional friendliness of the staff and the guided tour through the whole story in which they explained to us the possible selection of wines and food (Respondent 2);
- The waiter was more than friendly - he joked with us and showed us how to remove the bones from the fish (Respondent 4);
- The waiter was very professional and friendly (Respondent 5);
- The waitress was friendly and courteous (Respondent 7);
- The service was friendly, quick and professional (Respondent 10);
- The staff were very friendly, all recommendations (Respondent 11);
- I must also say that the team of waiters is the best, friendly and helpful (Respondent 15).

### 3.3. Local food

The terms "local food" refers to authentic products (Skinner et al., 2020) which not only symbolize tourism destinations but also vividly demonstrate local traditional culture (Sims, 2009). Local food in a destination expresses national, regional, or personal identity, thus enhancing the image of a destination (Henderson, 2009; Montanari & Staniscia, 2009). For this reason, it is not surprising that respondents identify the local food element as part of the MGE. In their narratives, they state the following:

- The Mediterranean fish Dentex was really delicious (Respondent 4);
- Everything we tried was very tasty (Respondent 5);
- We ordered a local dish made of fresh and high quality ingredients, which I can describe as fantastic. The restaurant offers a wide selection of wines from all over Croatia (Respondent 6);



- Excellent local wine, fresh fish, what more could you want? (Respondent 7);
- This experience has stayed in my memory because I tried the octopus salad for the first time - it was very tasty (Respondent 8);
- The taste of the food was amazing. My husband told everyone afterwards how divine the smoked chicken zabatak and the pork fillet were (Respondent 10);
- The food and wine were excellent (Respondent 11);
- We ordered a meat platter, salad and two bottles of red wine. Everything was excellent...(Respondent 12);
- We had fresh grilled fish and it was perfectly prepared (Respondent 13);
- The food was beautifully presented and tasty (Respondent 14);
- The food is very good, try the salad with marinated steak, it is special (Respondent 15).

### 3.4. Novelty

Two respondents mentioned novelty as an important element of their MGE in the survey. Madeira et al. (2019) stated that novelty “refers to the extent to which local food/drink experiences provide an intensification of daily life experiences by offering novel, fresh and original features”. For respondent 8, the novelty was realised in the following way: "I remembered this experience because I tried the squid salad for the first time - it was very tasty!" Is there anything better than trying something new?". Respondent 5 underlines in his narrative the novelty related to learning about the destination visited: "We learned a lot about the cheeses of this region from the waiter". So the tourists were impressed by the novelty related to the local food of Kvarner.

### 3.5. Enjoyment

A pleasant environment gives tourists a feeling of happiness and satisfaction (So et al., 2021). For Respondent 1, the waiter was key to activating the feeling of comfort, as evidenced by the following: "Somehow the way the waiter served me contributed to the feeling of comfort". For respondent 11, the feeling of comfort was triggered by the music: "I do not know if it's like that, but that day there was live music. We really enjoyed it and had fun singing the klapa". Respondent 14 states that the food, the wine and the beautiful view influenced the feeling of comfort for him.

### 3.6. Relaxation

The psychological detachment from work while travelling contributes to a sense of relaxation (Chen et al., 2016). Packer & Ballantyne (2019) suggest that the feeling of relaxation during travel can contribute to tourists' "mental recovery". Obviously, relaxation is an important element of the tourism experience, as the following statements of the respondents indicate:

- All in all, the day was wonderful, I felt very relaxed (Respondent 1);
- There was a very relaxed atmosphere in the restaurant (Respondent 5);
- We went to Mornar restaurant where the atmosphere was relaxed (Respondent 7);
- As my husband and I work a lot, we relaxed a lot with good food (Respondent 10);
- There was a relaxed atmosphere and a fun team (Respondent 12);
- The girl and I just ate good food and relaxed (Respondent 15).

### 3.7. Social distance

Before the outbreak of the COVID -19 virus, inter-table distance was considered a personal preference of the diner (Robson et al., 2011), while from 2020 it becomes a serious public health issue (Zhang et al., 2021). This shows that social distance has become the new normal in the service sector.

In Croatia, according to Rašan et al. (2020), consumers had a moderate fear of contracting the COVID -19 virus. However, regulations on the structure of the consumer environment were enacted at the state level to protect consumer health. Inevitably, mandated regulations influenced consumer habits, and thus it is not surprising that several respondents in this study highlighted social distance as an important factor in MGE:

- a minor complaint is the small distance between tables (Respondent 1);
- the service in the restaurant was excellent, but the lack of social distance worried me. I kept wondering - what if I get a cold ? (Respondent 16).

#### 4. CONCLUSION

Despite the fact that gastronomic tourism is an increasingly important motive for tourists to visit a destination (Rašan & Laškarin Ažić, 2023), a lack of research on MGE was noted after the changes in tourist preferences caused by the crisis COVID -19. This research provided an insight into the multidimensional nature of MGE which is relevant for restaurant managers and destination stakeholders. In total, 7 key elements of MGE were identified: Aesthetics of the establishment, quality of service, local food, social distance, novelty, enjoyment and relaxation. It is not surprising that functionalist elements such as facility aesthetics, service quality and food quality have been identified as part of MGE, as their influence on future tourist behaviour outcomes has been demonstrated in numerous studies in the literature (Canny, 2014; Tsaur et al., 2015). However, holistic elements, novelty, relaxation and pleasure have only been demonstrated as important elements of MGE in a few studies (Horng & Hsu, 2021). Although social distance is mentioned in the tourism literature, to the author's knowledge this is the first study that identifies a key element of tourists' MGE. Based on the above, the contribution of this study is reflected in understanding in which directions tourist wants and needs are going after health crisis COVID-19. There are several limiting factors in this study. First, the study was conducted from the perspective of tourists. Therefore, to get a complete picture of the transformation of MGE, it is necessary to examine the perceptions of experts. Secondly, a qualitative approach was used in the study of tourists, so it is desirable to apply a quantitative approach in the future. The third limitation relates to the geographical area, as the sample only includes respondents who have visited the Croatian destination of Kvarner. A suggestion for future researchers is to conduct a survey on the MGE among tourists who have visited different destinations such as coastal or non coastal in order to identify potential differences. The authors also agree with the suggestion of Madeira et al. (2019) that future gastronomic studies “should take into account the type of cuisine (traditional, contemporary), the type of service (fine dining, traditional restaurant), the type of entertainment provided and cultural factors of the demographic sample (there are cultures that give more importance to some elements of experiences to the detriment of others)”.

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# THE IMPORTANCE OF LOYALTY PROGRAM ELEMENTS IN THE CROATIAN DRUGSTORE MARKET FOR MEMBERS OF GENERATION Z

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## ABSTRACT

*The purpose of the paper was to investigate which elements of the loyalty programs on the Croatian drugstore market are important to members of Generation Z. For the purposes of the study, qualitative and quantitative research was conducted. For the purposes of qualitative research, in-depth interviews were conducted in which the research instrument was a guide. For the purposes of quantitative research, a survey was conducted in which the research instrument was a questionnaire. In both surveys, a non-probability convenience sample was used, from Generation Z members who have used a loyalty card or a loyalty application. The sample size for the qualitative research was 25 respondents, and for the quantitative research 339 respondents. The results of the research showed that the key elements of the loyalty program on the Croatian drugstore market for members of generation Z are the simple use of points and discounts. Furthermore, it is important for respondents to collect points quickly. When it comes to products with which drugstores want to encourage customers to make additional purchases, for which customers receive multiple points, respondents use the mentioned products to a lesser extent. Respectively, multiple points do not represent a sufficient incentive for respondents. An interesting result is that the respondents don't have enough information about the current benefits of the loyalty programs.*

**Keywords:** drugstore market, Generation Z, loyalty programs

## 1. INTRODUCTION

The subject of this study is to determine the importance of loyalty program elements in the Croatian drugstore market for members of Generation Z. Generation Z has been chosen because it represents a challenging generation that will play a key role in the future job market and, consequently, will constitute an important customer group (Rodriguez et al., 2019). They are challenging to engage, often changing their preferences rapidly, oriented towards simplicity, discounts, and savings, and the digital environment is crucial to them. Therefore, they are important to study from a loyalty perspective. For example, Bowen & Chen McCain (2015) point out the importance of researching different generations in the context of loyalty and satisfaction. Ismail et al. (2021) state that Generation Z members use their purchases as a means of self-expression and have higher expectations compared to other generations. They are less loyal and more focused on the experience. The Croatian drugstore market has been chosen because there are not many works on this specific research area in the Croatian market (Kovač, et al., 2018). Additionally, this market is highly competitive and requires loyalty program-related activities. Finally, Generation Z members are regular drugstore shoppers, and due to their focus on savings, they use drugstore loyalty programs. Solarová (2015) states that in retail, there are numerous competitors, and some retailers don't have many opportunities to demonstrate how different they are. Retailers aim to influence customer behavior through their loyalty programs; they want their customers to remain loyal. Therefore, retailers in the retail industry seek to build long-term, profitable relationships with their customers. Thompson & Chmura (2015) conducted research in five countries (Brazil, Russia, India, China, and Germany). Their results show that customers from developed countries (e.g., Germany) make different loyalty program decisions compared to customers from emerging markets (e.g., Brazil,

Russia, India, and China). Their results indicate that customers in emerging markets show a greater willingness to participate in loyalty programs that offer both related and unrelated rewards, while in developed countries (i.e., Germany), they prefer immediate rewards or completely avoid loyalty programs. They also found differences among customers in emerging markets, indicating the need to research loyalty programs on individual markets. This suggests the importance of conducting research specifically in the Croatian market. Customer loyalty can be related to suppliers, brands, various companies, retailers, retail chains, and drugstores. Loyalty, like any other concept, can be defined in various ways. The common approach to loyalty relates to the general (overall) connection of a customer with a product, service, brand, or organization (Nesset et al., 2021). Curatman et al. (2022) consider loyalty to be of utmost importance for any company. Customer loyalty can lead to increased future sales, achieving a higher price (e.g., price premium), share of wallet, and share of visits. Customer loyalty is especially important in an extremely competitive environment. Therefore, companies direct their efforts towards building and maintaining customer loyalty. When it comes to loyalty in retail and/or a specific retailer/store (specific point of sale), it refers to the customer's connection with a specific retailer in a way that the customer prefers and repeatedly makes purchases from the same retailer over an extended period. From the mentioned, the importance of repetition/retention is evident, which can be related to the view presented by Oliver (1997), where loyalty may be perceived as being related to a four-stage model consisting of cognitive, affective, conative, and action loyalty, consisting of two interrelated components: relative attitude and repeat patronage (adapted from Nesset et al., 2021). The development of loyalty follows a cognitive-affective-conation pattern (Bowen & Chen McCain, 2015). Customers can be loyal at each of these stages. However, truly loyal customers are those who have a positive attitude toward the company and repeatedly make purchases from the same company (Bowen & Chen McCain, 2015). Belli et al. (2022) distinguish three levels of loyalty: Attitudinal loyalty, Conative loyalty, Behavioral loyalty. Attitudinal loyalty relates to the degree of liking and positive attitude that consumers have towards loyalty program providers. Attitudinal loyalty is often considered a key indicator of true loyalty. Conative loyalty relates to the committed intention to act towards the company and is more akin to motivation. It is often related to intentions of repurchase, e.g., a willingness to repurchase from the same company or a commitment to remaining a customer of the company, or a desire to maintain a relationship with the company in the future. Behavioral loyalty relates to a consistent pattern of repurchase behavior or patronage of a preferred product or service. It encompasses purchase volume, purchase frequency, retention, and firm performance (Tanford & Malek, 2015). Bowen & Chen McCain (2015) classify customers into four categories: true loyalty, latent loyalty, spurious loyalty, and low loyalty. As previously mentioned, true loyal customers are those who have a positive attitude toward the company and repeatedly make purchases from the same company. Latent customers favor the company or have a positive attitude towards it but do not make regular purchases from the company. Customers who make frequent purchases but do not favor the company, instead, they make purchases out of habit, proximity to the store, or financial incentives are called spurious loyalty customers. Customers with a low level of repeat purchase and connection to the company are considered low-loyalty customers. This classification aims to highlight the need to observe loyalty from both behavioral and attitudinal aspects because it is possible for someone to regularly shop at a store without having a genuine connection to the company, for example, due to the store's proximity.

## 2. THEORETICAL FRAMEWORK

Customer retention, in the highly competitive retail market, is one of the key activities for the survival of retailers. This holds true for the drugstore market as well. In line with this, loyalty programs play a significant role in retail, with key objectives focused on retaining customers

by increasing switching barriers, enhancing customer loyalty, increasing share of wallet, and collecting customer data for personalized offers to individual customers. Cedrola & Memmo (2010) state that loyalty programs originated in the airline industry in the 1980s when American Airlines introduced the first loyalty program called AAdvantage. These programs underwent significant development in the 1990s as technology and new media flourished. Over the last 15 years, loyalty programs have rapidly expanded into various industries and countries. Thompson & Chmura (2015) state that loyalty programs are marketing activities (Mascarenhas et al., 2006, Furinto et al., 2009, Evanschitzky et al., 2012, Steinhoff & Palmatier, 2016, Villacé-Molinero et al., 2016, Gorlier & Michel, 2020) supported and enhanced by a company's value proposition, offering additional incentives to customers for repeat purchases. This approach is also supported by Curatman et al. (2022), who describe loyalty programs as marketing initiatives designed to build customer loyalty by providing incentives or gifts to customers. Loyalty programs enable increased profitability, reduce the sensitivity of program users to competitors' marketing activities, and raise entry barriers. Some authors (Cedrola & Memmo, 2010; Dehghan et al., 2014; Wierich & Zielke, 2014; Chhabra, 2017; Lam & Wong, 2020; Shin et al., 2020; Chen & Jai, 2021; Kim et al., 2021; Perumal, 2021; Hendler et al., 2022) consider loyalty programs to be part of Customer Relationship Management (CRM) because they are essential tools for managing customer relationships. Loyalty programs are considered a significant component of CRM, and they are referred to as CRM tactics (Solarová, 2015). These loyalty programs can also be categorized as marketing communication tools that fall under sales promotion techniques. According to Curatman et al. (2022), loyalty programs have long captured the attention of marketing professionals and researchers. Through loyalty programs, marketers influence customers' perceptions, their buying status, shopping habits, and the establishment of loyalty, all with the goal of increasing customer loyalty (Watson et al., 2015). In addition to the financial benefits offered to customers, such as special discounts for loyalty program members, cash-back offers, and coupons (Curatman et al., 2022), loyalty program members also receive social benefits, such as friendship and personal recognition (self-actualization), from participating in the loyalty program.

### **2.1. Loyalty programs expectations**

Kerr (2009) suggests that expectations from loyalty programs are associated with the growth of incremental sales, increased turnover, and more effective promotions. Solarová (2015) highlights several expectations that retailers have from loyalty programs, including maintaining sales levels, margins, and profits, increasing the loyalty and potential value of existing customers, and encouraging existing customers to purchase more products. In addition to the above-mentioned points, there is one frequently mentioned benefit, which is obtaining information about customers and the market situation. Guerra-Tamez et al. (2021) emphasize the importance of word of mouth from loyal customers and its influence on other customers and repeat purchases. The significance of this should be observed in the context of the customer experience. Baloglu et al. (2017) underline the importance of emotional commitment from loyalty program users and customer lifetime value. Chhabra (2017) mentions two key advantages: increasing revenue and building a closer relationship between the brand and current customers in the hope of retaining the current customer base. Gorlier & Michel (2020) suggest that by treating existing customers better than newcomers, the goal is to improve loyalty based on both behavioral (e.g., cross purchases, repeat purchases, mean basket size) and attitudinal (e.g., relationship building through positive attitudes, trust, attachment) aspects, with long-term financial results. Privileged treatment can have a positive effect on satisfaction, commitment, purchase, word-of-mouth, and customer share. Villacé-Molinero et al. (2016) consider loyalty programs, when managed appropriately, to enable structured and effective activities for managing, selecting, connecting, and controlling customer purchasing behavior.



The research results conducted by Villacé-Molinero et al. (2016) confirm that loyalty programs increased the frequency of visits by members, resulting in very positive effects on these programs. They offered greater opportunities for cross-selling, promoted personal communication and customization, and managed the supply differently compared to mass media communication. Additionally, loyalty programs reduced the likelihood that a customer would visit competing establishments. Pullman & Gross (2004) and Melnyk & Bijmolt (2015) identify at least one of the following outcomes of loyalty programs: increased spending, larger basket size, accelerated purchase frequency, reduced price sensitivity, increased wallet share or category demand share, increased retention rate, extended membership duration, and increased positive word-of-mouth. Shin et al. (2020) highlight the significant role loyalty programs play in cultivating trust, commitment, switching resistance/cost, program loyalty, and company/brand loyalty. Chang (2022) emphasizes that loyalty programs can enhance the user experience and strengthen their loyalty to the brand. Baker & Legendre (2021) and Belli et al. (2022) expect that loyalty programs will create a base of loyal customers, which is a valuable asset for businesses. They note that loyal customers are less price-sensitive and more profitable, more committed, and more tolerant of a company's shortcomings, as well as resistant to competitive offers. They are also more engaged on social media and generate positive word-of-mouth. Furthermore, loyalty programs are a significant and valuable source of information for customers (Curatman et al., 2022), and many companies use them as a communication platform. It's interesting to mention that Solarová (2015) suggests that loyalty programs can be seen as a "discriminatory marketing tool" because companies reward only some of their customers (i.e., program members) and not every customer.

## **2.2. Loyalty programs elements and types**

Neset et al. (2021) suggest that five elements will determine the value of a loyalty program: cash value, the choice of redemption options, aspirational value, relevance, and convenience. Thompson & Chmura (2015) distinguish between two different dimensions of loyalty program types and the rewards that customers receive (related or unrelated) and the timing of the reward (immediate or delayed). Immediate rewards, such as short-term promotional or cash incentives, have a lesser impact on loyalty than delayed reward programs, which more effectively encourage continuous customer participation, which is the primary purpose of loyalty programs (Solarová, 2015). Yi et al. (2013) also classify the reward scheme in loyalty programs into two domains. One pertains to the timing of rewards, and the other to the type of rewards. Timing refers to whether users receive rewards immediately after purchase or later, while the type of rewards relates to whether the benefits are directly linked to the core product/service or not. Sarkar et al. (2022) highlight that to maximize customer loyalty, companies should deliver the desired value in terms of the type of reward customers expect. In this regard, authors (Sarkar et al., 2022) mention implicit and explicit incentives. Explicit benefits include rewards provided by the company and comprise economic incentives (e.g., discounts, vouchers, gifts) and non-economic incentives (e.g., membership levels, membership statuses). Solarová (2015) states that there are many ways to categorize loyalty programs. One possibility is differentiating the target audience of each loyalty program, programs for end customers, and programs for retailers. Another possible division of loyalty programs is time-oriented, distinguishing between long-term and short-term loyalty-building activities. Loyalty programs can also be categorized into free and paid membership programs. Furthermore, there are programs in which customers must demonstrate their merits to become members (i.e., customers must qualify for membership). Thus, a company can introduce a membership card with multiple levels, typically consisting of three levels: basic (standard), advanced (silver), and premium (gold or platinum). Furinto et al. (2009) argue that loyalty programs can be classified into two types: monetary-based rewards and special treatment-based rewards.

Loyalty programs can differ in the number of companies involved. A loyalty program can be led by only one company, or multiple companies can participate in it (Solarová, 2015). Regarding the diversity of loyalty, loyalty programs may offer different price levels for different customers. It usually involves a points system. In a points-based system, members earn points for their purchases, which they can later redeem for various rewards and benefits. In the case of a points scheme, customers can accumulate points for their purchases or even just for visiting the retailer. Another possible variation of a points scheme is a product-based loyalty program. The basis for this variation is typically collecting points for realized purchases. However, in addition to points for realized purchases, customers receive additional points for purchasing selected products. Accumulated but unused points can be carried over to the next period or expire (within a certain time frame after they have been credited to the customer's account). Stourm et al. (2020) note that loyalty programs have dramatically evolved in design and management in response to technological advancements that enable the utilization of big data. Modern programs allow point redemption at any time and among selected partners. Gorlier & Michel (2020) mention two key criteria: timing of rewards and types of rewards. Timing indicates whether rewards can be immediately or later utilized through a points system – for example, deferred or accumulated rewards. The type refers to whether rewards are tangible or intangible, essential or luxury, direct or indirect. Gorlier & Michel (2020) note that users are mostly oriented towards tangible elements such as cash rewards (discounts, vouchers, gifts). On the other hand, there are psychological, relational, emotional, and functional rewards (e.g., privileged treatment and services, special events, personalized recognition) considered as intangible or soft benefits. Kim & Baker (2020) believe that companies have two possible approaches: rewarding loyalty program customers with earned rewards (earned preferential treatment) and delighting non-program customers with surprise rewards (unearned preferential treatment). Preferential treatment is defined as giving selected customers elevated social status, recognition, and/or additional or enhanced products and services beyond the company's standard value proposition and customer service practices. Preferential treatment is provided through discounts, complimentary upgrades or services, and offers of recognition and encouragement to continue the relationship. Baloglu et al. (2017) point out that loyalty programs in different industries may vary drastically based on their tier structure and reward structure, including reward type, frequency, magnitude, and framing. In the same vein, Breugelmans et al. (2015) note that loyalty programs can differ in membership requirements, program structure, points structure, reward structure, and program communication. Gorlier & Michel (2020) advocate introducing additional special rewards in highly competitive situations, which are not customary and are more focused on creating a positive user experience in loyalty programs. Kovač et al. (2018) investigated seven dimensions associated with the quality of loyalty programs (psychological aspects, program policies, rewards, personalization, information usefulness, communication quality, and courtesy/service) and concluded that the relationship with staff emerged as a crucial element of loyalty programs highly valued by customers in the Croatian market, significantly affecting customer retention in loyalty programs. The research showed that for customers in the fast-moving consumer goods market in Croatia, preferential treatment, personalized approach, and a sense of belonging are important components. Among these components, preferential treatment is the most significant. Hendler et al. (2022) argue that since loyalty programs offer time-limited rewards (immediate or delayed) and seek to develop a relationship that extends over time, an essential but often neglected dimension that managers need to consider is the context of time. This is especially important when considering the preferences of Generation Z, which desires everything instantly. Kim et al. (2021) states that elements and features of loyalty program design include the program structure and rewards, which reflect strategic decisions about program type, tiers, partnerships, and currency, as well as reward value, types, and characteristics.

Belli et al. (2022) in the context of loyalty program design mention the following: structure, reward content, and reward delivery. Structure encompasses how loyalty programs are organized and includes decisions about program enrollment rules, tiers, and multi-vendor partnerships. Enrollment type (open vs. closed) affects whether all customers can freely join the LP or if membership is by invitation or requires approval from the company. Tiers capture hierarchical structures within the program. In tiered LPs, customers move between levels, typically based on their buying behavior, in such a way that higher levels entail greater rewards or special treatment. Multi-vendor (aka. coalition) programs are organized as coalitions of multiple companies from which users can earn and redeem rewards, as opposed to single-company programs. Rewarding in a loyalty program typically has two types of rewards (Belli et al., 2022): economic (hard) and psychological (soft) rewards. Economic rewards are tangible and based on financial or monetary benefits, such as discounts, savings, cash rewards, coupons, and free products. Discounts (e.g., 10% for program members) and savings (e.g., point accumulation) are the most common forms of hard rewards. Psychological rewards do not provide direct monetary value (Rashid, 2021). It's important to note that both hard and soft rewards are not mutually exclusive, both within these categories and across them (Yi & Jeon, 2003).

### **2.3. Generation Z**

Generation Z (born between 1995 and 2010) was born in the digital era and views the smartphone as their most important internet device (Alt & Agárdi, 2023). They are sensitive to potential financial losses. Generation Z users are open to new things and are willing to test new ideas. Rodriguez et al. (2019) suggest that Generation Z is one of the most challenging generations to engage with in business activities and understanding them can be quite difficult. They have numerous choices and are impatient, not particularly loyal, and quickly change the products they buy. Members of Generation Z have several defining characteristics that influence their worldview, making them distinct in society and the workforce. This group came of age during and was heavily influenced by the 2007/2008 economic crisis and the subsequent recession, which impacts their views on companies and finances. This generation is also highly socially conscious (Rodriguez et al., 2019). Generation Z is extremely digitally oriented. They prefer simplicity and clear, direct instructions. They have low tolerance for errors and desire strong leadership, which requires significant proactivity from loyalty program managers. Ismail et al. (2021) are a generation that has never lived without the internet. As frequent users of technology, they are highly educated and tech-savvy. For marketing professionals, Generation Z poses a challenge because they behave differently from previous generations like Generations Y and X. For example, they have higher expectations from their favorite product brands, but they are also less brand loyal and prioritize experiences. Internet engagement with their favorite brands is an essential part of their lives, making understanding their engagement activities intriguing. Generation Z customers are interesting because they want to express themselves, often through their purchasing behavior. They express loyalty to a brand and have less trust in brands compared to previous generations. They are new conservatives who embrace traditional beliefs, value family, self-control, and have more responsibilities. Furthermore, they can influence their parents' purchasing habits. Generation Z consumers emphasize value for money. Nguyen et al. (2023) state that Generation Z consumers are guided by ethics and beliefs devoted to societal and environmental well-being, more than any other generation. Jiang & Hong (2023) point out that Generation Z exhibits several noticeable consumer-oriented differences compared to previous generations and are recognized as the "greatest future challenge for marketing." They are willing to spend money on technological and design innovations. They rely heavily on practicality in product attributes, delivery processes, consumption experiences, and marketing communications. Additionally, Generation Z seeks security.

They are more cautious and pragmatic in spending their money due to growing up in economically challenging times. They also appreciate the opportunity to escape from a stressful reality, such as 24/7 access to social media. Furthermore, Generation Z is ready to purchase and consume environmentally friendly products despite their youthfulness. Kaabachi et al. (2022) state that Generation Z consumers are less likely to be brand loyal than other generations and will quickly switch to competitors if brands fail to engage with them promptly or break promises. Generation Z is very open to using alternative providers and services if traditional ones fail to meet their needs and expectations. Generation Z has different needs and expectations compared to other generations. Despite being digital natives and seeking an omnichannel experience, they still value personal exchanges. Generation Z has high expectations of service providers, valuing competence and accuracy while expecting a highly personalized experience. They hold traditional values of freedom, friendship, health, ethics, and transparency. They seek "good value". Generation Z places greater importance on support and advice, combining a desire for security and authenticity with expectations of speed, practicality, and flawless service. They also desire transparency regarding fees and services, and they seek personalized service delivered through mobile devices. Perceived value is essential for this generation (Kaabachi et al., 2022). What's important to note is that Generation Z members are not a homogenous group, necessitating ongoing market research, further reinforcing the importance of this paper.

### **3. RESEARCH METHODOLOGY**

For the purposes of this study, two research methods were employed: qualitative and quantitative. In the qualitative research, 25 participants were involved, while in the quantitative research, there were 339 participants. A total of 549 individuals participated in the quantitative research, but only 339 met the criteria for having used a loyalty program in the drugstore market. In both research approaches, a non-probability convenience sample of Generation Z individuals was used. In the qualitative research, all participants were from Zagreb, consisting of 20 women and 5 men. In the qualitative research, in-depth interviews were conducted using a research guide as the research instrument. The primary focus of the guide was to determine the elements that are important to respondents in loyalty programs or loyalty applications. Naturally, Generation Z members tend to use loyalty apps rather than physical cards. The results of the qualitative research led to the conclusion that it is of paramount importance to respondents that the way they utilize loyalty points is simple and straightforward. Furthermore, respondents mentioned that it is particularly crucial for them that the loyalty app allows them to redeem points for a discount, regardless of the purchase amount. This means that there is no predetermined amount that must be spent to obtain a specific discount. Given that this is Generation Z, which has lower purchasing power and makes smaller purchases, this insight seems logical but is often overlooked in practice. As previous research reviews have shown and the results of this study indicate, simplicity is crucial to Generation Z members. This applies even more so when it comes to online loyalty program platforms where ease of use is paramount. Given their constant online presence, speed is also vital to Generation Z, as confirmed by the results showing that respondents value the quick accumulation of points in loyalty programs/applications. Generation Z is more focused on economic (hard) rewards and less on psychological (soft) rewards. They seek a better experience and a good value-for-money ratio. They are looking for a personalized approach. One increasingly common strategy used in retail, including drugstores, is to encourage customers to purchase specific products by allowing them to earn more points on their loyalty card/app with these purchases. The research results have shown that there is significant room for improvement in customer segmentation and better adaptation to their needs, as respondents indicated that they mostly do not need or use the products for which they receive multiple points.

One particularly interesting finding from the research is that respondents feel they do not have enough information about the current benefits of loyalty programs. Apart from the potential underutilization of loyalty programs as communication platforms, one possible explanation could be that none of the drugstores in the Croatian market has TikTok as a communication channel. TikTok is one of the key sources of information for Generation Z. Based on the results obtained from the qualitative research, the quantitative research sought the respondents' level of agreement with the factors shaped through statements to explore how these factors are perceived in the loyalty programs/applications they use.

<b>Gender</b>	<b>%</b>	<b>Count</b>
Male	10%	34
Female	90%	305
Total	100%	339

*Table 1: Gender structure of respondents  
(Source: Author's research)*

In the sample, there were mostly female participants, which is logical and expected since the screening question in the questionnaire was whether the participants are users of one of the loyalty cards/applications used in drugstores (Table 1).

<b>Age</b>	<b>%</b>	<b>Count</b>
18-19	46%	156
20-23	45%	153
24-27	9%	30
Total	100%	339

*Table 2: Age structure of respondents  
(Source: Author's research)*

The age structure corresponds to the age group of Generation Z, with an equal representation of respondents aged up to 19 years and those up to 23 years in the sample (Table 2).

<b>Region</b>	<b>%</b>	<b>Count</b>
Zagreb and its surroundings	74%	251
Northern Croatia	9%	30
Dalmatia	7%	24
Slavonia	5%	17
Lika and Banovina	3%	10
Istria, Primorje and Gorski Kotar	2%	7
Total	100%	339

*Table 3: Sample by the region where respondents come from  
(Source: Author's research)*

According to the data from Table 3, a key limitation of this study is evident, arising from the sample structure which is dominated by respondents from Zagreb and its surroundings.

<b>Financial situation</b>	<b>%</b>	<b>Count</b>
Your situation is very satisfactory - you can afford everything you want.	9%	30
Your situation is satisfactory - you can afford most of what you want.	66%	224
Your situation is somewhat difficult, you have to be careful with expenses.	20%	68
Your situation is very difficult - you have a hard time covering basic living expenses.	1%	3
You can't cover living expenses without going into debt or borrowing.	0.2%	1
I don't want to answer.	4%	13
Total	100%	339

*Table 4: Financial situation perception  
(Source: Author's research)*

From the previous table (Table 4), it can be concluded that the respondents perceive their financial situation as satisfactory.

#### 4. RESEARCH RESULTS

Based on the results of the qualitative research, a list of loyalty programs used in the questionnaire was prepared. From the results presented in Table 5, it can be concluded that the familiarity with loyalty programs corresponds to the market position (market share) of drugstores in the Croatian market.

<b>Familiarity with loyalty cards</b>	<b>%</b>
dm active beauty	36.72%
BIPACard	28.11%
Müller Loyalty Card	15.90%
Douglas Beauty Card	12.46%
Bio & Bio Loyalty Program	4.70%
Garden's Loyal Customers Club	1.44%
None of the above	0.67%
Total	100%

*Table 5: Which of the listed loyalty programs or loyalty cards/apps are you familiar with? You can select multiple answers.  
(Source: Author's research)*

The results in Table 6 should be analyzed with special attention, as the condition for participating in the study was that respondents had used at least one loyalty program in the last three months. This question aimed to determine the share of active users, or those who had used one of the offered loyalty programs in the last month. It is evident that one-third of the respondents did not use any loyalty cards/applications in the last month. Additionally, it can be seen that the dominant loyalty cards/applications are from drugstores that are leading in the Croatian market.

<b>Actively used loyalty cards</b>	<b>%</b>
dm active beauty	42.81%
BIPACard	16.72%
Douglas Beauty Card	3.13%
Müller Loyalty Card	2.66%
Bio & Bio Loyalty Program	0.47%
Garden's Loyal Customers Club	0.16%
I haven't used a loyalty card/app in the last month.	34.05%
Total	100%

*Table 6: Which of the listed loyalty programs or loyalty cards have you used in the last month? You can select multiple answers.  
(Source: Author's research)*

The results from Table 6 and Table 7 indicate that there is significant room for improvement in terms of how loyalty cards/apps are perceived in the drugstore market by Generation Z. Apart from the mentioned one-third of "dormant" users who haven't used their loyalty card/app in the last month, only one-third of the respondents feel that loyalty cards/apps encourage their purchases.

<b>Purchase incentive</b>	<b>%</b>	<b>Count</b>
Extremely little incentive (1)	17.99%	61
A little incentive (2)	24.78%	84
Neither little nor much incentive (3)	26.84%	91
Much incentive (4)	22.42%	76
Extremely much incentive (5)	7.97%	27
Total	100%	339

*Table 7: To what extent does having a loyalty card/app encourage you to go shopping at a drugstore? You can choose only one answer.  
(Source: Author's research)*

Based on the results of the qualitative research in which respondents emphasized the importance of simplicity in collecting points and using cards/applications, respondents were presented with statements for which they had to express their level of agreement for the cards/applications they use.

<b>Loyalty program elements</b>	<b>Mean</b>	<b>Std Deviation</b>	<b>Variance</b>
The way points are utilized is simple.	4.34	0.90	0.81
The loyalty program/application allows me to get a discount in exchange for the points I've collected, regardless of the purchase amount.	3.97	1.03	1.06
The online platform of the loyalty program is easy to use.	3.86	1.10	1.20
Points accumulate quickly in the loyalty program/application.	3.52	1.13	1.29
I mostly don't need or use the products for which I receive multiple points.	3.06	1.17	1.37
I don't have enough information about the current benefits of the loyalty program.	2.73	1.22	1.49

*Table 8: Please indicate your level of agreement for each of the statements above regarding the loyalty program/application elements you use.  
(Source: Author's research)*

Table 8 shows that respondents recognize a straightforward way of using their loyalty cards/apps, offering appropriate discounts, and the ease of using online loyalty program platforms. They also find the rate of points accumulation satisfactory. However, they express a low level of satisfaction with the range of products for which they can earn multiple points when shopping in drugstores. The biggest potential for improvement lies in informing users about the current benefits of loyalty programs. Poor awareness may provide an answer to the results presented in Tables 6 and 7. This is particularly important because according to Curatman et al. (2022), one of the essential roles of loyalty programs is communication with customers. It is evident that this aspect needs further attention and improvement, especially when it comes to Generation Z. In the discussion of the results, it can be said that this study confirmed that loyalty program users primarily focus on discounts, which aligns with Cedrola

& Memmo's (2010) research. This study also confirmed that members of Generation Z are primarily oriented toward economic (hard) rewards and less toward psychological (soft) rewards, consistent with Belli et al.'s (2022) research. The expected results were obtained in terms of preferring mobile apps over physical loyalty cards, which is in line with Alt & Agárdi's (2023) findings since mobile phones are an integral part of Generation Z members. They seek simple, clear, and concrete instructions, which align with Rodriguez et al.'s (2019) research. The results show that respondents place importance on obtaining good value for money, as confirmed by Ismail et al.'s (2021) research. Respondents also seek and expect a personalized approach, consistent with the study conducted by Kaabachi et al. (2022).

## 5. LIMITATIONS AND FUTURE RESEARCH

This research has several limitations. A key limitation is the use of a non-probability convenience sample, which does not ensure the representativeness of the sample. The sample is geographically limited to Zagreb and its surroundings and includes only users of loyalty programs or apps in drugstores. Females dominate the sample. It would be interesting to conduct research on multiple different markets and industries. In preparing the questionnaire for the quantitative research, only loyalty program elements mentioned in interviews were included, which means not all possible factors were covered. During the analysis of the quantitative research results, no statistically significant differences were found in respondents' responses regarding demographic characteristics. As Generation Z is not a homogenous group, future research should focus more on investigating different segments within this group. Another limitation is the exclusive focus on one generation, so a recommendation for future research is to include members of other generations as well.

## 6. MANAGERIAL IMPLICATIONS

Based on the obtained results, managers responsible for loyalty programs targeting Generation Z should consider the digital environment as crucial for this generation. Smartphones are the key devices for Generation Z, and activities should be tailored to the devices they use. They desire simplicity and speed when collecting loyalty points. Members of this generation should be allowed to redeem points for discounts, regardless of the purchase amount. Users from this group seek valorization of every transaction, regardless of its size and value. Providing a seamless omnichannel experience is essential, ensuring consistent customer experience across all touchpoints. Proactivity and a strong online presence are critical, with a high emphasis on rapid response times from the company. Generation Z wants everything instantly and immediately. Activities targeting this segment should offer good value for money while providing excellent personalized user experience. There is significant room for improvement in customer segmentation and better adaptation to their needs, as respondents indicated that they mostly do not need or use the products for which they receive multiple loyalty points. A significant untapped potential lies in transforming the loyalty app into an effective information platform because, according to the obtained results, respondents gave the lowest ratings for their level of awareness and the benefits the program offers.

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## QUEUE MANAGEMENT AND SATISFACTION WITH THE SPEED OF SERVICE IN CROATIAN POST OFFICES

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### ABSTRACT

*The way customers perceive waiting for service can have adverse effects on their behavioural approach towards the service organization and influence their overall perception of the company negatively. The study aims to predict post office customer satisfaction with the speed of service based on customer characteristics, their satisfaction with postal service clerks, and their satisfaction with the implemented queue management solutions. Data was collected through interviews with 580 postal service customers from 29 post offices, with an equal number interviewed in each office and an almost equal gender distribution (58.4% women; 41.6% men). The questionnaire assessed customer satisfaction with the speed of service, satisfaction with postal service clerks, and satisfaction with the queue management system (queue kiosk visibility, queue kiosk menu clarity, counter plate device visibility, counter plate display visibility, and counter number visibility). Respondents rated their satisfaction on a scale from 1 (extremely dissatisfied) to 4 (extremely satisfied) for each item. Additional data on gender, age, education, work status, frequency of post office visits, and the type of service used were collected. A hierarchical linear regression analysis was conducted, with six customer characteristics entered in the first step, five characteristics of the queue management system in the second step, and customer satisfaction with postal service clerks in the third step. The results revealed that the 12 independent variables together significantly predicted customer satisfaction with the speed of service ( $R=.56$ ), explaining 31% of the variance. Satisfaction with the work of postal service clerks and queue kiosk menu clarity were found to have the most significant contributions ( $\beta=.46$  and  $\beta=.17$  respectively). The findings highlight the importance of customer satisfaction with the service clerks and with the queue management system in determining overall satisfaction with waiting time experience. The research provides valuable insights into modern postal operational management and proposes new guidelines for future studies on customers' satisfaction with the speed of service.*

**Keywords:** *queue management, satisfaction with the speed of service, waiting time experience*

### 1. INTRODUCTION

Quality service at the post office implies the courtesy, professionalism, and speed of the counter staff. Under courtesy, it is expected that employees in contact with users behave cordially and positively towards them, while under professionalism, it is expected that employees handle all user requests professionally. Speed means that the processes in the post office, and especially the processes in which the user himself is involved (e.g., receiving letters, parcels, carrying out a transaction), take place efficiently, that is, that the user does not feel that time is being wasted unnecessarily. The user's conscious expectations are mostly related to the conscious intention with which a person comes to the post office, and that is first that he will efficiently, therefore quickly and simply, do what he wants to solve. Unconscious expectations refer more to emotional needs that, as a rule, they do not think too much about, such as the kindness and positivity of employees, the feeling of welcome, and the feeling that, in the event of an

emergency, someone from the post office will take responsibility for the situation. Therefore, it is essential to build the user's trust that he will be well served, that he will be correctly informed and advised, and that he will quickly perform his service at the post office.

## 2. QUEUE MANAGEMENT AND SERVICE SATISFACTION

Customer service satisfaction is an important factor influencing customer loyalty (Harazneh et al., 2020). Retaining existing users is certainly more profitable for the company than attracting new users. As Vranešević (2000) points out according to the findings of various studies, user retention costs 5-12 times less than attracting new users, depending on the activity. Therefore, companies that recognize that greater customer satisfaction leads to greater customer loyalty must take care to satisfy and exceed customer expectations (Kotler, Keller & Martinović, 2014). Satisfaction implies the user's positive feeling about the service used, which gives him confirmation that he made the right decision when choosing between different options (Marušić & Vranešević, 2001). A queue occurs when we are faced with a situation where the number of people demanding a certain service exceeds the capacity of the service places. It is the result of an imbalance between the number of service users and the available resources for providing that service (Bose, 2001). Instead of a partial solution to the problem of waiting in a queue, several studies have confirmed that it is better to apply a complete solution by introducing a queue management system (Bose, 2001). This has been demonstrated in different industries: finance (Al-Jumaily, Al-Jobori, 2001), healthcare (Ngorsed & Suesaowaluk, 2016), the food industry (Bonga, 2013), as well as the business sector in general (Goluby & McAfee, 2011). However, effective queue management is much more than setting up a service selection device (queue kiosk) with the ability to print a number on the ticket. Queue management includes an optimal reporting system as well as a user guidance system (order of service, number of active counters, counter type, system capacity). While the reporting system is used for the subsequent drawing of conclusions for the optimization of active counters (number of counter employees) at a certain time of day (hour), day of the week, and period of the month, the user guidance system refers to immediate intervention in the order of service execution depending on a given parameter, e.g., the type of service, the time of arrival at the post office, the type of user, etc. It is precisely the speed of service that has the greatest possibility of influencing customer satisfaction and determining the order of service in the queues of waiting service. Namely, it defines how service users from the waiting line access the counter, as well as the time and speed of service performance. Depending on the needs, the systems can be programmed, unified, or individual. There are several such ways:

- 1) FIFO (First In First Out) or FCFS (First Come First Served) - the first user who came in line will be the first to be served
- 2) LIFO (Last In First Out) or LCFS (Last Come First Served) - the last user who came in line will be the first to be served
- 3) PRIOR (Priority service algorithm) – users will be served according to certain priorities
- 4) SIRO (Service in Random Order SIRO algorithm) gives each user the same probability of service regardless of the time of arrival (Japundžić, 2011).

However, it is important to note that by solving the queue problem, waiting cannot be eliminated, but only the side effects of waiting can be reduced to a minimum so that the service can be performed at an acceptable speed. Therefore, the optimal solution of the queue does not mean that there will be no more waiting because, to eliminate waiting by users, there would have to be a greater number of active counters than users. Then the problem of the inefficiency of counter staff would appear, who would not have an optimal number of users, i.e., the unused capacity would increase, which is irrational.

Solving the queue problem means determining the optimal number of active counters for which the waiting time in the queue will be minimal while users are still satisfied with the speed of the service (Zenzerović, 2015). The expectations for the results were drawn according to the literature and previous experiences.

### **3. EXPECTATIONS AND HYPOTHESES**

The study aims to explain post office customer satisfaction with the speed of service based on customer characteristics, customer satisfaction with the implemented queue management solutions, and customer satisfaction with postal service clerks. In accordance with the stated aim of the research, the following null hypotheses are set:

- H1: Customer characteristics (age, gender, employment status, education, service used, and frequency of visits) are not significantly related to satisfaction with the speed of service.
- H2: Factors of the queue management system (queue kiosk visibility, queue kiosk menu clarity, counter plate visibility, counter plate display visibility, and counter number visibility) are significantly related to satisfaction with the speed of service.
- H3: Satisfaction with the work of postal service clerks is significantly related to satisfaction with the speed of service.
- H4: Satisfaction with the speed of service can be significantly explained by the set of customer characteristic factors, the factors of the queue management system, and customer satisfaction with postal service clerks.

### **4. METHODOLOGY**

#### **4.1. Sample**

Participants in this study were 580 post office customers interviewed in 29 post offices in Croatia, with an equal number interviewed in each office ( $N = 20$ ), aged 18 and above, and almost equal gender distribution (58.4% woman; 41.6% man). Almost half of them visit a post office more frequently than once a month (48.6%), and another quarter once a month (23.6%). The detailed structure of the sample is shown in Table 1.

*Table following on the next page*

*Table 1: Descriptive statistics for customer characteristics (demography) and post office service usage variables.*

	<i>n</i>	<i>%</i>
<b>Gender</b>		
Male	241	41.6
Female	339	58.4
<b>Age</b>		
<18	2	0.3
18-24	52	9.0
25-34	94	16.2
35-44	119	20.5
45-54	136	23.4
55-64	105	18.1
>65	72	12.4
<b>Education</b>		
Elementary school	35	6.0
High school	366	63.1
Bachelor degree	161	27.8
Maste degree	18	3.1
<b>Employment status</b>		
Unemployed	27	4.7
Student	36	6.2
Retired	123	21.2
Employed	394	67.9
<b>Frequency of visiting post office</b>		
Everyday	91	15.7
More times a month	282	48.6
Once a month	137	23.6
More times a year	40	6.9
Less than that	30	5.2
<b>Service used</b>		
Postal business	161	27.8
Delivery	154	26.6
Finance business	230	39.7
Other	35	6.0

*Note.* N = 580

#### 4.2. Instruments

Thirteen questions are featured throughout the survey. Satisfaction with the queue management system was measured with five questions asking how satisfied the customer is with each of the five characteristics of the queue management system: queue kiosk visibility, queue kiosk menu clarity, counter plate visibility, counter plate display clarity, and counter number visibility. The offered answers for these questions were on a four-point Likert scale ranging from 1 (very dissatisfied) to 4 (very satisfied). The question "How satisfied are you with the work of the counter postal service clerk?" was used to measure customer satisfaction with the work of postal service clerks, and the question "How satisfied are you with the speed of service?" was used to measure customer satisfaction with speed of service. The offered answers for both questions were on the same, as mentioned, four-point Likert scale, ranging from 1 (very dissatisfied) to 4 (very satisfied).



The last group of questions in the survey was demography and post office service usage, which consisted of six questions. Those being "What is your gender?", "What is your age group?", "What is the highest level of education you completed?", "What is your employment status", "Which service did you use" and "Frequency of coming to the post office?". Gender and age are rather standard, so for further details, one can see Table 1. The levels of education ranged from elementary school to high school, followed by a bachelor's, a master's, and lastly a Ph.D. by the Croatian system of education. Employment status included four categories: employed, student, retired, and unemployed. The customer could have used 3 different postal services (delivery; postal business; finances) or services not listed and categorized as other services. The offered answers for measuring the frequency of visiting were: every day, more times a month, once a month, and less than once a year.

### 4.3. Procedure

The data was collected by face-to-face interviews. The interviews were conducted in 29 post offices, with 20 interviews conducted in every post office. Post offices were selected to cover all regions in Croatia. Convenience Sampling method was used with customers visiting the post office being asked to participate in the survey. All data was collected in the period between 16th and 17th of May with the data being collected parallel at all 29 post offices. The survey used for gathering data was created in Google Forms due to its convenience and accessibility and it was conducted by experienced interviewers.

### 4.4. Statistical procedures

The data was analyzed using the statistical package SPSS v23. Descriptive statistics were used for the description of the sample and variables used in the main analysis. Pearson correlation coefficient ( $r$ ) was used to measure the relationship between two variables. The significance of the correlation coefficient was tested by applying the significance level of .01. Univariate normality was analyzed for all quantitative variables examining skewness and kurtosis coefficients. A hierarchical multiple linear regression analysis with three steps was used to predict the outcome variable customer satisfaction with the speed of service from several predictor variables. The data was checked for outliers but no outliers were detected.

## 5. RESULTS

### 5.1. Descriptive statistics

The general goal of the research is to understand how post office customer satisfaction with the speed of service can be explained based on customer characteristics, their satisfaction with postal service clerks, and satisfaction with the implemented queue management solutions. To describe the variables used in analysis, descriptive data is shown (table 2).

*Table 2: Descriptive statistics for numerical variables*

	M	C	N	sd	min	max
Queue kiosk visibility	3.54	4.00	580	0.60	1	4
Queue kiosk menu clarity	3.48	4.00	580	0.59	1	4
Counter plate visibility	3.39	4.00	580	0.73	1	4
Counter plate display clarity	3.36	3.00	580	0.72	1	4
Counter number visibility	3.27	3.00	580	0.70	1	4
Satisfaction with the postal service clerks	3.65	4.00	580	0.51	1	4
Satisfaction with the speed of service	3.39	3.00	580	0.63	1	4

The average satisfaction with all the queue management satisfaction measures on a scale from 1- very dissatisfied to 4- very satisfied is above average ranging from M=3,27 (SD=0,70) for counter number visibility to M=3,54 (SD=0,60) for queue kiosk visibility. The average satisfaction with the postal service clerks is M=3,65 (SD=0,51). Finally, the average satisfaction with the speed of service is M=3,39 (SD=0,63).

*Table 3: matrix of the correlation coefficients for variables used in this study*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Satisfaction with speed of service	1	.05	-.05	-.01	.06	.05	-.02	.21*	.31*	.25*	.24*	.23*	.52*
(2) Service used	.05	1	-.09*	-.15*	.12*	.12*	-.17*	.08	.05	.03	-.02	.02	.04
(3) Gender	-.05	-.09*	1	.03	-.02	-.01	.06	.01	-.02	.03	.02	.03	-.01
(4) Education	-.01	-.15*	.03	1	-.21*	-.08*	.18*	.05	.10*	.06	.09*	.01	-.01
(5) Age	.06	.12*	-.02	-.21*	1	-.08	-.05	-.10*	-.09*	-.06	-.08*	.03	.07*
(6) Frequency of visiting	.05	.12*	-.01	-.08*	-.08*	1	-.19*	.04	.07	.11*	.08*	.07	.03
(7) Employment status	-.02	-.17*	.06	.18*	-.05	-.19*	1	.02	.00	.01	.04	.02	.00
(8) Queue kiosk visibility	.21*	.08	.01	.05	-.10*	.04	.02	1	.55*	.54*	.51*	.46*	.24*
(9) Queue kiosk menu clarity	.31*	.05	-.02	.10*	-.09*	.07	.00	.55*	1	.54*	.63*	.41*	.28*
(10) Counter plates visibility	.25*	.03	.03	.06	-.06	.11*	.01	.54*	.54*	1	.77*	.53*	.23*
(11) Counter plates display clarity	.24*	-.02	.02	.09*	-.08	.08	.04	.51*	.63*	.77*	1	.54*	.24*
(12) Counter number visibility	.23*	.02	.03	.01	-.03	.07	.02	.46*	.41*	.53*	.54*	1	.21*
(13) Satisfaction with postal service clerks	.52*	.04	-.01	-.01	.07*	.03	.00	.24*	.28*	.23*	.24*	.21*	1

*Note.* N = 580; \*p<0,01

Pearson correlation coefficients are used for examining the bivariate relationship between variables (Table 3). Satisfaction with speed of service is significantly positively related to all five satisfaction variables with the implemented queue management solutions. So it is positively related to queue kiosk visibility ( $r=0,21$ ,  $p<0,01$ ), queue kiosk menu clarity ( $r=0,31$ ,  $p<0,01$ ), counter plate visibility ( $r=0,25$ ), counter plate display clarity ( $r=0,24$ ,  $p<0,01$ ), and counter number visibility ( $r=0,23$ ,  $p<0,01$ ). These implemented queue management solution factors are also mutually related to each other with average correlation coefficients about  $r=0,5$ . Satisfaction with speed of service is also significantly positively related to satisfaction with postal service clerks ( $r=0,52$ ,  $p<0,01$ ). Customer characteristics (demography) and post office service usage variables, on the contrary, are not significantly related to satisfaction with the speed of service. Although, in some cases,  $r$  between other variables is statistically significant, the size of  $r$  is relatively small therefore we can conclude these relationships are not important. Statistical significance is obtained because the  $N$  is very large but not because of a high degree of correlation between variables. In this study, hierarchical regression was conducted to determine whether customer characteristics (demographic information), satisfaction with queue management system factors, and satisfaction with postal service clerks predicted satisfaction with the speed of service. As displayed in Table 4, the hierarchical regression analysis involved three models. The first model (Model 1) covered customer characteristics (demographic) variables of age, gender, education, employment status, used service in the post office, and frequency of visiting a post office. In the following step (Model 2), newly added were the five satisfaction factors with the queue management system, including queue kiosk visibility, queue

kiosk menu clarity, counter plate visibility, counter plate display clarity, and counter number visibility. In the third step (Model 3), satisfaction with postal service clerks was newly added. The dependent variable in the model was customer satisfaction with the speed of service in post offices.

*Table 4: Hierarchical linear regression analysis results related to satisfaction with the speed of service*

Variable	Model 1		Model 2		Model 3	
	B	$\beta$	B	$\beta$	B	$\beta$
(Constant)	3.13		2.19		.24	
Age	.03	.06	.04	.08*	.02	.03
Gender	-.08	-.05	-.08	-.05	-.07	-.04
Education	.02	.01	-.02	-.01	-.01	-.01
Employment status	.00	.00	.00	.00	.00	-.01
Service used	.03	.03	.01	.01	.00	.01
Frequency of visiting	.05	.05	.02	.02	.01	.02
Queue kiosk visibility			.00	.00	-.03	-.03
Queue kiosk menu clarity			.22	.25**	.15	.17**
Counter plate visibility			.08	.09	.06	.07
Counter plate display clarity			-.03	-.04	-.03	-.04
Counter number visibility			.07	.09*	.05	.06
Satisfaction with postal service clerks					.68	.46**
	R	.01	.35**		.56**	
	R <sup>2</sup>	.01	.12		.31	
	$\Delta R^2$		.11		.19	

*Dependent Variable: Customer satisfaction with the speed of service*

\* $p < 0,05$ , \*\* $p < 0,01$

Model 1 showed that customer characteristics (demographic information) variables of age, gender, education, employment status, used service in the post office and frequency of visiting a post office do not significantly predict customer satisfaction with speed of service. R-square value in Model 1 was 0.01, implying that these combined variables explained only 1% of the variance in predicting customer satisfaction with the speed of service. In Model 2, after adding the five factors of satisfaction with the queue management system, including queue kiosk visibility, queue kiosk menu clarity, counter plate visibility; counter plate display clarity and counter number visibility, the explained variance of customer satisfaction with the speed of service significantly increased. Model 2 generated R square value of 0.12 in contrast with the value of 0.01 in Model 1. The changes of R square value showed an increase and resulted in additional contribution of 11% to the overall explained variance in Model 2. Finally, in the third model after adding satisfaction with postal service clerks to the model, hierarchical multiple linear regression analysis (table 4) makes it clear that the 12 independent variables together in the model are significantly predictive of the dependent variable - satisfaction with the speed of service ( $F_{(12, 567)} = 23.79$ ;  $p = 0,00$ ). The model's degree of predicting the dependent variable is  $R = .56$ , explaining additional 19% of the variance which makes in total 31% explained variance of the dependant variable - customer satisfaction with *speed of service*. The value of  $\beta$  (beta) indicates the order of importance of the predictor variable with the variable with the highest  $\beta$  contributing the most to the explanation of the dependant variable. It was found that satisfaction with postal service clerks made the biggest contribution ( $\beta = .46$ ,  $p < 0,01$ ). It was followed by queue kiosk menu clarity ( $\beta = .17$ ,  $p < 0,01$ ). The contribution made by the other variables were found to make a much smaller contribution to the model, with beta coefficients of -0,01 to 0,09.

Statistical results showed that although model 2 and model 3 significantly predicted customer satisfaction with the speed of service, the Model 3, explained the dependent variable better than did Model 2. The newly added variable of satisfaction with postal service clerks explained an additional 19% of the variance in predicting customer satisfaction with the speed of service.

## 6. DISCUSSION

The obtained results of the hierarchical regression analysis indicate that customer characteristics (age, gender, employment status, education, services they use, and frequency of visits) are not significantly related to satisfaction with the speed of service in post offices, thus confirming the first hypothesis H1. The results of our research in post offices are in line with research conducted at kiosks (Raspon, Žunić and Ribarić Aidone, 2013), the results of which indicate that "selected demographic characteristics of respondents (gender, age, employment status) do not significantly affect the level of client satisfaction in individual elements of the service, as well as the level of client satisfaction with the overall service at the kiosk". It has been shown that psychological measures, like anxiety level, uncertainty, or perception of fairness measures, not considered in this research, are more related to satisfaction with the speed of service than demographic characteristics (Maister, 1983; Norman, 2009). The factors of the queue management system (visibility of the kiosk in the queue, visibility of the menu of the kiosk in the queue, visibility of the counter panels, visibility of the display of the counter panels, visibility of the number of counters) are related to satisfaction with speed of service, but they are not the most significant, so we can conclude that the hypothesis H2 is only partially confirmed. However, satisfaction with the work of postal clerks, as the most influential variable, was shown to explain 19% of the variance in the total satisfaction of users with the speed of service in post offices, thus confirming hypothesis H3. It is interesting to point out that in the research on satisfaction with the quality of services in corporate banking (Marinković & Senić, 2012), it is the satisfaction with the professionalism of bank employees that explains identically 19% of the variance of total customer satisfaction. This finding is in line with previous studies, showing a relationship between customer satisfaction and the services provided by an organization (Anderson & Mittal, 2000; Brocato et al., 2012). Finally, a set of customer characteristic factors, factors of the queue management system and user satisfaction with post clerks explained together almost a third of the variance in predicting user satisfaction with speed of service in post offices, confirming the fourth hypothesis H4, with queue kiosk menu clarity and satisfaction with postal service clerks being the most relevant factors in explaining satisfaction with speed of service. The results of this study indicate that the ability for a customer to take control to an appointment or task, together with being satisfied with the work of the postal clerks, can increase the perceived satisfaction with speed of service. A limitation of the research conducted is a nonrepresentative sample and the use of simple measures of constructs of interest. For future research, the recommendation would be to use standardized measures of the same constructs combined with an experimental design. Also, although many variables have been considered in this research, other variables, like the individual psychological characteristics of the users (anxiety level, perception of uncertainty, frustration, perception of fairness, etc.) should also be considered in future research. Likewise, it is advisable to reach a larger, more representative sample that could be used to draw conclusions for other sectors and industries as well.

## 7. CONCLUSION

A satisfied customer is not a coincidence but results from a concept that has been built up over the years, therefore the user's behaviour can and must be measured to use the results of that measurement in the strategy of developing their satisfaction. With the application of all tools and an innovative approach to sales, it is necessary to constantly examine the satisfaction of

users in post offices to always have an answer to the question - why do users buy in post offices? Therefore, Croatian Post needs to know the current level of satisfaction of users of services in post offices, as well as the direction in which users are going, that is, to recognize their expectations through immediate, meaningful, and objective feedback. Also, the results of the research can be assessed and evaluated, with a clear definition of weak and strong points in the parameters that affect user satisfaction with the speed of the service. Optimizing the flow of customer service improves the level of service and creates a more relaxed atmosphere in post offices. In doing so, positive effects are realized, such as a reduction in labour costs, because the increased average efficiency of the counter employee reduces the number of necessary executors and increases the income from impulse sales because instead of being static and focused on the queue, users can move around the space and buy additional products, and with greater satisfaction with speed. a service that leads to a reduction in tension and customer complaints.

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