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Contents

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Review Paper

A New Frontier for Financial Systems. Exploring the Role and Implications of Cryptocurrencies

Miloš Grujić[1]

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Abstract: *Cryptocurrencies are new financial instruments that pose opportunities and challenges for modern finance. This paper synthesizes previous research using a literature review method and various academic databases. The results show that cryptocurrencies offer lower transaction costs, greater privacy, diversification benefits, and alternative financing solutions for institutional investors and individuals. However, they also face challenges such as regulatory uncertainty, criminal activity, environmental costs, prohibitions and restrictions on use, security and privacy concerns, and high volatility. The paper provides useful information for the academic and professional public who want to understand these new financial instruments. The research question is, "What are the opportunities and challenges of cryptocurrencies in modern finance?"*

Keywords: *Cryptocurrencies, Finance, Financial systems.*

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1. INTRODUCTION

A common analogy for cryptocurrencies is that they are like "digital gold" (Harwick, 2016). This implies that they can serve as a store of value that is independent of the actions of governments. The idea of cryptocurrencies emerged in 2008 when an anonymous entity using the pseudonym "Satoshi Nakamoto" proposed an electronic system for peer-to-peer exchange based on the digital currency bitcoin (Squarepants, n.d.).

Bitcoin is a decentralized digital currency introduced in 2008 and implemented in early 2009 (Nakamoto, 2008). A major motivation for creating cryptocurrencies was the need to develop a system that enabled fast and cheap transactions without the mediation of third parties such as banks (Bação et al., 2018; Kfir, 2020). Many authors consider Bitcoin a future alternative to government-issued currency (Bouri et al., 2017; Hong, 2017). Since the launch of Bitcoin, several thousand cryptocurrencies have entered circulation. There are almost 23,000 cryptocurrencies in circulation today, with a total market capitalization of 1.1 trillion dollars.

Cryptocurrencies are mostly defined as digital financial assets for which ownership and ownership transfers are guaranteed by cryptographic decentralized technology (Cui & Gao, 2023; Giudici et al., 2020). One of the main differences between cryptocurrency and digital currency is related to encryption. Cryptocurrency is secured by encryption, which means that the transactions and ownership of the coins are protected by cryptographic algorithms. Digital currency, on the other hand, is not encrypted, which means that it can be hacked or stolen by malicious actors. For example, digital currency can get robbed from the bank, whereas cryptocurrency is stored in decentralized networks that are more resistant to cyberattacks. Another difference between cryptocurrency and digital currency is related to centralization. Cryptocurrency is decentralized, which means that any central authority or intermediary does not control it. Market forces and the consensus of users determine the value and supply of cryptocurrencies. Digital currency, on the other side, is centralized, which means that a central authority or intermediary, such as a government or a bank, controls it. The policies and regulations of the central authority or intermediary determine the value and supply of digital currency. A third difference between cryptocurrency and digital currency is related to regulation. Cryptocurrency is largely unregulated, which means it operates outside most countries' legal frameworks and jurisdictions. This can pose some risks and challenges for the users, such as volatility, fraud, scams, taxation, etc. Digital currency, on the other hand, is regulated, which means that it operates within the legal frameworks and jurisdictions of most countries. This can provide some user benefits and protections, such as stability, security, compliance, etc.

Cryptocurrencies are digital currencies that can be used to buy real goods and services in the real world, such as education at some universities, online shopping, hotel accommodation, tour packages, movie tickets, or real estate agent services (Guadamuz & Marsden, 2015). Moreover, cryptocurrencies represent a significant innovation in designing, managing, and regulating financial systems (Shahzad et al., 2018). Some challenges and limitations when using cryptocurrencies are price volatility, regulatory uncertainty, and technical issues.

Technology that enables the creation and distribution of cryptocurrencies is the blockchain. Namely, after the emergence of the bitcoin cryptocurrency, many other cryptocurrencies based on the principle of blockchain technology were formed with the aim of attracting a critical mass of users that could potentially ensure wider use (Pu et al., 2017). On the global level, in terms of market capitalization, the following are current: Dogecoin, Ethereum, XRP, Tether, Bitcoin Cash, Litecoin, Stellar, etc. The mentioned market is subject to significant price fluctuations, which is one of the main disadvantages of the decentralized payment system.

Blockchain technology is based on peer-to-peer connectivity and cryptographic security, enabling decentralized access with improved transparency and trust instead of the centralized nature of traditional monetary systems. There are numerous possibilities and use cases of blockchain in literature and practice (Fosso Wamba et al., 2020). Some of them are asset exchange systems (Yermack, 2015), the banking industry (Amor et al., 2022), blockchain or consensus as a service (Dyhrberg et al., 2018), clearing and settlement (Baur et al., 2018), cryptocurrencies (White, 2015), identity management (Katsiampa, 2017), insurance industry (Guesmi et al., 2019), internet of things (Radivojac & Grujić, 2018a), securities trading (Dyhrberg et al., 2018), remittance system (Yermack, 2015), securities register of paper values (proxy voting) (Pieters & Vivanco, 2017), smart contracts (Baek & Elbeck, 2015; Kristoufek, 2015), voting system (Platanakis & Urquhart, 2019).

Grujić and Šoja (2021) argue that cryptocurrencies are financial assets, investing material and alternative investments with profound diversification benefits. Cryptocurrencies are mostly used as a means of exchange for everyday payments and have characteristics similar to those of other financial instruments, such as precious metals (Omane-Adjepong et al., 2019). Many authors support the claim that cryptocurrencies have no inherent value (Cheah & Fry, 2015). Still, the economic value and future of using cryptocurrencies and blockchain technology remain an open question (Demir et al., 2018). The authors also agree that blockchain is the most significant innovation in computer science because it represents distributed databases that create trust through mass collaboration and smart code rather than through a powerful institution that performs authentication (Laabs & Đukanović, 2018). The main advantage of blockchain technology lies in the fact that it enables the development of secure, reliable, and decentralized autonomous systems that have applications in various fields.

Cryptocurrencies represent a significant innovation in designing, managing, and regulating financial systems (Shahzad et al., 2018). Many authors debate whether cryptocurrencies have any inherent value (Cheah & Fry, 2015). Still, the economic value and future of using cryptocurrencies and blockchain technology remain an open question (Demir et al., 2018). At the same time, the authors agree that blockchain is the greatest innovation in computer science because it represents distributed databases that establish trust through mass collaboration and smart code rather than through a powerful institution that performs authentication (Laabs & Đukanović, 2018). The key advantage of blockchain technology lies in the fact that it enables the creation of secure, reliable, and decentralized autonomous systems that have applications in various fields.

Cryptocurrencies can be classified in different ways based on their generation, functionality, or technology. For instance, cryptocurrencies can be classified by the generation of their blockchain technology, reflecting their innovation and development level. The first generation of cryptocurrencies includes Bitcoin and other coins that use a simple proof-of-work consensus mechanism and offer the basic functionality of peer-to-peer transactions. The second generation of cryptocurrencies includes Ethereum and other coins that introduce smart contracts and decentralized applications, enabling more complex and programmable functionality. The third generation of cryptocurrencies includes Cardano and other coins that aim to solve the previous generations' scalability, interoperability, and sustainability issues using advanced consensus mechanisms and governance models. Cryptocurrencies can also be classified by their functionality or purpose in the crypto ecosystem. Payment cryptocurrencies, such as Bitcoin, Litecoin, and Dash, are designed to facilitate fast and cheap value transactions. Utility cryptocurrencies are designed to provide access to a specific service or platform, such as Ethereum, Binance Coin, and Chainlink. Privacy cryptocurrencies are designed to enhance the anonymity and security of users, such as Monero, Zcash, and Dash. Governance cryptocurrencies, such as Decred, Dash, and Tezos, are designed to enable decentralized decision-making and voting on the network. Finally, cryptocurrencies can be classified by the technology or architecture they use to achieve consensus and validate transactions on the network.

Proof-of-work cryptocurrencies use a system where miners compete to solve cryptographic puzzles and earn rewards for adding new blocks to the chain, such as Bitcoin, Ethereum, and Litecoin. Proof-of-stake cryptocurrencies, such as Cardano, Polkadot, and Cosmos, use a system where validators stake their coins to participate in the consensus process and earn rewards for securing the network. Proof-of-authority cryptocurrencies use a system with trusted validators selected by reputation or identity to validate transactions and maintain the network, such as VeChain, POA Network, and xDai.

Cryptocurrencies have huge capital markets and monetary authorities. According to a World Economic Forum report, cryptocurrencies could positively affect financial stability, equity, innovation, and environmental sustainability, depending on the regulatory framework and governance model adopted by policymakers and business leaders (WEF, 2021). European Central Bank announced that cryptocurrencies could pose risks to monetary policy transmission and price stability, as well as to financial stability and market integrity, due to their high volatility, low liquidity, operational vulnerabilities, and regulatory uncertainty (WEF, 2022). According to a survey by the Bank for International Settlements, central banks are increasingly exploring the potential benefits and challenges of issuing their own digital currencies (CBDCs), which could enhance payment efficiency, financial inclusion, and monetary sovereignty but also raise technical, legal, and economic issues (Chimienti et al., 2019).

The main research hypothesis is "Cryptocurrencies and blockchain technology have a positive impact on the capital markets and monetary policy by lowering transaction costs, increasing transparency and security, reducing intermediation and friction, and enhancing innovation and competition."

2. METHODS

To answer the research question, a systematic search of various academic databases was conducted using keywords such as "cryptocurrency," "blockchain," "capital market," and "monetary policy". The databases included Google Scholar, Scopus, Web of Science, and Springer Link. The search results were filtered by citations and indexing, publication date - from 2008 to 2022, language (English, Serbian or Croatian), and type (scientific work). The quality and relevance of the sources were assessed by their peer-review status, journal impact factor, and alignment with the research question. A total of 43 sources were selected for the literature review. The review aimed to provide a comprehensive understanding and critical assessment of the existing knowledge on the topic, as well as to identify gaps or controversies that warrant further investigation. The main themes that emerged from the review were the classification and characteristics of cryptocurrencies and blockchain technology; the benefits and challenges of using cryptocurrencies and blockchain technology in the capital markets; the implications and risks of cryptocurrencies and blockchain technology for monetary policy; and the views and initiatives of central banks and institutional investors regarding cryptocurrencies and blockchain technology.

3. RESEARCH AND DISCUSSION

One of the main risks cryptocurrencies pose is their potential to facilitate illicit activities on the black market. Due to their pseudonymity, which makes it hard to trace the identity of users and transactions, digital currencies undermine the law enforcement efforts of the authorities (Baldimtsi et al., 2021). According to Kerr (2018), Bitcoin is the perfect financial instrument for the digital black market. Moreover, digital currencies could enable structural changes in the way informal money transfer systems operate. For instance, some authors argue that cryptocurrencies are the ideal means of hawala money transfer (Radivojac & Grujić, 2018b). Hawala is an ancient financial transaction system that operates outside formal financial systems. The word hawala

means “transfer” or “trust” in Arabic, reflecting how the system works. It involves a network of brokers who transfer money quickly and confidentially, without any physical movement of money or paper trail. The system is based solely on mutual trust between brokers and their clients. Radivojac and Grujić (2018b) provide an example of how hawala works. Suppose a citizen of Serbia residing illegally in France wants to send money to his mother in Serbia. He cannot use a formal way of transferring money because the authorities could detect him. He contacts a hawala broker X in France and gives him the amount of money he wants to send, along with a password for receiving it. Broker X takes a commission and contacts another broker, Y, in Serbia, who agrees to pay the sender’s mother the same amount from his own funds. Broker Y contacts the sender’s mother and verifies the password before handing her the money and taking a commission. As a result of this transfer, broker X owes Broker Y the money that he paid to the sender’s mother.

Cryptocurrencies also pose a risk of being used for illicit activities on the black market. Due to their anonymity or pseudonymity, digital currencies enable the trade of weapons, drugs, and other illegal goods (Miller, 2016). Furthermore, digital currencies facilitate money laundering, tax evasion, and other criminal transactions. Consequently, the existence of black markets in controlled economies endangers the stability and security of people’s lives and incomes (Scharding, 2019). Cryptocurrencies pose a challenge to the government’s control of the money supply and evade existing regulations. The authorities find it difficult to track and oversee cryptocurrency-based transactions due to their decentralized nature (Fadeyi et al., 2020). Cryptocurrencies will likely affect other domains and industries as they become more accepted and popular. The technology behind cryptocurrencies, blockchain, depends on high power consumption, graphics processing units, and proof-of-work algorithms for cryptocurrency mining (Fadeyi et al., 2020).

A further risk that cryptocurrencies pose is their vulnerability to hacking, fraud, theft, and privacy breaches. Despite their reliance on robust security protocols enabled by blockchain technology, digital currencies are not immune to cyberattacks and malicious actors. Criminals have already targeted exchanges and wallets and have successfully stolen large amounts of digital currency. For instance, Bitcoin has suffered several theft incidents worth more than $1 million in its history (Bunjaku et al., 2017). In 2016, a hacker exploited a smart contract on the Ethereum protocol and siphoned off about $70 million worth of Ether tokens at that time (Auer, 2019).

Furthermore, the security of digital currencies relies on asymmetric encryption of public and private keys. However, the user may lose access or ownership of the digital currency units if the private key is lost or stolen (Wei et al., 2019). The user may not be able to retrieve the funds because there is no central authority that governs the system. Techniques such as malware, phishing, key loggers, and Trojan horses can be used to steal private keys. They capture and transmit user data to a remote attacker. Besides security issues, cryptocurrencies also face challenges related to their valuation and stability. Unlike government-issued currencies, cryptocurrency is not backed by any physical asset or regulated by any authority. They only get their value from the community’s and market participants’ expectations and trust. A major disadvantage of cryptocurrencies is their high volatility, mainly due to their design and limited supply. In fact, cryptocurrencies are prone to large price swings due to market forces and speculation. For instance, the price of one bitcoin increased from $13 in January 2013 to $1,242 on November 29, 2013, which was just below the price of an ounce of gold (Calafos & Dimitoglou, 2023).

The volatility of cryptocurrencies can be exploited and amplified if financial institutions engage in speculative investments, leading to chain reactions and financial crises. Likewise, cryptocurrency prices can form “bubbles” that pop when investors dump their holdings. The volatility and uncertainties of

cryptocurrencies make it hard to provide reliable valuations for reporting and auditing purposes, especially from a tax compliance and reporting perspective. Jalan et al. (2023) observed that a high level of volatility increases the risk of holding cryptocurrencies and the possibility of their manipulation by signaling false positives to sell them at higher prices. As a result, when investors get rid of their cryptocurrencies, the supply rises, leading to a fall in the price and severe losses for other holders.

4. FUTURE RESEARCH DIRECTIONS

This paper provides a comprehensive overview of the opportunities and challenges of cryptocurrencies and blockchain technology in modern finance, focusing on their impact on capital markets and monetary policy. However, there are still many open questions and areas that need further exploration and investigation. Some of the future research directions are:

- How can cryptocurrencies and blockchain technology be regulated and supervised in a harmonized and coordinated way across different jurisdictions and sectors? What are the best practices and standards for ensuring compliance, accountability, and consumer protection?
- How can cryptocurrencies and blockchain technology be integrated and interoperable with existing financial systems and infrastructures? What are the technical, legal, and institutional barriers and enablers for achieving such integration and interoperability?
- How can cryptocurrencies and blockchain technology foster financial inclusion and development, especially in emerging and developing economies? What are the potential benefits and risks of using cryptocurrencies and blockchain technology for financial inclusion and development?
- How can cryptocurrencies and blockchain technology affect the design and implementation of monetary policy? What are the implications of central bank digital currencies for monetary policy objectives, instruments, and transmission mechanisms?
- How can cryptocurrencies and blockchain technology influence the behavior and preferences of investors, consumers, and market participants? What are the determinants and drivers of cryptocurrency adoption, demand, and supply? How do cryptocurrencies affect portfolio diversification, risk management, and asset pricing?

These are some of the most relevant and pressing research questions that need to be addressed by future studies. Cryptocurrencies and blockchain technology are dynamic and evolving phenomena that pose significant opportunities and challenges for modern finance. Therefore, it is essential to keep abreast of the latest developments and trends in this field.

5. CONCLUSION

The aim of this paper was to explore the impact of cryptocurrencies and blockchain technology on capital markets and monetary policy. Cryptocurrencies and blockchain technology can offer various advantages for the capital markets, such as lower costs and faster speeds of transactions, improved transparency and security of data, reduced intermediation and friction in the market, and increased innovation and competition among participants. However, they can also pose various challenges and risks, such as high volatility of prices, lack of clear and consistent regulation, exposure to cyberattacks and fraud, high energy consumption and environmental impact, and involvement in illegal activities and tax evasion.

The paper shows that cryptocurrencies and blockchain technology can affect monetary policy in different ways, such as influencing monetary policy tools' transmission and effectiveness, challenging national currencies' sovereignty and stability, and creating spillover effects on exchange rates

and international reserves. Consequently, cryptocurrencies and blockchain technology have attracted interest and curiosity among central banks and institutional investors, who are exploring the potential benefits and challenges of issuing their own digital currency or investing in existing ones.

This hypothesis was tested by collecting and analyzing data on the performance and behavior of cryptocurrencies and blockchain technology in the capital markets and monetary policy. Cryptocurrencies were compared with other financial instruments and systems to see if they had any advantages or disadvantages.

The paper also identified some gaps or controversies that need further investigation. For example, a very important question is, "How can cryptocurrencies and blockchain technology be regulated and supervised in a harmonized and coordinated way across different jurisdictions and sectors?". Moreover, explaining how cryptocurrencies and blockchain technology can be integrated and interoperable with existing financial systems and infrastructures is very important.

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Review Paper

Academic Entrepreneurship at the Start of Industry 5.0 Era

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Abstract: *The economic theory has been once again looping to the role of the entrepreneur. The differences that we find are based on the changing role of the Universities as well as the expected shift to Industry 5.0. The focus of the paper is set on the successful entrepreneurs that have been "created" in the universities. Accordingly, the main hypothesis is: the Industry 5.0 instruments reveal a quite new world for academic entrepreneurs working in virtual open academic entrepreneurial centers. The structure of the paper is following: the first paragraph analyses the shift of the University role to support entrepreneurs based on 'business – academia' cooperation; the second paragraph presents the entrepreneurial knowledge that is important nowadays; the third paragraph gives a discussion on the digital instruments that stay behind the contemporary entrepreneurial training; and finally, some recommendations how virtual co-creation and co-working clubs should be organized will be given in conclusion.*

Keywords: *Academic Entrepreneurship, Industry 5.0, Co-working and Co-creation.*

JEL Classification L26

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1. INTRODUCTION TO ACADEMIC ENTREPRENEURSHIP

Focusing on the role of the "**entrepreneur**" and the process of entrepreneurship with/within the university/academia support, we could find four stages of understanding the common "academic entrepreneurship" (Jones & Wadhwani, 2006; Sterev & Penchev, 2023):

Firstly, the entrepreneurs were observed and described. For example, the very first explanation of the entrepreneur as a specific economic figure could be found in the 15th and 16th centuries in Venice, where the efficiency of the trade is explained by the personality of the trader and its accounting and managerial skills (see. Benetto Cotragli, 1573). Later, the very first definition of an entrepreneur was given by Richard Cantillion in the 18th century as a core figure of the market economy that "*brings the nation wealth and drives economic development*."

Secondly, entrepreneurship is a process that should be managed. For example, Josef Schumpeter states that "*the essence of entrepreneurial activity lay in the creation of "new combinations" that disrupted the competitive equilibrium of existing markets, products, processes and organizations*" (Schumpeter, 1947). Thus, numerous mechanisms for developing entrepreneurs were proposed in the 1950s and 1960s.

Thirdly, the development of behavioral management theories found the "opportunity" of university/academic training of entrepreneurs from the 1980s till the late 2000s. The "newly" proposed entrepreneurial study programs endeavor a personal development based on the knowledge that "*the entrepreneur is a person, not a team, committee or organization. .... Entrepreneurial actions are performed in all societies by individuals whose judgment differs from the norm*." (Hébert & Link, 1989).

Finally, entrepreneurs and entrepreneurship are set as the core of entrepreneurial economics as contemporary economic development is based on the strong figures of individual entrepreneurs: people who create high-tech companies (resp. start-ups) that push up technological and societal changes. In those terms, the role of Universities/academia is set as a starting point for any successful entrepreneur. Additionally, Huffman and Quigley (2002) found the role of the Universities not just in training entrepreneurial knowledge (third stage) but also in attracting high-tech entrepreneurs through entrepreneurial networks' development by instruments like: "network events," internships, business scholarships, and business incubators.

Following history, academic entrepreneurship as a process is not quite a new phenomenon, but it is trending nowadays as a result of seeking new economic and social opportunities. Therefore, focusing on the last, fourth stage of understanding entrepreneurs, we could set some of the latest definitions of "**academic entrepreneurs,**" meaning the entrepreneurs that start from their university/academia engagements. Additionally, "*academic entrepreneurship is the process by which an individual or group of individuals linked through their work to a university or research center use knowledge created in their research to set up business ventures or spin-offs*" (Miranda et al., 2017). Thus, Toole and Czarnitzki (2007) set that "*the common academic entrepreneurship is defined as a form of technology transfer.*" In that meaning, the academic entrepreneur is a researcher / scientific investigator who takes part in the commercialization of an originated technology. Verification of this is given by Feldman et al. (2002), who found a strong connection between the commercialization of the intellectual property of American Universities and equity instruments for technology transfer as a first step to fostering academic entrepreneurship within them.

Following the latest definition of "(academic) entrepreneurship," some more pillars of 'academia – business' cooperation, as a basis of the Industry 5.0 boom, could be noted as follows:

- **Innovations** have kept their importance in economic development as well as entrepreneurial start-ups. However, scientific breakthroughs and scientific research innovations become a core idea for technological achievement /within Industry 5.0's technology development/ and a source for (academic) entrepreneurial endeavors (Klofsten & Jones-Evans, 2000; Siegel & Wright, 2015; Wood, 2011; Yordanova, 2019, 2021).
- **Innovation promotions** and **innovation commercialization** have become more and more expected results of the universities as the research universities were defined in the latest 2000s. As O'Shea et al. (2004) found, "*the commercial exploitation of new knowledge created in universities has become increasingly important to universities ...*". All this is a final result of the Universities/Academia's role development not just a knowledge centers but a "leadership centers" that generate new (Industry 5.0 technology) knowledge to boost the new leadership and resource allocation approaches (Taylor, 2006).
- The **'academia–business' forms** are developing from industry-university research collaboration to intra-university forms (university-based incubator firms, start-ups by academicians) involving not just faculty staff but post-docs, students, or affiliated university personnel (Hayter et al., 2018). Following this, the typical Theory-to-Practice (T2P) University centers have "upgraded" to "open entrepreneurial centers" (Sterev et al., 2023).

Following the given key pillars of academic entrepreneurship, two approaches appear to be at the core of academic entrepreneurship: co-working and co-creation:

First, **co-creation** is set as a cooperative form of leadership creativity and new-technology development process. According to Sterev et al. (2023), Zuniga et al. (2021), and Hughes (2014) co-creation is "*the process of collaboration of two or more parties in building a new type of value for themselves or others*." The co-creation success in academic entrepreneurship is attributed to the group / social behavior of the people who become more successful, more motivated, and more creative when working in group cooperation (Li et al., 2022; Takahashi & Takahashi, 2022).

Second, **co-working** is the process of sharing a business environment, business processes, or staff with others. As a modern concept, co-working, especially within cloud-based Industry 5.0 technology for distance working, brings out flexibility, dynamics, and resilient design, which are favorable requirements for start-ups, freelancers, and creative industries (Kartika et al., 2019; Pan et al., 2022 and others). Additionally, according to Jackson et al. (2022), Mahlberg and Riemer (2017), and others, the co-working space in universities embodies **entrepreneurship**, **cutting-edge technologies, and transdisciplinary and collaborative working** as well as supports **matching students** with co-working members and gives interns access to developmental activities.

In summary, academic entrepreneurship is the core base of contemporary entrepreneurial economics, especially as a background for the development of the Industry 5.0 entrepreneurial system. It has not just supported new business decisions and new-born entrepreneurs' development but has set an appropriate environment for it through the rise of group (entrepreneurial) training and the establishment of innovative co-creation and (social) co-working networks.

2. ENTREPRENEURIAL KNOWLEDGE AND ENTREPRENEURIAL SKILLS

The main role of the Universities is to establish training. Thus, they have to train academic entrepreneurs to answer the needs of recent entrepreneurial economics covering fast change from

Industry 4.0 to Industry 5.0. The main question that any entrepreneur has always asked himself since the 15th century (from the beginning of entrepreneurial knowledge summarizing) is: Am I good enough to be a (successful) entrepreneur?

Notably, there has been no single answer to that question for more than five centuries. But, we are sure that successful entrepreneurs always believe in their "internal forces" to be entrepreneurs. Like any single entrepreneur, management science is looking for "(empirical) signs" that show the best entrepreneurial mindset!

From the very beginning (see. Cantillon, 1755 and others), the role and characteristics of the (trade) entrepreneur are essential for business development. Nowadays, the mechanism is still being kept, but the instruments for that are being improved. Thus, the practical instrument that the researchers and practitioners continue to look out for is based on the human-centric theories for **entrepreneurial profiles**.

Entrepreneurial profiling helps to find data quality rules and requirements that will support data quality assessment of entrepreneurial success. Using entrepreneurial profiling alone, we can find some perceived defects and outliers in entrepreneurial training. Additionally, a lot of people use entrepreneurial profiles as the start and end point for their personal characteristics development, incl. competencies and assessment as results of profiling are:

- **Valued** in a balanced and correct way in comparison with other entrepreneurs;
- **Significant** to the (entrepreneurial) business success;
- **Reflect** the true extent of a particular entrepreneurial competence.

Moreover, the contemporary **entrepreneurial profile** emphasizes those human (capital) competencies (resp. entrepreneurial knowledge and entrepreneurial skills) that differentiate entrepreneurs from other people. These entrepreneurial skills and personal entrepreneurial experience do not make people great or better, but they summarize the needed preconditions for the success of entrepreneurs.

Looking at research evidence on what predicts entrepreneurial success, we fully agree with Krieger et al. (2022), who explains that early variety orientation of the entrepreneurial personality boosts their start in vocational entrepreneurial development. Thus, early entrepreneurial training does not follow boosting "millions of entrepreneurs" but gives an early bridge for entrepreneurial personalities to develop their **entrepreneurial skills.**

Additionally, entrepreneurial skills have recently been discussed in research on human capital. The lead hypothesis is that there is a strong positive relation between human capital – including education, experience, knowledge, and skills – and success (Unger et al., 2011). Therefore, entrepreneurial attitude and early-bird entrepreneurial training have a significantly positive effect on the success of entrepreneurs (Kassa & Mirete, 2022).

Looking for the "best entrepreneurial attitude," De Silva et al. (2023) propose that Universities should offer customized entrepreneurial training based on increasing (academic) motivation and better use of decision-making approaches in entrepreneurial causation.

Following Tam et al. (2021) and their analysis of blended entrepreneurial training on the pre-incubation stage for social entrepreneurship development, we could summarize four main entrepreneurial skills, very important for the human-centric approach of Industry 5.0 era:

- Team-working: despite the common belief that entrepreneurship is an individual path, the idea that shared dreams can lead to significantly more success is becoming increasingly popular. Thus, better teamwork skills will help young people understand themselves and be more successful in pursuing their (entrepreneurial) dreams.
- Risk-taking: As risk is essential for any entrepreneurial business, the knowledge of risk-taking will help young entrepreneurs "choose their (market) fights." Additionally, risk-taking skills are strongly connected to strategy set-up knowledge that forces entrepreneurial success.
- Creativity and innovations: The main hypothesis is that humans are creative themselves, but there is a need to bring these human characteristics to light. As education often opposes creativity to a technical mindset, it is a huge mistake as combining creativity and technical knowledge brings out successful innovations.
- Communication: Each entrepreneur should be able to speak in front of a lot of people and present the added value of their innovation. But there is no just speaking – that should be motivational speech that creates followers. Thus, pitching skills, resp. telling something important with fewer words and with pathos is part of common institutional entrepreneurship.

Proving the above results, Nieuwenhuizen and Groenewald (2008) and Da Silva Teles et al. (2021) found that essential entrepreneurial skills, at the start of the Industry 5.0 era[2], during entrepreneurial training for students could be summarized in three fields: innovativeness, pro-activeness, and risk-taking.

Following the EntreComp framework (Bacigalupo et al., 2016), three groups of essential entrepreneurial skills and knowledge are found:

First, ideas and opportunities include different skills that help the entrepreneur to understand his "deep wishes," such as creativity skills, visionary skills, valuable ideas generation skills, spotting opportunities skills, and sustainable thinking skills.

Second, resources include different knowledge and skills on how to use different resources efficiently, such as mobilizing different resources skills, mobilizing and motivating others skills, motivating themselves skills, self-awareness skills, financial literacy, and economic efficiency skills.

Third, into-action skills include different knowledge and skills that pull up entrepreneurial skills such as business planning knowledge, risk-taking knowledge and skills, team-working and team-leading skills, experience learning skills, and pro-activeness skills.

The (research) Universities have to develop preferred entrepreneurial competencies to foster entrepreneurial skills in their academic staff, students, and affiliates (Yordanova & Stoimenova, 2021). They are responsible for providing the necessary resources and supporting students in developing these skills. But how do we find the training content needed?

Possessing some / all of these entrepreneurial skills is found to be the difference between entrepreneurial success and entrepreneurial failure. So, based on Cooney (2012), Kutzhanova et al.

[2] Comparing the entrepreneurial skills from the Cantillon (1755) at the pre-Indystrial Era, passing by Schumpeter's (1947) entrepreneurial needs during the Industry 2.0 era, till Krieger et al. (2022) entrepreneurial success of Industry 5.0 we found a quite different (entrepreneurial) skills that are important for any recent Indutry x.0 era. Thus, we focus on those entrepreneurial skills, especially after Covid-19 pamdemic, that are found as a prequisition for new (Industry 5.0) innovation and technology development. – a.n.

(2009), and others, in order to personalize academic entrepreneurial training to meet the Industry 5.0 requirements, it is necessary to test each trainee's entrepreneurial skills individually to compare with the reference successful entrepreneurial set and to continuously monitor any changes in those individual skills.

Following Yordanov (2019, 2023) and Sterev (2023), three steps for understanding the academic entrepreneurial level within Industry 5.0 are needed:

The first step is to set the average entrepreneurial skills level. It differs in different societies as a result of existing personal knowledge and skills and societal group/personal understanding of entrepreneurial knowledge and skills. The main hypothesis is that all entrepreneurial skills are at the average level for the essential society.

The second step is to find out individual entrepreneurial knowledge and skills. They could differ by age, academic position (e.g., academic staff, students, affiliates), sex, and other social characteristics.

The third step is to discover the differences between individual and group entrepreneurial knowledge and skill levels. Accordingly, the hypothesis is that successful entrepreneurs prioritize exact entrepreneurial knowledge and skills and neglect others.

Accordingly, based on the methodology of EntreComp framework (Bacigalupo et al., 2016) application of the above three steps, the entrepreneurial profile and its Industry 5.0's context, resp. ideas, resources, and into-action, is visualized by profiling the entrepreneurial skills as follows (Figure 1.)

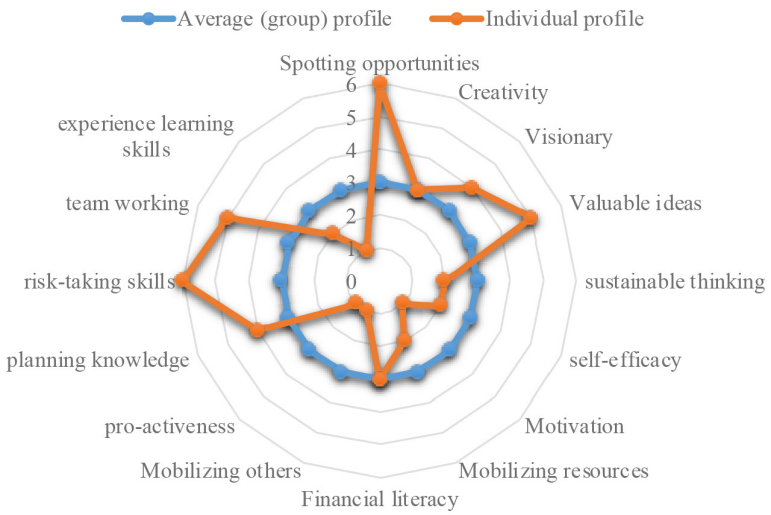

Figure 1. Entrepreneurial profiling

Source: Example of simple visualization based on methodology review of Bacigalupo et al. (2016)

3. ENTREPRENEURIAL TRAINING

Despite the academic debate on skills acknowledgment, entrepreneurial recognition could be done better at the time of training them as during the process of finding young people who intend to be entrepreneurs. As the tradition of the training of entrepreneurs in the USA is appointed backward

to the 1930s in Harvard Business School, entrepreneurial education in the (German-speaking) European universities became important in the mid-1990s (Franke & Luthje, 2004) and Bulgarian Universities as well – in the mid-1990s (Yordanov, 2019).

Although blended entrepreneurial training is done according to the personal entrepreneurial intention of the trainees, there is always a difference between entrepreneurial intention before and after the entrepreneurial training (resp. between the average values) (Figure 2).

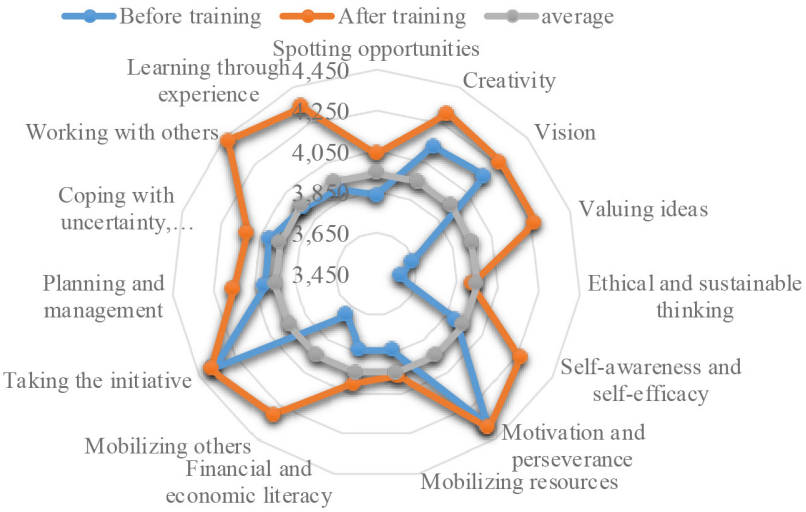

Figure 2. Entrepreneurial skills before and after entrepreneurial training
Source: Sterev, 2023

Additionally, blended entrepreneurial training could cover a wide range of topics, including business planning, marketing, financial management, and legal and regulatory affairs. This training can be particularly important for students considering starting their own business, as it can help prepare them for their challenges.

Sterev et al. (2021) state that entrepreneurial training covers at least one stage of the academic entrepreneurial roadmap (Figure 3).

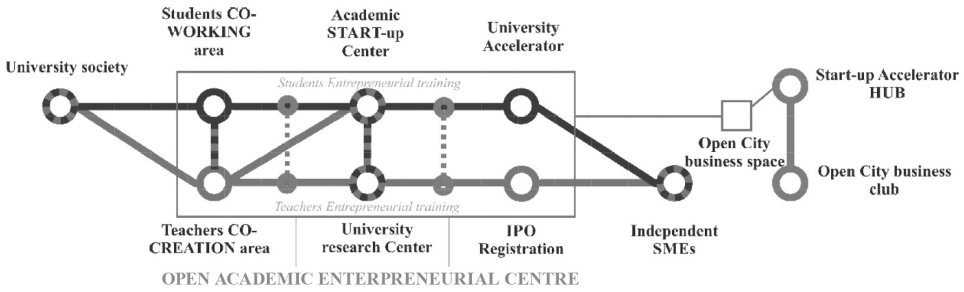

Figure 3. Road map of an academic entrepreneurship
Source: Sterev et al. (2021)

The latest research covering the COVID-19 effect found that the socialization of technology transfer could be the key point of the newest high-tech innovations and entrepreneurial development in

the near future. According to them, we are in a "group intelligence" boom as the starting point of the Industry 5.0 based on the "open business" and "open science" approaches. Following the latest technology development, entrepreneurial training could be done with the support of Industry 5.0 instruments (Table 1).

Table 1. Industry 5.0 and entrepreneurial training

INSTRUMENTS	CONTRIBUTION TO ENTREPRENEURIAL TRAINING
Big data	• Provides information for the entrepreneurial skills of a big group of end-users • Continuous change of the average level of entrepreneurial competencies based on the group knowledge and entrepreneurial success case studies
IoT	• Communication between devices on the Internet is needed to perform better business processes and activities. Allows better resource knowledge in real-time • Supports the fulfillment of the complex requirements of entrepreneurial economics • Extending the results of entrepreneurial training by detecting training errors and improving technical support for entrepreneurs
Block-chain	• Guarantees high levels of transparency in entrepreneurial chains and entrepreneurial networks • Ensures traceability, ethical sourcing, and more efficient material flows.
Machin learning	• Preparation of entrepreneurial forecasts with a high degree of accuracy • The reduction of human bias in testing and prototyping at the stage of early entrepreneurship
Computer Vision	• Automatic extraction, analysis, and understanding of useful information from an image or sequence of images that helps individualize the entrepreneurial training • Autonomous visual comprehension on entrepreneurial training

Source: Modification on Biolcheva, 2018

Additionally, based on Saleh (2019), contemporary entrepreneurial training that focuses on Industry 5.0 Artificial Intelligence (AI) instruments increases entrepreneurial success as the AI is connected not to single human intelligence but to the collective intelligence of the society as follows:

- AI uses algorithms to discover entrepreneurial patterns from vast amounts of information;
- AI is capable of augmenting human intelligence, delivering insights, improving productivity, and increasing the entrepreneurial success rate;
- AI uses algorithms to construct analytical models that perform entrepreneurial training tasks through innumerable rounds of trial and error during the (virtual, augmented reality) training;
- AI is a tool that allows for integrating information from different sources and using it to make better entrepreneurial decisions.

4. CONCLUSION

As the role of the entrepreneur and entrepreneurship is in the core base of contemporary economics, training entrepreneurs is essential for the success of entrepreneurial economics. And, as the entrepreneurial approach stayed stable for more than 5 centuries, the instruments of finding and developing entrepreneurs differ. Nowadays, the boom of artificial intelligence and Industry 5.0 introduction leads university entrepreneurial training to the next level.

(Research) Universities play a crucial role in fostering entrepreneurial skills in academia (e.g., academic staff, students, and affiliates). They provide access to entrepreneurial mentoring and entrepreneurial networking opportunities, and they create and provide entrepreneurship education and training environment that fosters innovation and creativity. Fostering an entrepreneurial culture in the University could also be a powerful tool to promote entrepreneurship among students and faculty staff.

Accordingly, open entrepreneurial academic centers could increase the effect of social works provided by co-creation and co-working approaches in generating and using innovative entrepreneurial ideas. Such socialization of innovations is expected to be successful as unfolding the creativity of people from the academic community, resp. mostly students, but also teachers and researchers; expanding the scope of functional and technological innovations; developing the exact transversal skills and key competencies, such as problem-solving skills and entrepreneurial skills, needed for the innovation success.

Instruments of Industry 5.0 and AI could support open academic centers and convert them to virtual ones. Thus, entrepreneurial training becomes a continuous process, and future entrepreneurs can assess their success in real-time. But, it means a quite new entrepreneurial instrument to be developed, starting with big data – entrepreneurial assessment tools and finishing with blended entrepreneurial training via augmented reality and 3D computer visions.

The Universities have to organize Open Academic centers for entrepreneurial training and development that use successful entrepreneurial skills to establish and test single students/academic staff entrepreneurial intention /based on Industry 5.0 prequisitions and organize entrepreneurial training to boost the missing skills from the successfully referenced ones. Additionally, Universities must incorporate Industry 5.0 technologies, especially AI and cloud technology, to establish appropriate academic entrepreneurial profiles and intentions.

Finally, the Open academic center has to carry on innovative success as there are Industry5.0-based policy opportunities and requirements defining:

- Social infrastructure of the openness: Infrastructural, the functioning of such a center needs appropriate premises and a base. In accordance with the basic principles of the existence of this type of entrepreneurial center, with open doors, it follows that the center must be physically located in a building/premises with public access. Similarly, the center can also be located in the virtual space within existing Industry 5.0 technologies, and free access to the website/platform on which the center is presented is also required. Restriction of access to a physical/virtual center can only be done in relation to belonging to one or more interested groups through an access card/student card (for physical centers) or username and password (for virtual centers).
- Organizational team: the social structure needs the inclusion of different stakeholders as Academic entrepreneurs: students/academic teachers/researchers, Academic mentors, Academic tutors, and high-tech business mentors. Participation, especially by organizing virtual discussion rooms and AI discussion instruments, of all groups of stakeholders has to be ensured for better innovation success.

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Original Scientific Article

Livestream Marketing to Revolutionize Agricultural Sales – A Chinese Case Study

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Abstract: *This study aims to analyze and understand the sales process and content of a successful live-stream agricultural sales case from China. The case was selected based on the popularity ranking of livestream rooms focusing on agricultural product sales on DouYin (Chinese TikTok). Both content analysis and case analysis were adopted to gain insight into the operational processes of livestream sales. These can be used as a reference for global farmers and retailers interested in implementing the live stream approach in the sales process. Results emphasize the efficacy of a three-stage live stream selling model, comprising trust building, selling point display, and call for action. The study contributes to the existing body of literature on livestream sales in the agricultural sector. It offers practical guidelines for global stakeholders who aim to leverage livestream marketing as a means to enhance agricultural sales.*

Keywords: *Livestream Marketing, Agricultural Sales, Case Study.*

JEL Classification M31 · Q13

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1. INTRODUCTION

Agricultural products can be determined as any plant or animal cultivated or reared on agricultural land or estates (Soumaré, 2022), including grains, vegetables, fruits, meat, dairy products, eggs, seafood, and agricultural by-products. Agricultural products have some unique characteristics, such as a short lifespan (Roy et al., 2010), perishability (Cheraghalipour & Roghanian, 2021), and decreasing freshness over time demands the immediate sale and consumption of these goods. In the meantime, climatic conditions (Abler & Shortle, 2000; Tarawneh, 2021) and pest infestations (Yang et al., 2016) significantly influence the productivity and quality of agricultural produce, often leading to market price fluctuations. Additionally, as Zhu et al. (2021) mentioned, geographical variation of those products could cause scarcity and specialty and further strengthen their marketability and demand. Significantly, as typical fast-moving consumer goods (FMCG), these products require special attention to distribution, marketing strategy, and selling challenges (W. Li & Fan, 2017).

Min (2018) deemed that agricultural product distribution highly depends on retailing avenues like markets, supermarkets, and grocery stores, with an efficient supply chain and logistics management. However, with the booming development of digitalization, Cai et al. (2015) argued that digital platforms like e-commerce websites and social media have emerged as effective distribution channels that enable direct sales and marketing. During the digital transformation era, the adoption of innovative technologies in various industries has resulted in significant changes to traditional methods and procedures, resulting in a sped-up evolution. According to Liu and Walsh (2019), this transformation highlights digital technology's growing influence in the agricultural sector.

Nowadays, live streaming is becoming prevalent on e-commerce and social media platforms, serving as an interactive digital marketing method that allows sellers to interact with audiences instantly, introduce and promote products, and even educate audiences to accept something new. In the past five years, numerous successful livestream agricultural sales cases have been discovered in China. Still, to a greater extent, the experiences are valuable for global farmers and retailers who would like to promote interactive communication with their customers and strengthen their content strategy during the sales process. Therefore, this study aims to analyze and understand the sales process and the content of a benchmark livestream agricultural sales case from China.

2. LIVESTREAM MARKETING AND ITS IMPLICATION

Livestream marketing has been rooted in China's retail landscape in recent years, starting with giant companies like L'oreal, which have introduced livestream marketing campaigns on a regular basis. Nevertheless, E-commerce platforms like Taobao and social media platforms like Little Red Book and Douyin (Chinese TikTok), which are also enabled for livestream function, allow SMEs (Small and Medium-sized Enterprises) to enhance customer engagement and sales, particularly throughout the pandemic period when people had limited access to shop offline (Feenstra et al., 2022; Luo, 2021; Sun et al., 2019). It deserves to be mentioned that by reviewing the existing literature base in the past five years, which relates to livestream marketing, most of the articles are contributed by Chinese researchers.

To conceptualize livestream marketing, J. Cai et al. (2018) determined it as online shopping with real-time social interaction, with hedonistic and utilitarian motives playing pivotal roles. Similarly, Wang et al. (2022) deemed live-streaming commerce as an e-commerce service where sellers communicate with consumers in real time, with consumers placing orders under the same system.

In addition, as underscored by Sang (2020) and Cunningham et al. (2019), livestream marketing revealed an evolution in digital marketing strategy, generating real-time connections between anchors, brands, and consumers. This contemporary approach promotes a unique value exchange between enterprises and customers, enabled by web-based platforms and mobile applications offering synchronous and cross-modal interactivity.

Based on the existing literature base, it further witnessed that livestream marketing-related research primarily focuses on its characteristics and consumer motivations. Cheng et al. (2019) and Qing and Jin (2022) agreed that the real-time marketing approach nurtures a brand-new shopping environment where consumers can watch, observe, consider, and purchase simultaneously. During the live stream process, social interaction and related attributes are crucial factors boosting consumer engagement (Sun et al., 2019; Hu & Chaudhry, 2020; Onderdijk et al., 2021).

To deepen the scope, numerous researchers have been investigating the reasons why people engage in livestream shopping. The main attributes can be summarized and determined as trust, time-saving, lower cost, reduced psychological distance, lower perceived uncertainties, and the on-the-spot testimonial feedback by the sellers (C.-C. Chen & Lin, 2018; J. Chen et al., 2020; Lee & Chen, 2021; Zhang et al., 2022). Several studies have been taken further to explore the factors influencing consumer purchase intentions through live streaming. For instance, Yu and Zhang (2022) identified several key elements: perceived interactivity, endorsement, product familiarity, subjective norms, altruistic value, and the overall livestream shopping experience. Simultaneously, Ang et al. (2018) reported positive impacts of live streaming on consumer purchase intentions for newly introduced products. In addition, empirical research conducted by Sun et al.(2019) resulted in the development of a theoretical model to examine the role of live streaming on customer purchasing intention, concluding that visibility, meta-voice, and the availability of guided shopping can significantly influence customers' purchase intentions through participation in real-time streaming media. It shall be emphasized that live streamer attractiveness, consumer sophistication in quality perception, the live streamer's sales ability, consumers' preference value, and consumers' costs have been cited in supplementary studies on the adoption and profitability of live streaming (Hou et al., 2021; H. Liu & Liu, 2021; L. Liu, 2022; Pan et al., 2022).

To deepen the understanding of Livestream sales, the factors influencing the consumers' purchase intention during livestream shopping could be summarized below:

Table 1. Factors influencing the consumers' purchase intention during livestream shopping.

Factor	Description	Relevant Literature
Perceived Interactivity	Real-time interaction between consumers and sellers enhances engagement and decision-making.	Yu and Zhang (2022); Liu et al. (2022)
Trust and Credibility	Builds consumer trust through live demonstrations, testimonials, and reduced psychological distance.	Chen & Lin (2018); Zhang et al. (2022)
Product Familiarity	Consumers' prior knowledge about the product positively influences purchase decisions.	Yu and Zhang (2022)
Subjective Norms	Social influence and peer recommendations drive consumer purchase intentions.	Yu and Zhang (2022)
Altruistic Value	The feeling of contributing to a greater cause (e.g., supporting farmers or sustainability) motivates purchases.	Yu and Zhang (2022); Zheng et al. (2023)
Livestreamer Attractiveness	Physical appearance, charisma, and expertise of the livestreamer influence consumer behavior.	Hou et al. (2021); Liu and Liu (2021)
Time Efficiency and Cost-effectiveness	Saves time and reduces costs, making the shopping experience more appealing.	Chen et al. (2020); Lee and Chen (2021)

Entertainment Value	Engaging and enjoyable content during livestreams boosts consumer motivation.	Sang (2020); Cunningham et al. (2019)
Guided Shopping	Assistance and recommendations provided during the livestream help consumers make purchase decisions.	Sun et al. (2019)
Scarcity Promotion	Limited-time offers and exclusive deals during livestreams create urgency and drive impulsive purchases.	Li et al. (2023); Chen et al. (2022)
Reduced Perceived Risk	Real-time testimonials and immediate answers to consumer questions alleviate uncertainties.	Zhang et al. (2022); Liu et al. (2022)
Endorsement and Credibility of Sellers	Trustworthy and credible sellers enhance purchase intentions through endorsements.	Yu and Zhang (2022); Hou et al. (2021)
Emotional Connection	Building emotional rapport through authentic communication increases consumer loyalty and purchase intent.	Liu and Liu (2021); Pan et al. (2022)

Source: Own processing

3. LIVESTREAM MARKETING WITH AGRICULTURAL PRODUCTS

Nowadays, the growing popularity of livestream marketing in the Chinese agricultural industry has substantially affected sales and reduced farmer losses from inefficient sales activity. As Li (2022) mentioned, the Chinese government recognized the potential, including government officials in livestream sales, to build up the credibility of the product quality to facilitate the marketing of agricultural products in rural areas. Despite the growth and success of livestream marketing in agricultural sales, the current literature on live-streaming agricultural e-commerce remains limited and primarily contributed by Chinese scholars, and there is no consensus regarding this phenomenon's effectiveness (Wu & Wang, 2021).

Dong et al. (2022) explored the role of live-streaming e-commerce in influencing consumers' purchasing intentions towards green agricultural products, while J. Chen et al. (2020) suggested using marketing strategies to enhance sales of agricultural products via livestream platforms. In a related direction, B. Chen et al. (2022) introduced marketing strategies, such as the "People-Product-Place" strategy, to understand the influence of marketing strategy on impulsive purchase behavior in e-commerce live-streaming shopping scenes. People who perform the live stream, such as farmers and retailers; Product represent the agricultural products; Place can be emphasized on the product production area. During the agricultural livestream sales process, Li et al. (2023) examined the role of scarcity promotion and cause-related events in impulse purchasing. Meanwhile, Zheng et al. (2023) identified that anchor characteristics, including influence, sales promotion, and interactive entertainment, significantly enhance consumers' purchasing behavior in live-streaming e-commerce. Furthermore, they highlighted the positive role of green consumption cognition—encompassing environmental problem perception and green consumption awareness—in driving consumers' purchasing intentions, particularly for green agricultural products. This aligns with Liu, 2022, who emphasized the critical importance of interactions in boosting purchase intentions within live-streaming contexts. Together, these findings suggest a promising opportunity to integrate livestreaming process optimization and content strategies to effectively promote green agricultural products in China.

When it comes to the impact of live-streaming agricultural products on rural economic revitalization, Yao (2022) examined the effects of promoting agricultural products in rural areas through livestreaming on economic growth and rural revitalization. Chen and Wu (2023) proposed targeted development strategies based on an analysis of the issues present in agricultural live streaming and their positive influence on rural e-commerce development. Li and Zhu (2022) examined the issues and countermeasures associated with the live stream of agricultural products, collectively

illuminating the potential of live-stream marketing in the agricultural sector and its implications for rural development. Despite its potential, further investigation is needed to fully understand the capabilities and limitations of livestream marketing in agricultural products.

4. METHOD AND ANALYSIS

In this study, a case study research method was employed to examine a case of successful livestream agricultural product sales in China. The agricultural livestream benchmark case selection of the *Zigui navel orange planting base*（秭归脐橙种植基地）was based on the popularity ranking of a livestream room that focuses on the sales of agricultural products on DouYin (Chinese TikTok), the benchmark case was ranked at 6th out of the top 100 livestream rooms. This ranking was determined by a set of indicators (Table 2) regulated by the platform in each livestream room during the time of 17:00-18:00 on June 23rd, 2023.

Table 2. DouYin Livestream Room Ranking Indicators

Indicator	Explanation	Metrics
Sales Ability	Evaluates the host's ability to promote products effectively.	Transaction value, transaction volume per unit of time.
Fan Group Operations	Measures the effectiveness of managing fan groups.	Fan group engagement rate, task completion rate within fan groups.
Interaction	Assesses the streamer's ability to create an engaging and interactive atmosphere.	Sharing rate, comment rate per unit of time.
Attractiveness	Determines whether the live stream can attract new users to the platform.	Number of first-time buyers for the promoted product.
Price Competitiveness	Compares the price of the products sold to similar products on the platform to assess visibility.	Product visibility and price positioning relative to similar products on the platform.

Source: Translation Based on the DouYin Platform Rules

An hour-long livestream video was recorded and transcribed into a 15-page long text. Both content analysis and case analysis were adopted to gain insight into the operational processes of livestream sales, which can be used as a reference for global farmers and retailers interested in implementing the live-stream approach in the sales process.

The stages of the Agricultural Livestream Sales Process (Figure 1.) are:
1. Trust building,
2. Selling point display and
3. Call for Action.

The cases of livestream agricultural product sales can be evaluated based on the steps of these stages. These are well-planned, which may contribute to the success of selling.

Prior to analyzing the case, it is imperative to provide an overview and elucidate the structure of the Douyin Livestream Room interface. This is crucial since the majority of interactions and information exchange during the live-stream process require the utilization of various functionalities within the interface. The primary components of the live-stream interface are shown in Figure 2.

By transcribing and analyzing the selected case, a periodic routine can be observed that the livestream operational process is repeating on an approximately 15–20-minute basis and can be delineated into three primary stages, which are the trust-building stage, the selling point display stage, and the call for action stage, respectively.

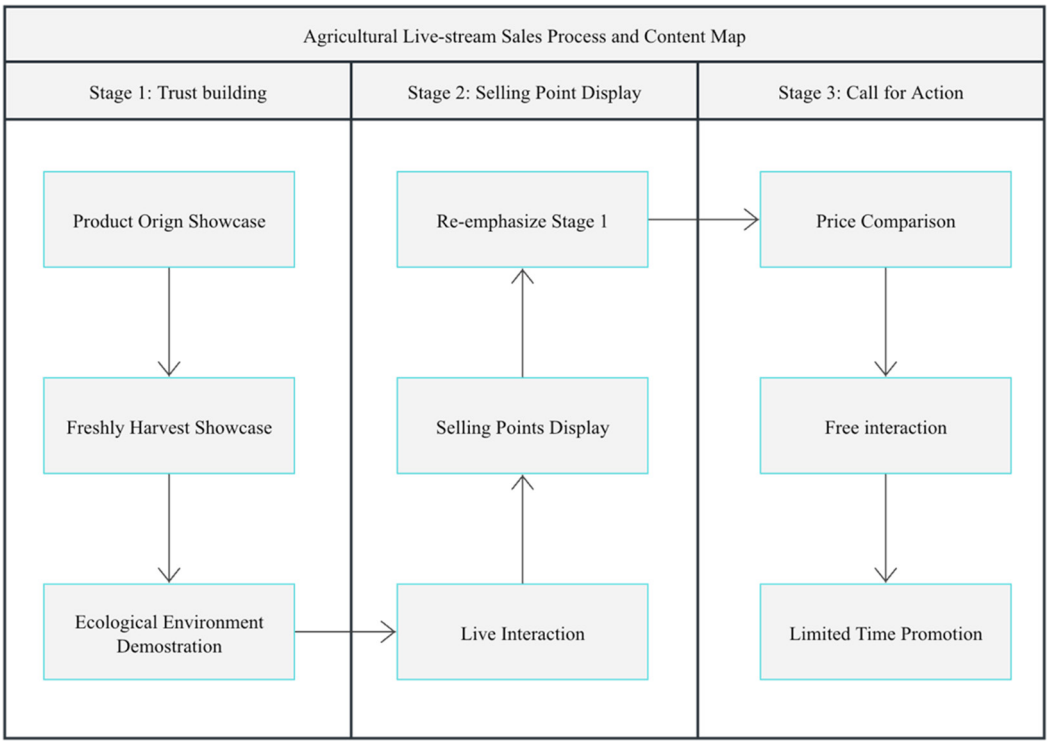

Figure 1. Agricultural Livestream Sales Process and Content Map
Source: Own processing

To commence with stage 1, it shall be emphasized that the live streamers are striving to build up a solid, credible image in front of the audience by taking advantage of the agricultural product's origin. The livestream starts with a self-brief introduction that includes who they are, where they are, and the purpose of this livestream event. Then, it showcases a panoramic view of the agricultural product's origin: a huge orange plantation with numerous oranges apparently revealed on the livestream screen. This move is to plant authenticity inside audiences' mindsets. This vivid visual environment serves as tangible proof that the oranges the audience purchases will come directly from this authentic plantation. Afterward, the live streamers moved the camera from a panoramic view to a close view to capture the process of how freshly harvested oranges were plucked from the trees. It further associates the freshness and superior quality with audiences' perceptions. In addition, moving the camera around to show the green ecological environment where the oranges grow gives an interpretation with a great emphasis on the deficiency of artificial additives. The live streamers reassure the viewers about the product's health benefits and natural quality, further enhancing trust in the level of fruit safety and nutritional value.

Stage 2 aims to display the selling points of the oranges. The live streamers initiate the interaction in the chat box, nurturing a lively and dynamic atmosphere. They answer questions the audience raises, reply to comments, and even consider viewers' suggestions and preferences to enlighten their product showcase. Based on the conclusion of the Live Streamer-Audience interaction, followed by the demonstration of the four unique selling points of the oranges, in parallel to the demonstration process, on-the-spot testimonials are used to endorse these points further, where live streamers vouch for the product's quality. The frequent-purchase customers also share their experiences in the chat box of the live stream interface. Upon reaching the culmination of stage 2,

the live streamers engage in a retrospective exercise wherein they recapitulate the pivotal aspects of the trust-building phase. The primary objective behind this endeavor is to fortify the audience's perception of the live streamers' trustworthiness and the quality of the products being showcased.

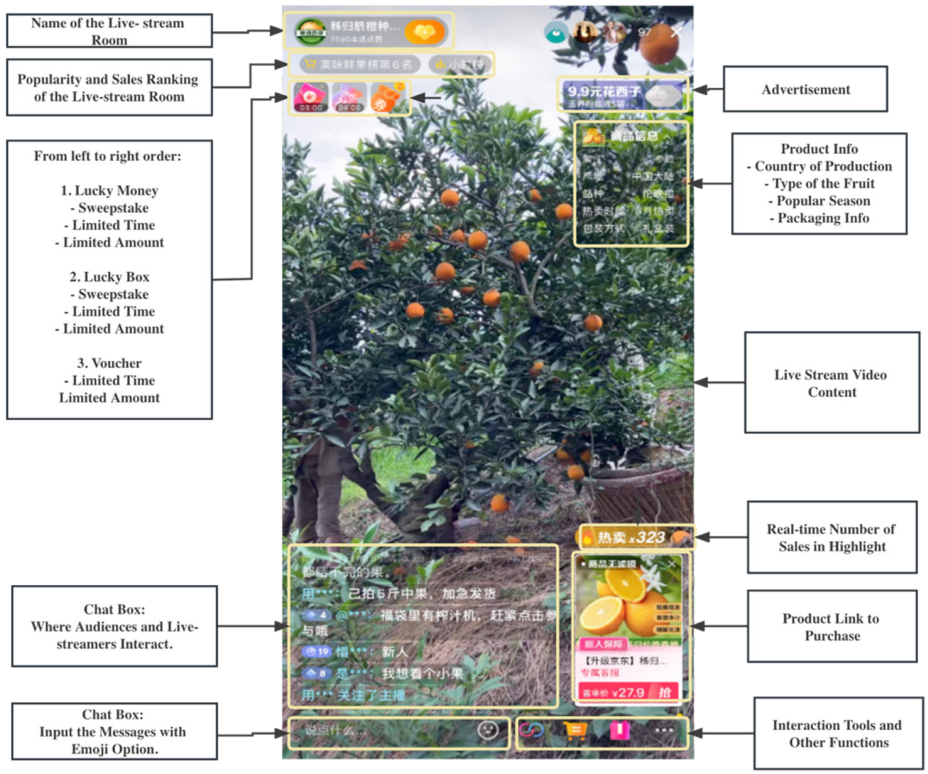

Figure 2. Livestream Interface Explanation
Source: Own processing

Regarding stage 3, it strives to convince audiences to take action to purchase through the product link banner. Hence, the live streamers actively take part in price comparisons, illustrating the discounted price of the agricultural products showcased on the livestream room compared to conventional markets or alternative online vendors. This highlights the excellent choice of purchase in terms of value for money. Hence, the nature of interaction shifts towards a greater emphasis on sales. Live streamers commence a limited number of Lucky Bag and Lucky Money sweepstakes every 3–4 minutes and limited release vouchers, offering viewers the opportunity to acquire additional gifts and discounts at checkout. Last, a round of promotions, such as buy a basket of oranges, get one fruit knife for free, this phenomenon generates a feeling of urgency and enthusiasm among viewers, emphasizing that this is an exclusive opportunity that can't be missed and pushing viewers towards immediate purchase via the product link banner display on the live-stream interface.

By the end of the one-hour live stream activity, the *Zigui navel orange planting base* had received over 500 orders from the audiences (within 60 minutes) and ranked 6th on the top 100 list of livestream within the agricultural category at the DouYin platform. Those orders are well-wrapped and distributed through the Chinese logistics service providers, so a lead time of 1-3 days is required, depending on the geographical factor.

5. CONCLUSION

This study comprehensively reviews the existing literature on live streaming within the past five years. Furthermore, the findings from the case study contribute to a comprehensive understanding of the live agricultural sales process, specifically within the Chinese context. This study emphasizes the process of a three-stage selling model based on a benchmark case, comprising trust building, selling point display, and call for action. Each stage fulfills a distinct role in facilitating the selling process. The flow chart was succinctly summarized.

Simultaneously, the case study demonstrates that live selling can offer farmers and retailers a contemporary, interactive, and efficacious means of marketing their products within digital marketing. Live streaming can potentially bring about a significant transformation in the marketing and distribution of agricultural products, not only within China but also on a global scale, where applicable. From a social perspective, using live streaming platforms enhances the level of trust and interaction between merchants and consumers, thereby generating word-of-mouth (WOM) value. From a sales management perspective, the three-stage model observed in this case can be utilized as a strategic framework for companies that aim to effectively market and sell their agricultural products through live streaming platforms. With the support of artificial intelligence (AI) and the continuous improvement of recommendation algorithms on live-streaming platforms, it is crucial to focus on targeting audiences in local and nearby regions to maximize effectiveness. This approach can subsequently be expanded to encompass a broader range of viewers with the support of efficient logistics.

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Original Scientific Article

Employee Engagement in the Republic of North Macedonia in the Post-COVID-19 Era: Some Empirical Evidence

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Abstract: *The aim of the paper is to research employee engagement in the Republic of North Macedonia. To achieve this goal, the instrument for measuring organizational and job engagement developed by Saks (2006) has been used on a sample of 104 respondents. The results from the regression analysis indicate that perceived organizational support and job characteristics, as well as gender, are statistically significant predictors of organizational engagement, while job engagement can be predicted only with job characteristics. Furthermore, the results indicate that organizational engagement is statistically significantly and positively related to organizational commitment, job satisfaction, and organizational citizenship behavior, while job satisfaction is positively and statistically significantly related to organizational commitment and organizational citizenship behavior. Intentions to quit can be predicted only with organizational engagement, and as expected, this relationship is negative.*

Keywords: *Organizational engagement, Job engagement, Engagement management, HRM practices.*

JEL Classification J24 · O15

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1. INTRODUCTION

The popularity of employee engagement among academics has increased in the past few decades since several research papers published at the beginning of this century provided evidence of its relationship with significant work outcomes, such as job performance, productivity, and organizational commitment (Saks, 2006; Macey & Schneider, 2008; Gruman & Saks, 2011; Saks & Gruman, 2014; Sorenson, 2013). Additionally, the popularity of employee engagement was also impacted by the attention that has been given to this concept by some of the most pronounced consultant companies, such as Gallup. Gallup has developed one of the first scales for measuring employee engagement, although, from an academic perspective, this scale is more useful as a management tool (Saks & Gruman, 2014).

During and after the COVID-19 pandemic, the research on this concept additionally increased since organizations faced different types of adversity and challenges that could not be overcome without employees' willingness to dedicate their time to learning and development and incorporating new ways of work. The COVID-19 crisis, on an organizational level, one more time highlights the importance of human resource management for implementing strategy and ensuring organizational competitiveness in the long run. Namely, each organization's aim should be to enhance employees' abilities and skills and, through that, ensure that the organizations can generate the desired strategic outcomes or the desired performance level in any circumstances. Therefore, while some of the papers investigating employee engagement during the COVID-19 period focus on its predictors (Amano et al., 2021; Zheng et al., 2020; Sirisena & Iddagoda, 2022; Zhang et al., 2022; Awan et al., 2020; Stanzl et al., 2021) and the strategies for its enhancement (Kundu & Nag, 2021; Tao et al., 2022), others find it suitable to focus more on a remote work engagement (Toscano & Zappala, 2021; Pass & Ridgway, 2022; Adisa et al., 2023; Yu et al., 2020).

The research on employee engagement in the period after COVID-19 is marked by the publication of conceptual papers that give a comprehensive overview of the evolution of thought on this topic (Boccoli et al., 2023) and on identifying the future trends in human resource management (Slavic et al., 2021; Saks, 2022).

Therefore, it can be concluded that employee engagement is crucial for creating organizational competitiveness, ensuring organizational survival during the crisis, and achieving sustainable organizational performance in the long run. Besides its undeniable importance for overall organizational functioning, employee engagement has not been thoroughly researched in the Republic of North Macedonia. In our country, only one study investigates employee engagement and focuses only on employees in public secondary education institutions (Bilalli Abduraim et al., 2023). Considering this gap in the literature, we decided that it is suitable to conduct a study that focuses on employees from both the private and public sectors, and it is done by using the instrument developed by Saks (2006).

The purpose of the study is to investigate employee engagement in the context of North Macedonia. Namely, this paper analyzes the antecedents, as well as the consequences of employee engagement in the case of the Republic of North Macedonia. Our main goal is to analyze whether the same constructs that predict employee engagement in other countries can be used in the case of employees from the private and public sectors in North Macedonia. The study's design includes the following sections: literature review, methodology, results, and conclusion.

2. LITERATURE REVIEW

In this part of the paper, we shortly analyze the literature related to employee engagement in order to identify the main theories on which this concept has been developed, which are the antecedents and consequences of employee engagement and how the understanding of the concept has evolved during and post COVID-19 pandemic.

The concept was popularized at the beginning of this century due to the activities of some consultant companies for human research management, such as Gallup. The measures for employee engagement developed by Gallup, although aimed as a management tool that gives companies the opportunity to improve their HR practices, also give a comprehensive overview of its elements. However, from academic perspective, most of the authors rely on the three main approaches or theories (Saks & Gruman, 2014). The first one is Khans' theory of engagement and disengagement, conceptualized in an article published in the Academy of Management Journal in 1990, in which he describes the three main psychological components of engagement – *meaningfulness, safety, and availability* and the factors that impact them. Khan (1990) also suggests that each of the three main psychological components is influenced by the characteristics of the job or by some formal or informal processes within the organization. The second approach is related to the burnout literature, and according to the basic assumption in this model, engagement is the opposite psychological state of burnout (Maslach & Later, 1997).

Maslach and Later (1997) argue that engagement with work incorporates three elements: *energy, involvement, and effectiveness*. The components of employee engagement are defined in the following way: 1. *Energy* refers to the level of emotional, creative, and physical energy; 2. *Involvement* refers to the degree of concern or cynicism about the work; 3. *Effectiveness* refers to the impact of work on personal accomplishments (Maslach & Later, 1997, p.161).

According to this author, management processes and structures have the largest impact on the six areas of organizational life (which include workload, control, reward, community, fairness, and values) that lead to the state of engagement. The authors also have developed an instrument for measuring burnout (and consequently engagement) that includes measures on the three dimensions crucial for an individual's experience with work: exhaustion-energy, depersonalization-involvement, and efficiency-accomplishment. The other widely used approach is the so-called Job Demand-Resources approach, developed by Bakker and Demerouti (2008), which uses Schauffelis' definition of employee engagement with three dimensions: *vigor, dedication, and absorption*. This definition is similar to the definition proposed in the approach developed by Maslach and Later (1997), but in this approach, besides the factors related to the organization and management (or the so-called job demands and resources),

Bakker and Demerouti (2008) also include personal resources (or individuals' characteristics) as factors affecting work engagement. According to this model, the relationship between the job and personal resources and work engagement is moderated by the job demands (which include work pressure and emotional, mental, and physical demands). Furthermore, the authors argue that work engagement is related to performance at individual and organizational levels (Bakker & Demerouti, 2008, p. 218).

Considering the short overview of the three fundamental conceptual frameworks in the area of employee engagement research, we can conclude that it is defined as a psychological state that includes the willingness to be involved in the work processes and in the job and organizational

roles that the individual has, as well as to use the available resources for achieving the desired outcomes, or the desired level of performance. Furthermore, these theories imply that individuals' engagement is moderated by the characteristics of the job and the organization, as well as by the employees' personal characteristics.

Building on the assumptions of these three models/theories numerous studies have tried to empirically investigate the antecedents and consequences of employee engagement (Saks, 2006; Robinson, 2007; Kang & Sung, 2017; Pandita & Ray, 2018; Saks, 2019; Zheng et al., 2020; Govender & Busin, 2020; Awan et al., 2020; Metha, 2021; Khan 2021; Jung et al., 2021; Ojo et al., 2021; Reinwalt et al., 2021; Amano et al., 2021; Toscano & Zappala, 2021; Stanzl et al., 2021; Kundu & Nag, 2021; Chaudhary et al., 2022; Kulkarni et al., 2022; Oberlander & Bipp, 2022; Sirisena & Iddagoda, 2022; Pass & Ridgway, 2022; Ulfa et al., 2022; Zhang et al., 2022; Wiger & Barrett, 2023; Adisa et al., 2023), to structure the existing knowledge on employee engagement (Macey & Schneider, 2008; Gruman & Saks, 2011; Kumar Sundaray & Vihar, 2011; Saks & Gruman, 2014; Albrecht et al., 2015; Boccoli et al., 2023) and to propose strategies or practices for enhancing employee engagement (Carnevale & Hatak, 2020; Slavic et al., 2021; Davies, 2021; Stein et al., 2021; Saks, 2022; Tao et al., 2022; Gibbon & Lorenz, 2023; Ratten, 2023; Almeida & Flumar, 2023). In the following sections, we shortly describe the findings and suggestions of these studies, which we have classified into three main groups in accordance with their research focus (whether they research employee engagement during or in the post-COVID-19) and time of publication: studies on employee engagement in the pre-COVID-19 period, studies on employee engagement during COVID-19 period, and studies on employee engagement after COVID-19 period.

2.1. Employee Engagement Research Before the COVID-19 Pandemic

Most of the studies included in this part of the literature review were published before 2020 and did not focus on investigating the main elements, factors, and consequences of employee engagement in light of the circumstances imposed by the COVID-19 pandemic. In the pre-pandemic period, a significant number of studies focused on developed approaches (or models or theories) that explain the essence of the concept of employee engagement and how the insights related to employee engagement can be used for modifying management practices in a way that is going to lead to improved organizational effectiveness and performance (Khan, 1990; Maslach & Later, 1997; Bakker & Demerouti, 2008). As was mentioned in the previous part, much of the literature related to employee engagement incorporates elements of organizational psychology, and it is related to the research on burnout (Khan, 1990; Maslach & Later, 1997).

The most important empirical study investigating the antecedents and consequences of employee engagement in this period was published by Saks in 2006. Namely, Saks (2006) has developed a new instrument for measuring employee engagement and argues the need for distinguishing job engagement from organizational engagement and test the hypothesis related to the antecedents and consequences of employee engagement. The findings indicate that job characteristics and perceived organizational support are the most significant predictors of job engagement, while perceived organizational support and procedural justice are the most significant predictors of organizational engagement (Saks, 2006). On the other hand, regarding the consequences, Saks (2006) findings imply that job engagement predicts job satisfaction, organizational commitment, intentions to quit, and organizational citizenship behavior directed towards the organization, while organizational engagement represents a predictor of job satisfaction, organizational commitment, intention to quit and both types of organizational citizenship behavior (directed towards individual and directed towards organization).

Robinson (2007) argues that human resource management practices are key drivers of employee engagement and that the sense of feeling valued and involved (which is mostly determined by employee-manager relations) is crucial for enhancing engagement. Another significant research on the consequences of employee engagement has been published by Sorenson (2013) as part of Gallups' research activities, in which the findings imply that employee engagement is related to nine (9) performance outcomes (customer rating, profitability, productivity, turnover, safety incidents, shrinkage, absenteeism, patient safety incidents, and quality) and therefore it represents a main driver of organizational growth.

Kang and Sung (2017) findings indicate that employee internal communication management is linked to employee engagement and that employee engagement stimulates supportive communication behavior and reduces turnover intentions.

In the revision of the paper Antecedents and consequence of employee engagement published in 2006, Saks (2019) deepens its research and, according to the statistical results, concludes that *skill variety* can and should be used as a variable that replaces the construct named job characteristics since only this job characteristic has statistically significant relation with job and organizational engagement. Furthermore, Saks (2019) empirically demonstrates that the results generated with the use of his scale and the results generated with the other scales for measuring employee engagement (such as UWES measures of work engagement) on the same data set are similar. Therefore, Saks (2019) argues that the generalizations made on the basis of the findings presented in the study in 2006 are justified.

In this period, several authors have published conceptual papers in which the main goal is to deepen the understanding of employee engagement (Macey & Schneider, 2008; Saks & Gruman, 2014), its relationship with organizational effectiveness and performance (Gruman & Saks, 2011; Kumar Sundaray & Vihar, 2011), and with human resource management (Albrecht et al., 2015; Pandita & Ray, 2018). Macey and Schneider (2008) argue that there are three types of engagement: trait engagement, state engagement, and behavioral engagement. They also argue that work attributes have an impact on trait and state engagement, while the type of leadership influences state engagement and behavioral engagement. Additionally, Macey and Schneider (2008) suggest that trust has a crucial role in achieving a higher level of behavioral engagement (or extra-role behaviors).

Saks and Gruman (2014) synthesize the existing literature on employee engagement and propose an integrative framework (or theory) that incorporates Khans' study (1990) and the Job Demands-Resources Model. Their main proposition is that transformation and empowering leadership leads to increased use of job resources and improved coping with job demands, which in turn enable attaining the desired psychological conditions (meaningfulness *in* work, meaningfulness *at* work, and safety) and proper use of the personal resources, which are the precondition for achieving employee engagement (task and work, or organizational engagement) (Saks & Gruman, 2014).

Regarding the relation of employee engagement with performance management, Gruman and Saks (2011) argue that employee engagement is a more controllable and proximal outcome that proceeds performance and that the supervisor-employee relationship is crucial for effective performance management. Gruman and Saks (2011) suggest that the performance management system should be designed to enhance employee engagement and that an organization that thrives in achieving a higher level of performance and competitiveness should implement the engagement management model proposed by these authors. Namely, one of the propositions is that the

traditional performance management system should be replaced with the engagement management model, which assumes that between the employees and the organization, there should be an agreement on the desired levels of performance, which is going to enables achieving employee engagement and through proper feedback led to improved individual and organizational performance (Gruman & Saks, 2011).

Kumar Sundaray and Vihar (2011) argue that organizations should adopt proper engagement strategies in order to achieve higher organizational effectiveness (in terms of productivity, profits, quality, customer satisfaction, employee retention, and increased adaptability). The strategies for stimulating employee engagement, according to Kumar Sundaray and Vihar (2011), should be related to recruitment practices, job design, career development and opportunities, training and development practices, compensation and rewards, and performance management to the practices that empower employees and increase their job satisfaction, as well as to the lines of communication within the organization. Therefore, it can be concluded that human resource practices should be properly designed and used as a tool for enhancing employee engagement through organizational effectiveness.

Investigating the relationship between human resource management and employee engagement, Albrecht et al. (2015) suggest that human resource practices are crucial for enhancing employee engagement and that HRM should include an engagement strategy for creating an organizational climate that enables the attainment of the psychological dimensions of employee engagement (vigor, dedication, involvement, focus, striving). The attainment of this psychological state is going to lead to improved individual performance and behaviors, as well as improved team, unit, and organizational outcomes (Albrecht et al., 2015).

Pandita and Ray (2018) on the other hand, focus on the relation between talent management and employee engagement and argue that talent management should be used as a tool for increasing employee engagement. Employee engagement is the primal outcome of effective talent management, including strategies for attracting and retaining talent (related to performance and potential assessment, career path management, feedback mechanisms, learning initiatives, coaching, mentoring, and competency mapping). The implementation of these strategies enables the creation of an engaged workforce that is more effective in retaining talent.

2.2. Employee Engagement Research During COVID-19 Pandemic

The papers analyzed in this part of the literature review were published in the period between 2020 and 2022 and can be classified as follows: 1. studies that focus on the factors affecting employee engagement during COVID-19 pandemic and practices for improvement (Kamaruzaman et al., 2022; Jung et al., 2021; Khan, 2021; Ojo et al., 2021; Oberlander & Bipp, 2022; Reinwald et al., 2021; Yu et al., 2020; Zheng et al., 2020; Tao et al., 2022; Sirisena & Iddagoda, 2022; Zhang et al., 2022; Pass & Ridgway, 2022; Kundu & Nag, 2021; Ulfa et al., 2022; Stanzl et al., 2021; Stein et al., 2021) 2. studies that propose the need for separate analysis of the remote workers engagement (Metha, 2021; Amano et al., 2021; Toscano & Zappala, 2021; Chaudhary et al., 2022), and 3. studies that investigated the implications for human resource management of the changes in the workplace imposed by COVID-19 pandemic (Carnevale & Hatak, 2020; Davies, 2021).

During the COVID-19 pandemic, job insecurity and misinformation were the most significant factors that negatively affected employee engagement, and the ability to quickly upgrade the employees' digital competencies became crucial for organizational survival. Therefore, Jung et al. (2021) have investigated the impact of job insecurity created by the COVID-19 pandemic on job

engagement. Their findings suggest that there is a statistically significant and negative relation between perceived job insecurity and job engagement, but a direct relation between perceived job insecurity and intention to quit was not identified. Khan (2021), on the other hand, has found that misinformation during the COVID-19 pandemic led to anxiety and social media fatigue and consequently decreased work engagement. Khan (2021) also argues that resilience should be used as a coping mechanism for reducing the negative effects of anxiety on work engagement. In this tone, Ojo et al. (2021) research the predictors of resilience and work engagement during the COVID-19 pandemic and conclude that self-efficacy, facilitating conditions, and family and friends' support significantly impacted employees' resilience. Furthermore, Ojo et al. (2021) provide evidence that employee resilience is related to job engagement. Regarding the importance of digital competencies for employee engagement during the COVID-19 pandemic, Oberlander and Bipp (2022) have concluded that digital competencies and collaboration, together with job social support, impacted work engagement during the COVID-19 pandemic and that digital competencies were crucial since they were needed for better communication and cooperation. Oberlander and Bipp (2022) also highlight that social support is the most powerful virtual work characteristic.

Regarding the papers focusing on the factors affecting remote work engagement, Metha (2021) concluded that autonomy, convenience, and psychosocial safety gained through remote work led to increased work engagement. Amano et al. (2021) findings indicate that close communication with supervisors and refraining from working long hours are predictors of remote workers' engagement. Toscano and Zappala (2021), on the other hand, suggest that remote work engagement and remote work productivity are tightly connected and that when faced with new situations, employees tend to maintain the same level of performance (as a result of the effects of previous performance and remote work engagement). Chaudhary et al. (2022) findings indicate that female employees are more engaged than male employees when working from home and that the number of children negatively impacts employee engagement. Furthermore, Chaudhary et al. (2022) conclude that the availability of virtual tools, virtual training, and contact with organizations' top management positively impact the engagement of employees working from home.

Regarding the implications for human resource management from the COVID-19 pandemic, Carnevale and Hatak (2020) argue that the erosion of fit is the most important challenge. Furthermore, Carnevale and Hatak (2020) suggest that enhancing relation-orientated HR systems and job design to improve employee resilience, engagement, and productivity is necessary. Davies (2021), on the other hand, suggests that the changes in the workplace are imposing the need for reassessing and redesigning the training practices and managers' understanding of the need for capacity building.

2.3. Employee Engagement Research After the COVID-19 Pandemic

The studies included in this part of the literature review were published in the period 2022-2023. Some of the studies are empirical (Slavic et al., 2021; Smith et al., 2021; Li et al., 2022; Kulkarni et al., 2022; Cemberci et al., 2022; Gibbon & Lorenz, 2023; Wiger & Barrett, 2023), while others are conceptual and give direction of the future development of human resource management (Surma et al., 2021; Saks, 2022; Boccoli et al., 2023; Ratten, 2023; Harter, 2023).

Kulkarni et al. (2022) conducted research on a sample of bank employees, and their findings indicate that the pandemic has had a significant impact on employee perceptions and that the challenges in the workplace have increased. Furthermore, Kulkarni et al. (2022) imply that COVID-19 has influenced the work hazards on the job. Gibbon and Lorenz (2023), investigating teachers' engagement

in the post-COVID-19 period, have suggested several recommendations for improving engagement, such as frequently measuring employee engagement and providing freedom for expressing individuals' authenticity. Wiger and Barrett (2023), investigating managerial engagement, have found that managers are more likely to disengage at work, burnout, and be actively looking for a new job. Their recommendations for increasing managers' engagement include improvement of leadership communication, providing more opportunities for training and development, and coaching support.

Li et al. (2022), considering the assumption of the Job Demands-Resources approach, have tested the relationship between perceived organizational support and employee care on one side and work engagement on the other side on a sample of healthcare employees in the post-COVID-19 period. Their findings indicate that perceived organizational support and employee care have a significant and positive impact on work engagement and that work engagement is significantly related to turnover intentions. Additionally, Li et al. (2022) have found that the indirect impact of perceived organizational support on turnover intention (through work engagement) is significant. In their model, Li et al. (2022) also include the respondents' demographic and work characteristics (such as gender, educational background, and unit title). Furthermore, Li et al. (2022) argue that age (based on the assumptions of the socioemotional selection theory) moderates the relationship between work engagement and turnover intentions.

Cemberci et al. (2022) have investigated whether marital status, job experience and having children are associated with the three dimensions of employee engagement: dedication, absorption, and vigor. Their findings imply that marital status influences absorption and that married people are more concerned about their jobs. Furthermore, Cemberci et al. (2022) note that older and more experienced employees show more vigor and that having children or not is not related to work engagement.

Surma et al. (2021) suggest that the traditional metrics of employee engagement are not applicable in the post-COVID-19 hybrid workplace. Moreover, Surma et al. (2021) suggest that in the post-COVID-19 period, the workplace should be analyzed more holistically as a network of places. Their main argument is that in the post-COVID-19 period, employee engagement is not determined only by the factors related to organizational and environmental psychology and that the patterns of remote work, which are tightly connected to workplace autonomy, should be considered.

The literature review conducted by Boccoli et al. (2023) gives an overview of the evolution of thought on employee engagement and its relationship with individual performance and well-being. Boccoli et al. (2023) elaborate on the need for adopting a dynamic approach in the research on employee engagement and highlights that in today's environment, employee engagement should be studied together with the impact of new technologies. Furthermore, Boccoli et al. (2023) argue that employee engagement should be fundamental in shifting towards a human-centered approach in human resource management and performance management. On the other hand, Saks (2022), relying on the literature on the relation between employee engagement and well-being, *proposes the concept of caring human resource management*. The model of caring human resource management and employee engagement implies that human resource management practices should be designed to fulfill employees' basic psychological needs and contribute to their well-being, which leads to creating an organizational climate of care and increases the employees' care for the organization. Through these mechanisms, employee engagement also increases.

We can conclude that in the post-COVID-19 pandemic period, implementing the model of caring human resource management will be crucial for enhancing employee engagement.

3. METHODOLOGY

3.1. Sample

In order to investigate employee engagement in North Macedonia, a questionnaire developed by Saks (2006) has been used. The questionnaire has been translated into Macedonian, and all the constructs were created by measuring respondents' level of agreement with the items included. To adapt the instrument to the circumstances in our country, some of its elements have been modified (the open-ended questions were replaced with statements measured on a five-point Likert scale). The research has been conducted on a sample of 104 respondents. The sample size in the paper published by Saks (2006) was 102, and therefore, we conclude that this sample size is appropriate for researching employee engagement antecedents and effects in North Macedonia. The questionnaire was distributed electronically from the end of May 2023 and during June 2023.

Most of the respondents were between 31 and 50 years old (n=65) and were female (n=69). The working experience of the biggest part of the respondents ranges between 10 and 30 years (n=56). Eighty-one of the employees included in the study are currently employed in private companies.

Regarding the data analysis method, we found it most suitable to use multiple regression. Saks (2006, 2019) used the same method.

3.2. Hypothesis and Research Model

We have developed six hypotheses to investigate the antecedents and consequences of employee engagement on a sample in the Republic of North Macedonia. As presented in Figure 1, we suppose that employees' individual characteristics, job characteristics, and perceived organizational support determine the level of job and organizational engagement. Furthermore, we hypothesize that job and organizational engagement can be analyzed as predictors of organizational commitment, intentions to quit, job satisfaction, and organizational citizenship behavior.

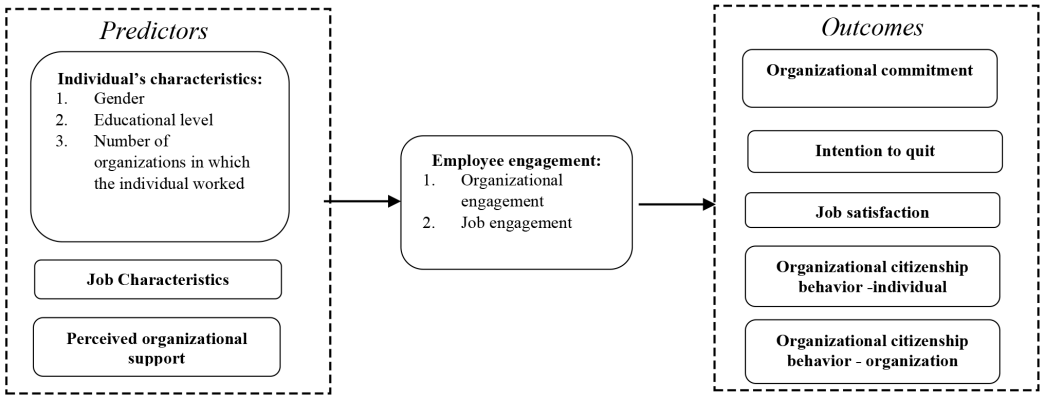

Figure 1. Research model
Source: Own construction

The hypotheses are defined as follows:

H1: Individuals' characteristics (such as gender, educational level, and number of organizations in which the individual has worked), job characteristics, and perceived organizational support predict organizational engagement.

H2: Individuals' characteristics (such as gender, educational level, and number of organizations in which the individual has worked), job characteristics, and perceived organizational support predict job engagement.
H3: Organizational and job engagement are related to organizational commitment.
H4: Organizational and job engagement are related to individuals' intentions to quit.
H5: Organizational and job engagement are related to job satisfaction.
H6: Organizational and job engagement are related to organizational citizenship behavior directed toward the individual and towards the organization.

4. RESULTS

In this section, we are going to present the results regarding the reliability of the constructs used, and afterward we are going to present the results from the regression analysis. Although we used the instrument developed by Saks (2006), the reliability of each of the constructs was tested using the data from our sample. Therefore, some of the constructs have a smaller number of items included than the constructs included in the Sacks' (2006) study. This step was necessary in order to provide the required level of internal consistency and validity of the constructs. However, none of the constructs is created using a single item, as recommended in the literature (Gliem and Gliem, 2003). In Table 1, we present the values for Cronbach's alpha for each construct and the number of items included in the construct.

As presented in Table 1, the internal consistency and reliability of all the constructs included in the questionnaire have satisfied the requirements for reliability since Cronbach's alpha for each construct is above 0.70. According to the discussions in the literature, when the value of Cronbach's alpha is above 0.70, we can conclude that the measure (or the construct) has an acceptable level of reliability and can be included in further analysis (Taber, 2017).

Table 1. Cronbach's alpha for each construct

Construct	Number of items	Cronbach's alpha
Job engagement	4	0.772
Organizational engagement	6	0.825
Job characteristics	7	0.730
Rewards and recognition	9	0.892
Perceived organizational support	8	0.910
Perceived supervisor support	4	0.810
Job satisfaction	3	0.885
Organizational Commitment	6	0.908
Intention to quit	2	0.866
Organizational citizenship behavior-individual	4	0.780
Organizational citizenship behavior-organizational	4	0.843
Distributive justice	4	0.940
Procedural justice	6	0.882

Source: Own analysis

After testing the reliability of the constructs, we conducted a multiple regression analysis to identify the antecedents of organizational and job engagement. In Saks (2006), the following constructs were included in the analysis of the antecedents of both organizational and job engagement: job characteristics, perceived organizational support, perceived supervisor support, rewards and recognition, procedural justice, and distributive justice. In our models, from the above constructs, we have included only the job characteristics and perceived organizational support

due to the issues related to multicollinearity. Therefore, to identify the antecedents of organizational and job engagement, we constructed the following research model, presented in Figure 1. The results of both models are presented in Table 2.

As presented in Figure 1, the model includes three variables related to individuals' personal characteristics: gender, educational level, and number of organizations in which the individual has worked. The variable gender was codded in the following manner: 1-male and 2-female. The variable on individuals' education distinguishes five levels: 1-secondary education, 2-higher education (2-years), 3-higher education (4-years, university degree Bachelor of Science), 4-Master of science and 5-PhD. The number of organizations in which the individual has worked is a continuous variable in our sample ranges between 1 and 11.

Table 2. Antecedents of organizational and job engagement

	Model 1	**Model 2**
	Organizational engagement	***Job engagement***
Gender	-0.163*	0.041
Educational level	-0.029	0.077
Num. of organizations in which the individual worked	0.091	0.001
Job characteristics	0.271***	0.387***
Perceived organizational support	0.616***	0.093
R^2	0.618	0.204
Adjusted R^2	0.599	0.164
F	31.774***	5.030***
Durbin-Watson	1.949	2.223

Note: *p<0.05; **p<0.01; ***p<0.001; and values in the table are standardized beta coefficients

Source: Own analysis

The model constructed for identifying the determinants of organizational engagement describes 59.9% of the variances of the dependent variable, which indicates a strong explanatory power. The F-statistic of the model is significant at level p<0.001. The Durbin Watson 1.949 is an acceptable level, considering the number of observations and the number of independent variables included. Regarding the statistical significance of the relation between the independent variables and the dependent variable, we can conclude that gender statistically significantly predicts organizational engagement (-0.163, p<0.05). Considering the way in which we have coded the gender of the respondents (1 for male and 2 for female), this negative relation should indicate that males are more likely to be engaged in the organization. Furthermore, the results also indicate that in the sample of employees in the Republic of North Macedonia, job characteristics (0.271, p<0.001) and perceived organizational support (0.616, p<0.001) are the statistically strongest predictors of organizational engagement. The function of Model 2 is to access the predicting power of the same set of independent variables when the dependent variable is job engagement. The explanatory power of this model is drastically lower compared to the previous model. Namely, R^2 is 20.4%, while Adjusted R^2 is 16.4%. The Durbin-Watson statistic is on an acceptable level (2.223). From the independent variables, job characteristics represent a statistically strong predictor of job engagement (0.387, p<0.001). The measures of multicollinearity (Tolerance and VIF) in both models are in accordance with the recommendations in the literature (Mason & Perreault, 1991; Kumari, 2008; Robinson & Schumacher, 2009; Miles, 2014).

In Table 2, we present the statistical models used for analyzing whether the constructs of organizational and job engagement can be used as predictors of several job-related outcomes, such as organizational commitment, intention to quit, job satisfaction, and two forms of organizational citizenship behavior.

Model 1, presented in Table 3, estimates whether organizational commitment can be predicted with organizational and job engagement. The adjusted R^2 of the model is 63.4%, which shows that the independent variables in the model explain 63.4% of the changes in the dependent variable. Both organizational as well as job engagement have a statistically significant relation with organizational commitment. However, organizational engagement has a statistically stronger ability to predict organizational commitment (0.704, $p<0.001$) compared to job engagement (0.167, $p<0.05$). Model 2 describes 36.4% of the changes in the dependent variable intention to quit and indicates that organizational engagement is inversely and statistically significantly related to intention to quit (-0.666, $p<0.001$). The adjusted R^2 of Model 3 is 55.4%, which indicates relatively strong explanatory power. The coefficients in this model also indicate that organizational engagement is a statistically strong predictor of job satisfaction (0.775, $p<0.001$). Model 4 and Model 5 estimate whether organizational and job engagement can be analyzed as predictors of different forms of organizational citizenship behavior. The explanatory power of Model 4 and Model 5 is 30.6% and 30.2%, respectively. The coefficients in Model 4 indicate that job engagement (0.397, $p<0.001$), as well as organizational engagement (0.235, $p<0.05$) are statistically significant predictors of the organizational behavior presented to the individual. On the other hand, Model 5 suggests that both independent variables, organizational engagement and job engagement, are statistically strong predictors of organizational citizenship behavior directed towards the organization (0.285, $p<0.01$; 0.348, $p<0.001$, respectively). The F-statistics for all models are significant at level $p<0.001$. The values of Durbin-Watson test for Model 1, Model 2, Model 3, Model 4, and Model 5 are as follows: 2.242; 1.718; 1.945; 2.230; 1.817. The values of the coefficients (Tolerance and VIF) that indicate the level of multicollinearity between the independent variable are within the acceptable range as explained in the literature (Mason & Perreault, 1991; Kumari, 2008; Robinson & Schumacher, 2009; Miles, 2014).

Table 3. Consequences of organizational and job engagement

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Organizational commitment	***Intention to quit***	***Job satisfaction***	***Organizational citizenship behavior-individual***	***Organizational citizenship behavior-organization***
Organizational engagement	0.704***	-0.666***	0.775***	0.235*	0.285**
Job engagement	0.167*	0.123	-0.053	0.397***	0.348***
R^2	0.642	0.376	0.563	0.306	0.302
Adjusted R^2	0.634	0.364	0.554	0.293	0.288
F	90.394***	30.456***	64.954***	22.299***	21.837***
Durbin-Watson	2.242	1.718	1.945	2.230	1.817

Note: *p<0.05; **p<0.01; ***p<0.001; and values in the table are standardized beta coefficients

Source: Own analysis

5. DISCUSSION AND CONCLUSION

Employee engagement is a concept that has been widely researched in the past three decades. However, there is a lack of literature investigating employee engagement in the Republic of North Macedonia. Therefore, we have conducted empirical research on the predictors and consequences of employee engagement in the Republic of North Macedonia on a sample of 104 employee in private and public institutions, with the use of the instrument developed by Saks (2006). The main goal of the study was to investigate whether the factors identified as predictors of organizational and job engagement by Saks (2006) can be analyzed as determinants of employee engagement in the Republic of North Macedonia. Furthermore, we analyzed whether organizational and job

engagement in the sample from our country are related to several outcomes: organizational commitment, job satisfaction, organizational citizenship behavior, and individuals' intentions to quit. Besides the constructs on job characteristics and perceived organizational support developed by Saks (2006), in the models constructed for identifying the antecedents of organizational and job engagement, we have added the individuals' characteristics (gender, educational level, number of organizations in which the individual has worked).

The results presented in this paper indicate that in the case of the Republic of North Macedonia, job characteristics, perceived organizational support, and gender are statistically significant predictors of organizational engagement, while job engagement can be predicted only with job characteristics. Compared to Saks' (2006) finding, we can conclude that the results are in line with those obtained from his sample of Canadian employees. Saks (2006) has reported that job engagement can be predicted by job characteristics and perceived organizational support, while organizational engagement can be predicted by job characteristics and procedural justice. The confirmation of the relation between organizational and job engagement with job characteristics was expected since job characteristics have the largest impact on employee perception of their job and organization and strongly influence their attitudes. The results indicating that perceived organizational support has a statistically significant relationship with organizational engagement, although not confirmed in the Saks (2006) study, we believe, are expected.

Namely, the direction and support of the supervisor are related to the job demands and, therefore, influence employees' attitudes towards their job and job engagement, while the support provided by all organizational members is expected to shape the individuals' attitudes towards organization and organizational engagement. Also, we should mention that we did not include the constructs on procedural and distributive justice in our model in order to avoid problems related to multicollinearity. Therefore, we could not examine to what extent justice is related to the levels of engagement of Macedonian employees. Regarding the relations between individuals' personal characteristics and organizational and job engagement, the results indicate that only gender is statistically significantly related to organizational engagement. These findings are similar to those of Chaudhary et al. (2022), which suggest that females are found to be more engaged than male employees. However, the results of our study indicate that males are more likely to have a higher level of organizational engagement. These results can be interpreted differently, but when researching employee engagement and gender, we must take into consideration the fact that the ability to demonstrate engagement is tightly related to the psychological preconditions in the workplace and the context in which respondents work (Banihani & Syed, 2017). Additionally, Rozman et al. (2022) also have identified significant gender differences in work engagement and work efficacy of Slovenian remote employees.

Regarding the consequences of employee engagement, our results indicate that organizational engagement is statistically significantly related to organizational commitment, intentions to quit, job satisfaction, and organizational citizenship behavior directed toward the organization and towards the individual. On the other hand, job engagement is a statistically significant predictor of organizational commitment (although this relation is statistically weaker) and organizational citizenship behavior. Saks' (2006) results indicate that organizational engagement is statistically significantly related to job satisfaction, organizational commitment, intention to quit, and organizational citizenship behavior. Furthermore, the results from that study indicate that job engagement is related to job satisfaction, organizational commitment, intention to quit, and organizational citizenship behavior directed towards the organization. The results that show no statistically significant relation between job engagement and intention to quit indicate that the intention of quitting is impacted largely by employees' sense of belonging in the organization.

In conclusion, it can be noted that this study reveals some significant insight regarding employee engagement in the context of the Republic of North Macedonia and that besides theoretical contribution, the paper also has practical implications. The insights from the findings in this paper can be used by managers who are interested in improving employee engagement and wish to create an organizational climate that supports achieving a higher level of performance (individual as well as organizational). Furthermore, the results can be used for designing human resource practices that are going to impact employees' intentions to quit and their organizational commitment.

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Original Scientific Article

The Infrastructure-an Indicator of Sustainable Development and Consumption in Integrated Plans of Bulgarian Cities

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Abstract: *This paper focuses on urban infrastructure as an indicator of sustainable consumption at the city level. To achieve the objective of the study, three cities in Bulgaria were selected - the capital city - Sofia; a large regional city - Varna; and a small university city - Svishtov. The aim is to establish the presence or absence of regional differences by comparing the municipalities' integrated development plans for 2021-2027*[4]*. Energy efficiency programs and their implementation are analyzed. The study results can serve as a guide for future comparative analysis of sustainable urban development strategies within the EU and an examination of these strategies' impact on achieving its various objectives.*

Keywords: *Sustainable urban development, Sustainable consumption, Urban infrastructure, Integrated municipal development plan, Energy efficiency.*

JEL Classification F63 · O12 · Q01

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[4] The plans under consideration are part of the strategy of the Ministry of Regional Development and Public Works of Bulgaria, synchronized with EU policies to achieve sustainable development goals.

1. INTRODUCTION

Sustainable development is a topic that has played a significant role in scientific developments over the past three decades. The issue was put on the agenda by the United Nations in 1992, marking the beginning of the development of theory and practice related to the achievement of sustainability. There are 17 Sustainable Development Goals, and they contain 169 tasks covering a wide range of areas related to their achievement (Lukman et al., 2016, p. 141). The formulation of goals at the global level makes it possible to focus efforts on accumulation in theory and subsequently launch real actions to achieve sustainable development.

Sustainable Development Goal 12 aims to ensure new patterns of sustainable production and consumption, namely „doing more and better with less, increasing the net welfare benefits of economic activities by reducing resource use, degradation and pollution throughout the life cycle, while increasing quality of life through the involvement of various stakeholders (Lukman et al., 2016, p. 141). The adoption in 2012 of the 10-Year Framework of Programs on Sustainable Consumption and Production Patterns (The 10YFP) underlines the essential role of sustainable consumption and production in achieving the Sustainable Development Goals.

Within the implementation of the project "Sustainable Consumption in the Urban Environment – Regional Differences, funded by the Bulgarian National Science Fund (BNSF) with contract No CAP-06-H35/7, the attention of the research team is focused on the problems of sustainable consumption in urban environments both at the level of individual households and at the city level. In this context, Kehayova-Stoycheva et al. (2023a) argue "the need to conduct selective policy actions on the part of institutions tasked with providing the infrastructure for sustainable activities - such as recycling, increasing the energy efficiency of homes and the corresponding lower consumption of energy from non-renewable sources, the use of public and/or environmentally friendly transport, etc." (Kehayova-Stoycheva et al., 2023a, p. 146).

According to Kehayova-Stoycheva et al. (2023b), the infrastructure is present as a distinct area of study, assessment, and impact on urban carrying capacity (Kehayova-Stoycheva et al., 2023b, p. 221). So, in clarifying sustainable consumption at the city level, the focus is on the state of urban infrastructure and its elements as an indicator of sustainable consumption in cities and a basic prerequisite for sustainable household consumption.

The main research questions related to the focus are:

1. Is there a link between infrastructure and sustainable consumption in cities? The answer to the question aims to determine the importance of infrastructure for measuring sustainable urban consumption and supporting sustainable household consumption.
2. What are the strategies of Bulgarian cities in terms of achieving sustainable consumption by providing appropriate infrastructure? The authors aim to track the real actions in cities concerning sustainable consumption.
3. Are there any implementation of the measures foreseen, and what results have been achieved? The idea is to find data on the achieved effect of the goals set and the activities performed.
4. Are there regional differences in strategies and results between Bulgarian cities?

To achieve the purpose of the study, three cities on the territory of Bulgaria were selected, which belong to different demographic, economic, social, and cultural aspects, municipalities: Sofia – the largest and most developed city in the country and its capital, Varna – the third largest city and district center and Svishtov – a small university town.

The purpose of this paper is to establish the presence or absence of regional differences related to the strategies of the municipalities based on secondary data collected by comparing the "Plans for the Integrated Development of Municipalities" for the period 2021 – 2027 (PIDM). Secondary data on energy efficiency programs and their implementation have been analyzed to illustrate the actions of local municipalities and cities in this direction. An attempt is made to explore the relationship between the results achieved by 2022 and the formulated strategic objectives for each of the studied cities related to the use of energy in a sustainable way.[5]

The methodology used to achieve the goal includes:

1. Literature review of theoretical sources for derivation and argumentation of infrastructure as an indicator and prerequisite for sustainable consumption.
2. Desk study – analysis of secondary statistical data and data published by municipalities for the following purposes:
   - Content analysis of the integrated development plans of the three municipalities for the period 2021 – 2027.
   - Tracking the actual state of certain indicators related to the results of actions at the municipal level in terms of infrastructure and resource consumption in cities.

The results of the desk study, the processed secondary data, and the analysis made can serve as guidelines for conducting future comparative analyses of strategies for sustainable urban development within the EU and an examination of the impact of these strategies on the achievement of different sustainability goals.

2. LITERATURE REVIEW

2.1. Sustainable Development and Sustainable Consumption in the Context of the Urban Environment

In the study of Bai et al. (2016), it is argued that cities are constantly evolving, but this physical, institutional, and cultural development is dependent on the capabilities of their environment. This fact often leads to a blockage of infrastructure, inertia in practice, preservation of social stratification, and limited social commitment to the sustainability agenda. To overcome the problem, it is necessary to adopt a new approach that does not necessarily require additional funding but rather the careful consideration of systems and behaviors that save costs by eliminating the duplication and unnecessary repetitions that abound in isolated management, for example of infrastructure, or by coordinating multi-partner initiatives (Bai et al., 2016, p. 73).

In this unprecedented time of rapid urbanization, cities, instead of being the cause, can offer solutions to the challenges facing the modern world. Properly conceived and managed, urbanization can become a powerful tool for achieving sustainable development in both developing and developed countries. Ideas, standards, and principles for achieving sustainability are protected in the "New Urban Agenda" adopted at the United Nations Conference on Housing and Sustainable Urban Development in Quito, Ecuador, on 20 October 2016 (United Nations, 2017). This document offers a shared vision of a better and sustainable world, and urban systems and their physical form are seen as crucial factors in achieving this vision. The standards and principles set out in the agenda serve the planning, construction, development, management, and improvement of urban spaces, mainly based on five pillars: national urban policies, urban legislation and regulation,

[5] The municipalities include the city as a major administrative center and the adjacent smaller settlements and tourist complexes if any. For this reason, strategies at the municipal level have been considered.

urban planning and design, local economy, and municipal finance, and implementation at the local level (United Nations, 2017, p. iv). In other words, in specialized theory, cities are at the forefront of achieving a state of sustainability, and to do so, it is necessary to rethink traditional methods of planning and use of resources to put an end to the practices of chaotic and inappropriate development of urban space (Lai & Chen, 2005, p. 3929).

One way to achieve sustainable development of the city is to rethink urban forms and infrastructure to provide a framework for restructuring everyday practices and planning approaches, mainly tailored to the essence and requirements of sustainable consumption (Samson & Freudendal-Pedersen, 2022, p. 01). According to Serbezova and Nedev (2020), sustainable consumption is a complex concept that is "consumption based on conscious and thoughtful decisions to purchase, use, extend the life and disposal of consumed products and services, enabling continuous economic and social progress, while at the same time minimizing the use of natural resources and toxic materials, emissions of waste and pollutants throughout the life cycle of the service or product, responding to everyone's needs and aspirations for a better quality of life, now and for future generations" (Serbezova & Nedev, 2020, p. 4).

In the context of cities, sustainable consumption can be seen as behavior related to the improvement of quality of life, to be achieved through reduced and controlled use of environmental resources, the pursuit of reduction, and, where possible, the elimination of damage caused by urban growth and development, change in habits and actions of individuals and organizations, the consumption of products and services related to both the personal well-being of citizens and the development of the economic, social and cultural environment. In their study, Nematchoua et al. (2021), believe that "a significant increase in carbon emissions in cities is a function of their strong growth; however, it can also be attributed to different economic structures, different urban forms, modes of transport and infrastructure, as well as the high demand for energy in our homes" (Nematchoua et al., 2021, p. 9).

Lehmann (2011), also takes the view that "cities and urban development are the areas where all concepts are brought together and can be put into practice to redesign urban systems with a view to zero waste and material flows, transforming the existing city and modernizing its recycling infrastructure into low-to zero-carbon urban neighborhoods" (Lehmann, 2011, p. 91). Achieving sustainable consumption is a process that requires time, careful planning, and joining the efforts of all stakeholders in an urban environment, namely individual citizens, businesses, NGOs, and governance structures.

2.2. Planning and Importance of Infrastructure to Achieve Sustainable Consumption

Bibri (2018), says that urban planning should be concerned with "guiding and directing the use and development of land, the urban environment, and urban infrastructure, as well as ecosystems and human services in a way that ensures efficient use of natural resources, intelligent management of infrastructures and facilities, efficient operations and services, optimal economic development and a high quality of life and well-being" (Bibri, 2018, p. 769).

In another study urban planning in the 21st century "should evolve towards an environmentally oriented macroarchitecture that fully integrates the design and location of energy- and materially efficient buildings and urban infrastructure with overall spatial planning to minimize the use of materials" (Agudelo-Vera et al., 2011, p. 2302). This means that achieving sustainable consumption, respectively development, "requires careful consideration and planning of the effectiveness

of development strategies both depending on behavioral characteristics and the limitations of people and organizations (Van den Bergh, 2011, as cited in Cruz & Katz-Gerro, 2016, p. 28). According to Bibri (2018), urban planning includes "the preparation, design, evaluation, and forecasting of an organized, coordinated, and standardized physical structure and infrastructure system of the city and related processes, functions, and services" (Bibri, 2018, p.769).

Da Silva and Wheeler (2017, p. 32) underline that „traditionally, infrastructure includes all human-made assets, including human capital, required by the social (e.g., educational, health, cultural and financial) and economic sectors (e.g., energy, water and sewage, transportation)." Agudelo-Vera et al. (2011), consider that "the infrastructure is designed to extract, transform, transport, supply and dispose of resources. As a consequence, an interactive link between cities and the environment is established, with cities having a huge impact on the natural environment and the natural environment influencing urban configurations" (Agudelo-Vera et al., 2011, p. 2299). Referring to the cited positions, infrastructure can be defined as a major component of consumption, making it an important factor in planning and implementing sustainable consumption strategies. In almost all developments related to resource planning, sustainable consumption, and sustainable development activities in general, infrastructure is mentioned as an important and decisive factor for change and development in this direction, and according to Zucaro et al. (2022, p. 4), it "not only determines the spatial extent of the city and urban patterns but plays a decisive role in urban sustainability, as 'physical, social welfare".

In their study, Wang et al. (2020a), referring to several studied authors, draw attention to the importance of the state of infrastructure in promoting economic, environmental, and social urban development. "Socially, different functional urban infrastructures should be able to generate the capacity to meet the basic living requirements of a certain scale of urban residents. From an environmental perspective, the carrying capacity of the various infrastructures must strike a balance in urban sustainable development through green space infrastructure linked to environmental benefits. In terms of economic development, the different urban infrastructure should have sufficient carrying capacity to carry out a certain volume of economic activities to ensure economic growth without negative impacts" (Wang et al., 2020a, p. 1). Sun, Chen and Tian (2018) argue that the capacity efficiency of urban infrastructures has become a barometer of sustainable urban development (Sun et al. 2018, as cited in Wang et al., 2020b, p. 1).

In different developments, the authors present divergent views on the constituent elements of infrastructure, especially in terms of the scope of the concept. In some of the studies, a greater number of elements included in the infrastructure composition have been proposed, and in others, fewer in number. The different theoretical positions are shown in Table 1.

Table 1. Elements included in the infrastructure

Authors and scientific publications	Elements of infrastructure
Bibri (2018)	Transport Water supply Communication systems Distribution networks
Zucaro et al. (2022)	Built environment Buildings Utilities Roads Other civil transport structures

"Indicators for sustainable cities", Science for Environmental Policy, (EC, 2018) Zhou and Jiang (2019)	Waste treatment Green areas and buildings Public transport
Onishi (as cited in Oh et al., 2005) Jennifer Bennett et al., 2020 (as cited in Miller, 2021)	Water supply Sewerage Waste processing LP Line Road Dwellings Recreational, educational, and administrative services
Oh et al. (2005) Wei et al. (2015) Zhou and Jiang (2019)	Energy Green areas Roads Metro Stations Water supply Wastewater treatment Waste treatment

Source: Own processing

Regardless of the different number of elements indicated, the table makes it clear that the main areas that are directly related to the state of the infrastructure are outlined, namely – the ratio between built-up areas and green spaces, buildings and related water consumption and electrical energy; the state of the roads and the organization of the various modes of public transport; policies on the treatment of different types of waste; provision of recreational, educational, and administrative services.

From all that has been said so far, it can be summarized that the process of achieving sustainable consumption in cities can begin with careful planning of adequate measures and actions related to the outlined areas of urban infrastructure, which will facilitate and support the development and perception of such consumption in all areas of urban life.

Based on the information obtained so far, the following conclusions can be drawn regarding the importance of infrastructure for achieving sustainable development:

1. In almost all sources considered, infrastructure is present as a distinct field of research that is directly related to sustainable consumption at the city level.
2. The capacity efficiency of urban infrastructures may be considered an indicator of sustainable urban development, and their elements can be used as a framework for orientation and solutions for action towards achieving sustainable consumption.

3. COMPARATIVE ANALYSIS OF THE INTEGRATED DEVELOPMENT PLANS OF THREE BULGARIAN MUNICIPALITIES

Despite the importance of urban planning for sustainable consumption and sustainable development mentioned in the previous point, each city may take a different approach in formulating measures and approaches to achieving them. Weingaertner (2010) defends the position that "the realization of visions of a sustainable city depends on whether cities can identify the issues and approaches that are best suited to their particular needs and circumstances. As the city develops, circumstances may change, as can strategies to achieve sustainability goals. Even within a city, priorities may differ, and so each city needs to identify context-specific strategic initiatives to promote sustainable development on a local scale" (Weingaertner, 2010, p. 38). For this reason, to achieve the objective of the study, three Bulgarian cities were selected for analysis, which differ in demographic, economic, social, and cultural profile (see Table 2).

Table 2. Objectives and priorities set out in the integration plans for development

Strategic objectives and priorities set out in the integration plans for the development of Svishtov Municipality, Varna Municipality, and Sofia Municipality	
Svishtov Municipality	
Strategic Objective 1:	**Economic growth and industrial infrastructure**
Priority 1	Development of "Danube Industrial Technology Park Svishtov"
Priority 2	Supporting the transition to a circular economy
Priority 3	Promoting sustainable employment and increasing entrepreneurial activity
Strategic Objective 2:	**Waste management and environmental protection**
Priority 4	Higher efficiency in waste management
Priority 5	Water protection, risks, and climate change
Strategic Objective 3:	**Improving the living environment in settlements**
Priority 6	Improvement and connectivity of settlements
Priority 7	Modernising public services for the population
Strategic Objective 4:	**Creating more favorable conditions for the development of human potential**
Priority 8	Development of education and sport
Priority 9	Improving the quality of health and social services
Priority 10	Protection and promotion of cultural heritage and development of cultural tourism
Strategic Objective 5:	**Good local governance**
Priority 11	Increasing the management capacity of municipal administration
Priority 12	Increasing the participation of citizens and businesses in local governance
Varna Municipality	
Strategic Objective 1:	**A healthy, preserved, and fair city that is capable of climate change**
Priority 1	Green City
Priority 2	Socially Fair and Healthy City
Strategic Objective 2:	**Leading regional leader in the integrated development of the region with knowledge and innovation**
Priority 3	Centuries-old and diverse city
Priority 4	New and educated city
Priority 5	Territorial connectivity and accessibility
Priority 6	Administrative and regional leader
Sofia Municipality	
Strategic Objective 1:	**More sustainable development and improved connectivity**
Priority 1	Sofia Municipality - sustainable, green and adaptable
Priority 5	Sofia Municipality – Connected and Integrated
Strategic Objective 2:	**Increasing the competitiveness of the municipality and developing a knowledge economy**
Priority 2	Sofia Municipality – competitive, innovative and intelligent
Strategic Objective 3:	**More developed social and cultural environment**
Priority 3	Sofia Municipality – diverse, authentic and vibrant
Priority 4	Sofia Municipality – social and inclusive

Source: Own research based on data in the "Plans for the Integrated Development of Municipalities – Sofia, Varna and Svishtov 2021-2027"

When analyzing the set goals and priorities, it is noteworthy that Svishtov Municipality has set itself five strategic objectives and 12 priorities; Varna Municipality - has two strategic objectives and six priorities; Sofia Municipality - has three strategic objectives and five priorities. In confirmation of the position of Weingaertner (2010), the municipalities in Bulgaria also take an individual approach to determining the goals and priorities in their development. This example shows that the municipality with the smallest economic and demographic capabilities has set more goals than the capital and the regional city. This is understandable from the point of view of the desire of the Municipality of Svishtov to become a more attractive territory for life and development and to improve its demographic characteristics. It is satisfying that all three municipalities set goals and priorities related to improving the state of infrastructure to a large extent and achieving better sustainability indicators.

4. ANALYSIS OF REAL ACTIONS AND RESULTS

Within the framework of the analyses, an overview of the information on the achieved results of the three monitored municipalities (Sofia, Varna, and Svishtov) is also included. Despite the established good intentions for changes and development aimed at achieving sustainability in urban consumption set out in the integration plans for the development of municipalities, the abstraction of secondary statistical data to find information on the results achieved by the cities under consideration in this direction proved to be a challenge because:

- Much of the data is at the level of country, region, district center, or municipality. There are no specific indicators only for cities;
- For some of the indicators related to the state of urban infrastructure, no reporting data are collected at all;
- Refusal of the companies concerned to provide information on the state of the infrastructure.

For the above-mentioned reasons, additional information was sought from the municipalities themselves. For this purpose, the only published and publicly available energy efficiency reports that each municipality fills in and reports to the relevant ministry are reviewed. They contain information about the goals set for limiting electricity consumption within the cities and the implementation of these goals (see Table 3).

Table 3. The energy efficiency of Sofia, Varna, and Svishtov for the period 2014 – 2022

Energy Efficiency Reports 2014-2022		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Sofia										
Objective of the Energy Efficiency Programme		N/A	N/A	N/A	0	0	0	0	0	836,7
Performances of the program:	GWh	N/A	N/A	N/A	0	0	0	0	0	3,8
	%	N/A	N/A	N/A	0	0	0	0	0	0
Energy savings proven by certificates		N/A	N/A	N/A	0	0	0	0	0	0
Varna		**2014***	**2015***	**2016***	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Objective of the Energy Efficiency Programme		5,42	5,42	5,42	0,43	0,1	0,18	0,13	1,2	1,2
Performances of the program:	GWh	0,6	0,4	0,4	6	0,3	0,6	0,1	1,3	0,3
	%	12	7	14	135	342	314	108	106	25
Energy savings proven by certificates		-	-	5,8	0	0	0	0	0	0
Svishtov		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Objective of the Energy Efficiency Programme		N/A	N/A	N/A	N/A	N/A	0	2,58	2,58	2,58
Performances of the program:	GWh	N/A	N/A	N/A	N/A	N/A	0	0,5	0,2	0,5
	%	N/A	N/A	N/A	N/A	N/A	0	20	8	19
Energy savings proven by certificates		N/A	N/A	N/A	N/A	N/A	0	0	0	0

* Formulated target is common for the period 2014-2016
*** Energy efficiency targets

	MWh/1000 persons								
Sofia	-	-	-	0	0	0	0	0	687,1196
Varna*	16,1334012	16,20494	16,17056	1,280318	0,297172	0,53537	0,391102	3,607005	3,857367
Svishtov	-	-	-	-	-	0	109,4333	112,5802	143,8127

Source: Own research

The first fact that impresses is that there is no long enough dynamic order to be compared, as the largest municipality of Sofia has published reports under this program only since 2017, given that the documents in the period 2017-2021 have zero values and Svishtov - from 2019 (for 2019 the document has zero values). Only the Municipality of Varna published its reports from the very beginning of the launch of the national program which is 2014.

In the period under review, the Municipality of Varna always has a plan implementation in the range of 7% to 342% (in 5 periods, the plan has been over-implemented), which we can say is due to too minimalist planning because in the periods for which we have comparative data, the planned savings in Varna compared to Svishtov are between 31 and 280 times lower comparing the indicator set savings MWh per 1000 people, and with Sofia for 2022 – approximately 178 times lower staked values. For Svishtov in the period 2020-2022, the implementation of the plan is between 8% and 20%, and for Sofia for 2022 – 0% (a decrease in electricity consumption of 3.8 GWh was reported, and a decrease of 836.7 GWh was planned.

There is also a difference in the reported implementation of the program. For the period 2014-2022, Varna Municipality has achieved a reduction in the use of electrical energy between 0.3911 and 16.2049 MWh/1000 people; in the last two periods, just over 3.6 MWh/1000 people. These values compared to Svishtov (2020-2022) are between approximately 2 and 70 times lower and for Sofia – approximately 3 times lower in 2022.

In conclusion, it can be said that there is still no data on the full comparison of the indicators under consideration and on the generalization of conclusions. However, the different planning approaches speak of the relative autonomy of administration in the cities under review, which shows that it is possible to monitor and compare the indicators under consideration to detect differences within the ideas of sustainable consumption at the city level.

5. FUTURE RESEARCH DIRECTIONS

As a subject of future research, the factors influencing the lack of good planning and implementation of measures and activities under the set goals and priorities in the plans for the integrated development of municipalities can be studied. In addition, it can seek information on whether the measures taken by municipalities have an impact on the change in the behavior of other subjects in the urban environment, namely individual governments, businesses, and non-governmental organizations. Data can be sought and analyzed to determine the extent to which the measures are adequate and correspond to the vision of individual citizens and regional businesses in terms of sustainable consumption and development.

6. CONCLUSION

In this paper, the existence of regional differences in sustainable consumption strategies is confirmed. Following the logic of the comparative analysis, such differences can be established for other municipalities surveyed. The findings can serve as a basis for a more in-depth analysis to specify whether the reasons for these differences are due only to the profiles of the municipalities surveyed or whether there are other factors.

Several difficulties have been identified in collecting secondary data on indicators important for the sustainable development of cities. This finding is useful for municipalities because it can serve as an argument for creating a single, adequate, up-to-date, and detailed database that will be the

basis of the analysis and comparison of cities about the achievement of specific results related to sustainable consumption.

Arguments in favor of infrastructure as an important indicator and prerequisite for sustainable consumption are outlined, and this can be a starting point for developing a methodology for constant monitoring of certain indicators related to its condition.

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Review Article

Nautical Tourism as an Incentive for Developing the Island of Šolta Into an Elite Destination

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Abstract: *The island of Šolta, located in central Dalmatia near the cities of Split and Trogir, has outstanding natural resources, but its tourist offer is still underdeveloped and consists mainly of non-commercial accommodation. Currently, the brand image of the destination is mainly associated with the sun and sea. Due to its geographical characteristics, Šolta has significant potential for nautical tourism and the development of specialized tourism products. Nautical tourism, with its ability to elevate the brand image of the destination to an elite status, proves to be a promising avenue for the development of the island as a small-scale economy. By applying benchmarking techniques, making comparisons with analogous destinations, and observing trends in yachting, the optimal development strategy is to establish berths for mega yachts with the corresponding ancillary facilities and services for vessel owners and users. In establishing these facilities, nautical tourism plays a central role in positioning the island as an elite destination.*

Keywords: *Nautical tourism, Developing the island, Island, Elite destination.*

JEL Classification Z32 · L83

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1. INTRODUCTION

Thanks to its natural maritime resources as well as its high degree of indentedness, the Croatian coast of the Adriatic Sea is very attractive and favored among boaters. According to the criteria for identifying convenient conditions for the development of nautical tourism, the primary geographic features of the Croatian littoral area have significant comparative advantages for its growth. Because of its natural geopotential, Croatia is ranked among the top yachting destinations in the world. Since the parts of the Croatian coast that remain unspoiled and unindustrialized have earned the country's reputation as a desirable sailing destination, they require planned protection to avoid the unrestrained creation of recreational vessel piers that could endanger the area's ecological and natural balance (Favro et al., 2008, p. 49).

Šolta is a Croatian island located in the Middle-Dalmatian archipelago, close to the cities of Split and Trogir and west of the island of Brač, as shown in Figure 1. Along a surface area of 58,98 km^2, according to the Croatian Bureau of Statistics, in 2021, it was inhabited by 1.975 residents. The island's population greatly relies on the hospitality and tourism industry, which also serves as one of the key engines for the island's growth. However, the island lacks year-round amenities and has a significant seasonality in visitor arrivals and overnight stays at lodging establishments.

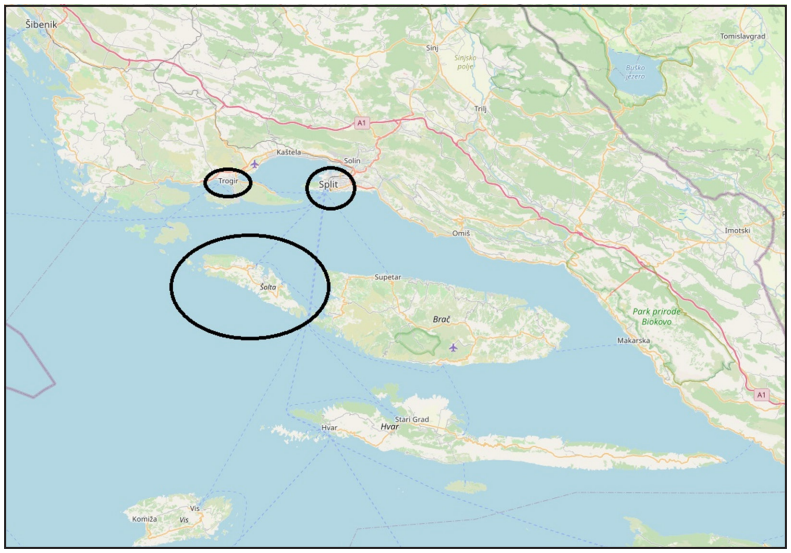

Figure 1. The geographic location of the island of Šolta
Source: OpenStreetMap, 2023., Edited by the authors

With a shoreline of 73,1 km and an indentedness coefficient of 2,69, which represents the ratio between the actual length of the shoreline and the length it would have if the island were a circle of the same surface area (Croatian Bureau of Statistics, 2018, p. 45), the island's natural resources and strategic geographic location present an abundance of possibilities to engage in nautical tourism. Aside from the numerous hidden bays and natural shelters, the island features a few municipal ports and one commercial marina that has twice been recognized and honored by The Croatian Chamber of Economy as Croatia's best small marina. Despite this, Šolta's valuable natural asset and its potential and nautical tourism's competitiveness have not yet received an appropriately thorough economic appraisal. By taking into account the drawbacks of tourism growth based on low-cost private apartment renting, the advantages of nautical tourism, as well as its growing demand and the island's inherent

potential, this paper intends to address nautical tourism as a driving force behind the development of the island of Šolta as an elite tourist destination and find out if nautical tourism can serve as the primary catalyst for transforming islands into elite tourist destinations, as well as how this transformation aligns with theoretical perspectives and empirical research on nautical tourism development.

The aim of the research is not only to determine the competitiveness of Šolta's nautical tourism, which has not yet been made in the recent literature but also to connect it with the improvement and transformation of the brand image of the destination into a luxury tourist destination that is attractive to visitors with high incomes through the development of luxury villas and resorts combined with high-quality mooring of their luxury yachts with comprehensive services at the highest level.

2. LITERATURE REVIEW

The ability of maritime tourism to adapt and persevere has been demonstrated recently in several global economic sectors. Its progression is influenced by a multitude of elements, including its geographical position, hydrographic assets, transportation, ease of access, and cultural and social considerations specific to the region (Vázquez, 2020, p. 320).

Nautical tourism represents a specialized form of tourism, characterized by its consumer base composed predominantly of individuals from affluent social strata with higher financial standings. Boaters, who form the primary clientele for nautical services, have a transformative influence on the destinations they visit, specifically the ports of nautical tourism and the local communities. As a result, enhancements are carried out to existing structures, and local resources are utilized as efficiently as achievable. Building a nautical tourism port primarily has beneficial socio-demographic effects, one of which is that established marine ports may be considered attractions in terms of the whole tourism offering. Other advantages include higher living standards, better municipal infrastructure, and overall upgrades of the areas where nautical ports are constructed by assisting in expanding the offering to satisfy the needs of boaters (Kovačić et al., 2016, p. 401). Inadequate berth availability near towns and islands in Croatia hinders the growth of marine tourism. Since the number of nautical ports increased by an average of just about eight nautical ports annually, there are insufficient boat chartering facilities. For Croatia, a nation with a pronounced maritime identity, where both the quantity of existing nautical berths and the development of new berths persistently exhibit stagnation on an annual basis, it is imperative to revoke the current legislation to streamline forthcoming investments and accelerate the establishment of additional berths (Ivanić et al., 2018, p. 65).

Marinas serve not only as essential support infrastructure for nautical pursuits but also contribute as supplementary elements to the local tourism portfolio by providing services that foster the advancement of recreational boating and nautical tourism. Consequently, it is crucial to incorporate marinas and related support structures situated along coastal areas into the domain of tourism study. Beyond providing moorings for recreational boats, whether sailing or motorized, these facilities offer tourist-oriented services, including leisure amenities, sports activities, and dining establishments (Vázquez, 2020, p. 320). Moreover, Lam-González et al. (2015, p. 40) claim that when choosing accommodation, a visitor who, for certain reasons, does not actively participate in nautical tourism but has the propensity to do so typically prefers neighborhoods near marinas. Because of this, many businesspeople also consider marinas and ports not only as the starting point for nautical activities but also as standalone tourist attractions in themselves.

Gallo (2023, p. 3) stresses that because of the increased number of boats present during the summer, the demand for nautical tourism has led to an increase in port and marina congestion. The above has

raised emissions and other environmental pollution factors related to waste storage, pollution of the atmosphere, and water quality issues. It has also created a complex management challenge for marina managers and vessel owners, raising costs for both parties. Therefore, it is important to emphasize that in order to manage the Croatian nautical facilities as best they can, economic and environmental factors must work together to establish sustainable management models and pursue environmental sustainability goals. This can be realized through the implementation of clever, environmentally friendly methods to enhance procedures for making the switch to "green marinas" (Gallo, 2023, p. 4). Environmental conscientiousness and sustainability may also cause an even higher demand for mooring services in marinas. The findings by Lam-González et al. (2023, p. 10) indicate that the implementation of ambitious environmental projects is a particularly successful method for encouraging sailors' utility and desire to visit marinas. This reaffirms that addressing climate change through measures such as energy efficiency and emission reduction ranks among the foremost environmental priorities for European sailors. It also demonstrates that as sustainability management develops, sailors' preferences for the marina will rise. This shift will impact not only the marina's reputation but also its income, competitive position, and sustainable future growth and development.

Having in mind the terms that are typically used to describe luxuries, such as exclusiveness, uniqueness, superiority and integrity, individualism, aesthetics, and particularly expensiveness (Taishoff et al., 2022, p. 201), we can consider yacht tourism also as a luxury. To explain the connections between fulfillment, social concerns, financial risk, status quo, and general tourist satisfaction in predicting luxury yachting travelers' word-of-mouth intention, Fotiadis et al. (2023, p. 356) applied a theoretical framework to examine luxury yachting. Their study's overall conclusions demonstrate that tourist satisfaction is favorably and strongly impacted by fulfillment, social incentives, and the status quo, but that satisfaction of the tourist and financial risk do not seem to be significantly correlated, which, since in the case of luxury yachting, persons who engage in this kind of activity usually make greater earnings than the typical tourist and are therefore less concerned with the trip's financial implications, was to be expected. This also affirms that individuals participating in nautical tourism are willing to spend greater amounts of money for a service of superior quality and that the price alone is not a significant determinant of their demand.

Vázquez (2020, pp. 320, 328) found that regardless of the significance of marinas and nautical tourism on a global scale, academic and scientific output has not been positioned with the same emphasis as traditional tourism, but also that the researchers with the highest quantity of published articles and citations in the nautical tourism field come right from Croatia. In their review, Spinelli and Benevolo (2022, p. 10) also find most researchers originate from Croatia but point out a highly disjointed exploration of the nautical tourism research domain. Topics such as cooperation among businesses, entities, and institutions in order to deliver intricate nautical tourism offerings; overseeing and endorsing nautical tourist destinations through a network-oriented approach; examining the supply-side entities engaged in nautical tourism; financial considerations, as well as various marketing approaches, including product design, pricing strategies, revenue management, distribution decisions, and communication policies, are found relatively untouched by the researchers. Contemporary challenges related to tourism, economics, and management also seem to be facing a lack of in-depth study.

3. INLAND TOURISM DEMAND AND SUPPLY ON THE ISLAND OF ŠOLTA

According to the data of the Tourist board of the island Šolta, in the period from 2016 until the end of 2022, a total of 121.088 inland tourist arrivals were achieved on the island. The villages that are primarily on the seaside (Nečujam, Stomorska, Maslinica, Rogač) convincingly lead in

the number of arrivals, while villages away from the coast are counting significantly fewer arrivals. The fact that the settlements not on the shore report more than seven times fewer visitor arrivals than the ones directly on the shore confirms that vacations by the sea are the primary reason people come to the island. When analyzing the structure of tourist overnight stays in the same period from 2016 until 2022, the domination of demand for non-business accommodation such as households and non-commercial facilities is highly noticeable by looking at Figure 2., since 89% of total tourist overnight stays are made in these types of lodging. With only 1% of the share, hotels are negligible when examining the total number of attained overnight stays as a determinant of tourist demand.

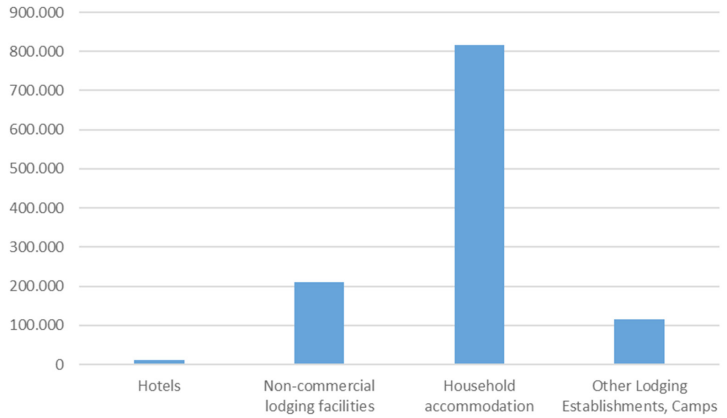

Figure 2. Tourist overnight stays in lodging facilities 2016-2022
Source: Tourist board of the island Šolta

The insignificant demand for hotels is not surprising at all when looking at the structure of the number of beds on the island. As represented in Figure 3, hotels account for only 0,33% of the island's tourist supply in terms of bed count. In comparison, 90,62% of the supply refers to non-business accommodation (households and non-commercial establishments). While there is no doubt that residents of the island may profit well from renting their homes to tourists, the lack of professional and customized tourist services and offers is evident. When looking at other hospitality services such as food and beverages, most of the restaurants and bars are closed from November until April.

Given the identified insufficient structure of the tourist supply, it is not unexpected to observe a pronounced seasonality in tourist arrivals and overnight stays. The peak season is typically limited to the period from June to September, accompanied by a modest pre-season in May and a post-season in October. The seasonality problem on Croatian islands, such as Šolta, reflects a broader challenge faced by Mediterranean islands, as highlighted by Ruggieri and Platania (2024, p. 11-12). Their study emphasizes that Mediterranean islands experience significant tourism seasonality, with variations across countries driven by differing cultural, geographical, and economic contexts. This underscores the need for tailored policies that not only address the specific challenges of individual islands like Šolta but also draw on shared insights to promote sustainable tourism. By diversifying attractions, balancing tourist demand year-round, and strategically preserving local identities and heritage, Šolta can follow a path like successful Mediterranean examples. This approach not only mitigates the adverse effects of seasonality but also strengthens the resilience and sustainability of the tourism sector, fostering economic growth in alignment with community priorities. Alcover et al. (2011, p. 626) examine the economic impact of yacht charter

tourism in the Balearic Islands and highlight its potential to increase tourist spending and extend the tourist season. Their study emphasizes the importance of focusing on high-value tourism products, such as yacht charters, which generate higher daily spending compared to traditional tourism. They also emphasize the diversification of tourism offerings, including nautical tourism, to target new market segments and balance seasonal fluctuations in demand.

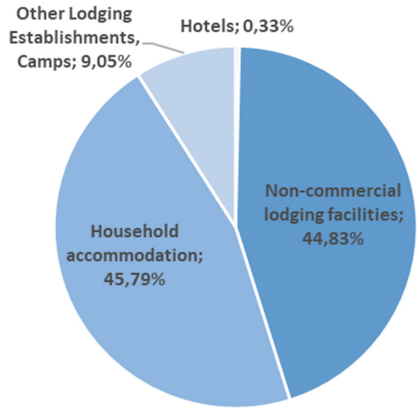

Figure 3. Structure of the average bed count on Šolta by type of lodging 2016-2022
Source: Tourist board of the island Šolta

4. ASSESSMENT OF THE COMPETITIVENESS OF NAUTICAL TOURISM ON THE ISLAND OF ŠOLTA

To analyze the current competitiveness of yachting travel on the island of Šolta, the authors will use two groups of determinants that primarily influence the competitiveness of a destination's nautical tourism, as Horak et al. (2006, p. 150) identified. The first group is broad determinants such as weather characteristics, the sea's aesthetic and temperature attributes, seawater quality, and natural attractiveness, which includes the variety and intentness of the shore. The second group of determinants can be described as particular. These include accessibility of departure ports for key markets, safety, quantity, location, and quality of the marinas, capability to anchor, marina staff characteristics, availability of extra services for preserving and fixing yachts, onshore attractions, pricing, and others. The factors can be classified as changeable because they can be altered relatively rapidly, whereas the first category of broad factors can be classified as unchangeable since they change gradually over an extended period.

Examining the first bundle of general competitiveness determinants, Šolta possesses unmistakable competitive strengths in the realm of tourism due to its abundant maritime resources. The favorable Mediterranean climate and exceptionally clear, high-quality seawater have garnered recognition from both classic and nautical tourists. The environmental allure, characterized by the variety and intensity of the coastline, constitutes a significant advantage. This is particularly evident in the presence of numerous turquoise bays, notably on the southern side of the island, such as Šešula, Poganica, Tatinja, Jorja, Stračinska, and Livka Bay, as well as the scenic seven islets adjacent to the village of Maslinica. The second set of specific competitive determinants presents a somewhat volatile image. The primary advantage in this domain undoubtedly lies in the exceptional accessibility of the primary charter bases situated in the Middle Dalmatian region, taking into consideration the proximity of Split Airport. Given that the airport is near the town of Trogir, the extensive charter bases in Trogir, Seget Donji, Marina, Kaštela, and Split are situated

within driving distances ranging from 6 to 26 kilometers. This positioning bestows upon Šolta a strategically advantageous geographic location near both the airport and charter bases, making it easily accessible to its target markets. Nevertheless, while the option to anchor is available in most of the bays, there remains room for improvement in both the quantity and quality of marinas and ports. The jurisdiction of the Split and Dalmatian Country Port Authority encompasses four municipal ports located in the villages of Nečujam, Stomorska, Rogač, and Maslinica. Notably, there is only one contemporary commercial marina in Maslinica, boasting a capacity of 50 berths, and it currently stands as the sole facility on the island offering professional mooring services for visitors. The graphical representation of boat entries in the four municipal ports is illustrated in Figure 4.

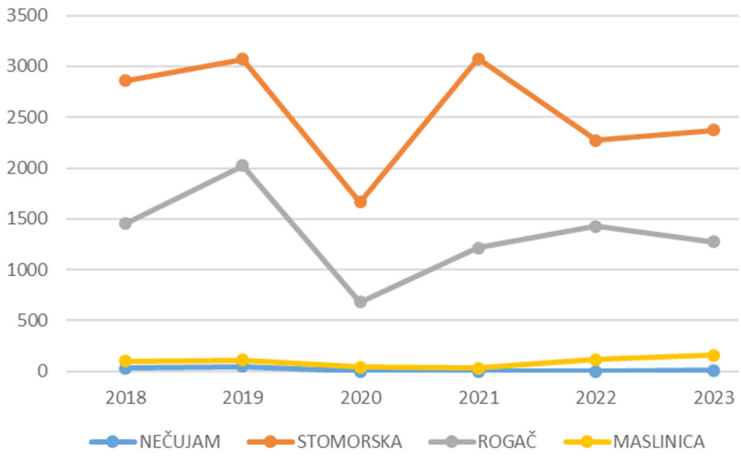

Figure 4. Boat entries in municipal ports on Šolta 2018-2023
Source: Split and Dalmatian Country Port Authority

It is crucial to underscore that Figure 4 exclusively depicts sailings recorded in municipal ports as documented by the Port Authority, thereby not providing a comprehensive representation of the entirety of nautical traffic on the island. The predominant portion of mooring requirements in Maslinica are fulfilled by the 50 berths available in the private commercial marina, an aspect unmonitored directly by the Port Authority. Additionally, a specific number of boats have anchored, and these figures remain untraceable; however, their impact necessitates consideration. Practical constraints in measuring boat entries in certain municipal ports should also be acknowledged. The substantial decline in the number of boat entries in 2020 can be attributed to the adverse effects of the COVID-19 pandemic, which significantly impacted the entire tourism and hospitality sector. Considering the limited number of commercialized nautical marinas and moorings on the island, consequently, there are further specific drawbacks that diminish the competitiveness of Šolta as a nautical destination. Primarily, these concerns revolve around the criteria of accessibility to supplementary services for sailors, such as boat services, nautical stores, and the like. Additionally, competent harbor personnel who can assist yachts are only available at the commercial marina in Maslinica. The lack of year-round hospitality facilities, as mentioned earlier, also represents a competitive disadvantage for the island. In summary, the island of Šolta possesses significant competitive advantages concerning its natural characteristics and geographic position, but it also faces notable drawbacks in terms of the development of nautical infrastructure, economic evaluation and supplementary facilities for both nautical and hospitality services. The positive aspect is that the above-mentioned drawbacks are changeable and can be improved, while the island abounds in genuine resources that cannot be bought or built.

5. LUXURY YACHTING AND MEGA-YACHTS SEGMENT

As per the findings presented by Global Market Insights (2023), the market size of luxury yachts reached USD 9.9 billion in 2022, with a projected compound annual growth rate of 6.7% from 2023 to 2032. This growth is attributed to the rising popularity of yacht charters. A notable trend in the luxury yacht market is the increasing demand for superyachts and mega yachts. Affluent purchasers are increasingly inclined toward larger vessels that not only provide opulence but also extended amenities and capabilities. In 2022, the motor segment dominated the luxury yacht market, holding over 80% of the market share.

Škorić et al. (2018, p. 165) provide principles for aligning the strategic objectives of marinas with the incorporation of mega-yachts in Croatia in accordance with trends in nautical tourism, claiming that the outcomes should not only manifest in the economic advancement of marinas and their practicality but also in the establishment of a range of diverse ancillary services. They state that it would foster the employment of the local population, thereby guaranteeing economic growth and the development of the geographical area in which the marina is situated. Among the services that stand to gain and expand their markets by attracting mega-yachts, they identify exclusive catering, upscale residences, private air travel, and taxi services, sporting activities, and high-end clothing stores. Alkier (2019, p. 120-121) addresses further enhancements required for Croatia to establish itself as a luxury nautical destination in the tourism market. Among recommended actions are defining a distinct luxury nautical offering based on total quality; incorporating best practices from competing nautical tourist destinations; addressing yachtsmen's keen interest in exploring gastronomic offerings, especially within marinas; introducing casinos as part of the tourism product; constructing indoor and outdoor swimming pools; improving shopping opportunities in marinas; creating a distinctive and recognizable nautical tourism brand, and conducting effective marketing activities to promote the luxury nautical tourism offer.

Séraphin (2022, p. 18) recognizes luxury yachting not only as a tourism activity but also as a stimulus for the growth of the travel industry. Examining the instance of Montenegro, the practice of yachting has been instrumental in the establishment of a marina, subsequently contributing to the growth and rejuvenation of nearby local villages. The case of Montenegro shows how yachting is closely related to a whole range of economic activities. Navarro and Jones (2022, p. 195-218), using the example of the Rolex Middle Sea Race, widely recognized as a luxury event, emphasize the opportunities that sailing and yachting events present as creators of tourism brand image in Malta. They also highlight the potential infrastructural, new maritime business, and off-season advantages they may bring. Aside from Malta and Montenegro, the Italian island of Capri is another example of the practice that could be used for benchmarking analysis for the island of Šolta. Capri is a well-known synonym for luxury, featuring marinas and upscale shopping, dining, and lodging facilities.

Thirumaran et al. (2023, p. 373-375) explore the connection between luxury yachting and wellness, emphasizing the role of offshore activities like snorkeling and island hopping in enhancing yachters' well-being. They argue that integrating wellness-focused activities into marina and destination planning, along with high-quality hospitality services such as spas and wellness retreats, can create a more fulfilling experience. The design of marinas, including eco-friendly infrastructure and serene landscapes, further contributes to relaxation. The study highlights the potential for destination development to attract luxury yachters and drive economic growth, urging further research into yachter motivations to improve destination competitiveness.

Gupta and Roy (2023, p. 416) investigate the under-utilization of certain cruising areas in the case of Fiji's luxury yachting industry. Their study highlights that, while Fiji is an attractive destination, specific

regions have not been fully capitalized on. They suggest that increasing awareness and strategically marketing these areas as part of a comprehensive yachting experience could attract more tourists, extend their stays, and enhance the overall economic impact of the industry.

6. PERSPECTIVES ON THE FURTHER DEVELOPMENT OF THE NAUTICAL TOURISM ON THE ISLAND OF ŠOLTA

Diakomihalis and Lagos (2008, p. 880) state that yachting plays a crucial role in the local economy, contributing significantly to the main economic values in regions that have developed this niche tourism sector. Their study, focused on Greece, emphasizes that yachting is one of the most important economic activities, particularly in island and coastal regions. This insight suggests that Croatian islands could similarly benefit from developing luxury nautical tourism, with yachting serving as a key driver of economic growth and contributing to the long-term sustainability of these regions.

In the context of expenditure within the destination, findings from the Tomas research conducted by the Institute for Tourism (2023) indicate a preference for boaters over conventional tourists in Croatia, particularly in terms of their spending. Notably, in 2022, 78% of yachtsmen's households reported a monthly income exceeding 3,500 euros, a notable contrast to the 29.9% of inland tourists in Adriatic Croatia in 2019. Furthermore, 59% of yachtsmen had visited Croatia for sailing three or more times. Almost universally (99.8%), yachtsmen patronized restaurants in 2022, while only 50% of traditional tourists did the same in 2019. The average daily expenditure for yachtsmen during sailing in 2022 was 182 euros per person, indicating a significant increase from the 2017 average of 126 euros. In comparison, in 2019, traditional tourists had an average daily expenditure of only 97 euros.

These data indicate that nautical tourists, in general, exhibit higher spending levels in terms of both quantity and frequency in the destination compared to typical tourists, and they also tend to have higher earnings. The promotion of yachting tourism represents a pivotal objective within various tourism strategies devised by Croatian local and regional self-government bodies in conjunction with tourist boards. In due course, the tourism entities acknowledged the potential of nautical tourism in Šolta. Various investors are already undertaking several imminent infrastructural initiatives involving the establishment of new mooring capacities.

The tourism development strategy of the municipality of Šolta for the period 2018-2024 envisions the construction of several ports. These include Marina Šešula near the village of Maslinica, the expansion of the port for nautical tourism in Nečujam together with Marina Rakotina, and Marina Livka near the Gornje Selo village. This aligns with the Action Plan for the Development of Nautical Tourism in Split-Dalmatian County (Hrvatski Hidrografski Institut, 2013), which underscores the significance of constructing new naval infrastructure and identifies these locations as potential projects. Other suitable locations for anchorages are also highlighted.

According to Šolta's strategy plan, within the business zones, Banje Bay is earmarked for a workshop relevant to nautical tourism, catering to ship construction and servicing. This zone allows for the installation of equipment for stretching ships and the improvement of coast mooring. Additionally, the Maslinica zone is designated within the port, open to public traffic for the nautical part, where supporting facilities for nautical moorings, such as reception, laundromats, sanitary facilities, catering, and other related amenities, are planned. The strategy further delineates the establishment of a tourist resort in Šipkova Bay near Maslinica. The Spatial Plan of the

municipality of Šolta grants authorization to organize moorings (tourist port) for up to 20% of the accommodation capacity of the unit, following the norm where one vessel equates to three beds. To facilitate the construction and organization of the moorings, allowances are made for coastal encroachments, necessitating the construction of essential facilities for maritime protection. The upcoming elite tourist resorts planned for the bays of Livka and Šipkova are envisaged as exclusive mooring facilities catering to privately owned mega-yachts. These resorts will be complemented by high-end villas, hotels, and associated amenities, including a spa and wellness center, restaurant, coffee bar, and beach club. The Port of Stomorska is also slated for reconstruction, which includes the development of communal and nautical moorings.

7. CONCLUSION

The island of Šolta is rich in natural beauty and resources and has a favorable geographical position that makes it an ideal center for maritime activities. Despite its numerous advantages, the island's tourist offer is not yet fully developed, and the destination's brand is currently based solely on the attraction of the sea and the sun, while specialized tourism products are lacking. This situation also poses a challenge for the high seasonality. Based on the inherent potential of the island, characterized by attractive marine resources and sheltered bays, as well as strategic guidelines at the national and regional level and applying the benchmarking concept by observing other destinations, the authors of this study assume that nautical tourism is a catalyst for the overall development of the island and represents the greatest potential for the development of specialized tourism products.

Given the spatial constraints and characteristics of yacht enthusiasts, including their purchasing habits and income, the most desirable direction of development is a focus on the mega-yacht segment, accompanied by the construction of appropriate facilities for this clientele. These facilities include first-class berths for these boats, luxury estates, hotels, health and recreational facilities, and entertainment. Initiatives of this kind on Šolta are currently in the planning phase and are being driven forward by private investors.

Nautical tourism can indeed serve as the primary catalyst for transforming the island of Šolta into an elite tourist destination. This transformation aligns with the theoretical and empirical perspectives presented in this paper, which highlight how nautical tourism drives economic, social, and environmental advancements. By focusing on mega-yacht infrastructure and high-quality services, Šolta can redefine its brand as a luxury destination, meeting the demand of affluent visitors. This approach integrates the theoretical foundation of nautical tourism's impact on local development with practical initiatives already underway on the island.

More broadly, this study emphasizes the potential of nautical tourism as a transformative tool for island destinations. It showcases how strategic development can not only enhance the economic viability of islands but also extend tourism seasons and diversify offerings. This aligns with global trends in sustainable and luxury tourism development, reinforcing the value of island tourism as a driver of both local and regional progress.

Future studies within this thematic framework should monitor the implementation of planned new projects and assess their perception by tourism stakeholders and entities on the island, as well as by the local population and the tourists themselves - both traditional and boaters. It is also of great importance, upon the realization of planned expansions of nautical capacities, to monitor their impact on tourist traffic and the course of the season. Specifically, it is crucial to assess whether they have a favorable influence on extending the duration of the tourism season.

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