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MANAGEMENT AND ECONOMICS – EECME 2022**

**Knowledge Transfer for Sustainable Development in
Digital Global Societies**



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EECME 2022
Knowledge Transfer for Sustainable Development in Digital Global Societies**

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CONTENTS

Anatolii Mazaraki, Anzhelika Gerasymenko CHALLENGES TO COMPETITION IN THE DIGITAL WORLD	2
Fadil Mušinović, Darijo Levačić MOTIVACIJA PROSTOVOLJCEV V IZBRANI NEPROFITNI ORGANIZACIJI V ČASU EPIDEMIJE COVID 19.....	12
Jani Toroš PRICE PERCEPTION BASED ON PRICE FONT COLOR.....	20
Julija Lapuh Bele FENOMEN NEZAMENLJIVIH ŽETONOV	34
Mariia Nezhyva, Viktoriia Mysiuk, Olga Zarembo DIGITAL TRANSFORMATION IN ECONOMIES AND CONSUMERS	45
Milena Fornazarič TEHNOLOŠKI RAZVOJ, KOVID IN VPLIV NA MARKETING	58
Nataša Perović, dr. Bojana Ristanović, Sandra Djurović, Nikola Abramović IMPACT OF DIGITALIZATION ON THE DEVELOPMENT OF HUMAN RESOURCES IN PORT BUSINESS IN MONTENEGRO	66
Rok Bojanc ANALIZA MODELOV DAVČNEGA POROČANJA.....	76
Larysa Lebedeva, Alyona Sorokina TOUCHLESS ECONOMY: CHANGE IN CONSUMER BEHAVIOR AND IN BUSINESS.....	87
Đuro Đurić Sandra Đurović, Vladimir Jovanović NEW LEGAL FRAMEWORK FOR SUSTAINABLE BUSINESS IN THE EU	97
Dejana Crvenica, Sandra Đurović, Jovana Lekić, Nikola Abramović, THE EMPHASIS OF RENEWABLE ENERGY FROM THE ASPECT OF SUSTAINABLE DEVELOPMENT	111
Iza Gigauri THE POTENTIAL OF UNIVERSITIES TO PROMOTE AND FACILITATE SUSTAINABLE DEVELOPMENT	125
Nevenka Maher EUROPEAN UNION CONTEXT FOR SUSTAINABILITY MANAGEMENT	135
Miodrag Živanović, Slađana Živanović, Nikola Abramović ENERGY EFFICIENCY AS AN INNOVATIVE BUSINESS MODEL	145

Gordana Nikčević	
KNOWLEDGE CONTROL IN MODERN COMPANIES THROUGH THE PRISM OF ORGANIZATIONAL CULTURE	158
Jani Toroš, Tanja Sedej	
PREFERENCE LASTNOSTI ZDRAVIL V PROSTI PRODAJI	166
Jyotirmaya Satpathy, Lidija Weiss	
PARADIGM TECTONICS IN COMPREHENSIVE KNOWLEDGE BUSINESS PROCESSES	178
Sladana Živanović, Nikola Abramović, Miodrag Živanović	
SIGNIFICANCE OF THE KNOWLEDGE ECONOMY AND ORGANIZATIONAL CULTURE FOR COMPETITIVENESS	191
Marjeta Horjak	
RAZVOJ ELEKTRONSKE HRAMBE V SLOVENIJI.....	202
Vladan Martić, Nermin Škretović	
COMPETENCE OF ACCOUNTING AND ACADEMIC COMMUNITIES FOR DIGITALIZATION OF FINANCIAL REPORTING IN MONTENEGRO	211
Barsa Rai, Ishore Koirala, Yeshi Zangmo, Katarina Aškerc Zadavec	
INTERCULTURAL AND TRANSVERSAL COMPETENCE DEVELOPMENT AMONG ERASMUS STUDENTS	223
Katarina Aškerc Zadavec	
INTERNACIONALIZACIJA IN DIGITALIZACIJA VISOKOŠOLSKEGA IZOBRAŽEVANJA	236
Boštjan Urbanc	
KAKO UBEŽATI MOTNJAM V GLOBALNIH OSKRBOVALNIH VERIGAH?.....	248
Franci Žohar	
URAVNOTEŽENJE GLOBALIZACIJE - BALANCING GLOBALIZATION.....	259
Brigadier JS Rajpurohit	
HETERODOX IN GLOBAL KNOWLEDGE ECONOMIC PERSPECTIVES.....	270
Yue Ma, Iztok Sila	
IMPACT OF THE LABEL ON THE PURCHASING DECISION PROCESS OF CHINESE WINE CONSUMERS	283

PREFACE

As a consequence of globalization, the world is rapidly becoming a global society – a unified social community –, being affected by the integration of international economies, trade, culture, politics, and knowledge. In this context, profound digital transformation has an immense impact on society's changes, processes, and development. Digital literacy skills and knowledge transfer are inevitably needed to thrive in a global society, wherein the central role is given to the understanding of knowledge as a concept and sustainable development goals. Consequently, sustainable development in the global society is a potential frame for knowledge development, leading to social cohesion, economic competitiveness and development, stability, and usage of resources to safeguard biodiversity and the social ecosystem. Digital global societies, as our everyday reality, must be inseparably intertwined with sustainable development global challenges, also addressing the questions of inequality, environmental degradation, climate change, justice, peace, and poverty. In this context, sustainable development can be defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [1]¹.

In the light of digital dimensions of today's global societies, also supporting sustainable development goals and the importance of knowledge transfer, the aim of EECME 2022 was to provide a platform for researchers, higher education teachers, entrepreneurs, and other authorities to present their research results and development activities in the following conference topics with the focus on knowledge transfer: i) E-Business and Digital Marketing, ii) Sustainable Development Management and Business Regulation, iii) Knowledge Management and Business Process Modelling, vi) E-Governance and Online Education, v) Globalization as a Powerful Force for Growth and Development.

Peer-reviewed articles that are collected in this publication, are written in English or Slovene language, and are divided in previously mentioned sections or topics. Within E-Business and Digital Marketing section, papers highlighted challenges that we are faced with within the competition in the modern digital world, it was also highlighted, what is the motivation of volunteers in selected non-profit organization during the covid epidemic. One of the articles presented price perception according to various selected criteria, as well as specifics of the phenomenon of indispensable tokens are given. Further on, one of the articles pointed out the overview of digital transformation in economies and consumers behaviour, another one exposes, what is the impact of technological development and covid situation on marketing, as well as impact of digitalization on the development of human resources in port business in Montenegro is highlighted. Besides, analysis of tax reporting models is presented, as well as change in consumer behaviour and in business as a part of touchless economy.

¹ Brundtland Report – Our Common Future (1987). Oxford University Press. Retrieved from: <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>. (2022-06-20).

The section Sustainable Development Management and Business Regulation gives us an insight into the new legal framework for sustainable business in the EU and the renewable energy from the aspect of sustainable development is also presented, as well as the energy efficiency as an innovative business model in the context of sustainability. Besides, the role of the universities to promote and facilitate sustainable development is pointed out in one of the papers, as well as the importance of the EU context for sustainability management within modern European trends and approaches.

The topic Knowledge Management and Business Process Modelling includes papers, addressing knowledge control in modern companies in the light of organizational culture. Further on, paradigm tectonics in comprehensive knowledge business processes are presented, knowledge economy and organizational culture for competitiveness in the modern labour market, and preferences connected with free sale of medicinal products are also highlighted.

The fourth topic relates to the E-Governance and Online Education, wherein papers address the development of electronic storage in Slovenia and which competences are needed for accounting in line with academic communities for digitalization of financial reporting. Articles also point out the importance of the development of intercultural and transversal competence among students, as well as the connections between digitalisation and internationalisation of higher education.

The final section includes papers related to Globalization being treated as a Powerful Force for Growth and Development. In this context, articles discuss the challenge of balancing globalization, the complex topic of heterodox in global knowledge economy is given, as well as the impact of the label on the respondents' purchasing decision process, and how to avoid disorders in global supply chains.

The conference was held online at Ljubljana School of Business, Slovenia, on May 26, 2022. More than thirty papers from eight different countries were submitted for the presentation at the EECME 2022. The interest for the participation at the conference without paper was sizable as well, since in total more than 70 participants from 12 different countries registered for the conference. We would like to express our sincere gratitude to all the active presenters at EECME 2022, all the authors of submitted full papers, as well as to the chairs of Conference Organizing Committee, members of Scientific Committee and Organizing Committee, and finally to conference co-organizers: Ljubljana School of Business (Slovenia), European Marketing and Management Association (BiH), Faculty of Business, Economics and Law (Montenegro), State University of Trade and Economics (Ukraine), and all other colleagues who helped us co-created this event.

We believe that the EECME 2022 conference represented a fruitful content background for exchanging good practices and dissemination of experiences, knowledge, and policies on sustainable development issues in digital global society.

Katarina Aškerc Zadavec,
in the name of EECME 2022 committees

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CHALLENGES TO COMPETITION IN THE DIGITAL WORLD

Abstract. *Digital transformation is an important factor of modern society change. It influences behaviour of certain people, companies, nations, as well as institutional framework of their activity, the ways of their cooperation and competition. It shifts the balance of market power between different economic actors, fostering the dominance of those, who can manage the huge bulk of information, decreasing transaction costs of its proceeding, on the one hand, and capturing contractors with the network effects, on the other hand. Such a dominance is a breeding ground for abuse, as the latter is not obvious for competition agencies. Notwithstanding the fact of their recent focus on digital issues, the agencies still do not know how to measure digital markets, whom to grant a “gatekeeper status”, what kind of competitive practices of informational intermediaries must be prohibited or regulated and how. The paper aims to systemize the challenges that competition faces in the digital world in order to look for ways of their meet by firms and competition agencies on behalf of public welfare.*

Keywords: *digitalization, competition, informational intermediary, network effect, multisided market, competition policy.*

Introduction

Digitalization is a strong trend of an economy's development. Despite of the rather small share of digital goods in GDP of different countries (3-10%), the relevant share of digitally dependent economy is much higher – 20 – 30 % [1, p.21]. It is important to understand, that digitalization manifests less in digital resources' dominance in the structure of production resources of an economy or dominance of digital goods in its total output, but mostly in changes in the field of intermediation. It changes the value chains and the vertical competition disposition up to creating monopolies among intermediaries. The phenomenon of such a monopoly is not a new for economy. It has been seen in the trade sector in the second half of the 20th century. Its evolution and strengthening under digitalization is described in the first section of the paper. The second section investigates the variety of digital challenges that increase the risks to competition, take root of the monopoly of informational

intermediaries and facilitate the market power leverage onto adjacent markets. The current competition policy mostly stays blind to these challenges. Its economic and legal tools turn to be ineffective in digital economy and ask for upgrading or even development of the new ones. The third section develops the recommendations on the ways of competition policy reforming according to the challenges revealed. The last section concludes.

Informational nature of intermediaries' monopoly

It is known that who owns the information, owns the world. This rule may be modified today to say – the economic actor that owns the fullest market sensitive information, obtains the biggest portion of the profit within a value chain.

Describing the mode of American market of consumer goods in the book 'Powershift: Knowledge, Wealth and Violence at the Edge of the 21st Century' [2, p.122-136], Alvin Toffler wrote that up to the middle of the 20th century the dominance in the vertical competition (measured by a portion of the value chain profit) had been accumulated by producers that had controlled the informational flows through goods' advertising. Since introduction of barcoding in 1970-s and expansion of cash registers the balance of information control shifted to supermarkets. They got even deeper knowledge about consumer demand, than the producers had before. Each supermarket collected the large amount of data about demand for goods, produced by not only one, but many producers, about competitive advantages of each of them (demand comparison in terms of trademarks, goods' quality, packing etc.). Control over such information granted supermarkets a bargaining power.

The rebalance of control over market sensitive information brought forth the dominance of big retailers in vertical competition and practice of that dominance abuse in the second half of 1980-s. To counteract the abuse in 1986 French competition authority introduced the Rules of economic dependency [3], which granted it a new effective antitrust tool. Most other jurisdiction across the Europe arrived at the need of such rules introduction just in the early 2000-s, when the dominance of big retailers (networks of hyper-, supermarkets) in the vertical competition had been complemented with the dominance in the horizontal one. Hence, it granted the retailers more than ten years of unregulated and profitable dominance.

Today, when the e-commerce has reached 20% of retail sales worldwide [4], while in some countries, like China, it exceeds 50% [5], we can affirm that market power of conventional retailers has been undermined. Digital algorithms of online trade platforms let collect much more complete information on demand and consumer preferences of their users, because they monitor not only the users who

have already bought the good, but also those who just put an eye for the good or its substitutes. The informational background of social networks or Google Shopping is much deeper. It provides the access to much more detailed data on consumer preferences, covering not only the field of commodity circulation, but also the service sector. Hence, the new rebalance of market powers becomes obvious.

The idea of dominance of informational intermediaries – most e-platforms like Google, Facebook, Amazon, Apple, and others – becomes more and more popular in both academic and professional environment, while conventional kinds of intermediation turn to be imperfect substitutes of their services. However, such terms as ‘dominance’ or ‘monopoly’ are almost not used by competition agencies. As 30 years ago competition agencies was not ready to deal with a monopoly of trade intermediaries, today they are not ready to deal with a monopoly of information intermediaries.

The mandatory component of dominance determination is a market definition. However, conventional methodologies of market definition cannot be applied effectively to the markets of information intermediation. They do not consider such important digital challenges as network effects, zero pricing, digital transformation of value chains, etc., while alternative methodologies have not been developed yet. Their development is a real big issue to competition agencies that pushes them “to put less emphasis on analysis of market definition, and more emphasis on theories of harm and identification of anti-competitive strategies” [6, p.3-4].

The inability of applying of conventional antitrust tools in order to investigate the digital effects on competition brings a popularity to the concept of ‘gatekeeper’ – usually an e-platform that mediates the public’s access to market sensitive information and commerce [7]. This term is similar, but not identical to the term ‘monopolist’. It does not correspond to a control over some market (key pillar of the monopoly definition) and thus does not ask for market definition. It corresponds to the key factor of such a quasi-monopoly – control over market sensitive information. This conceptual shift is an advantage in terms of the theory of competition, but is a downside in terms of antitrust enforcement. Even in the terms of Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (hereinafter – Digital Market Act or DMA) the gatekeeper status is a not enough occasion for extensive competition law enforcement. It just let impose some restrictions on hard anticompetitive practices, but does not solve the problem of a monopoly of information intermediaries, making us come back to analysis of digital challenges to competition and possible ways to meet them.

Digital challenges to competition

Among the main digital challenges to competition are network effects, pricing at multisided markets, digital transformation of value chains. Let us focus on them.

Network effects

Network effect is a phenomenon whereby increased numbers of customers improve the value of a good or service. Network effects also existed in the pre-digital era, but their impact was much less significant. Establishment of the digital economy multiplies them due to expansion of communications. 4 of 5 exactly digital industries (telecommunications, software publishing, web publishing, specialized and support services) are communicative and dependent on the network effect. Phone, messenger, social network, other ways of communication are more valuable, when more people use them. No one joins a communication tool that is not in use of others. Software applications are firstly developed under popular operating systems that lets developers obtain enough return. Web publishing is much profitable, if it is done at the popular web resources – top-ranked e-commerce platforms, popular social media, etc. Efficiency of support service systems determines the choice of consumers – starting with digital content developers till end-users of digital apps. Hence, in case of a network good those producers have advantage who first reach the tipping point in terms of number of that network good users. This is a point of network effect switching on, when the next increase of consumers is determined not by an autonomous utility of a good, but by its using by others. Starting with this point the demand for the network good rises under snowball effect, leaving no chance to rivals even if their goods are better and cheaper. It beats the basic principle of the theory of competition, which underlies conventional competition policy.

This challenge to competition becomes stronger when the direct network effect is complemented with the indirect one. It provides the leverage of market power from the one side of a multisided market to another. For instance, more than 90% market share of Alphabet Inc.(Google) in the search engine market [8] provides its dominance in the search advertising market [9, p.280; 10]. The current leader of the display advertising market is Meta Platforms Inc. that collects almost 2 billion of active users of Facebook and more than 2 billion of active users of Instagram worldwide [11; 12].

E-commerce markets are more local, but they are also caught by the indirect network effect. Buyers choose a dominant e-platform, expecting for wide assortment, strong competition of sellers and low prices as the consequence of the latter. Sellers choose a dominant e-platform in order to meet the concentrated consumer demand and to minimize transaction costs, which are much higher in case of

contracting a wide scope of small counterparties (small intermediaries or / and final consumers). Hence, keeping with the best traditions of the perfect competition, individual rational decisions of economic actors bring forth a monopolization of information intermediation.

No competition agencies, no academics, who specialized on research of competition issues, do not know, how to measure network effects, as well as their competitive or anticompetitive effects. They even cannot establish a common denominator on the way of considering markets, where e-platforms work: consider each side of an e-platform as a separate market or join all the sides within a single multisided market.

Pricing at multisided markets

Conventional and multisided markets are designed in much different ways, asking for different approaches to market investigation and to grounding of dominance, competition restrictions, etc. The scheme is rather easy in a conventional market: it consists of one good (or some close substitutes), its sellers and buyers, whose interaction brings some level of price. Usually this price is a subject of monopolistic manipulations. In case of multisided market, the scheme is much more complicated. There are at least two goods that may differ depending on the type of an e-platform. Transaction platforms usually deal with a basic good and the service of intermediation (for instance, flight ticket and the service of price aggregator, like Skyscanner, CheapOAir, TripAdvisor, etc.). Non-transaction platforms deal with some goods allocated at different sides of an e-platform (for instance, services of allocation of advertisements by Google or Facebook at one side of a platform and services of digital content allocation at another one). Consumers are different on different sides of e-platforms. Moreover, in case of transaction platforms, the sellers (actors on the supply side) and buyers (actors on the demand side) alternate each other while moving from one side of a multisided market to another one.

Another difference is a price one. The practice of the free service distribution is rather popular among non-transaction e-platforms. It is usually conducted on one (determinant) side of a multisided market. No consumers join a platform to obtain advertisement, but advertisers join it to contact the huge bulk of consumers. The lower price (up to zero one) is on the determinant side of the platform, the bigger number of the users will be collected, making the platform more and more attractive for advertisers and forcing advertisers to pay higher and higher price on another side of the platform.

As it was mentioned before, no modern economic science, no practice of the competition law enforcement has not developed effective tools of indirect network effect measuring and consequently – considering the multisided market as a single one. However, there is no chance to investigate

different sides as different markets. Analysis of price reactions is still a basic way of market investigation, but cross subsidizing and zero pricing make such methodologies non-operational.

Competition agencies try to path the theories of harm, but the uncertainty of a term ‘harm’ provides the risk of manipulations. Under conventional competition policy the ‘Structure – Conduct – Performance’ Paradigm (hereinafter – SCP-paradigm) was a protector of such manipulations. There is no chance to abuse and to cause harm by the economic actor that has a market share of 5 %. Now this protector does not work – the inability to define the market leads to inability to measure the market capacity and its structure. Which of the prices shall be considered over- / undercharged? Sometimes we may compare it with prices in other regions. But what shall we do with the pricing by globally popular Google? Comparing its prices with those of less popular and less efficient advertising platforms is the same as to compare the prices of a low-cost car with the price of a rolls-royes. To measure the price by the cost plus a fixed return means to give up the ‘first best’ market pricing, to deny the right of more effective market player for a bigger share of producer surplus and consequently – to stop technical progress. Ban of the cross subsidizing means to restrict access of the users to informational content and to decrease competition on the adjacent markets. All above mentioned perspectives are imperfect.

Value chains’ transformation.

As establishment of retail chains’ dominance in the 20th century, the establishment of e-platforms’ one in 21st century is based on the imbalance of transaction costs in different value chains. Selling goods to a big retail chain let the supplier obtain rather big savings comparing to contacting with many small retailers in terms of search of responsible partners, negotiation and concluding agreements, their performance control, transportation, storage, etc. Usually such savings were enough to cover the monopolistic overcharge. In spite of considering the latter as excessive and unfair, the alternative of incurring much higher transaction costs made the choice of suppliers on behalf of retail chains obvious. It split the previously single retail market by the value of transaction costs. However, the existed methodologies of market definition were blind to this criterion. It made the analysts of competition agencies to look for new arguments consistent with the existed methodologies, which were found in the field of consumer properties. Consumer properties of services of retail chains differ from those of small retailers in terms of assortment, benefits of loyalty programs, etc. Hence the problem was solved manually, and therefore arose again under establishment of monopoly of informational intermediaries.

As in the case of retail chains, contracting with a dominant e-platform (even taking the dominant’s overcharge into account) is cheaper than contracting with many small counterparties. That makes

different value chains poor substitutes of each other. Thus, the need to introduce the criterion of transaction costs in the list of criteria of goods' substitutability under the procedure of market definition has become relevant again. Its replacement by a complex service (as it was done 40 years ago in regard to trade intermediation) will no longer work, because the problem of transaction costs underlies the network effect. The imbalance of transaction costs is the driving force behind the change of the intermediary link of value chains in the digital world, of the emergence of information intermediation as a type of economic activity and its organization as the core of multisided markets.

Thus, current antitrust economic, as well as relevant competition law are at the doorway of significant reforms. If these reforms do not take place, competition policy will not only lose its effectiveness, but will do so at an increasing pace as the digitalisation of the economy intensifies.

Perspectives of competition policy reforming

Over the last few years, the focus of the competition agencies has shifted to the realm of information intermediaries, and the digital challenges described above have become apparent to them, although systemic reforms have not yet taken place. Nowadays competition agencies mainly practice the skill of applying current legislation to new challenges, acting manually.

Digital Markets Act can be considered the first more or less systematic step towards restricting the market power of e-platforms. It defines the criteria for determining / assigning gatekeeper status and provides restrictions on the range of potentially anti-competitive practices in the digital space, like combining personal data sourced from these core platform services, prohibition of business users to offer the same products or services to end users through third party online intermediation services at prices or conditions that are different from those offered through the online intermediation services of the gatekeeper, preventing or restricting business users from raising issues with any relevant public authority relating to any practice of gatekeepers, requiring business users to use, offer or interoperate with an identification service of the gatekeeper in the context of services offered by the business users using the core platform services of that gatekeeper, refusal to provide advertisers and publishers to which it supplies advertising services, upon their request, with information concerning the price paid by the advertiser and publisher, as well as the amount or remuneration paid to the publisher, for the publishing of a given ad and for each of the relevant advertising services provided by the gatekeeper etc. [13, art.5].

This initiative should be positively assessed, unless a rather limited list of obligations set by the proposal due to the current experience of e-platforms competitive behaviour. This list is based on the results of the research of anticompetitive practice of e-platforms done through induction technique

application. It is not grounded theoretically that makes the DMA and regulatory approach based on it fragmentary. The DMA is seen as an add-on to the existing model of state protection of competition. It should complement the latter, coping with digital challenges, while not all of them are met by DMA. For example, the concept of the market is actively used by DMA developers. Only in the text of the act this term is mentioned 40 times. Nevertheless, the developers of the DMA actually avoid the real market research, replacing it with research of the activities of individual businesses – potential gatekeepers. Moreover, the actual parameters of the functioning of such information intermediaries are studied not even in comparison with similar indicators for providers of substitutes, but with fixed thresholds specified in the DMA. This approach can, at best, filter out small information intermediaries who are incapable of abuse due to their small scale. However, it cannot assess the real structural preconditions for dominance and substantiate the facts of abuse. This means that the problem of market definition is still open.

In academic literature the DMA approach usually contrasts to SCP-paradigm. We believe that the future is not in opposition, but in the integration of these approaches. Based on the empiricism of anticompetitive practices, which underlies the DMA, we can reveal the gaps of the conventional approach to antitrust cases investigation in the digital world and develop the ways to fill them. Among them are:

- considering of network effect that asks for market capacity measuring not just in terms of sales, but also in terms of number of active users;
- measurement of the degree of cross subsidizing in multilateral markets as an indicator of the strength of market power leverage, and ultimately – the intensity of the indirect network effect;
- considering switching cost as a measurement of barriers to switching demand and an indicator of market boundaries defining; need to consider transaction costs in order to define market boundaries;
- encouraging of multihoming in order to merge unique markets and to counteract an abuse by their gatekeepers;
- regulation of vertical competition and introduction of vertical unbundling where vertical dominance is already complemented by horizontal one.

As digital effects distort competition in all national markets and globally, the world's leading competitive agencies need to come together to develop appropriate methodologies.

Conclusions

Summing up the results of the study, it should be noted that the digital transformation of the economy in the 21 century has significantly changed the competitive environment, posing a big challenge to the world's competitive agencies and their associations – to restore the effectiveness of competition policy. Nowadays, we can see a clear focus of competition authorities and competition researchers on addressing this challenge, but progress on this issue is still insufficient. We have passed the stage of understanding the problem and descriptive research of changes in the competitive environment of modern markets under digitalization. We have identified challenges in need of regulation and have formulated the first proposals for their meet. Now they are under discussion and testing. There are still a number of issues of market definition that limit the possibilities of applying a wide range of conventional competition policy tools. We perceive that the future of competition policy in the digital world belongs not to inventing a radically new model of competition protection, but to building of a bridge between conventional competition theory and digital reality in terms of development of the methodologies of market research and competitive behaviour assessment able to meet the challenges of digitalization.

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MOTIVACIJA PROSTOVOLJCEV V IZBRANI NEPROFITNI ORGANIZACIJI V ČASU EPIDEMIJE COVID 19

Povzetek. Motivacija je eden ključnih dejavnikov oziroma procesov človekovega delovanja in njegove zavzetosti za tisto kar dela. Proces motiviranja zaposlenih je ključna naloga managementa vsake organizacije. Management mora pri svojem delu združevati in dopolnjevati različne teorije in koncepte motivacije. To je izrednega pomena še posebej v neprofitnih organizacijah, katerih uspeh je odvisen od dela prostovoljcev. V prispevku so predstavljeni ključni dejavniki, ki so prostovoljce v času epidemije Covid-19 motivirali za njihovo delo. Raziskava, ki je bila izvedena v nevladni organizaciji je potrdila dve vnaprej zastavljene hipotezi, vezani na posamezne dejavnike motivacije. Nevladne organizacije so neprofitna združenja na vseh nivojih družbe, na lokalnem in nacionalnem nivoju, so prostovoljne ali profesionalne organizacije. Delujejo na različnih področjih družbenih dogajanj. Večina teh organizacij v Sloveniji je v odvisnosti od države, predvsem zaradi sredstev in so med seboj nepovezane. Na motivacijo prostovoljcev v nevladnem sektorju vpliva mnogo dejavnikov. Kljub občasno slabo spodbudnem okolju, je v tem sektorju veliko požrtvovalnih in poslanstvu zavzetih prostovoljcev.

Ključne besede: motivacija, prostovoljstvo, nevladna organizacija, Covid 19

Uvod

Razmere, ki so nastale s pandemijo in stanjem v katerem se trenutno nahajamo so profitne in neprofitne organizacije prisiljene v spremembo strategij in uporabo novih metod za izpolnjevanje potreb potrošnikov in uporabnikov storitev. Profitne organizacije morajo slediti tržni zakonitostim in spremembam na trgih, medtem, ko neprofitne morajo slediti trendom v družbi in ustvarjati nove oblike organiziranosti, da bi lahko izpolnjevale svoje poslanstvo in cilje. Neprofitne organizacije kot nevladne organizacije s svojim delovanjem imajo velik vpliv na družbo, zaradi različnih vlog, ki jih opravljajo v lokalnem, regionalnem in globalnem okolju. Nevladne organizacije kot neprofitne organizacije so nacionalne ali mednarodne organizacije, ki s svojim delovanjem in združevanjem služijo družbenim in političnim ciljem. Ti so lahko humanitarni ali okoljevarstveni [1]. Po Lewisu (2009) so nevladne organizacije najbolj znane po zagotavljanju storitev ljudem v stiski, pa tudi na številnih drugih področjih, kot so delo na področju človekovih pravic, ohranjanje kulture, okoljski

aktivizem itd [2]. Obravnavana nevladna organizacija v prispevku deluje na področju varnosti v prometu in zaščiti pravic poklicnih voznikov. Na temelju ustanovnega akta je prostovoljno nepolitično združenje ustanovljeno za izvajanje preventivnih nalog na področju varnosti v prometu in povezovanje poklicnih voznikov z namenom zagotavljanja varnosti pravic te poklicne skupine v družbi. Člani nevladne organizacije delujejo organizirani v lokalnem okolju in povezani v posamezne regije. Koordinacijo na območju celotne države koordinira in vodi zveza združenj. Tako zveza združenj kot združenja imajo status nevladne organizacije. Cilj zveze je skupaj z združenji spodbujati odgovornost in zavzetost ljudi za varnost v prometu, skozi širjenja pomena načela varnostne kulture. Nevladna organizacija svoje aktivnosti izvaja s prostovoljci. Prostovoljci so pomemben kapital nevladne organizacije. Zaradi njihovega pomena, zlasti med pandemijo COVID 9, je bilo pomembno osredotočenje na njihovo motivacijo in zavzetost za delo. Motivacija prostovoljcev še posebno v času, ko je interes posameznikov z vključevanjem v tovrstne organizacije v upadu, je vloga in cilj vodstva ohraniti aktivne in produktivne prostovoljce z različnimi motivacijskimi dejavniki. Čeprav ima vloga prostovoljcev pri vzgoji mladih v prometu pomemben vpliv na razvoj družbe, je na področju tega narejeno malo raziskovalnih nalog. Poleg tega v javno pristopnih bazah ni najti strokovnih ali znanstvenih prispevkov o tem, kako so se prostovoljci na področju varnosti v prometu odzvali na pandemijo COVID - 19. COVID -19 je zahteval zaprtje šol mimo ustaljenih letnih urnikov, šolanje od doma je najmlajše udeležence v prometu umaknilo iz prometnega življenja. Nepričakovane najave vračanja v šolske klopi in neusklajeno delovanje pristojnih institucij na tem področju, je od prostovoljcev zahtevalo motivacijo in pripravljenost na delo. Glede na pomemben prispevek prostovoljcev v tako zelo neurejenih okoljih lahko razumevanje motivacije in vpliva prostovoljcev pomaga pri bolj trajnostnih praksah pri razmišljanju o delnih zaposlitvah prostovoljcev in njihovem nagrajevanju s strani pristojnih državnih organov in podjetij.

Teoretična izhodišča motivacije

Ljudje se vsakodnevno srečujemo s situacijami, ki se nam zdijo predvidljive in samoumevne. Zaradi svoje rutine in prepričanja da to tako mora biti, se redko vprašamo zakaj to počnemo. Kljub temu vedno pri storitvi nečesa obstaja neka motivacija. Stanje, ki je povezano z našim umom in našimi čustvi. Pojem motivacija torej označuje neko čustveno stanje, ki usmerja obnašanje posameznika za izogibanje kazni ali pa doseg nagrade [3, str. 650]. Motivacija je vedenjsko usmerjeni proces, več zaporednih dejanj posameznika, odvisen od posameznih dejavnikov. Na katere lahko hote ali nehote vplivamo. Na temelju posameznih značilnosti in dejavnikov, ki vplivajo na vedenjski proces in ko govorimo o opredelitvi motivacije, lahko izpostavimo vprašanja [4, str. 11]:

- Kako se posameznik na določeni stopnji razvoja ter v različnih situacijah obnaša?
- Kakšen je namen ter kaj je cilj njegovega obnašanja?

- Kateri dejavniki vplivajo na njegovo vedenje?
- Ali pri ljudeh obstajajo razlike v motivaciji glede na socialni status, spol, poklic in podobno (v nadaljevanju ipd.)?

Motivacija predstavlja pomemben vpliv na razvoj osebnosti in njeno delovanje. Zato je tudi predmet številnih raziskav na področju menedžmenta človeških virov. Kompleksnost ljudskih motivacijskih sistemov tudi otežuje poenotenje definicije motivacije. To kompleksnost predstavlja več komponent [5, str. 231]. To sta kategoriji notranjih in zunanjih vzrokov motivacije. Kot je opozoril filozof René Descartes (1596-1650), lahko dražljaji, ki prihajajo iz okolja, izzovejo direkten odziv. Do odziva pride preko živčnega sistema, ki prenaša živčni pritisk v možgane. Ta pritisk v možganih pa se izrazi v krčenju mišic. Descartes je prvi, ki je z znanstvenim pristopom pristopil k raziskovanju pojma motivacije [6, str. 261].

Po mnenju Herzberga se stopnja motiviranosti na delovnem mestu povečuje s stopnjo sreče zaposlenih na delovnem mestu, kar lahko povežemo z ugotovitvami Alberta Einsteina o notranji motivaciji in sicer, da je to »uživanje ob pogledu in iskanju« [9, str. 130]. To pa je povezano z vzroki, ki to povzročijo. Ti so lahko notranji (potrebe, cilji, goni, ...) ali zunanji (socialno, kulturno.. idr. okolje) vzroki [4, str. 14]. Po vsebini izvora spodbud ločimo: vsebinske teorije, ki razpravljajo o vplivih na vedenje ljudi in načinih delovanja ter procesne teorije, ki obravnavajo usmerjanje, vzdrževanje, izzivanje ali prekinitev vedenja posameznika ter načine njegovega delovanja [10, str. 412-413]. Po Abrahamu Maslowu vsi ljudje imamo potrebe. Te so razvrščene po hierarhiji. Ko bodo zadovoljene najosnovnejše potrebe, ki so potrebne za preživetje, kot so hrana, voda ipd., zadovoljitev višjih potreb, ki so na njegovi lestvici, ne bodo zaskrbljujoče in bodo delovale kot motivator tako v delovnem kot življenjskem okolju. [11, str. 67]. Psiholog David McClelland (1917-1998) je potrebe, ki motivirajo ljudi, razdelil v tri osnovne skupine potreb in sicer na (1) potrebo po dosežkih, (2) potrebo po vključitvi ter potrebo po moči [12, str. 102]. Posamezniki imajo različne kombinacije osnovnih skupin potreb kjer pogosto posamezna potreba prevladuje [10, str. 416-417, 14]. Pridobivanje potreb po njihovi zadovoljitvi pa prihaja na temelju življenjskih izkušenj in osebnega razvoja. Potrebo po tesnem sodelovanju, ki jo lahko uvrstimo v skupino potreb po dosežkih in vključitvi, lahko povežemo s prostovoljstvom. Prostovoljstvo poleg skupnega cilja uresničevanja nekaterih skupnih potreb, omogoča tudi povezanost posameznikov in njihovo sodelovanje. Da bi bolje razumeli te potrebe, sta jih Osemeke in Adegboyega (2017) označila z [13]:

1) potrebo po moči: ljudje, ki imajo to potrebo, običajno uživajo v nadzoru nad drugimi in radi imajo dober položaj na delovnem mestu oziroma moč. Naklonjeni so vplivanju in usmerjanju nekoga

drugega in za ohranjanje odnosov med vodji in njihovimi podrejenimi.

2) Potreba po dosežkih: ljudje, ki imajo to potrebo, želijo delati v organizacijah, ki imajo veliko izzivov in tekmovanj. Ljudje, ki imajo veliko potrebo po dosežkih so nagnjeni k osebni odgovornosti, reševanju zahtevnih nalog in močno željo po povratnih informacijah.

3) Potreba po pripadnosti: ljudje, ki imajo potrebo po pripadnosti, želijo biti všeč drugim in uživati v okolju, kjer je motiv vzpostavljanje prijateljstva in dolgotrajna zaposlitev. So nagnjeni k osebam, katerih cenijo prijateljstvo in občutke drugih.

Potreba po pripadnosti je tudi lastnost prostovoljstva. Zato je še kako pomembno, da najvišja vodstva nevladnih organizacij imajo močno željo po analiziranju prostovoljcev in iščejo najboljše motivacijske dejavnike za njihovo delo.

Raziskovalni del

Namen raziskave, ki je bila opravljena med septembrom in novembrom 2021, je bil ugotoviti kako so bili za delo motivirani prostovoljci izbrane organizacije. V uvodnem delu prispevka smo na podlagi proučene literature opredelili pomen motivacije za delo posameznika. Iz zapisanih teoretičnih dognanj lahko tudi sklepamo, da je ima motivacija pomembno vlogo pri izvajanju nalog prostovoljcev. Uresničevanje potrebe po združevanju in skupnih ciljih ima motivacijski vpliv na posameznika.

Empirična raziskava je v osnovi opravljena s kvantitativno metodologijo. Za pridobivanje kvantitativnih podatkov smo uporabili vprašalnik, ki je bil sestavljen iz štirih delov. V prvem delu so bili demografski podatki, drug del je predstavljal podatke o motivacijskih faktorjih, tretji del pa vprašanja povezana o motivaciji pri izvajanju prostovoljnih nalog v času pandemije COVID 19. Četrti zadnji del je bil odprtega tipa, kjer so lahko anketiranci podali svoje osebne poglede na varnostno kulturo in njen pomen.

Vzorec smo oblikovali s pomočjo dostopnih elektronskih naslovov v registru članstva organizacije. Pr izbor vzorca in rabi podatkov so bila spoštovana določila Zakona o varnosti osebnih podatkov in določila Splošne uredbe EU o varstvu podatkov (GDPR). V spremnem besedilu so bili seznanjeni, da je anketni vprašalnik anonimen in da bo izključno uporabljen v raziskovalne namene. V vzorec smo vključili osebe ne glede na status zaposlitve.

Pridobljene podatke smo najprej zbrali in jih oblikovali v tabelah s pomočjo Excel programa ter jim nato statistično obdelali s pomočjo programskega orodja za statistično obdelavo podatkov SPSS.

V raziskavo smo vključili 547 naslovnikov. Na anketni vprašalnik je odgovorilo 211. V 24 primerih je vprašalnik bil nepopoln, zaradi česar smo te vprašalnike izločili. Veljavnih je bilo torej 187 vprašalnikov, kar predstavlja 34,18 odstotka vseh naslovnikov. Tako slabo odzivnost je potrebno pripisati starosti prostovoljcev in njihovem daljšem odzivnem času pri uporabi elektronske pošte. Posamezni člani elektronske pošte ne uporabljajo, kljub temu, da posedujejo elektronski naslov.

Tabela 1. Število anketiranih

vprašalnik	število
poslani	547
vrnjeni	211
veljavni	187
neveljavni	24

Starostne skupine so bile določene na podlagi podatkov iz baze članov. Zaradi vse manjšega interesa za delo na področju, ki ga izvaja nevladna organizacija in upadu interesa za članstvo, so te starostne skupine sprejemljive. Po spolu je bilo anketiranih 5 žensk ali 2,6 %, moških 182 ali 97,4 % anketiranih. Najbolj zastopana starostna skupna je bila med 60 in 70 let, in sicer 124 ali 66,3 % anketiranih. Sledijo starostna skupina med 50 in 60 let, 46 ali 24,6 % anketiranih in starostna skupina med 40 in 50 let, 17 ali 9,1 % anketiranih.

Tabela 2. Število anketiranih po starosti in spolu

število	spol	Med 40 in 50 let	Med 50 in 60 let	Med 60 in 70 let
ženska	5	2	1	2
moški	182	15	45	122
skupaj	187	17	46	124

Po izobrazbi je bilo 63 % s srednješolsko izobrazbo, 28 % jih je imelo najmanj osnovnošolsko izobrazbo, 7 % z višjo ali visokošolsko izobrazbo, 2 % z magisterijem ali doktoratom.

Tabela 3. Anketiranci po izobrazbi

stopnja izobrazbe	število
osnovna šola in manj	52
srednja šola	118
višja ali visoka	14
magisterij ali doktorat	3
skupaj	187

Analiza motivacijskih faktorjev kaže, da prevladuje mnenje, da je pri njihovem delu motivacijski faktor spoznanje, da s svojim delom osrečijo druge ($M=41,2312$), da z aktivnostmi, ki jih izvajajo prostovoljno osrečujejo sami sebe ($M=39,2347$). Občutek pripadnosti in povezanosti pa je spodbujal izvajanje aktivnosti, ki so bile izvajane ob uveljavljanju ukrepov, ki so povezani s COVID-19 ($M=32,0364$).

Pri motivacijskih dejavnikih, ki so ključni za povezovanje prostovoljnega dela in izvajanje ukrepov COVID 19 je ugotovljeno, da najbolj prevladuje mnenje, da je k izvajanju prostovoljnih nalog, kljub temu, da te niso bile časovno vnaprej predvidene, prispeval občutek, da so s svojimi aktivnostmi in prisotnostjo prispevali k večji varnosti in lastni sreči ($M=47,2143$). Anketiranci so bili tudi mnenja, da jih je pri delu motiviralo spoštovanje njihovega dela od nadrejenih ($M=31,8724$). Anketiranci prepisujejo motivacijskem dejavniku tudi prepoznavnost njihovih aktivnosti v okolju ($M=29,2965$). Prav tako je prostovoljce pri opravljanju nalog v času ukrepov motivirala ustrezna organizacija dela ($M=23,3273$).

Skoraj 65 odstotkov anketiranih je v anketi ocenilo, da s tem ko pomagaš drugim, da tudi osrečuješ sam sebe.

Raziskovalne hipoteze

V okviru raziskave smo si postavili dve raziskovalni hipotezi:

Hipoteza 1: Anketirani so mnenja, da so v času ukrepov Covid 19 pri izvajanju svojih aktivnosti prispevali k povezanosti prostovoljcev in pripadnosti organizaciji.

Zastavljeno hipotezo smo potrdili. Iz statističnih podatkov izhaja, da prostovoljci z zavzetostjo za izvajanje del krepijo njihovo povezanost in pripadnost organizaciji.

Hipoteza 2: Anketirani se zavedajo pomena svoje vloge v okolju pri izvajanju ukrepov Covid-19

Glede na rezultate se hipoteza potrdi. Anketiranci so v 52,23 % potrdili, da so prepričani, da so s

svojo prisotnostjo in vidnostjo pripomogli k v večji varnosti otrok v prometu v času izvajanja ukrepov Covid-19.

Diskusija

V času, ki ga živimo je polno nepredvidljivih dogodkov. Te je potrebno obvladovati. Obvladujemo pa jih če smo motivirani. Uspešnost vsake organizacije in posameznika je povezana z motivacijo in zadovoljstvom. Nezadovoljstvo z izvajanjem aktivnosti povzroča manjšo produktivnost. Posledično temu je nižja uspešnost in manjši dobiček podjetja ali organizacije. V prispevku smo obravnavali motivacijo prostovoljcev v izbrani nevladni organizaciji. Prostovoljstvo temelji na samoodločanju posameznika ali želi delovati. Vključenost v prostovoljstvo je že motivacijskih faktor, ki prispeva k večji zavzetosti za izvajanje nalog. Kljub temu smo skozi raziskavo ugotovili, da prostovoljce motivira ko s svojim delom osrečijo druge. Povezovanje prostovoljcev in njihova prepoznavnost v okolju so tudi odraz dobre organiziranosti. Organiziranost in prepoznavnost osrečijo same prostovoljce in sta tudi temelj za pridobivanje novih članov. Na podlagi teoretičnih izhodišč, da v splošnem motivacijske teorije ločimo na vsebinske in procesne teorije lahko na podlagi lastnih ugotovitev vezano na vsebino raziskave v prispevku rečemo, da je pristop k članstvu in interes za delo v nevladni organizaciji del vsebinske motivacijske teorije. Te se nanašajo na to, kaj pri ljudeh vpliva na njihovo vedenje in način delovanja. Druge (procesne) teorije se nanašajo na možnosti usmerjanja in vzdrževanja vedenja posameznikov, kamor lahko iz raziskave uvrstimo faktorje osrečevanje drugih, lastna sreča, prepoznavnost v okolju in prispevek k varnosti v okolju. Ti pa so posledica uspešne organiziranosti in koordinacije s strani nevladne organizacije.

Pričujoči prispevek je obravnaval trenutno razumevanje motivacije posameznikov in vpliva prostovoljnih izkušenj v izbrani nevladni organizaciji. Kljub majhnem vzorcu je ugotovljeno, da so prostovoljci osredotočeni predvsem na občutek, da s svojim delom osrečujejo druge in da imajo občutek odgovornosti. Sodelujoči v raziskavi se uvrščajo v starejši del populacije, ki so tudi večji del svojega življenja člani obravnavane organizacije in da so skozi delo v njej dosegli osebnosti razvoj na področju prostovoljnega dela. To je lahko temelj za družbeno diskusijo o večji vlogi in podpori države pri izvajanju tovrstnih aktivnosti. Slovenija je odraz dobre povezanosti in usklajenosti prostovoljstva, ko gre za aktivnosti vezane na izredne dogodke. Vendar je na strani države ključnega pomena opredelitev programov in aktivnosti za aktivno prostovoljstvo. Prepričljivi programi, prilagodljivi posameznim specifičnim prostovoljskim funkcijam, pri posameznikih povzročajo večjo verjetnost, da izrazijo namero za prostovoljno delo in tudi pridobijo večje zadovoljstvo prostovoljcev. Usklajevanje motivacije posameznika s priložnostmi za prostovoljstvo je ključna naloga vsake nevladne organizacije, na strani države pa je da to motivacijo okrepi s svojimi strateškimi ukrepi na

področju razvoja prostovoljstva. Prostovoljstvo poganjajo funkcije vrednot, razumevanja in izboljševanja. Prostovoljstvo lahko pozitivno vpliva na osebno rast in družbeno ozaveščenost ter razvoj in usposobljenost profesionalnih kadrov za delo tudi v drugih profitnih ali neprofitnih organizacijah.

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PRICE PERCEPTION BASED ON PRICE FONT COLOR

Abstract. *Price as marketing instrument often neglected in the business world. On staff pricing managers or pricing specialists are rare. Even in education, classes focused on pricing have only started to emerge in the recent years. This paper focuses on the impact of the font color used on the shelf price tag (price color). In a large-scale study conducted through an online survey using the Conjoint Analysis method, we investigated the perception of price color among males. We divided them into four segments, based on age and income. The initial hypothesis came from previous findings of authors who cited those men perceived red price color more favorably than black. In our case, we found that perceptions of price colors vary widely. Therefore, we cannot confirm the initial hypothesis.*

Keywords: *Price, Price color, Preference, Conjoint*

Introduction

Defining the price isn't as easy as it seems. It may seem clear and simple at first. Price, in monetary terms, denotes the sacrifice made by the customer to obtain the desired product or service. And this sum of money is simultaneously received by the seller who sold it to the buyer [1]. This simple definition is not incorrect; however, it does raise several questions., many of which still not fully explored. Our thought process leads us in two parallel directions, where we can find extensive content on price.

The first one leads us to the definition of "the price in the eyes of the seller". In this context, the content depends on all the necessary knowledge and skills of the seller who manages the prices of products and services offered. Economic theory, the theory of value, prospect theory all come to play here along with cost theory, the experience curve, and the breakeven point. All well-known concept in business.

The second direction can be defined as "the price in the eyes of the buyer". Here we can find many yet to be fully explored reactions of the buyer to the price. It would be a mistake to simplify and claim that price is merely information about the sacrifice required and that it is the same as the monetary value indicated - for everyone. Price perception hides many emotional responses to stimuli such as size, presentation, use of punctuation, color, and other elements. There has been a lot of research,

mainly in the field of psychology, on what influences price perception, when a buyer thinks something is cheaper and when it is more expensive, even though the same numerical value, the same number, is always in front of his or her eyes.

Theoretical background

In this paper, we will look at a few areas that are stirring the minds of researchers. An important starting point is certainly the fact that in our brain numbers are based on sensory concepts - and this structure influences our perception of prices. This mechanism is complex, and in many respects only partially understood. It is linked to sound, color, and shape elements which, as stimuli, trigger responses in our brain. In the literature, these examples are most often defined as psychological price.

Odd price effect

A walk through the retail outlets and a look at the prices marked for each product reveals an interesting discovery. Most prices will end in 9 or 99. What is the secret of retailers pricing the products on their shelves?

The rounded price seems to be much higher than the one ending in 99. This happens in the process of perception. The information that shoppers receive using the eyes as a visual receptor is converted into a specific interpretation in the brain. In this case, it is an interpretation of the price level. Although the price is expressed with mathematical precision, the interpretation is often purely vernacular. One price is higher than another even if there is a negligible difference of only one cent. And yet this small difference is usually much greater in the eyes of the buyer than the real, rational difference expressed in monetary units. This phenomenon is universally accepted and in practice has been determining the fate of retail pricing for decades. It is particularly effective for products at the lower price level.

Yet the secret of how these prices work is not just in the 9 or 99 endings. The main reason why prices ending in 9 appear lower than those ending in 0 is also the left-hand digit, which is a step (a tenth or a hundredth) higher in rounded prices. This is a psychological effect based on the perception and comparison of numbers [2]. The reason is therefore the comparison of left numbers, which is why it is also described as the left number effect. Since the customer compares 3.00 with 2.99, 3 appears much larger than 2. This psychological effect is also the reason why unrounded prices are often referred to as psychological price.

The importance of left numbers in price perception has also been demonstrated by Thomas and

Morwitz [3], who surveyed a sample of 52 postgraduate students on how they evaluate the price of ballpoint pens. They highlighted two comparisons. The first highlighted the prices of two brands of pencils at \$2.99 and \$3.00, and the second at \$3.59 and \$3.60. The absolute difference was the same in both cases, i.e., one cent.

Respondents rated how high they thought the price of each pencil was on a Likert scale from 1 to 5; 1 meant 'do not agree at all' and 5 meant 'strongly agree'. The results showed that a price of 2.99 was perceived as much lower than 3.00. In the second case, the price of 3.59 was not perceived as significantly lower than 3.60, which is due to the number 3 in the first position of both prices. The phenomenon is illustrated in the figure. The numbers above the bars are the averages of the perceived price level on the Likert scale.

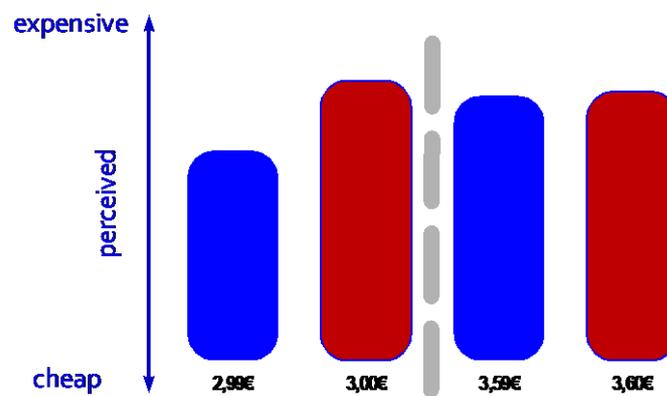


Figure 1. Perceived price level

The effect on the perception of the left number can best be seen in Figure 1.

Price record size

According to some authors, the size of the numbers in the shelf price tag is related to the perception of the price level. In the brain, visual size is transferred to the perception of numerical size, to an estimate of how high the displayed price is. If we see €60 in a large font, we think that this price is high. Numbers that appear large lead to the conclusion that the price must be high. In general, prices should be displayed in small font so that consumers perceive a lower price consequently [4]. However, this tactic also works in the other, opposite direction. Large fonts are effective when customers are evaluating price differences. The difference in the size of the prices presented highlights the difference between low and high prices.

Field where the price is written

The location where the price is displayed also influences its perception. For example, on a sales flyer or an advertisement - when prices are presented at the top or on the left-hand side, they are perceived as cheaper. Why on the left? Since our eyes enter the field of vision from the left, the left side becomes an anchor point or 'visual foothold'. Anything displayed away from the left side, the heavier the perceived weight, or in our case, the higher the price [5]

Moreover, researchers find that the numbers on the horizontal axis of left to right appear to be getting larger. This is the case assuming that we read from left to right. Small numbers are associated with the left, because we usually see smaller numbers on the left psychologists conclude that we are likely to associate them with lower values, i.e., lower price [6].

Right-handed people tend to associate right space with positive ideas and left space with negative content. Therefore, left-handers showed the opposite pattern, associating the right space with negative and the left space with positive content. These results support the body specificity hypothesis and provide evidence for a perceptual-motor basis for various ideas [7].

Some theories are also supported by the fact that the product shown above looks lighter. This fits perfectly with the notion that heavy things are always on the ground. Therefore, researchers understand this phenomenon in the same way for price perception, which may inherit this effect.

The authors of the study present that price in the bottom right corner appear higher [8]. Others, in their study, find that prices at the bottom are perceived as lower [9].

The meaning of syllables

In spoken or audio price presentations, prices appear lower with fewer syllables [10]. The findings relate to the English-speaking area.

For example, in the United States:

- \$27.82: Twenty-seven eighty-two (7 syllables)

- \$28.16: Twenty-eight sixteen (5 syllables)

In this example, 28.16 seems numerically smaller to us because of the smaller phonetic size. We don't have to say the price out loud, the brain still decodes the phonetic version [11].

The meaning of commas in pricing

Researchers have also studied the meaning of punctuation. Their message is: drop punctuation when showing price and avoid cents after the decimal point if possible. Do not show them even if they are just zeros. More numeric digits in the price display increases the sense of its magnitude.

In the visual perception of prices, punctuation marks such as the dot separating thousands from hundreds have a distinctive effect. A price written without a punctuation mark is usually perceived as lower. Let's look at the example of a price of one thousand three hundred and forty-six euros:

1346€

1.346€

The researchers confirmed the hypothesis that the price with the punctuation mark in the example shown is perceived as slightly higher than the price without the punctuation mark. In a follow-up of their research, the authors added cents [10]. In the case of adding another separator, the decimal point, this effect is magnified. We consider the price to be even higher:

1.346,00€

The effect is further increased if we add a few cents to the price, for example:

1.346,35€

The research shows that we perceive a price with a separator between one thousand and one hundred to be about 10% higher than a price without a separator. We also perceive a price about 10% higher than a price with a dot (.) if we add a comma (,) and cents.

Since cents do not mean much for prices expressed in four-digit numbers, the logical conclusion would be to drop them. If we want to make the price appear as low as possible in the eyes of the customer, it makes sense to write it without the separating dot.

We would probably never think that a price ending in twenty-two would be more acceptable to someone than one ending in eighty-eight. If your name is Tom or Travis, according to the researchers, this may be the case. Especially if you hear the price spoken rather than just seeing it written. The first letter of buyer's name influences the perception of price and encourages the purchase decision. They find the price more acceptable.

Similarly happens with dates, which mark an important event in our lives. For example, your birthday has a significant impact on price perception. Whoever is born on 17 May, the number seventeen will influence his decision. A price of 2.17 will be more acceptable to them than, for example, a price of

2.16 and so on.

Link to other data

How to interpret these phenomena. Social psychologists have found that people usually have a positive opinion of themselves [12]. A certain degree of affection is also formed for anything that reminds us of events related to experiences and adventures. Research in this area has indicated a stark contrast with many of the assumptions held by both lay people and scientists about important decisions in everyday life. It raises the question of the degree to which people control their own lives. Increasingly, science is finding that many of our life decisions are made based on unconscious emotions or decision rules. This does not mean that we are always irrational in these cases. This specific form of implicit egoism has been shown in research to be the way in which people create social worlds and tend to feel comfortable in them [13].

How the first letter of a respondent's name and price are related has been substantiated in a study of 120 US college students [14]. For example, Tom and Edward. The survey was conducted online. For this purpose, a radio advertisement was created featuring a new sports bike of a fictional brand (Mizuki). The brand name did not contain the letters D and O, which they took special care to avoid. Each respondent heard a radio advertisement announcing the new product at a price of €622 or €688. The price varied randomly. Respondents were asked to rate the attractiveness of the offer and their purchase intention. The survey showed that respondents with a name starting with the letter T showed a higher preference for the price ending with twenty-two (622). Respondents with names beginning with the letter E were more likely to prefer a price ending in eighty-eight (688). The same was true for the indication of purchase intention. More Edwards would buy a bicycle at a price of €688 and more Toms would buy a bicycle at a price of €622.

In Figure 2 we see the result of respondents who have the first letter of their name as “E”, and we have called them Edward. As we can see, 56% of Edwards prefer the price of 688€, while respondents with the first letter T, who we called Tom, were more inclined to prefer the price of 622€, since the price ends with twenty-two, i.e., the letter "T".

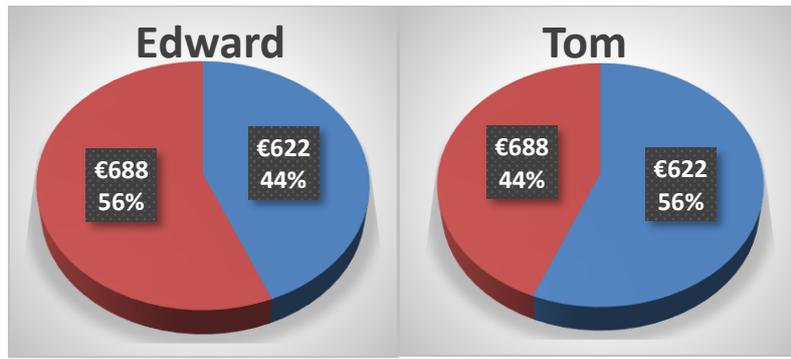


Figure 2. Display price preference according to the initial of the name

Researchers have found similar findings for numbers as for letters. They confirmed the hypothesis that when price is expressed visually, there is a higher level of liking and also a higher level of purchase intent. The conclusions relate to the findings of implicit egoism, which both in laboratory experiments and in everyday practice typically influence people's behavior and their purchase decisions [15]. Adding 15 cents to the price of 39€ in case the respondent was born on 15 April showed a higher degree of affection towards the purchase. He accepted the price more positively than without the decimal addition related to his date of birth. So, the date of birth included in the price, for example, 15 May, will be much more favorable to a price of €39.15 than to a price of €39 or some other price.

There are two famous football clubs in Germany, Schalke 04 and Borussia Dortmund 09. The numbers in the names indicate the year in which the club was founded. Schalke was founded in 1904 and Borussia in 1909.



Figure 3. Brands of football clubs

The researchers confirmed the assumption that FC Schalke fans prefer a price of 1.04, while Borussia fans prefer a price of 1.09. They conducted the study in several ways, including a conjoint analysis [16]. Among other things, in one version of the study, students on campus were offered two types of desserts, with two different sprinkles, plain sugar and cinnamon sugar. The desserts were given two different prices of €1.04 and €1.09. The prices were changed every half an hour. In this case, too, the fans proved to be loyal to the club's number. Schalke fans mostly opted for the dessert, which had a price of €1.04. Borussia fans did the opposite. More often they chose the dessert with a price of €1.09.

So, it is not only the date of birth or the letter in our name, but also the number of the football club or

the number worn by the favorite player on the jersey that often influences our price perception behavior. There are probably many other pieces of information in the form of letters and numbers that influence our decisions without us even being aware of it.

The phenomenon described probably cannot be simply applied to pricing. In any case, it is a reasonable question whether to end the price of an old car with the number seven (7) or seventy-seven (77) if the car is being sold to Simon, and eight (8) or eighty-eight (88) if the buyer is Edward.

Color of the displayed price

Color is ubiquitous in marketing communication, but less is known about the impact of color on price perception. Almost four years ago, a team of researchers conducted a large study which concluded that red prices had a significant impact on customers' perception of savings. The results of these studies show that this effect is moderated by gender. Male shoppers perceived greater savings in red than in black when presented with prices. The research was carried out using catalogue sales, where two customer segments were sent different catalogues. One showed price in red and the other in black. For both women and men, the perception of savings was higher with red prices than with black prices. But the difference between the genders was even more striking. The individual surveys were carried out on a sample of 124 and 159 students. The authors conclude that men process visual catalogue material less deeply and use price color as a visual heuristic to judge the perceived savings [17].

The fact that men make decisions quickly and assume that red prices indicate savings on purchases was later also found by other authors [18].

Retailers often present prices in red to signal savings. However, they often present only one price in red in promotional materials. The others are black. The research by Ye [19] analyses this widespread retail practice using a theoretical perspective. In his study, he used an eye-tracking device. The theoretical framework of their research predicts that associations with red play an important role in the perception of savings in stores that use red to indicate only one price. The authors argue that consumers perceive lower savings where only one price is shown in red. They point to the effect (red: Save and red: Stop). They conclude that the use of only one price in red lowers the perceived savings in the whole store, which may be detrimental to sales.

The empirical part

Given Puccineli's conclusion that red is more favorable in the eyes of men, we analyzed this hypothesis with a new survey of a sample of 996 respondents, via an online survey using Sawtooth

software.

We included 4 products for men and 4 for women. Therefore, the first question was about gender. Depending on the answer, the software displayed products with different prices in different colors. We used 3 prices and 4 colors. Black, blue, green and red.

On the same question, which was ‘What would you choose if they only had the offers shown’, the respondents selected their choice. The same question was repeated ten times and the concepts of the displayed offers were different each time. Each product was shown at different prices and in different colors. This is the basis of the CBC Choice base conjoint analysis method [20] [21], which allows us to analyse each feature at all levels.



Figure 4. Online questionnaire

Figure 4 shows three out of ten Conjoint question presentations in the online survey, where respondents chose from a variety of offerings showing how the combination of these characteristics changed in each question. The products were presented each time in different combinations, where both the minimum price and the color of the price record changed.

Sample

For this paper, we used a sample of 468 male respondents and processed them in four segments. We have labelled them as shown in Table 1.

M ++ men over 50 with above average income
M + - men over 50 with below average income
M- + men up to 50 years with above average income
M + - men up to 50 years with below average income

Table 1. Segments included in the research of this paper

Ensuring orthogonality

In the design of the online survey itself, the software has ensured that all levels of the three characteristics are presented equally throughout the survey. This means that respondents could select each level of each attribute in the same number. Each sample segment was processed in Sawtooth Software's SMRT module. In a first step, we analyzed the number of times each level of all three traits was selected.

	M++	M+-	M-+	M--
N. of respondent	115	220	46	87
black	0,31	0,31	0,28	0,31
green	0,29	0,29	0,33	0,30
red	0,31	0,29	0,29	0,30
blue	0,30	0,30	0,32	0,26

Table 2. Percent of price color selection among the given options

As can be seen in Table 2, the differences between the colors are small. Green stands out in the group of men under 50 with 0.33, which means that it was chosen 33% of the time, and in the other direction black stands out with 28%.

For the statistical treatment of the parameters, we used multi-nominal regression and calculated the partial preferences in the SMRT module using the Logit method. The calculations were converted into graphical form and the values were colored in the color used for the price display. The preference ratios are shown in Figure 5.

It shows the preference of the color of the prices displayed in the columns colored the same as the color of the prices in the survey questions.

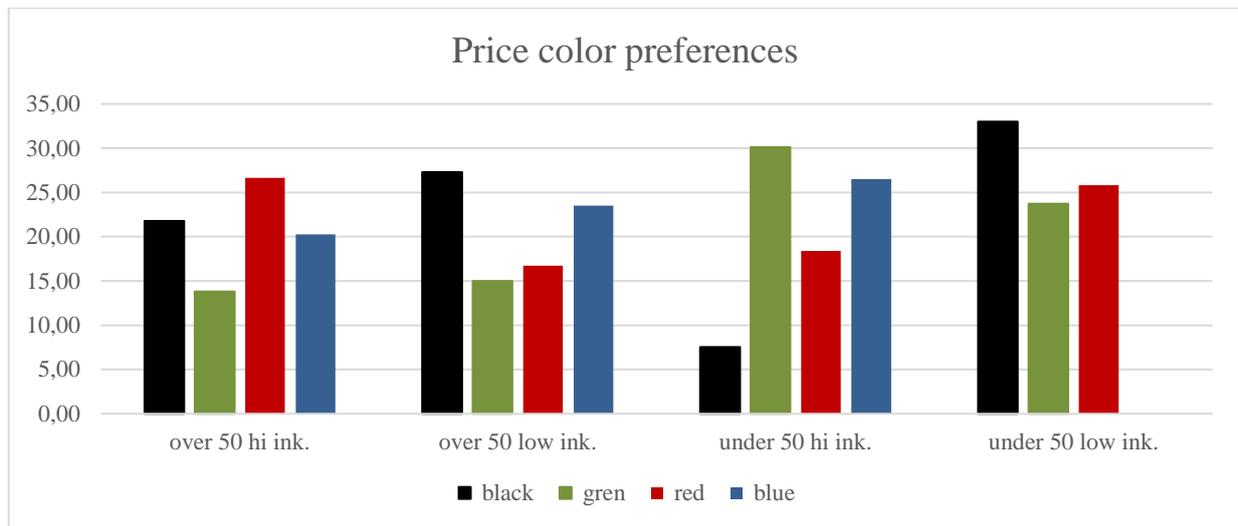


Figure 5. The color preferences of the displayed price

In the segment of high-income men over 50, red was the most frequently chosen color for the displayed price, followed by black, blue, and green as the least preferred.

In the low-income segment of men over 50, black was the most frequently chosen color for the price shown, followed by blue, red and green as the least preferred.

In the segment of men under 50 with high income, green was the most frequently chosen color for the displayed price, followed by blue, followed by red and black as the least preferred color.

In the low-income segment of men under 50, black was the most preferred color for the price shown, followed by red, green, and blue as the least preferred.

It should be noted that the values on the y-axis represent only the basis of relative proportions and do not represent percentages or any other values.

Relative importance of the color of the displayed price.

The survey used three attributes: the brand of the product; the price in nominal value; and the color with which the prices were displayed to the respondents. Each level of these attributes influenced the overall purchase preference. We therefore calculated how much influence each attribute has in the decision.

	% M+++	% M+-	% M-+	% M--	average
Brand	84,85	72,93	73,37	62,30	73,36
Color	4,28	4,09	7,52	11,00	6,72
Price	10,87	22,98	19,11	26,70	19,92

Table 3. Relative importance of attributes

The results shown in the table indicate the high importance of the brand in the choice of the options given. 84.85% of high-income seniors. The color of the price has the least importance but still influences the choice. Less so for the elderly and more so for the younger, 11% for the younger with low income.

Conclusions

The results obtained do not allow us to unreservedly confirm the hypothesis put forward based on the preliminary findings. Prices in red do not always work in the direction of perceiving better prices. For different groups of men, according to age and income, black and green were also included. Red was the most preferred color for the over 50s with a higher income and green for the under 50s with a higher income.

Black was the most represented price color. This is the most prevalent for both high- and low-income younger people. In terms of the number of respondents, this is a good half of the total sample.

An interesting finding is the relative share of price color influencing the decision. For older people, the color of the price is much less important (a good 4%) than for younger people (from about 8% to about 11%). Perhaps this information is important to consider for future research on the influence of the color of the price presented on purchase decisions.

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FENOMEN NEZAMENLJIVIH ŽETONOV

Povzetek. *Nezamenljivi žetoni (ang. NFT – non-fungible tokens) so oblika kripto imetja. Pozornost so zbudila poročila o virtualnih zbirateljskih predmetih, ki se prodajajo v znanih dražbenih hišah in dosegajo visoke cene. Vendar je potencial NFT-jev precej večji. V prispevku osvetljujemo NFT-je iz različnih zornih kotov. Prikazujemo razloge za njihov tehnološki razvoj, kako jih kreiramo, kupimo ali prodamo, cene po katerih se prodajajo in družbeni kontekst trga NTF. Opravili smo tudi raziskavo, kjer smo ugotovili, koliko ljudi v Sloveniji je že slišalo za NFT, koliko jih je že opravilo nakup in razloge, zakaj so se določili za nakup ali zakaj se niso. Ugotovili smo, da je pojem NFT med Slovenci še dokaj neznan, Tisti, ki so za NFT-je že slišali, jih povezujejo z digitalno umetnostjo in večinoma ne vedo, da je to le ena od možnosti uporabe. Ugotovili smo tudi povprečen znesek, ki so ga anketirani slovenski kupci porabili za nakup NFT.*

Ključne besede: *NFT, nezamenljivi žeton, kripto imetje, blockchain, veriga blokov*

Uvod

Nezamenljivi žetoni (ang. NFT – non-fungible tokens) so oblika kripto imetja.

Besedo fenomen smo uporabili, saj so zbudili veliko pozornost svetovne javnosti zaradi medijskih objav in pri velikem številu ljudi vzbudili nenatančne asociacije na ta pojav. Nezamenljivi žetoni niso le oblika dragih zbirateljskih predmetov, na kar mnogi pomislijo. Njihov pomen je precej večji. V tehnološkem smislu gre za obetavno rešitev dokazovanja lastništva in avtorstva digitalnih datotek.

V prispevku predstavljamo, kaj so nezamenljivi žetoni, razloge za njihovo iznajdbo, način delovanja, cene po katerih se prodajajo, družbeni kontekst trga NTF ter prednosti, priložnosti in nevarnosti, povezane z njimi. V raziskavi nas je zanimalo, v kolikšni meri slovenska javnost pozna tehnologijo nezamenljivih žetonov in čemu so namenjeni ter ugotoviti zanimanje potencialnih vlagateljev in drugih zainteresiranih imetnikov unikatnih digitalnih dobrin za njihove nakupe.

Nezamenljivi žetoni

Nezamenljivi žetoni, ki jih najpogosteje označujemo s kratico NFT, so digitalne slike, zvočni zapisi, video posnetki, videoigre in še marsikaj drugega, kar skušajo avtorji zaščititi pred kršenjem avtorskih pravic, z uporabo tehnologije verig blokov (ang. blockchain) oz. tehnologije razpršene evidence kot

to tehnologijo še imenujemo. NFT se lahko uporabljajo za dokazovanje lastništva kateregakoli edinstvenega digitalnega sredstva. V mnogih primerih gre za virtualne zbirateljske predmete, ki se prodajajo v znanih dražbenih hišah in dosegajo neverjetne cene. Njihova popularnost in prepoznavnost raste.

Meriam-Webster (2022) definira nezamenljive žetone takole. Nezamenljivi žetoni so edinstven digitalni identifikator, ki ga ni mogoče kopirati, zamenjati ali razdeliti; zapisan je v verigi blokov ter se uporablja za potrjevanje pristnosti in lastništva določenega digitalnega sredstva ter posebnih pravic v zvezi z njim. Isti slovar navaja, da se je kratica NFT, s tako definiranim pomenom, prvič pojavila l. 2017 [9].

Beseda nezamenljivost potrebuje v slovenskem jeziku dodatno pojasnilo zaradi svojega dvojnega pomena. Nezamenljivost v kontekstu NFT pomeni edinstvenost oz. unikatnost. Digitalnega sredstva, ki je predstavljeno kot NFT, ne moremo imeti za kaj drugega kot je v resnici.

NFT je v tehnološkem smislu podatkovna enota, ki je shranjena v razpršeni evidenci (ang. distributed ledger) na eni od verig blokov (ang. blockchain). Za kreiranje NFT-jev je trenutno najpopularnejši Ethereum [1]. Ustrezen zapis v verigi blokov potrjuje, da je digitalno sredstvo edinstveno. V bistvu gre pri NFT za pogodbo, iz katere izhaja, kdo je lastnik neke virtualne dobrine, ne glede na to ali je dobrina dostopna vsem ali ne [2].

Pomembno je, da noben NFT ni enak drugemu, vsak NFT pa mora imeti svojega lastnika. Prodajajo se na posebnih platformah. Med najbolj znanimi je Opensea [1]. Z NFT-ji se trgujejo tudi na največjih kripto menjalnih platformah kot so Binance, Coinbase, FTX, Kraken. Ustvarjalci NFT lahko prodajo svoja dela kjerkoli, kjer se trguje z NFT-ji, zato z lahkoto dostopajo do globalnega trga, pri tem pa ohranijo avtorske pravice. Zaradi slednjega lahko direktno zahtevajo avtorsko provizijo ob prodaji in ponovni prodaji svojega avtorskega dela [2].

Vsak, ki ima digitalno dobrino ali jo zna ustvariti ter nekaj znanja na področju računalništva, je sposoben ustvariti NFT. Zato obstaja na milijone različnih NFT-jev in različnih projektov.

NFT projekt je izraz za skupino NFT-jev, ki si delijo ime, neko osnovno lastnost, avtorja in idejo, ki jih povezuje. Osnovna ideja so npr. opice, mačke.

Zgodovina

Zgodovina nezamenljivih žetonov je krajša od zgodovine tehnologije verige blokov, a vseeno nekoliko starejša kot njihovo ime.

Maja 2014 je digitalni umetnik Kevin McCoy skoval prvi znani NFT in ga poimenoval Quantum. Quantum je digitalna slika osemkotnika, napolnjenega z različnimi oblikami, ki utripajo na precej hipnotičen način. Novembra 2021 je bilo to edinstveno umetniško delo prodano za več kot 1,4 milijona dolarjev na dražbi pri Sotheby's [14]. Na povezavi, ki je v referencah, je vidno tako umetniško delo kot prodajna cena.

Za prelomno štejejo leto 2017, z nastankom virtualne igre CryptoKitties, ki igralcem omogoča posvojitve, vzrejo in trgovanje z virtualnimi mačkami. Igra je postala zelo priljubljena. Nato se je pojavilo veliko število nezamenljivih žetonov, ustvarjenih na omrežju Ethereum, predvsem za igre in metasvet² (ang. metaverse) platforme. Trg NFT je v letu 2020 doživel hitro rast, njegova vrednost se je po navedbah Emerging Tech Brew (2021) potrojila na 250 milijonov USD. V letu 2021 je bilo za NFT porabljenih skoraj 25 milijard ameriških dolarjev, a menijo, da se trend najbrž umirja ([5], [7]). Kmalu bo jasno, ali je na umirjanje vplivala vojna v Ukrajini in splošni padci na borzah, ali se je umirilo začetno navdušenje.

Odmevne prodaje nezamenljivih žetonov

Leta 2021 so NFT žetoni vzbudili pozornost celotne svetovne javnosti. Razen že omenjene visoke prodajne cene Quantuma, je presenetilo še precej drugih kotacij in prodaj nezamenljivih žetonov. Za izbor predstavitev zanimivih prodaj v nadaljevanju smo se odločili, ker nakazujejo tako visoko ceno kot raznolikost ponudbe.

Umetnik Banksy je preko dražbene hiše Sotheby's prodal dve sliki, za skupno vrednost več kot 14 milijonov USD [15]. Visoka cena digitalnih umetniških del morda koga ne preseneča, saj so umetniška dela na splošno draga. Vendar pa se nezamenljivi žetoni in visoke cene pojavljajo tudi za druge digitalne dobrine. Ustanovitelj Twitterja Jack Dorsey je svoj prvi čivk (ang. tweet) prodal za 2,9 milijona USD [4].

Eden izmed večjih projektov po obsegu je Bored Ape Yacht Club (BAYC). Prvotna cena NFT-jev

² Metasvet ali metaverzum je omrežje virtualnih prostorov, namenjenih za druženje, zabavo, učenje in druge dejavnosti (Islovar).

tega projekta je bila enaka za vseh 10.000 izdanih žetonov in je znašala je 0.08 ETH oz. 170 USD. Cene so kmalu po izdaji zelo poskočile. Konec januarja 2022 se je najdražja prodala za 1080,69ETH oz. za 2,85 milijona USD [6]. Vseh 10.000 grafik opic ima za osnovo enako opico, razlikujejo pa se po podrobnostih kot so npr. oblačila, mimika, barva. Lastnik z nakupom BAYC NFT-ja vstopi v klub, se pravi v omejeno družbo bogatih in slavnih oseb, ki za svoje člane organizira zasebne koncerte in vsakoletno zabavo na luksuzni jahti. V NAYC klubu so npr. Justin Bieber, Serena Williams, Neymar, Eminem in še mnogo drugih [8].

Najvišja cena, ki jo je dosegel kakšen NFT, je 532 milijonov USD. Za tako ceno se je prodal NFT iz skupine NFT-jev CryptoPunk. Izkazalo se je, da je kupec NFT kupil od samega sebe in je šlo za reklamni trik. S pravo prodajo se je do sedaj največ iztržilo 91,8 milijona USD [10].

Digitalne dobrine v obliki NFT

V obliki NFT-jev se ne prodajajo le umetniška dela in vstop v visoko družbo, temveč se za idejo skriva mnogo uporabnejša vrednost, predvsem pa so cene, po katerih se prodajajo NFT-ji bistveno nižje od predstavljenih.

Za prodajo v obliki NFT je primerna vsaka digitalna dobrina, ki se ne sme nekontrolirano kopirati in zahteva nedvoumno jasnost, kdo je avtor in kdo imetnik materialnih avtorskih pravic. NFT-ji se uveljavljajo na številnih področjih:

- digitalna umetnost, npr. umetniške slike, glasbeni albumi, fotografije, videoposnetki, animacije,
- dogodki, npr. vstopnice za koncerte in druge prireditve,
- turizem, npr. unikatni digitalni 3D eksponati in ekskluzivni panoramski posnetki, razglednice, digitalni spominki, darila,
- družabna omrežja, npr. članske izkaznice za različne skupnosti,
- modna industrija, npr. kolekcija digitalnih oblačil Dolce & Gabana,
- šport, npr. sezonske karte za nogometne tekme, trgovalne kartice, NBA Top shot,
- dodatki v računalniških igrah, npr. virtualne nepremičnine, virtualne domače živali,
- zbirateljski predmeti,
- kuponi za razne storitve,
- druge digitalne dobrine, ki se ne smejo kopirati brez dovoljenja imetnika avtorskih pravic [1].

Dragi NFT so vzbudili pozornost, a statistike kažejo, da so povprečne prodajne cene veliko nižje kot bi si mislili na podlagi predstavljenih primerov. Poudariti je potrebno še, da cene precej nihajo. Volatilnost je značilna tudi za cene drugih kripto kovancev. Na spletni strani Nonfungible.com, ki jo

v člankih v zvezi s statistikami NFT-jev citira tudi Bloomberg [7], so navedli, da je bila povprečna prodajna cena 6.000 USD na dan 19.3.2022. Na spletni strani CoinmarketCap (<https://coinmarketcap.com/nft/>), kjer spremljajo vse kotacije na platformah pa lahko ugotovimo, da se je na isti dan najdražji NFT prodal za 111,42 ETH, mnogo pa jih je bilo ponujenih s ceno 1 milijoninke ETH, kar znese 0,3 ameriške cente, a se vseeno niso prodali.

Omeniti moramo še, da so nekateri NFT-ji izdani brez namena, da bi se prodajali. Na tem področju je svoj prispevek naredila Republika Slovenija, ki je za Expo 2020 v Dubaju izdala NFT žeton. Imenuje se I feel sLOVEnia NFT in ima svojo predstavitevno stran: <https://ifeelnft.si/>. Ta žeton so dobili obiskovalci predstavitvenega paviljona Slovenije na Expu v Dubaju, na njem pa so digitalizirani številni ponosi Slovenije, od naravnih lepot do izdelkov [12].

Nakup in prodaja nezamenljivih žetonov

NFT-jev ne moremo kupiti neposredno za katero od fiat³ valut. Kupimo jih lahko s kripto valutami, najpogosteje z Ethrom in Solano. Zato morajo tisti, ki še ne vlagajo v kripto valute, najprej narediti kripto denarnico (ang. crypto wallet) in kupiti zahtevano kripto valuto. NFT lahko kupimo na ustrezni menjalni platformi po zahtevani ceni, lahko pa ponudimo manj in upamo, da lastnik ponudbo sprejme. Pozorni pa moramo biti tudi na provizijo, ki jo v angleščini imenujejo »gas fee«. Ta dajatev je del vsake transakcije prek Ethereum, Solana in drugih blokovnih verig, znaša pa lahko od par centov do več sto dolarjev. Znani so primeri, ko je bila provizija desetkrat dražja od samega NFT-ja [3].

Nakup NFT-jev za zbirateljske predmete je visoko špekulativna naložba. Mnogo investorjev navaja, da se odločajo za nakup NFT-jev, ker upajo, da bo njihova cena narasla. Upajo na nakup po nizki ceni in prodajo po visoki ceni. To imenujemo NFT obrat (ang. NFT flip). Nekaterim NFT-jem je cena res narasla za milijon krat, vendar pa za večino izdanih bistvenega povečanja cene ne moremo pričakovati.

Izdaja nezamenljivih žetonov

Za vse transakcije z NFT-ji, vključno z izdajo, potrebujemo digitalno denarnico.

NFT nastane iz digitalne vsebine oz. digitalne datoteke s procesom, ki ga imenujemo kovanje (ang. minting). To je proces pretvarjanja digitalne datoteke v unikatno digitalno dobrino, ki se zapiše v eno

³ S fiat označujemo uradne, državne valute.

od verig blokov (npr. Ethereum) in se s tem za vse čase shrani v razpršeni evidenci⁴, ki jo je nemogoče izbrisati ali spremeniti. Digitalni dobrini se pripiše informacija o avtorju te dobrine. Avtor lahko izbere določeno število ljudi, ki imajo možnost NFT-je kupiti po prvotni ceni s tem, da formira listo upravičencev. To je t.i. beli seznam (ang. white list).

NFT tehnologija omogoča, da lahko kdorkoli poizve, kdo je lastnik določenega NFT-ja, oziroma kateri naslov denarnice je lastnik originalne digitalne dobrine.

Za ustvarjanje oziroma kovanje NFT obstajajo različni načini. Če želimo imeti NFT skovan v najkrajšem času in ne znamo programirati, je najbolje uporabiti eno izmed znanih platform, npr. OpenSea. Za izkušene računalničarje, z znanjem programiranja, so na voljo posebne platforme, npr. Moralis, s katero ustvarimo lastno decentralizirano (ang. dApp) aplikacijo za kovanje NFT [11].

Potek raziskave

Zanimalo nas je, ali sodelujoči v raziskavi poznajo pojem NFT, s čim ga najpogosteje povezujejo, koliko jih je že opravilo nakup, razlogi za nakup in proti njemu ter koliko denarja so investirali v NFT.

Hipoteze

Postavili smo naslednje hipoteze:

1. Več kot 50% anketirancev v starostni skupini do 29 let je že slišalo za NFT.
2. Manj kot 5% vseh anketirancev je že opravilo nakup NFT.
3. Glavni razlog, zakaj se anketiranci do 29 let ne odločijo za nakup NFT, je previsoka cena NFT.
4. Glavni razlog, zakaj se anketiranci iz starostne skupine nad 30 let ne odločijo za nakup NFT, je nezaupanje v NFT.
5. Anketiranci, ki so za pojem NFT slišali iz medijev, slednjega največkrat povezujejo z digitalno umetnostjo.

Zanimalo nas je še, koliko denarja so kupci NFT porabili za nakupe in na katerih menjalnih platformah so jih nabavili.

Metoda raziskovanja

Raziskovanje področja NFT smo izvedli s pomočjo vprašalnika, ki smo ga objavili kot spletno anketo

⁴ Evidenco hranijo vsi zainteresirani uporabniki določene blokovne verige.

na spletni strani <https://www.1ka.si/>. Anketa je bila uporabnikom dostopna od 14. 2. 2022 do 19. 2. 2022. Povezavo do spletne ankete smo delili preko socialnega omrežja Facebook in neposredne elektronske pošte. Uspelo nam je doseči 255 klikov na anketo, od tega je celotno anketo izpolnilo 189 anketirancev.

Vzorec

Vzorec ni bil vnaprej določen. Pričakovali smo, da bo struktura udeležencev po starosti ustrezala populaciji prebivalcev Slovenije. To se žal ni uresničilo, čeprav je bila anketa na voljo brez omejitev.

Analiza rezultatov

Rezultate smo analizirali z orodjem Ika in Excelom.

Demografska analiza vzorca anketirancev

Zanimala nas je starostna skupina, v katero spadajo anketiranci. Določili smo štiri starostne kategorije. Iz rezultata sledi, da je anketo reševalo največ anketirancev iz starostne skupine »do 29 let« in sicer kar 59 %, sledi skupina »od 30 do 49 let« z 31 %, nato skupina od »50 do 64 let« z 8 % in skupina »od 65 let« z le 1%. Zbrali smo še nekaj demografskih podatkov (stopnja izobrazbe, zaposlitveni status), ki pa za predstavljeni del raziskave niso relevantni.

Hipoteza 1

Hipoteza 1: Več kot 50% anketirancev v starostni skupini do 29 let, je že slišalo za nezamenljive žetone.

Pri oblikovanju hipoteze smo domnevali, da mlajši anketiranci bolj spremljajo kripto področje kot starejši.

Hipotezo smo potrdili. Iz pridobljenih odgovorov sledi, da je kar 82% anketirancev v starostni skupini do 29 let že slišalo za nezamenljive žetone.

Za NFT so slišali tudi v drugih starostnih skupinah (v starostni skupini od 30 do 49 let: 39 % in v starostni skupini 50 do 64 let: 38 %). V teh skupinah hipoteze ne bi potrdili.

Hipoteza 2

Hipoteza 2: Manj kot 5% vseh anketirancev je že opravilo nakup NFT.

Hipotezo smo ovrgli. Izkazalo se je, da je 15 oz. 8 % vseh anketirancev že kupilo NFT, kar je več, kot smo predvidevali. Največ nakupov so opravili študenti in sicer 53 % od vseh anketirancev, ki so kdaj kupili NFT. Ker je starostna skupina, kamor spadajo študenti najštevilčnejša v tej raziskavi.

Hipoteza 3

Hipoteza 3: Najpomembnejši razlog, ki mlajšim (do 29) preprečuje nakup NFT, je previsoka cena NFT.

Hipotezo smo potrdili.

Anketiranci iz starostne skupine do 29 let so odgovor »Predrago« kar v 93 % izbrali med razlogi, zakaj se niso odločili za nakup. To hkrati pokaže, da je njihovo poznavanje NFT omejeno na površno sliko, ki so jo dobili v medijih. Statistike menjalnih platform namreč prikazujejo ogromno število NFT-jev, ki so skoraj brez cene. Med razlogi proti nakupu sledijo po pomembnosti: visoko tveganje, nezaupanje v NFT in prezahteven postopek nakupa.

Hipoteza 4

Hipoteza 4: Najpomembnejši razlog, da se anketiranci, ki so starejši od 30 let ne odločijo za nakup, je nezaupanje v NFT.

Te hipoteze nismo potrdili. V tej starostni skupini je bil glavni razlog, ki preprečuje nakup, neznana tehnologija, sledijo pa po pomembnosti: nezaupanje v NFT, prezahteven postopek nakupa in visoko tveganje.

Hipoteza 5

Hipoteza 5: Anketiranci, ki so za NFT slišali iz medijev, jih največkrat povezujejo z digitalno umetnostjo.

Iz pridobljenih rezultatov sledi, da 76% anketirancev, ki so za NFT slišali iz medijev (TV, internet), povezuje NFT z digitalno umetnostjo, s čimer je hipoteza potrjena.

Raziskovalna vprašanja

Zanimalo nas je, koliko denarja so kupci investirali v NFT?

Število respondentov, ki so že opravili nakup NFT, je nizko, le 8% oz. 15. Odgovori glede vrednosti nakupa so precej razpršeni. Najvišji nakup je bil za 2.500 EUR in najnižji za 15 EUR. V povprečju so kupci v NFT vložili 368,25 EUR.

Zanimalo nas je tudi, katere NFT tržne platforme ste uporabili za nakup?

Izmed ponujenih odgovorov je bil izbran samo OpenSea. Izbralo ga je 60% anketirancev. Pri vprašanju je bila dodana možnost vpisa svoje NFT menjalne platforme. Pod »Drugo« smo prejeli sledeče štiri odgovore: Nba top, Magic Eden shots, Binance blockchain, Vulcan forged.

Odgovor Nba top nakazuje, da je kupec kupil enega od NFT, ki prikazujejo NBA tekme ali zanimive izseke s tekem. Tovrstni nakupi (npr. vstopnice za prireditve, športna tekmovanja) so verjetna smer večje uporabe NFT-jev, čeprav je v tem času to področje slabo poznano in še ne prav veliko popularizirano. Za osebe, ki imajo kripto denarnice, postopek tovrstnih nakupov ni zapleten. Za ostale

pa je trenutno še precej neprivlačen.

Zaključek

S tem prispevkom smo želeli osvetliti pojem nezamenljivih žetonov, pojasniti kako se z njimi trguje in za kakšne cene ter ugotoviti, kaj se na tem področju dogaja v Sloveniji.

Predstavili smo, kako lahko vsak posameznik izda nezamenljivi žeton. Proces nakupa in prodaje NFT je dokaj enostaven, pa vendarle je potrebno nekaj računalniškega znanja in zaupanja v tehnologijo. Pomembno je, da uporabnik pred nakupom NFT poišče varno NFT menjalno platformo, kjer kreira račun in kripto denarnico. Oboje je lahko tvegano, če uporabnik ne preveri verodostojnosti ponudnika. Zato je smiselno, da se odločimo za eno od znanih (npr. OpenSea, ki je specializiran za NFT trgovanje) ali eno od uveljavljenih kripto menjalnih platform, kjer trgujejo tako z NFT-ji kot z drugim kripto imetjem, npr. Binace, Coinbase.

Na osnovi zbranih podatkov in njihove analize lahko sklepamo, da je v Sloveniji predvsem mlajša generacija NFT na trgu že zaznala in se lotila poslovanja z njimi. Verjamemo, da bo s časom in napredkom tehnologije zanimanje za NFT žetone vedno večje tudi pri drugih generacijah.

Na osnovi pregledane literature, tržnih statistik in naše raziskave sklepamo, da ima NFT precejšnjo možnost, da postane osnova za novo vrsto digitalne dobrine, kjer je pomembno dokazovanje avtorstva in lastništva ter pravic, ki iz tega izhajajo. Prav tako omogoča veliko dostopnost, saj je globalni trg na voljo iz varnega domačega okolja.

Strokovnjaki s področja nezamenljivih žetonov so prepričani, da le-ti predstavljajo vizijo, za katero se je v prihodnosti vredno boriti. Verjamejo, da se bo tehnologija ravnanja z digitalnimi zbirateljskimi in drugimi predmeti razvila do te mere, da bomo z njeno pomočjo lahko na boljši način upravljali in nadzorovali občutljive podatke in zapise. Zanesljivi odgovor na vprašanje, ali so NFT le modna muha ali revolucija dokazovanja lastništva, bo pokazal čas. Trenutno lahko trdimo, da so vroči trend v kripto svetu, na podlagi katerega njegovi promotorji poskušajo ustvariti čim več medijske pozornosti in pritegniti čim več kapitala v projekte. Mnogi investitorji se za vstop v ta svet odločajo, ker upajo, da jim bodo naložbe prinesle velike dobičke. Mislimo, da tehnologija NFT ponuja mnogo več kot le generiranje špekulativnih naložb, a to bo pokazal čas.

Žal so z NFT povezana številna neodgovorjena pravna vprašanja, na katera bo potrebno v prihodnosti najti odgovore, posebej če se bo uporaba NFT povečala.

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DIGITAL TRANSFORMATION IN ECONOMIES AND CONSUMERS

Abstract. *Digital transformation has been identified as one of the most important themes for clients, particularly in manufacturing, education industries, and cities. Investments in digital technologies and industry 4.0 are transforming economies and consumer behaviour. The article examines how digitalization manifests in manufacturing, mobility, education, and consumer lifestyles to improve business efficiencies, laying the foundations for a digital economy. The spread of COVID-19 and social distancing has made the usage of digital devices a vital everyday necessity and this is set to support connectivity growth. New technologies help fortify supply chains and improve operational efficiency, B2B e-commerce growth. The increasing use of digital tools is transforming mobility, utilities, city planning. Around a third of young adults are planning to spend more on technology and education. In turn, education institutions increasingly integrate technologies such as artificial intelligence and big data to improve learning outcomes.*

Keywords: *economies, consumers, digital transformation.*

Introduction

Investments in digital technologies and industry 4.0 are transforming economies and consumer behaviour.

The growing number of connected households. 236 million new households are forecast to gain access to the internet by 2025. The spread of COVID-19 and social distancing has made the usage of digital devices a vital everyday necessity and this is set to support connectivity growth.

Production automation and digitalization to accelerate. 47% of companies plan to reshape digital

strategies while 25% plan to accelerate investments into production automation tools. New technologies are forecast to help fortify supply chains and improve operational efficiency.

B2B e-commerce is forecast to gain traction. The global B2B e-commerce market is forecast to expand by 66% over 2020-2025 to reach USD4.5 trillion in the latter year. The growing number of connected households, changing consumer preferences, and the need to diversify sales channels are predicted to support B2B e-commerce growth.

Smart cities to improve living standards. By 2040, 64% of the world's population is expected to live in urban areas. The increasing use of digital tools is forecast to transform mobility, utilities, and city planning and in turn make cities more people-centric.

Digital learning to help improve the education system. Around a third of young adults and middle youth are planning to spend more on technology and education. In turn, education institutions increasingly integrate technologies such as artificial intelligence (AI) and big data to improve learning outcomes.

Problem Statement

The aim of the article is to study the assessment of the impact of digital transformation on economies and consumers.

Analysis of recent research and publications

Issues of theoretical, organizational, and methodological support of digital transformation were studied by Dubel M. [1], Dzhedzhula O. [2], Gnatenko I. [3], Kovtunencko K. [4], Kozytska G. [5], Loiko E. [6], Mashoshina N. [7], Nazarova K. [8, 9], Nezhyva M. [10], Ortina G. [11], Panchenko O. [12]. Zadorozhna A. [13]. Lisova R. [14] argues that digitalization is a catalyst for innovation, technological change has led to opportunities such as flexibility, reactivity, and product individualization, but also new obstacles such as rapid technological transformation, high complexity, and changing customer preferences, and legal requirements. Pavlova T. [15] argues that the introduction of digital technologies is happening rapidly in all spheres of society and the state. Pigarev Y. and Kosteniuk N. [16] explore the digitalization of public administration through a system variable management model, a kind of automation of the process of using digitized data. Tsalko T. and Nevmerzhytska S. [17] consider digitalization as the introduction of digital technologies in all spheres of human life and society, involves the integration of physical and computing components at a new,

higher level (ie the transition of biological and physical systems to cyberbiological and cyberphysical), the transition from real to the virtual (online) world. Remnova L. and Zabashtanska T. [18] explore the current challenges of post-industrial society, catalyzed by the global coronavirus pandemic, accelerates the transformation of the labor market, and significantly changes approaches to training and staff development in the new economic reality. Oryekhov M. [19] explores the development of structural transformations of the world financial system, which are influenced by the formation of the latest trend of global economic development – digitalization, which is gaining momentum in all sectors of the economy. Orlova-Kurilova O., Kharchuk T., Taran-Lala O., Khobta M. [20] researches the process of managing innovative entrepreneurship in the conditions of business process transformation, adaptation to the conditions of digitalization, sustainable development, COVID-19. Lozhachevska O., Orlova-Kurilova O., Makarenko N., Rubezhanska V. [21] argues that measures of state influence in the transformation of logistics and marketing strategies of interaction between government and business, digitalization, and sustainable development should be timely with the mandatory search for reserves both within the country and abroad. At the same time, the available scientific works do not fully reveal the specifics of digital transformation in the economy and consumers.

Results

In today's growing world economy, there is changing consumer preferences and supply chain risks to transform economic landscape. A growing need to make supply chains more resilient to future shocks and pressure to improve operational efficiency are driving digitalisation of business activities. Digital and production automation tools could help companies to improve supply chain flexibility, reduce operating costs and provide efficiency gains by eliminating production bottlenecks (fig. 1).

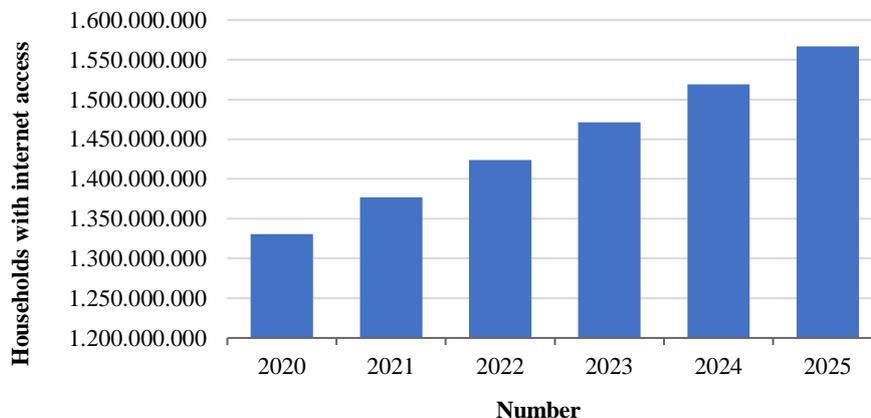


Figure 1. Global Number of Households with Internet Access, 2020-2025 [22].

Changing consumer preferences are also supporting digitalization of economies and consumer markets. The growing number of connected households and consumer lifestyle changes post-pandemic are set to transform cities and the retail landscape, and drive demand for digital learning services.

B2B e-commerce is forecast to play a greater role after the COVID-19 pandemic as companies respond to consumer preference changes and aim to better diversify risks. Expansion into e-commerce platforms is forecast to help reach new consumers and diversify sales risks (fig. 2).

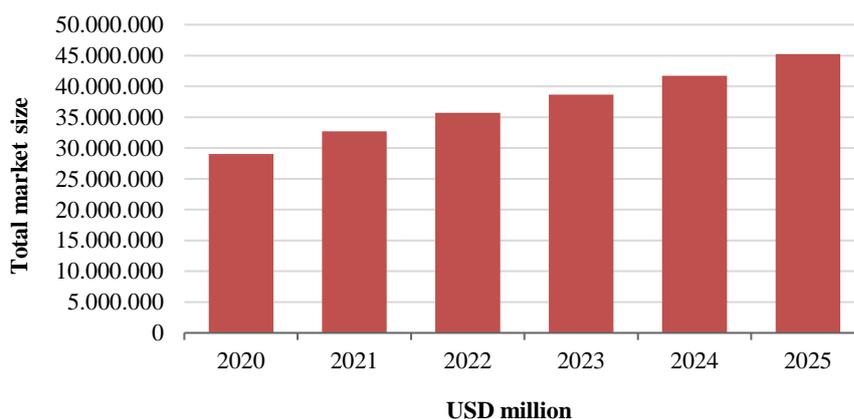


Figure 2. Global B2B E-Commerce Market, 2020-2025 [22].

Investments into digital technologies and industry 4.0 are transforming economies and consumers. We examine how digitalisation manifests in manufacturing, mobility, education and consumer lifestyles to improve business efficiencies, laying the foundations for a digital economy.

Digital transformation of economies is taking shape and in turn changes how consumers are purchasing goods, interaction of companies and the way businesses are structured. Moreover, new data flows enable countries and companies to increase operational efficiency, improve living standards in cities and provide better access to public services (fig. 3).

Digital transformation of business activities is becoming ever more important after the COVID-19 pandemic. Companies feel increasing pressure to invest into digital tools and production automation equipment in order to better prepare for future shocks. New technologies can help to improve operational efficiency, make supply chains more resilient and open new sales channels.

Improving household access to the internet and post-pandemic effects are also driving changes in consumer behaviour. Digital tools allow consumers to stay connected while at home and re-enter the outside world safely. This is anticipated to change the way consumers live, shop, work and travel.

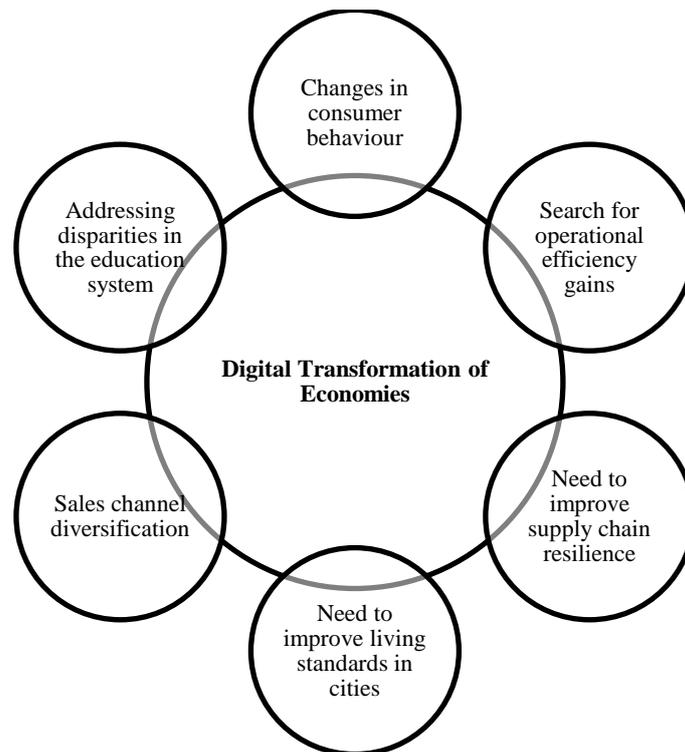


Figure 3. Global B2B E-Commerce Market, 2020-2025

Digital transformation in economies could be considered to develop by such ways:

1. Digital business tools increase – companies invest in digital tools to improve operational efficiency. The COVID-19 pandemic and the physical distancing measures introduced have changed how global businesses operate. Digitalisation tools saw a spike in demand all over the world in 2020 affecting all the global sectors from manufacturing to services. The global service sector is particularly quick to embrace digital business tools to approach customers via e-commerce and booking platforms. Meanwhile, the traditional brick-and-mortar model is losing importance due to high operational costs, also strengthened by the social distancing measures during the COVID-19 pandemic (Fig. 4).

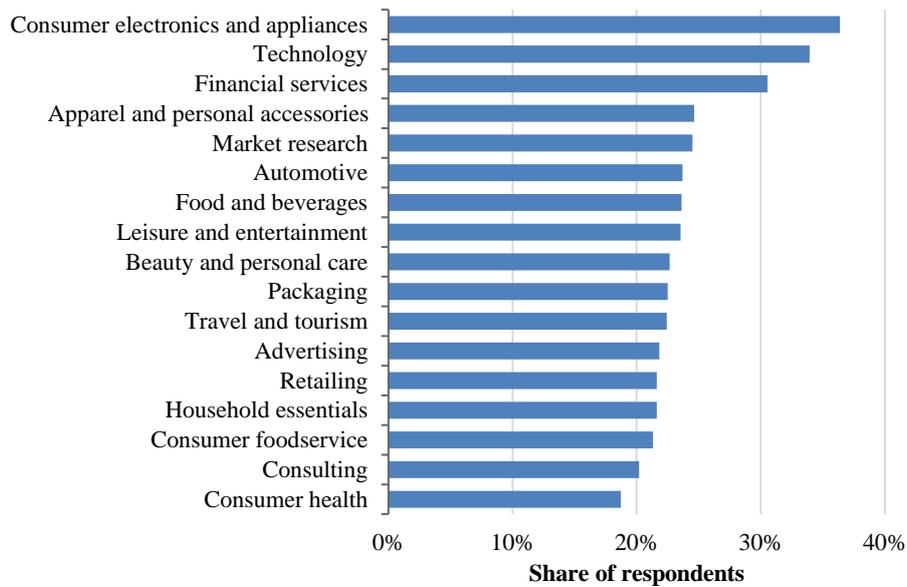


Figure 4. Share of Companies Ready to Invest in Digitalisation, such as IoT, AI, Robotics, 5G and DSN Post-COVID-19 Pandemic by Sector, 2020 [22].

Artificial intelligence (AI) solutions are expected to play an increasing role in companies’ development over the future. Ineffective, repetitive, labour-intensive work will be replaced by digital solutions, which will both cut operational costs and reduce employment in ineffective segments.

Regionally-wise, Euromonitor International’s Voice of the Industry Survey reveals that adoption of digital solutions is particularly gaining pace in Latin America with over a quarter of all companies expecting to boost digital adoption in fields such as IoT, AI and 5G. In contrast, in regions, which are already characterised by high digitalisation, such as North America and Europe, as well as low cost countries in Asia Pacific, the trend is set to be less expressed over 2020-2025.

2. Growth of production automation – addressing the need to improve efficiency and supply chain resilience. Investments into production automation technologies are forecast to accelerate over 2020-2025. According to the Euromonitor International Voice of the Industry COVID-19 Survey, conducted in October 2020, 25% of manufacturing companies plan to increase investments in automation tools. Production automation is forecast to be led by industries having wide product portfolios and long supply chains. Industries such as consumer appliances, apparel and accessories, and automotive are forecast to be among the leaders in production automation. Growing B2B demand for production automation tools is forecast to benefit automated industrial equipment suppliers. Global production value of automated industrial equipment is forecast to expand by 28% over 2020-2025 to reach USD90.3 billion in the latter year.

Investments into industrial robots and other production automation tools would help to transform

production into smaller semi-independent manufacturing hubs, diversify supply chain risks and be closer to the end-consumers.

3. B2B e-commerce development – B2B sector expands e-commerce presence to diversify sales risks. E-commerce is expected to play a greater role in the B2B sector sales mix after the COVID-19 pandemic. In order to diversify operating risks, companies are eyeing investment in e-commerce platforms. According to Euromonitor’s Voice of the Industry October 2020 findings, 64% of companies plan to invest in e-commerce to prevent risks in the future. The global B2B e-commerce market is forecast to expand by 66% over 2020-2025 and reach USD4.5 trillion in the latter year. Retail and wholesale, transport equipment and ICT industries are forecast to drive B2B e-commerce sales growth. Expansion into e-commerce is anticipated to help the companies to better diversify sales channels and risks. By expanding into online sales channel, companies can increase geographic outreach of consumers and reduce losses in case physical sales are temporarily disrupted. Consumer behaviour changes are also predicted to drive the popularity of e-commerce. During the COVID-19 pandemic, consumers switched to online buying, and it is likely that similar trends will eventually transition into the B2B sector. B2B companies will have to adapt to changing consumer preferences and expand their online presence (Fig. 5).

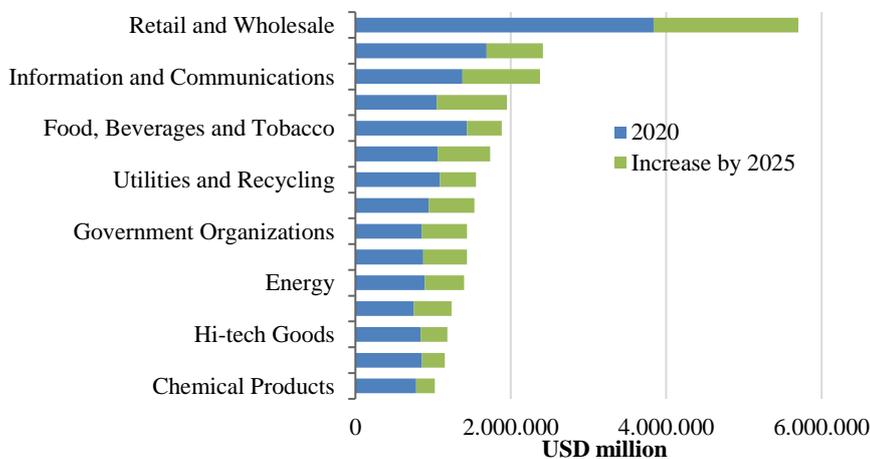


Figure 5. B2B E-commerce Sales in Selected Industries, 2020-202 [22].

4. Smart cities development – digital tools enable improvements in living standards and transportation. Smart cities refers to the use of information communication technologies in delivering improved and effective use of city assets by citizens. Increasing urbanisation and sustainability challenges are pushing ahead the need for smart cities. By 2040, 64% of the world’s population is expected to live in urban areas, meanwhile, cities account for 70% of all CO2 emissions. Advancements in AI, the rise of big data, growing internet access and surging IoT connectivity are

providing the necessary ingredients to build smart cities. Digital tools can help to monitor air pollution, real-time traffic flows and make adjustments in the city mobility network. While smart city initiatives have previously focused on innovation, the emphasis is now on using technology to improve citizens' lives and make cities more people-friendly. Smart city projects have the potential to disrupt a broad spectrum of sectors in the urban economy including energy, mobility, utilities, governance, construction and logistics. But this will be dependent on a range of factors which are challenging the smart city move such as political will, infrastructure, privacy and security, and inclusivity. As digital transformation ensues, the key point to note is value and how consumers can benefit from smart cities.

5. Digital learning – digital tools enable better access to education and more flexibility. The COVID-19 pandemic has resulted in an unprecedented push to online learning. The widespread school closures forced millions of students and educators to rely on education technologies (edtech), including digital learning management systems and Massive Open Online Course (MOOC) platforms. As a result, edtech companies gained traction among investors and witnessed exponential growth over the year. For example, in 2020 US edtech start-ups secured investments worth around USD2.2 billion compared to USD1.7 billion in 2019, according to EdSurge.

Educators around the world are using technology to increase access to education. In addition, education institutions increasingly integrate technologies such as artificial intelligence (AI) and big data to change the conventional methods of teaching, boost collaboration among students, create personalised educational experiences and improve learning outcomes.

According to Euromonitor International's Consumer Lifestyles Survey, around a third of young adults (aged 18-29) and middle youth (aged 30-44) are planning on spending more on technology and education over 2021. Consequently, the edtech market is anticipated to witness strong expansion in the coming years.

6. Connected households means improving access to the internet drive consumer behaviour changes. In 2020, around 61% of global households had access to the internet, around 54% of them had a high-speed connection to the internet. During the COVID-19 pandemic, the number of newly-connected households increased by 2.4%, while new high-speed connections increased by 3.3%. This means that high-quality connection is becoming more important than ever before (fig. 6).

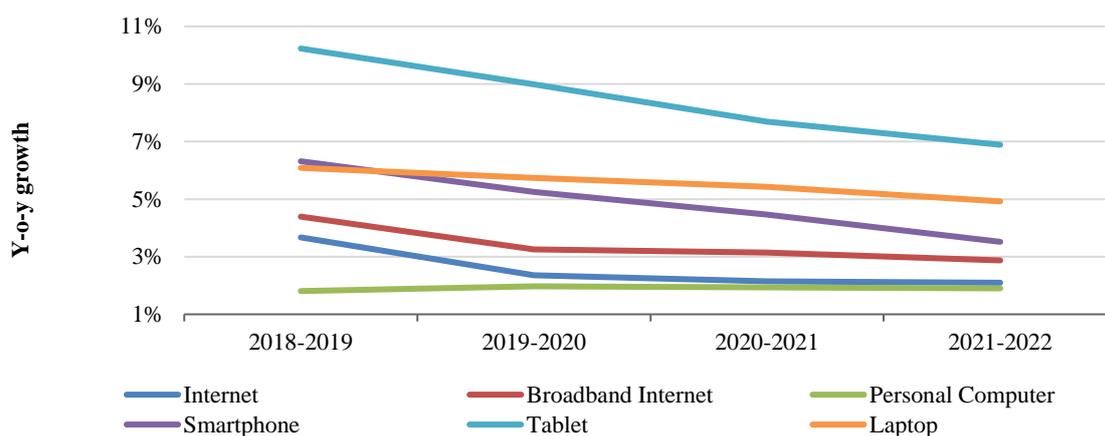


Figure 6. World Households with Digital Devices and Internet Growth, 2018-2022 [22].

The spread of coronavirus and social distancing have made the usage of digital devices a vital everyday necessity for many people. During the 2019-2020 period, the number of global households that owned a PC grew by 2% and reached 52%, while households with tablets grew fastest by 9% and reached 36%. However, due to lower prices and wider functionality, households prefer mobile devices rather than PC. In 2020, around 76% of global households owned a smartphone.

Unprecedented changes in tech-driven markets also come with challenges. As internet connection becomes essential for everyday activities, the gap between connected low- and high-income households has become all too vivid. Due to high service prices and lack of infrastructure, the digital divide is especially high in emerging and developing countries. Below is listed Key findings of digital development investigation (tab. 1).

Table 1. Key findings of investigation

No	Item	Description
1	Growing number of connected households	236 million new households are forecast to gain access to the internet by 2025. The spread of COVID-19 and social distancing have made the usage of digital devices a vital everyday necessity and this is set to support connectivity growth.
2	Production automation and digitalisation to accelerate	47% of companies plan to reshape digital strategies while 25% plan to accelerate investments into production automation tools. New technologies are forecast to help fortify supply chains and improve operational efficiency.
3	B2B e-commerce is forecast to gain traction	Global B2B e-commerce market is forecast to expand by 66% over 2020-2025 to reach USD4.5 trillion in the latter year. Growing number

		of connected households, changing consumer preferences and the need to diversify sales channels are predicted to support B2B e-commerce growth.
4	Smart cities to improve living standards	By 2040, 64% of the world's population is expected to live in urban areas. The increasing use of digital tools is forecast to transform mobility, utilities, city planning and in turn make cities more people-centric.
5	Digital learning to help improve education system	Around a third of young adults and middle youth are planning to spend more on technology and education. In turn, education institutions increasingly integrate technologies such as artificial intelligence (AI) and big data to improve learning outcomes.

Manufacturing companies accelerate investments in automation and digital tools. This is set to make supply chains more resilient and boost productivity. Companies invest in e-commerce to better diversify sales risks, increase geographic consumer outreach and adapt to changing market needs. Improving household access to the internet changes daily lives of consumers. This impacts how consumers work, shop, learn and travel, as well as city landscapes

Conclusions

Despite today's active digital transformation in economies and consumers, there could be faced challenges to overcome. We predict such challenges to be managed for successful digital transformation:

- uncertainty: companies investing in digital tools face high uncertainty when measuring return on investment;
- long project cycles: implementation of automation projects takes time and requires changes in management culture;
- reluctance to change: companies need to clearly communicate benefits to stakeholders and workers that may object to digitalisation efforts;
- skills shortage: digitalisation of economies will increase the shortage of skilled workers and will require a new approach to training programmes;
- societal issues: digitalisation of economies can have negative effects on the daily lives of societies, thus companies must prepare for potential challenges.

Geopolitical, climate and healthcare risks are forecast to remain high and could potentially disrupt

manufacturing activities. Diversification of supply chains and investments in digital tools to better manage the production process will be crucial when anticipating and preparing for future disruptions. Improving household access to the internet and changing lifestyles will require changes in sales strategies and implementation of an omnichannel sales approach. By investing in e-commerce platforms, the companies can better meet consumer needs, increase geographic scope of operations and diversify sales channel risks.

Investments in digital and production automation tools require financial, time and managerial resources, although final return on investment is difficult to measure. By implementing smaller-scale projects, companies can reduce the uncertainty, test new tools with minimal risks and later implement successful ideas on a broader scale.

Digital tools can help to improve internal communication and information exchange within a company and its clients. Improved internal communications enable better collaboration between employees and faster information flows which is crucial during times of emergencies.

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TEHNOLOŠKI RAZVOJ, KOVID IN VPLIV NA MARKETING

Povzetek. *Tehnologija omogoča brisanje meja med realnih in virtualnim, med tradicionalnimi in digitalnimi mediji, med realno nakupno izkušnjo in selitvijo kupcev na splet. Namen naloge je povzeti te spremembe in jih postaviti v čas kovida. Kovid je določene procese spodbudil, izostril, pospešil, pomembno pa spremenil marketinške strategije blagovnih znamk, vpliv medijev na širšo populacijo (lažne novice) in nakupno vedenje ljudi. Kako se je spremenil medijski kolač v Sloveniji, če se je, kateri mediji so zmagovalci krize, kaj se dogaja z vedenjem potrošnikov? Povzela bom javno dostopne valutne medijske raziskave in podatke o medijskih investicijah. Kovid je pospešil digitalizacijo družbe in pomembno vplival na spremenjeno vedenje kupcev v digitalnem okolju, kar kažejo tudi podatki.*

Ključne besede: *tradicionalni in digitalni mediji, kovid, tehnologija, medijski kolač, medijske investicije*

Uvod

Tehnološki trendi spreminjajo svet.

Razvoj umetne inteligence, podprte s 5G tehnologijo mobilnih komunikacij, bo v prihodnjih letih še povečal povezovanje pametnih naprav in pričakujemo lahko razvoj novih storitev, ki bodo spremenile potrebe kupcev in njihovo nakupno vedenje. Trendi, ki jih lahko pričakujemo do leta 2030 [1], govorijo o pametnih soseskah, pametnih oblekah, trajnostnih robotih, ki bodo napovedovali vreme, spremembah pri delu od doma, pa tudi o pomembnosti tako neprekinjene povezljivosti, kot tudi vprašanj, povezanih s kibernetiko varnostjo. Že danes vemo, da se medijske vsebine ustvarjajo s pomočjo matematičnih algoritmov, kar je privedlo tudi do pojava lažnih novice. Digitalna in fizična izkušnja bosta postal enako pomembni in podobni, govorimo o internetu čutil in zaznavanja [1].

Kovid je v marketingu sprožil številne spremembe.

Epidemija je prinesla v trženje veliko neznank; ni bilo jasno, kako se bodo odzvali potrošniki na krizo, kaj se bo dogajalo z oglaševanjem blagovnih znamk, bodo podprli marketinške aktivnosti posameznih blagovnih znamk, ali bodo zaradi krize, stiske, strahu in negotovosti pričakovali, da se tudi oglaševanje ukine, če ne zmanjša. Prve tedne ni bilo jasno, kaj si želijo potrošniki, bodo nagradili pogum, ali bodo oglasne bloke zavračali kot razsipnost. Dilema, kako bo kovid vplival na odnos potrošnikov do oglaševanja, je bila enaka tako za globalne, kot tudi lokalne oglaševalce [2]. Z izkušnjami iz preteklih gospodarskih kriz se ni dalo dosti pomagati, iz teorije pa je znano, da je zmanjševanje oglaševanja v korelaciji s prodajo, oziroma neugodno vpliva na moč posamezne blagovne znamke [2]. Nenaden šok, ki ga je ustvaril kovid, je prinesel “novo normalnost”, kjer se je

vse hitro spreminjalo, celo vrednote [3]. Ni bilo jasnih odgovorov, ali oglaševati več, ali manj, kako prilagoditi čez noč oglase, da bodo bližje kupcem, ki so večinoma ostali doma in delali ter se šolali od doma.

V Sloveniji je podobno kot drugje v svetu začetna kovid negotovost spožila krizo tako med mediji, oglaševalci (skrbniki blagovnih znamk), kot med potrošniki. Aktualne razmere so vplivale na spremenjeno naravo spremljanja medijev, saj so bili ljudje zaradi različnih ukrepov prisiljeni več časa preživeti doma. Po začetnem šoku so številni oglaševalci ustavili ali zmanjšali oglaševanje. Po prvem šoku so se prilagodili tudi mediji, nekateri, na primer zunanje oglaševanje, so ostali v začetnem obdobju brez oglasov [4]. Določeni deli gospodarstva so čez noč prenehali poslovati (turizem, gostinstvo, storitvene dejavnosti...). Temeljna dilemma je bila, kako preživeti, se prilagoditi in poslovati naprej.

Opredelitev problema

Burni dogodki v svetu in pri nas, kjer je kovid globalno povezal vse deležnike v podobno dogajanje, so zazamovali tako poslovne odločitve oglaševalcev, vedenje potrošnikov kot tudi vplivali na medijsko potrošnjo. Delo od doma je večino precej nepripravljene porinilo v digitalizacijo. Kovid je za vedno spremenil način komunikacije med uporabnikom, kupcem, ter podjetjem, skrbnikom blagovnih znamk. Epidemija je srečevanja in pogovore v živo preselila v orodja za klepet, ne samo zasebno, tudi poslovno, kjer blagovne znamke potrošnikom lahko ponudijo večjo mero personalizacije, ter edinstveno uporabniško izkušnjo. Čez noč smo delali, sestankovali, se učili, družili, pa tudi kupovali na daljavo. Povečana uporaba digitalnih storitev v času kovida je bila tudi priložnost, saj so se pojavili novi uporabniki, treba pa je bilo prilagoditi tako nosilce sporočil (mobilni telefon je postal še bolj pomembna točka dotika) [5], kot tudi sporočila, torej oglasi, pa tudi medijska potrošnja se je spremenila. Po prvem šoku, ko se je oglaševanje ustavilo, so ga nekateri oglaševalci (na primer trgovci) celo okrepili [4]. Zanimala nas je primerjava med medijskim kolačem v letu 2020, torej pred pandemijo in v njenem začetku, ter medijskim kolačem leta 2021, katere skupine medijev so se okrepile tako s stališča oglaševanja, kot tudi medijske potrošnje, katere panoge so zmagovalci in kdo poraženci? So se spremenila razmerja med skupinami medijev? Kaj se je dogajalo z vedenjem potrošnikov, kupcev? Kaj lahko naredi marketing za boljše delovanje vseh deležnikov nekega gospodarstva, če pravimo, da je oglaševanje odraz družbe in pokazatelj njenih sprememb?

Raziskovalna vprašanja

Vprašanja, ki smo si jih zastavili, oziroma trditve, ki smo jih preverjali, so naslednja:

- Kovid in z njim povezana kriza sta spremenila naravo oglaševanja v smeri digitalizacije, spremenila komunikacijo, ter okrepila moč trženja.
- Medijski bruto kolač je bil po začetnem padcu leta 2020 že v letu 2021 večji, kot pred krizo.
- Spremenila se je medijska potrošnja v smeri večje vloge medijev, tako digitalnih, kot tradicionalnih.

Namen raziskave

Namen naloge je bil, na osnovi javno dostopnih podatkov medijev, oglaševalcev, medijskih agencij in raziskovalnih institucij dokazati, kako je nenadna epidemična kriza spremenila delovanje medijev, način sprejemanja poslovnih odločitev oglaševalcev ter tudi vedenje kupcev, potrošnikov, ko gre za njihovo vrednotenje komunikacije, kot tudi vedenje potrošnikov v odnosu do medijskih vsebin. Zanimalo nas je, kako marketing s svojimi orodji, predvsem oglaševanjem in medijsko distribucijo, deluje v kriznih časih in kako nanj vpliva zelo hitra digitalizacija družbenega življenja (delo od doma, šolanje od doma, spletni nakupi).

Konceptualni model

Zaradi globalne pandemije in s tem posredno povezane tako gospodarske krize, kot tudi sprememb v vsakodnevnem življenju ljudi, je namen tega članka opozoriti na pomembnost sprememb v neki ekonomiji in družba s stališča s širšega vidika, torej pomembnosti uporabe orodij integriranega tržnega komuniciranja, predvsem oglaševanja. Podjetja so prisiljena čez noč sprejeti aktivnejše strategije nastopa blagovnih znamk tako v tradicionalnih, predvsem pa digitalnih medijih, saj se kupci selijo na digitalne platforme. Medijski oglaševalski kolači nam govorijo o trendih medijske potrošnje in marketinških investicij, na mikro nivoju pa je nujno spremljati, kaj se dogaja s posamezno blagovno znamko, posameznim medijem in oglaševalcem. Vsaka kriza je tudi priložnost, če jo upravljamo. Spremenljivka naše pozornosti je slovenski medijski kolač, ki se je spreminjal skozi dve leti kovid dogajanja, na katerega so vplivale negotove razmere pri oglaševalcih, ukrepi zdravstvenih oblasti in posledično odzivi potrošnikov, državljanov, kupcev. Gre za bolj posredne povezave med njimi.

Metode raziskovanja

Pri pripravi članka smo analizirali obstoječe javno dostopne podatke ter podatke o gibanju bruto oglaševalskih prihodkov raziskovalne agencije Mediana IBO. Metoda, ki smo jo uporabili, je kvalitativna analiza virov, povzeli smo obstoječo relevantno literaturo tistega obdobja ter opravili komparativno analizo za leto 2020 in 2021.

Rezultati

Ugotovitve bi združila v dva dela: najprej povzemamo spremembe, ki se tičejo medijskega bruto kolača in posledično spremembe v vedenju potrošnikov, ki vključujejo tudi medijsko potrošnjo.

Primerjava v bruto oglaševalskih investicijah v začetku epidemije z lanskim letom

Podatki Mediane, Inštituta za raziskovanje trga in medijev, za leto 2021 spet kažejo rast bruto oglaševalskega kolača v Sloveniji. Povejmo, da v raziskavi Mediana IBO meri bruto vrednost oglaševanja v preteklem obdobju, torej vrednost evidentiranih oglasov po cenah iz uradnih medijskih cenikov, kjer meritev ne upošteva dogovorjenih popustov med medijem in naročnikom (zakupnikom, komunikacijsko ali medijsko agencijo, oglaševalcem...) ter drugih, posebnih kupoprodajnih pogojev, kot je letni dogovor o z oglasom doseženim občinstvom, morebitne brezplačne objave in podobno [4]. Gre pa za meritev, ki je kljub bruto številkam izražena v denarju in omogoča skozi časovno obdobje spremljanje, kaj se dogaja med skupinami medijev, oglaševalci, pa tudi znotraj medijskih skupin.

V letu 2021 je po podatkih Mediane izmerjeni obseg bruto oglaševanja v primerjavi z letom poprej znašal 1,2 milijarde eurov, [4]kar je četrtnina več kot leto poprej, čeprav je treba takoj dodati, da so realni v denarju izraženi podatki o zakupljenem oglasnem prostoru precej nižji. Z razumevanjem trga in pojmov planiranja in medijskega zakupa v ozadju številčk se da priti do zelo dobrih ocen velikosti neto medijskega trga, če uporabimo podatke iz javno dostopnih virov, to je izkazov poslovnega uspeha zadnjih let (Ajpes), pa tudi poročila Računskega sodišča glede RTV, pogovorov z zaupanja vrednimi posamezniki na medijih, podatkov o naročninah in oglaševanju v medijih, neto podatkov o oglaševanju največjih agencij in neto oglaševalskih investicij nekaterih naročnikov. Cene televizijskih paketov, ki zajema okoli 80 odstotkov kolača, se večinoma določajo glede na gledanost. Poslovni dogovori o tem pa so skrbno varovana skrivnost slovenskih medijev in vseh ostalih sodelujočih. Kljub vsemu lahko predvidevamo, da je rast neto oglaševalskih prihodkov v letu 2021 v primerjavi z 2020 manjša od bruto rasti [4]. Mediana meri bruto kolač že od leta 1994, razen v krizi leta 2012, ko je šlo za 3-odstotni padec, vsa leta beležimo rast kolača.

V letu 2020, ki je bilo v znamenju pandemije in protipandemičnih ukrepov, je bruto izmerjeni obseg oglaševanja v Sloveniji znašal 980 milijonov eurov, kar je 11% manj kot leto poprej [4]. Na Mediani so konec leta 2020 beležili 12-odstotni padec bruto vrednosti zunanjega oglaševanja, ki je bilo med prvim zaprtjem države med najbolj prizadetimi sektorji. Najmočnejša skupina medijev so TV postaje z 82 odstotki v kolaču, od tega gre polovica medijski hiši Pro Plus. So pa televizije končale leto 2020 z desetino manjšim izkupičkom. Vsi televizijski program v letu 2020 beležijo manjšo bruto vrednost

oglaševanja glede na leto poprej, izjema so globalni specializirani program (filmski, športni, dokumentarni), kjer gre za programe, ki ponujajo nižje cene, torej več objav po nižjih cenah.

Tudi pri tisku gre v letu 2020 za podoben padec oglaševanja, torej 10-odstoten, kot na televizijah. Že v preteklih letih so vodilne tiskane medijske hiše (Media24, Delo, Dnevnik, Finance, Adria Media...) reševale svoje balance z organizacijo poslovnih konferenc in izobraževalnih dogodkov, ki so bile ali odpovedane, ali preseljene v virtualni svet. Pri spletnem oglaševanju ni točno merejenih podatkov, koliko denarja se nameni za oglaševanje na globalnih platformah (FB, YouTube, Google...), saj Mediana meri le slovenske spletne medije, a tudi tu se je bruto oglaševanje zmanjšalo za 4 odstotek. Podobno zmanjšanje beležimo tudi na največjih merejenih radijskih postajah (5-odstotni padec).

Tako kot je pandemija marca 2020 ustavila svet, so bili po prvem zaprtju ohromljeni tudi oglaševalci, saj se je v aprilu 2020 v primerjavi z aprilom 2019 oglaševanje v slovenskih medijih zmanjšalo za 50 odstotkov [4], čeprav smo po prvem šoku ostajali doma, več brali, gledali TV, poslušali, klikali... Samo maja 2020 še beležimo 35-odstoten padec oglaševanja, potem pa se je oglaševanje povrnilo v stare vode. Že junija so se oglaševalci prilagodili spremenjenim, novim navadam kupcev. Jesenski val, ko smo drugič zapirali državo, ni več prinesel tako šokatnega rezanja budgetov, čeprav je bil zaznan padec oglaševanja. Po pričakovanju so največji oglaševalci trgovci, ki so ves čas nemoteno poslovali, čeprav pod zaostrenimi varnostnimi razmerami. So se pa opazno spremenila sporočila trgovcev (Spar, Mercator, Lidl, Hofer, Tuš...), ki so vsi poudarjali skrb za bližnje, družbeno dogovornost, lokalno pridelavo hrane, prijaznost, lokalne sestavine [4].

Pač pa se je v letu 2021 oglaševanje povrnilo k stari moči, od tega je tv bruto oglaševanje preseglo milijardo, kar je za 27 odstotkov več kot v letu 2020 [4]. Gledanost televizijam so dvigali predvsem športni dogodki (kolesarstvo, poletna olimpijada Tokio, kratka športni uspehi slovenskih športnikov) ter zabavni in resničnostni šovi na komercialnih televizijah. Dobra gledanost pa običajno pomeni tudi nove oglaševalce in povečane oglasne prihodke.

Ko gre za tiskane medije, so ti v letu 2020 zabeležili manjši padec bruto oglasnih prihodkov, kot leto poprej, čeprav so ljudje več brali, še več, lahko bi rekli, da so tiskani mediji vsaj začasno ustavili padec svojih oglasnih prihodkov, in so neke vrste korona zmagovalci. Z največjo rastjo bruto oglaševalskih prihodkov se v letu 2021 lahko pohvalijo spletni mediji, ki so zabeležili kar 30-odstotni rast prihodkov, kar je glede na spletne nakupe, delo od doma, iskanje svežih novic, šolo na daljavo in pospešeno digitalizacijo življenja tudi razumljivo. Tudi radijske postaje, še posebej lokalne, ki so obveščale prebivalce o lokalnih dogodkih, v letu 2021 v primerjavi z letom poprej beležijo 12-

odstotno rast oglaševalskih prihodkov. Če je bilo ob prvem zaprtju države zunanje oglaševanje zaradi koronakrize najbolj prizadeto, pa je v letu 2021 kljub omejenemu druženju na prostem beležilo 11-odstotno rast bruto prihodkov. Za rast kolača so v največji meri skrbeli trgovci, ki so poudarjali podobne korona vrednote, kot leto poprej, druga oglaševalsko najmočnejša panoga pa so telekomunikacije.

Spremenjena medijska potrošnja in vedenje potrošnikov

Kaj govorijo podatki o vplivu izrednih dogodkov na večje skupine medijev, predvsem tv? Pandemija je pozitivno vplivala na gledanost televizije, saj so zaradi zaprtja družbenega življenja v prvem valu (12. 3. Do 31. 5. 2020) zaznali 28-odstotno gledanje televizij na splošno v primerjavi s povprečjem zadnjih treh let, vrhunec gledanosti pa so bili dnevi v zadnjem tednu marca, ko je gledanost narasla za 55 odstokov [6]. V času prvega vala epidemije se je gledanost informativnih oddaj povečala za 41 odstkov v primerjavi s povprečjem zadnjih treh let [6]. Ključni medijski trendi pa se nedvomno obračajo k digitalizaciji in personalizaciji oglaševanja, čeprav je epidemija vsaj začasno povečala konzumacijo vsebin na tradicionalnih medijih, predvsem televizijah in tisku.

Povečano zaupanje potrošnikov v digitalne kanale pomeni tudi večjo uporabo storitev, pa tudi nove skupine potrošnikov, zato se mora temu prilagoditi tudi marketing [5]. V komunikaciji smo opazili tudi, da se postavlja v ospredje prednost lokalnih virov (lokalna hrana, lokalni viri, bližina), kar v komunikaciji še posebej izpostavljajo trgovci [4]. V ospredje je stopilo tudi vprašanje varnosti spletnih nakupov in spletnega komuniciranja, pa tudi večja potreba kupcev po avtentičnosti v komunikaciji [5]. To se še posebej nanaša na vplivneže, ki niso imeli dosegov ali jasne, iskrene komunikacije z dodano vrednostjo za sledilce. Vsebinski marketing lahko zagotavlja zvestobo kupcev le z avtentičnimi zgodbami [5].

Epidemija je prinesla tudi razcvet spletnih trgovin, kjer pa potencialni kupci vstopajo v spletno trgovino drugače kot v fizični trgovini. Prve tedne epidemije se je razgalilo tudi pomanjkanje ž razvitih spletnih trgovin pri največjih trgovcih, ko so se spletne trgovine sesuvale, oziroma pomanjljivosti, povezane z dostavnimi službami. Delež spletnih akupov bo gotovo tudi v prihodnje višji, kot je bil pred krizo [5], saj tudi v svetu trend spletnih trgovin narašča. Delo na daljavo je prineslo tudi potrebo po drugačnem vodenju in drugačni povezanosti s svojimi zaposlenimi, ki so ena od ciljnih skupin, s katerimi se mora podjetje vzpostaviti in optimalno upravljati odnose.

Nekatere raziskave [3] so pokazale, da so se ljudje v mesecu dni prilagodili na nove razmere (delo od doma, zaprtje države), da so raziskovalci poleg monotonije vsakdanjega življenja, osamljenosti in

jeze zaznali tudi nove vrednote, kot so skrb za družino, povezanost s prijatelji, ter novo vsakdanjo kreativnost (peka kruha, šivanje) ter novo odkrivanje narave. Svoboda ni bila več samo po sebi umevna, zelo se je povečala želja po socialnih stikih z bližnjimi [3]. Kaj so pričakovanja potrošnikov glede komunikacije blagovnih znamk? Omenjena raziskava je odkrila, da se je povečal pozitiven odnos do oglaševanja, da ljudje pričakujejo, da jim v krizi blagovne znamke stojijo ob strani, da jih povezujejo z občutkom normalnosti, da so skrbne in podperne. Potrošniki pričakujejo, da so v komunikaciji blagovne znamke družbeno odgovorne, pozitivne in zanesljive [3]. Še posebej izpostavljajo trgovce, ki kažejo skrb za svoje zaposlene in kupce, zagotavljajo ustrezne zaloge hrane, so pozitivni in optimistični v oglaševanju, spoštujejo stroga zdravstvena pravila, podpirajo lokalne pridelovalce hrane ter donirajo hrano. Nakupi so bili za večino prebivalstva edina dovoljena aktivnost zunaj njihovih domov. Nakupi so se spremenili v manj frekventne, a količinsko in vrednostno večje, ko gre za hrano, medtem, ko so se v času epidemije tudi vsi nenujni nakupi zmanjšali [3]. Posledično smo zaznali tudi manjšanje oglaševalskih aktivnosti v oglaševalskem kolaču v kategoriji avtomobilistov, kozmetike in podobnih trajnih dobrin [4].

Zanimiv je podatek globalne raziskovalne agencije Kantar, da so si globalne blagovne znamke, ki so tudi pomembni oglaševalci, po finančni krizi leta 2008 opomogli kar devetkrat hitreje od drugih, ki so v krizi zmanjšali oglaševanje [2]. Oglaševalska industrija se je veliko naučila iz te krize, med drugim, da imajo le močne blagovne znamke prostor v glavah svojih in potencialnih kupcev na dolgi rok in kot take ustvarjajo donose za svoje lastnike. Zato je v kriznih časih oglaševanje nujno za blagovne znamke, ki želijo obstati na dolgi rok in se profitabilno razvijati. Dolgoročno je opazno tudi, da se krepijo digitalni mediji, saj so se v pandemiji potrošniki navadili na spremljanje vsebin v živo, pa tudi na aktivnosti na družbenih omrežjih, ki v vse bolj pomembni meri krojijo nakupne navade ljudi.

Zaključek

Tehnološke spremembe (umetna inteligenca, veriženje podatkovnih blokov, nove mobilne rešitve, nove energetske trajnostne rešitve, gensko spreminjanje človeka in njegovega okolja, pametni vmesniki, pametni roboti...[7] krojijo vedenje posameznikov, naš svet in nove, globalne vrednote, ki vplivajo tudi na nakupne navade. Priča smo celostnemu upravljanju komunikacijskih kanalov na osnovi podatkov, ki so postal nova nafta 21. stoletja, pri čemer najhitreje rastejo digitalni kanali. Globalna pandemija je prinesla nove kodekse ravnanja blagovnih znamk, kar pa povprečnemu potrošniku ne olajša nakupnih odločitev v času, ko se blagovne znamke borijo za njegovo pozornost. Kovid je spodbudil razmah lažnih novice in prinesel nezaupanje v medije, čeprav ravno podatki o medijski potrošnji v začetku pandemije kažejo na hlastanje posameznika za novicami. Mediji so pomembnejši bolj kot kdajkoli. Lažne novice izkoriščajo klišeje množic, in obvladujejo psihologijo

množic. Mediji pomembno oblikujejo vrednote ljudi, postavljajo družbeni okvir, a so obenem profitna podjetja, ki se preživljajo z oglasi.

Informacija je bolj kot kdajkoli strateško orožje, blagovne znamke pa v času kompleksnosti in negotovosti pred strateškim izzivom, kako verodostojno nagovarjati svoje potrošnike.

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IMPACT OF DIGITALIZATION ON THE DEVELOPMENT OF HUMAN RESOURCES IN PORT BUSINESS IN MONTENEGRO

Abstract. *One of the most important resources of every organization is human resources. Employees, their know-how, capabilities and skills must be aligned at all times with the needs of organization having in mind that business environment is constantly changing. In order to align with global and local business trends and requirements of international and local clients, it is necessary to continuously invest in upgrading and development of human resources. Therefore, it is exceptionally important how organizations are managing human resources because growth and development of organization significantly depends on human resource management. Fast development of information and telecommunication technologies impacted dynamic changes and development of human resources. In past, majority of organizations had a large number of employees in order to execute numerous business processes. However, digitalization introduced many changes and it can be freely said that there is no industry that was not changed considerably by introduction of information – telecommunication technologies. The subject of this paper is the analysis of digitalization impact on development of human resources in port business in Montenegro by means of the example of company Port of Adria JSC Bar, analysis of benefits of introduction of digitalization but also the analysis of challenges faced by human resources in the process of introduction and development of new technologies having in mind aspects of human resource management – personnel records keeping, job analysis, planning of human resources, recruiting and selection, training and job performance in work places.*

Keywords: *Human resources, digitalization, information-communication technologies, managing human resources*

Introduction

One of the most important resources of every organization is human resources. Its importance is vast as people design, plan and execute activities needed for organization to exist, function, grow and prosper. Having in mind that employees in an organization have different backgrounds, know-how,

experience, skills, values and beliefs, managing human resources is of utmost importance as it ensures “that employees of an organization are used in such a way that the employer obtains the greatest possible benefit from their abilities and the employees obtain both material and psychological rewards from their work” [1, p. 20]

Main objective of evolution and development of human resource management is efficiency in use of work, searching for employees’ potential, application of techniques and practices for motivating and support the employees. [2]

Human resource management “is a strategic approach to managing employment relations which emphasizes that leveraging people’s capabilities is critical to achieving competitive advantage, this being achieved through distinctive set of integrated employment policies, programmes and practices. “[3, p. 7].

Digitalization has entered all aspects of human life and has become an important tool in facilitating, time saving and efficiency of almost all activities people carry out throughout the day. Therefore, it is not surprising that it is a must for organization’s functioning, business operations as well as its competitiveness on national and international market.

“Digital transformation refers to the process that commences from the moment an organization starts thinking about introducing digital technologies in all business segments and lasts until its complete integration.” [4, p. 3]

Digitalization of HR represents optimization of HR processes in an organization through the use of new technologies with the aim to improve both employee’s performance and business operations. It enables transfer from paper-based and time-consuming processes to digital ones providing real-time communication, collaboration, data exchange and analytics.

Subject of this paper is research and analysis of introduction of HR digitalization in port business with particular attention of its presence on the example of company Port of Adria (Montenegro). The objective is to prove the benefits the company has had due to introduction of HR digitalization of business processes that are heavily based on human resources – hiring, data collection and processing, training, job performance, communication and collaboration.

In this paper, secondary data from research made so far in this area, available in literature/reference

books and official internet webpages. Also, theoretical and quality data obtained from the company Port of Adria have been analyzed in tabular and graphic presentation comparing organization and functioning of HR before and after introduction of digitalization.

Digitalization of HR

There are numerous definitions of HR management, but none is generally adopted definition of HR management.

According to Gary Dessler “Human resource management (HRM) is the process of acquiring, training, appraising, and compensating employees, and of attending to their labor relations, health and safety, and fairness concerns” [5, p. 3]

According Flippo, HR management is “planning, organizing, directing and controlling of the procurement, development, compensation, integration, maintenance, and separation of human resources to the end that individual, organizational and societal objectives are accomplished”. [6, p. 8]

Robbins and Decenzo define HRM as “a process of acquiring, retaining, developing, terminating and properly using the human resources in an organization”. [7, p. 4]

In the world of growing and ever-expanding digitalization within organizations, it inevitably impacts all its business aspects. Thus, HR management is not an exception.

New technologies bring new work models, new workplaces, larger accessibility of information, time saving, originality and innovation in work. [8, p. 1]

In order to better plan, organize, direct and control, develop and maintain its human capital, organizations are introducing digitalization (electronic media, IT, mobile) more and more to enable above functions to be performed more productively, effectively and efficiently. Accordingly, digitalization is transforming HR management processes such as recruitment, career management, training and development as well as performance monitoring and evaluation. Due to digitalization, HR responsible in any organization gains easier and faster access to employees’ data, uses digital recruiting technology to bring in talent, reduces time spent on data collection and analytics.

Digitalization of HR management in port business

Human resources instigate all business processes in maritime companies. Accordingly, managing human resources include knowledge, skills and capabilities of managers who shall ensure efficient work with the application of numerous complex procedures, processes, tasks and actions. [9, p.16]

Considering overall benefits of digitalization, it is not surprising that maritime transportation industry joined many other industries which started introducing and using digital technologies in order to increase their efficiency, speed up their growth and secure competitive edge and better positioning on exceptionally competitive markets. Ports are no exception. Such transformation from traditional- to digital-based business impacts all port's segments, not only service provision and work processes, but also organizational structure and management models.

"Digitalization is pushing the maritime industry beyond its traditional limits and provides many new opportunities to enhance the productivity, efficiency, and sustainability of logistics. The concept of smart ports, for instance, aims to adopt modern information technologies to enable a better planning and management within and between ports." [10, p. 1] The maritime transport is moving towards digitalization and DT at different speeds in the different domains. [11, p.16]

Research results

When we think of port digitalization, what first comes to one's mind is digitalization of port operations – automation of handling equipment, planning automation, automation of processes of cargo handling thus enabling ports to be more efficient and effective. However, subject of this research is HR management digitalization within ports with the focus on company Port of Adria.

Until 2009, Montenegro had only one international commercial port which was majority state-owned. Considering world trends in port business organization, outdated and old infrastructure and equipment and a surplus of employees burdening financial standing of the port, Government of Montenegro carried out port's restructuring thus creating two separate companies – Port of Bar handling bulk and liquid cargo and Port of Adria handling containers and general cargo. Upon port's restructuring, Government of Montenegro published invitation to tender to international companies for the purchase of majority shares in Port of Adria and 30-year concession. As of January 2014, Port of Adria was privatized by an international investor and changes in port's organization and heavily needed investments started to unfold.

One of first biggest investments made by international investor was in IT infrastructure (both hardware and tailor-made software solutions). Previous outdated software solution in place since 2003 was rarely upgraded to reflect the changes and requirements of changing port business and was more used for data collection and use by specific departments, without proper data analytics used in decision-making processes.

By investing heavily into new IT infrastructure (both hardware and software), as one of the first benefits the company had is creation of flatter, more efficient organization structure, deleting, merging of creating workplaces (in particular, in administration) where work processes became more efficient, less time-consuming with the use of digitalization.

It should be noted that introduction of digitalization was not the main reason for considerable decrease of employees (reason was more over-employment policy existing in all state-owned companies at that time). However, decrease of total number of work places can be linked with introduction of digitalization as it enabled previously very specialized and segmented work positions to be merged or deleted.

Table 1. Human resources rationalization

	2013	2017	2021
Total number of employees	582	303	275
Number of workplaces	272	77	113
Employees in administration	100	90	79
Digitalized workplaces	94	89	105
HR dpt workplaces	12	12	3
HR dpt no. of employees	12	12	4

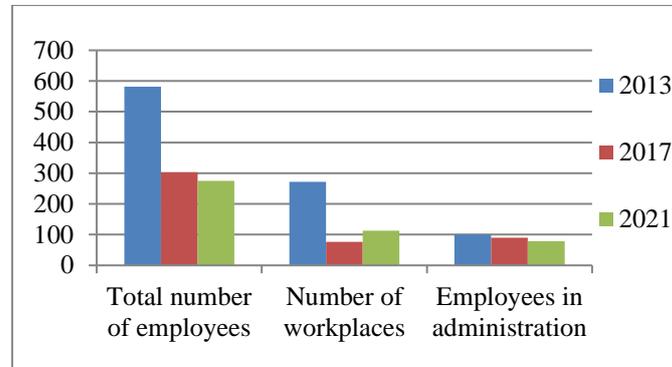
Source: Data obtained from company Port of Adria in 2022

Based on Table 1 data, it is clear that digitalization impacted work organization and needed number of employees, in particular in administration, which used to be more paper-based work process. Namely, from Table 1 and Graph 1, we can see that the total number of employees in the first analyzed year (2013) was the highest – 582 employees. In 2017, the number of employees decreased for cca 47,94% in comparison to 2013 whereas their number was the lowest in 2021 – 275 employees which is cca 52,75% less than in first analyzed year.

When considering number of workplaces, the situation is slightly different. In 2013, number of workplaces in the company Port of Adria was 272, and in 2017 is decreased to 195 workplaces. In 2021, the number of workplaces is increased due to Labour Law requirements which resulted in unnecessary but legally required increase of number of workplaces. The Number of employees in

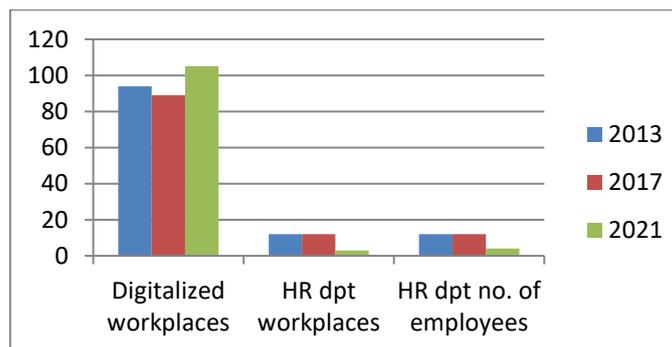
administration also decreased which we can see from given table and graph.

Thus, digitalization enabled employees to use their time more efficiently and even take over some other tasks whose performance and processing were made real-time and automatic.



Graph 1. Human resources rationalization

Source: Author according to data obtained from company Port of Adria



Graph 2. Human resources rationalization

Source: Author according to data obtained from company Port of Adria

Graph 2 presents the change in number of digitalized workplaces and in number of employees in HR department for 2013, 2017 and 2021.

Recruitment

Before introduction of digitalization in the country and port itself, all recruitment processes have been done through job vacancy ads published in local newspapers through Employment agency of Montenegro. However, with digitalization in place, both job vacancy notifications and recruitment process, in particular for management positions, was made more efficient and effective with the use of Internet (recruitment agencies websites & social media accounts as well as Port of Adria website and social media accounts). Although applicants submit requested documentation physically, they can apply electronically and short-listed candidates are invited either to attend job interviews in

person (if living locally) or by means of various platforms (Skype, Zoom meetings, Microsoft Teams) thus saving time and money of both applicants and interviewers.

Table 2. Digitalized recruitment

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
No. of employees hired based on digitalized recruitment (management level)	0	0	0	0	1	0	0	1	0	3
Total no. of job vacancies published (management level)	0	0	0	0	1	0	0	1	0	3

Source: Data obtained from company Port of Adria in 2022

According to Table 2 data, digitalization made possible to have wider search for key talents internationally meeting company needs in terms of international work experience and know-how which is scarce for this industry in the country. In Tables 1 and 2, data for the period 2013 – 2016 is not given as this period was marked by designing, purchasing, setting up and implementing needed IT infrastructure (including upgrades and renewal of hardware and tailor-made software solutions). Other non-managerial positions are being published the same way as managerial ones, but interviews are done via mentioned platforms only if candidates are not local.

Training

Before digitalization, there was no annual training programme defined at Company level. Trainings were carried out when the need occurred (usually required as per law) with no systematic overview of number of trainings and number of employees participating in training. Organization of trainings was mostly with parties providing training (seminar, course, etc.) without use of digital formats.

Since the introduction of annual training programme, Company has clear overview of trainings needed per year per employee, validity date of training certificates, dates for renewal of certificates. Most of the trainings needed to be undergone by more employees are organized in-house and are substantially dependent on use of digital formats – “digitalized” trainings (use of Internet, audio and video conference platforms, e-presentations, e-library, etc.). From table below, it can be seen that 40%-80% of all training have used some form of digitalization. Remaining percentage of trainings were done without the use of digitalization (e.g. training for work on specific equipment, evacuation exercise, etc.)

Table 3. Trainings overview

	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. of trainings	0	0	0	0	10	7	6	28	16
No. of employees trained	0	0	0	0	576	354	87	219	270
No. of “Digitalized” trainings	0	0	0	0	7	5	4	11	10

Source: Data obtained from company Port of Adria in 2022

Personnel Data Management

In Port of Adria, personnel documentation is physically stored in personnel files in HR department. However, since the introduction of digitalization, HR department created e-personnel files to enable immediate and real-time access to all important personnel files at all times. This also presents a security measure in case physical damage occurs to paper documentation.

By introducing tailor-made software solution, management of personnel data has been made almost entirely paperless. However, due to legal requirements and needs for employees' signature, paper documentation is still an important part of HR management.

What is different with new software solutions in comparison to old one is not data collection but data processing and analytics. With "one click", it is possible to get information of daily attendance of employees i.e. which employees are on vacation, sick leave or paid leave and which are at work so managers can organize work for that day with real-time information of available human resources. This also enables management to plan not only daily, but also weekly work organization in advance ensuring uninterrupted workflow. With "one click", management knows in real-time what activities are carried out by which group of employees and how much costs these groups incur. With "one click", management can obtain information what activities/services have been provided by which employees and how long employees have been engaged on these activities.

All these "one click" reports assist the management in decision – making processes. E.g. based on age structure report, management can determine in advance which work places need to be announced for vacancy in near future due to employees leaving for retirement so the company can either consider internal resources re-organization with additional training or plan external scouting and timely secure seamless functioning of a specific unit or department. Based on sick-leave reports, management can determine in advance bottlenecks in service provision to clients and plan different working hours for available employees, shift work, overtime work or additional hiring in order to meet contracted obligations from commercial contracts.

Based on e-record keeping, responsible persons and managers keep track and schedule medical follow-up obligatory for specific work places, renewal of trainings and/or certificates as legally required. Based on attendance and vacation and sick leave reports, responsible persons and managers can plan training sessions in advance as well as respective time and resource needed for trainings

completion. Job positions reports enable faster distribution of respective personal protective equipment needed for work processes.

These software solutions are made flexible as they can easily reflect any organizational change and keep track of all amendments and historical data in the system which is available at all times.

Conclusions

In spite of increasing presence of technologies in human resource management, there are relatively few research dedicated to its efficiency, i.e. to which extent do technologies enable organizations to achieve their objectives in terms of human resources. [12, p. 2]

The authors in this paper tried to emphasize the significance and advantage of impact of digitalization on development of human resources management, in company Port of Adria, efficiency and benefits which digitalization brings to business operations and performance of work tasks throughout the Company.

By comparing HR data usage, job performance of both HR responsible management of the Company before and after introduction of digitalization, it can be clearly concluded as follows:

1. Digitalization has enabled automation of data collection and processing, but more importantly, it secured valuable tools for decision-making regarding human resources capital (hiring, training, organization structure, etc.).
2. Digitalization has enabled easier and real-time human resource management by HR department thus allowing more time for career development, trainings and wider scouting /headhunting range than before with fewer employees.
3. Digitalization has enabled rationalization and merging of more workplaces into one as it allowed more efficient and effective work performance and multitasking.
4. Digitalization has enabled better planning, increased productivity, time saving and better costs management at Company level.

By increase of adoption of digitalization and automation, Port of Adria has same obtained same benefits as other ports in the world as “these technological and operational development has made it possible to obtain better results in terms of port productivity, labour productivity as well as improvements in the structure of work processes ...” [13, p. 2]

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ANALIZA MODELOV DAVČNEGA POROČANJA

Povzetek. Čedalje več držav uvaja digitalne rešitve za boj proti goljufijam pri pobiranju DDV. Nekateri davčne uprave posameznih držav od gospodarskih subjektov že zahtevajo, da namesto periodičnih obračunov DDV poročajo podatke o računih neposredno iz svojih transakcijskih procesov. Prispevek vsebuje pregled in analizo glavnih kategorij modelov stalnega nadzora transakcij (angl. continuous transaction controls, CTC), ki omogočajo prenos podatkov o računih v realnem ali skoraj realnem času davčni upravi za namene poročanja. Ti modeli se od države do države lahko zelo razlikujejo, zaradi česar morajo gospodarski subjekti, ki poslujejo v več državah, uporabljati različne sisteme in pristope za isti namen. Večina do sedaj uvedenih modelov je zasnovanih z vidika davčne optimizacije in posledično za poslovne subjekte niso tako enostavni za uporabo, kot bi lahko bili. Prispevek predstavlja tudi koncept, kako učinkovito povezati CTC model z interoperabilnim modelom izmenjave e-računov.

Ključne besede: Model stalnega nadzora transakcij, CTC, DDV, primanjkljaj DDV, e-računi

Uvod

V preteklih desetletjih je globalizacija poslovanja temeljila na tehnoloških inovacijah in standardizaciji. Sodobna tehnologija podjetjem omogoča, da izboljšajo, avtomatizirajo in racionalizirajo številne procese. Pri tem morajo podjetja upoštevati spreminjajoče zahteve zakonodaje, ki predstavljajo še poseben izziv za podjetja, ki poslujejo zunaj svojih nacionalnih meja. Pri tem je davčna zakonodaja med zahtevnejšimi, ki jih je treba upoštevati [1]. V preteklosti je bilo to področje večinoma povezano z računovodskimi postopki podjetja, poročanjem in shranjevanjem dokumentarnih dokazov.

Podjetja čedalje več poslujejo brezpapirno in izvajajo digitalno transformacijo svojega poslovanja. Med najbolj vsesplošno uporabljeni elektronskimi dokumenti so elektronski računi (oziroma e-računi), ki so jih posamezne države uvajale na različne načine [2].

Podatke o plačanem DDV, ki je prikazan na računu, je potrebno posredovati davčni upravi. V preteklosti se je poročanje davčnih zavezancev davčni upravi o plačanem DDV izvajalo večinoma periodično. V zadnjih letih pa smo v različnih državah priča postopnemu prehodu k posredovanju podatkov o plačanem DDV v realnem času. Glavna zahteva za DDV pri računih je, da morajo

trgovinski partnerji dokazati celovitost in verodostojnost svojih računov od trenutka objave do konca obveznega obdobja hrambe. Za račune, izdane v elektronski obliki, to pogosto pomeni, da je treba uporabiti neko obliko elektronskega podpisa ali drugega pristopa, da se zagotovijo dolgoročni preverljivi dokazi, kot na primer uporaba elektronske izmenjave podatkov (angl. electronic data interchange, v nadaljevanju EDI).

Zaradi odgovornosti podjetij, da ustrezno obdelajo in poročajo DDV, je potreben nadzor poslovnih transakcij s strani davčnih organov. Kljub opravljenim pregledom in revizijam davčnih organov, pa se pogosto dogaja, da države poberejo bistveno manj DDV, kot bi morale. Pri tem govorimo o davčnem primanjkljaju DDV (angl. VAT gap).

V Evropi znaša davčni primanjkljaj DDV vsako leto približno 140 milijard EUR. V zadnjem poročilu Evropske komisije, je davčni primanjkljaj DDV v Evropi, predvsem na račun Covid-19, narasel na 164 milijard EUR. Ta znesek predstavlja izgubo več kot 11 % pričakovanih prihodkov iz DDV [3]. Na svetovni ravni so ocene, da je davčni primanjkljaj DDV, ki ga države ne poberejo zaradi napak in goljufij, lahko visok do pol bilijona EUR. To je na primer primerljivo z BDP držav, kot sta Belgija ali Avstrija. Svetovni DDV primanjkljaj predstavlja približno 15 do 30 % DDV, ki bi ga bilo treba pobrati po vsem svetu. Te številke se nanašajo zgolj na registrirano poslovno dejavnost in bi bile zagotovo veliko višje, če bi bili upoštevani še izgubljeni davčni prihodki zaradi neregistriranih poslovnih dejavnosti [4].

Vse več držav uporablja digitalne rešitve za boj proti goljufijam in premalo pobranemu DDV. Zahteve vezane na DDV in njihov relativni pomen za podjetja in davčne organe so se v zadnjih letih bistveno spremenili. Zaradi strahu pred izgubo nadzora nad pobiranjem DDV so davčni organi marsikje pospešili digitalno transformacijo na ambiciozne načine, ki zdaj spreminjajo samo paradigmo poslovne administracije. Nekatere davčne uprave zahtevajo od gospodarskih subjektov, da poročajo podatke o računih neposredno iz svojih transakcijskih procesov, s čimer dopolnjujejo ali nadomeščajo periodične obračune DDV. Te zahteve za sproten prenos podatkov o računih za namene poročanja davčni upravi v realnem času ali skoraj v realnem času se imenujejo stalen nadzor transakcij (angl. continuous transaction controls, v nadaljevanju CTC).

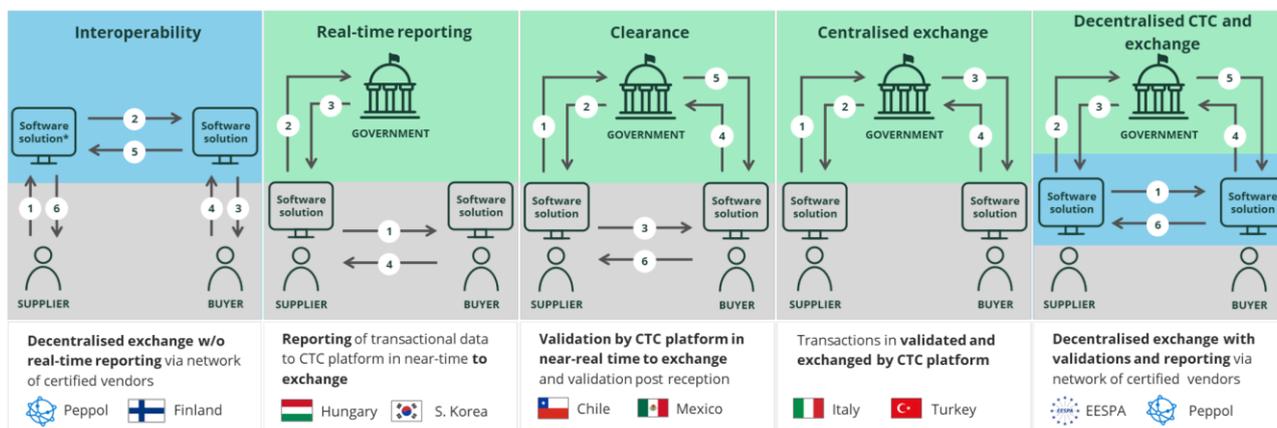
Modeli stalnega nadzora transakcij

Večinoma je za davčne uprave glavni cilj uvedbe CTC boj proti goljufijam na področju DDV, neupravičenim zbiranjem in napakam. Sistemi CTC običajno omogočajo poročanje, preverjanje in dostavo računov. Obstaja več različnih modelov CTC, ki pa se bistveno razlikujejo od države do

države, ki so ta sistem že uvedle. Večina doslej uporabljenih CTC modelov je nacionalno osredotočenih in zasnovanih z vidika davčne optimizacije, zato z vidika poslovanja podjetij niso tako poslovno prijazni, kot bi lahko bili. Še posebej velja to za podjetja, ki poslujejo v več državah, saj morajo uporabljati različne sisteme za isto poslovno funkcijo [5].

Do sedaj že vzpostavljeni modeli CTC so specifični za posamezne države in se med seboj razlikujejo v načinu uvedbe in izvajanja. Glede na značilnosti lahko CTC modele združimo v nekaj kategorij, ki temeljijo na njihovih ključnih značilnostih [6]:

- Model interoperabilnosti
- Model poročanja računov v realnem času
- Model potrjevanja
- Centralizirani model izmenjave
- Decentralizirani CTC model izmenjave



Slika 1. Modeli CTC [6]

Shematično so CTC modeli prikazani na sliki 1. Programska rešitev (angl. software solution), ki jo uporablja končni uporabnik, je lahko dobavitelj ERP, ponudnik storitev, ponudnik EDI ali celo davčni zavezanec, če je opravil potrebno certificiranje. Na sliki so prikazana barvna območja, ki opredeljujejo:

1. Regulirano območje (zelena barva) vključuje vse podatke in standarde prenosa elektronskih dokumentov, ki se izmenjujejo v okviru regulirane dejavnosti. To zakonsko zahtevo glede povezovanja izvajajo certificirani ponudniki storitev in programske opreme, ki v imenu podjetij izmenjujejo podatke z državo. Podatki, ki se pošiljajo davčni upravi so lahko celoten račun ali zgolj omejen nabor podatkov iz računa.

2. Standardizirano območje (modra barva) vključuje različne mednarodne, regionalne, nacionalne in

panožne standarde za izdajo, izmenjavo in sprejem elektronskih poslovnih dokumentov. Ti standardi se lahko uporabljajo ali prilagodijo tudi za uporabo na reguliranem območju.

3. Ne standardizirano območje (siva barva), kjer za udeležene strani in njihove ponudnike storitev ni predpisanega načina delovanja.

Poslovna omrežja transakcije nabave in prodaje

Jedrni informacijski sistemi, ki pokrivajo delovanje večine poslovnih funkcij v podjetju so celovite programske rešitve (angl. enterprise resource planning, v nadaljevanju ERP). Zaradi ogromnega števila različnih ERP sistemov in njihovih specifik, predstavlja velik izziv komunikacija in izmenjava podatkov med različnimi ERP sistemi. Prvotno so na področju izmenjave podatkov med različnimi ERP sistemi dominirale tradicionalne EDI rešitve (npr. EDIFACT ali ANSI X12), sčasoma pa so se začele uveljavljati bolj prilagodljive rešitve za avtomatizacijo nabavnih (angl. procure-to-pay, v nadaljevanju P2P) in prodajnih (angl. order-to-cash, v nadaljevanju O2C) procesov, ki večinoma delujejo kot storitev v oblaku.



Slika 2. Vključenost različnih informacijskih sistemov v proces prodaje (O2C) in nabave (P2P) [4]

Oblačne platforme P2P in podobne transakcijske platforme za povezovanje končnih deležnikov so v mnogih panogah pomembni gonilniki za avtomatizacijo B2B transakcij. Pri prvotni zasnovi takšnih platform je veliko podjetje vzpostavilo platformo za naročanje v oblaku in s tem pridobilo enoten vmesnik za povezavo vseh svojih dobaviteljev v enotno omrežje. Istega dobavitelja pa lahko v svoja P2P omrežja vključijo tudi druge večje stranke. Za tak koncept se je uveljavilo ime *model s tremi koti* (angl. 3-corner model), saj gre za povezavo med tremi deležniki: dobaviteljem, kupcem in platformo, ki jo pogosto upravlja ponudnik storitev. Podobno velja za O2C platforme, le da gre tam za platformo kjer dobavitelj poveže v omrežje svoje kupce. [6]

Čeprav so se ponudniki storitev prvotno prizadevali za strategije "zaprtga omrežja", so v zadnjih letih povečali sodelovanje pri ustvarjanju modelov, ki omogočajo boljšo interoperabilnost med njihovimi omrežji in drugimi ponudniki avtomatizacije transakcij B2B. Pojav teh modelov so v veliki

meri pognale tržne zahteve, ki narekujejo trend "odprtih omrežij", podpirajo pa ga tudi države pri javnem naročanju [7]. Tak koncept se imenuje *model s štirimi koti* (angl. 4-corner model), kjer vsak uporabnik storitev prvega in zadnjega kilometra uporablja rešitve svojega izbranega ponudnika storitev, različni ponudniki pa se povezujejo med seboj. Evropsko združenje ponudnikov storitev e-računov (EESPA) je pripravilo vzorčni sporazum o interoperabilnosti, ki se čedalje bolj uveljavlja na evropskem in svetovnem trgu. [8]

Model interoperabilnosti

Čeprav model interoperabilnosti pravzaprav ni model CTC, je vsesplošno uporabljen mehanizem za izmenjavo e-računov in drugih poslovnih elektronskih dokumentov v dobavni verigi. Za dostavo poslovnih dokumentov in metodologijo izmenjave se uporablja omrežje ponudnikov storitev, ki so medsebojno povezani v model s štirimi koti. Ti modeli so že široko preizkušeni kot učinkovito izvajanje transakcij in podpora avtomatizaciji O2C in P2P procesov [9].

Običajno davčne uprave določijo le splošni okvir fiskalnih pravil, ki ga morajo davčni zavezanci upoštevati pri izdaji, izmenjavi in prejemu skladnih e-računov. Poleg računov, model omogoča tudi izmenjavo povezanih vrst dokumentov, kot so naročila, dobavnice in drugi dokumenti. Uporabljajo se nacionalni, regionalni ali mednarodni tehnični standardi. Podatki za revizijo so na voljo v enotni in strukturirani obliki s strani končnega uporabnika ali ponudnika storitev.

Model interoperabilnosti se pogosto šteje kot bistveni predpogoj za splošno sprejetje digitalnih procesov in izmenjav s strani gospodarskih subjektov. Države pogosto podpirajo vzpostavitev takšnih infrastruktur in lahko sodelujejo tudi kot vodilni subjekt pri upravljanju z zainteresiranimi stranmi ali pa je država celo glavni upravljavec infrastrukture [10].

Izvajanje CTC v modelu interoperabilnosti se lahko doseže z mehanizmom povezovanja davčne uprave v model s štirimi koti preko kanala, ki predstavlja *peti kot*. Za to povezavo se lahko uporabljajo tudi različna tehnična orodja, ki jih omogoča Evropska komisija (npr. CEF Digital artifkat) in so sedaj že precej razširjeni med državami [11].

Model poročanja računov v realnem času

Pri modelu poročanja računov v realnem času davčni zavezanec račun poroča davčni upravi, ali drugi državni agenciji, ki deluje v njenem imenu, kmalu po izdaji in izmenjavi računa med trgovinskimi partnerji. Davčni zavezanci morajo običajno predložiti račun ali zgolj zahtevani nabor podatkov iz

računa v roku 24–72 ur po izstavitvi računa [4].

Centralno platformo za obdelavo podatkov vzpostavi davčna uprava, platforma pa za dostop in obdelavo podatkov zahteva uporabo certificiranih programskih rešitev. Pogosto je sistem obvezen za večje gospodarske subjekte, omogoča pa razširitev uporabe tudi na mala in srednja podjetja.

Pri tem modelu sama izdaja računov pogosto ni regulirana, zato lahko gospodarski subjekti uporabljajo različne oblike računov, od strukturiranih elektronskih računov, vizualnih elektronskih računov v PDF obliki ali papirnih računov. Z vidika gospodarske učinkovitosti se tudi tu spodbuja uporaba strukturiranih e-računov.

Davčni zavezanci morajo pri modelu poročanja računov v realnem času običajno uporabljati različne rešitve in postopke: eno za poročanje v realnem času in drugo za poslovanje z e-računi. Poročanje CTC s čistega tehničnega vidika je pogosto videti kot potrjevanje e-računov, vendar so ti sistemi ločeni od pravil izdajanja računov in ne zahtevajo, da je račun, kot je bil izmenjan med dobaviteljem in kupcem, elektronski. Davčnemu zavezanecu ni potrebno čakati, da platforma CTC vrne izrecno odobritev računa, pred nadaljnjo obdelavo in pošiljanjem računa prejemniku.

Podatke, ki jih je potrebno poročati se lahko ustvaril zgolj iz podatkov na računu ali pa davčna uprava zahteva še dodatne podatke (npr. podatki o finančnem računovodstvu), ki na računu niso na voljo. Z zahtevo pa uporabi dodatnih podatkov se povečajo začetni stroški naložb in stroški tekočega vzdrževanja.

Kar nekaj držav članic EU je za pristop k CTC izbralo nadgradnjo obstoječih postopkov poročanja, tako da se poroča bolj podrobno in pogosteje. S prehodom držav na izmenjavo e-računov v realnem času, pa se bo tak pristop najverjetneje spremenil in šel bolj v smeri modela potrjevanja.

Model potrjevanja

Model potrjevanja (angl. clearance) zagotavlja fiskalno potrjevanje in odobritev računa pred ali po izdaji računa kupcu. Centralno skladišče podatkov in platformo vzpostavi davčna uprava. Model potrjevanja so od leta 2000 dalje prve uvedle države v južni Ameriki, v naslednjem desetletju pa so sledile še druge države (npr. Turčija).

V splošnem je postopek modela potrjevanja sledeč:

1. Dobavitelj posreduje račun (ali zgolj omejen nabor podatkov iz računa) platformi, da pridobi potrditev (oziroma davčno veljavnost) dokumenta.
2. Platforma potrdi račun in tako dobavitelju omogoči, da kupcu pošlje potrjen račun.
3. Kupec lahko (glede na različico modela) ponovno potrdi račun na platformi in s tem pred plačilom preveri in potrdi njegovo veljavnost.

Obstaja več različic delovanja modela potrjevanja, ki se lahko od države do države razlikuje, glede na preference posamezne države. Običajno so razlike vezane na časovni razpored korakov potrjevanja (veljavnost in odobritev) ter ali je postopek potrjevanja centraliziran ali decentraliziran.

Pri predhodnem potrjevanju (angl. pre-clearance) izdajatelj potrjevanje računa izvede pred pošiljanjem računa kupcu. Pri kasnejšem potrjevanju (angl. post-clearance) pa se potrjevanje lahko izvede v kratkem časovnem oknu po izmenjavi računa med izdajateljem in kupcem. Prve uvedbe potrjevanja e-računov so bile osredotočene na nadzor v realnem času. Dobavitelj je imel obveznost, da podpiše račun in hkrati pridobi dovoljenje, da e-račun obravnava kot pravno veljaven dokument, ki ga lahko izda kupcu. Časovno okno med podpisom računa s strani dobavitelja in pridobivanjem potrditve je v zadnjih letih postal vse krajši, od nekaj dni do samo nekaj ur. Danes se ti dogodki za večino e-računov izvajajo v realnem času. Nekatere države so začele s časoma tudi rahljati pravila, kdaj je potrebno posredovati podatke e-računa v potrditev. Ponekod lahko izdajatelj pošlje kupcu e-račun, čeprav ta v trenutku pošiljanja še ni bil potrjen.

Potrjevanje lahko izvaja centralna platforma ali mreža certificiranih ponudnikov storitev. Pri centraliziranem preverjanju potrjevanje izvaja centralizirana platforma, ki jo vzpostavi davčna uprava. Pri decentraliziranem potrjevanju pa davčna uprava postopek potrjevanja prenese na certificirane ponudnike storitev. Ponudniki storitev delujejo kot posredniki med centralno platformo in gospodarskim subjektom. V tem primeru potrjevanja s strani ponudnika storitev le-ti ob potrditvi sporočijo podatke iz računa centralni platformi davčne uprave.

Model potrjevanja prinaša za gospodarske subjekte nekaj izzivov. Običajno oblika dokumentov za potrjevanje ne temelji na določenem standardu, temveč je osredotočena na potrebe davčne uprave. Izmenjava računov in povezanih dokumentov lahko poteka neposredno med gospodarskimi subjekti ali preko ponudnikov storitev, pri tem pa model na zagotavlja avtomatične interoperabilnosti. V nekaterih državah se pogosto kot prevladujoči mehanizem izmenjave uporablja celo elektronska pošta.

Italija je trenutno edina država v EU, ki je v celoti uvedla obvezno potrjevanje e-računov. Pri tem so njihovo obstoječo platformo za izmenjavo B2G nadgradili tako, da izvaja tudi potrjevanje e-računov. V poročilu ministrstva za gospodarstvo in finance so zapisali, da je italijanska blagajna v prvih šestih mesecih po uvedbi obveznih e-računov in potrjevanja uspešno povrnila kar 1,4 milijarde evrov prihodkov od DDV [10].

Opaža se tudi trend, da v državah, ki so uvedle model potrjevanja e-računov, sedaj potrjevanje širijo tudi na druge poslovne dokumente. V Mehiki je na primer potrebno transakcije plačilnih list potrditi na enak način kot račune. V nekaterih drugih državah južne Amerike (Čile, Argentina, Kostarika, Kolumbija in Ekvador) morajo biti potrjene določene informacije o financiranju računa.

Centralizirani model izmenjave

Centralizirani model izmenjave nadomešča neposredno izmenjavo dokumentov med gospodarskimi subjekti. Centralno platformo ali omrežje za izmenjavo e-računov med kupci in prodajalci vzpostavi država. Pri tem se lahko izmenjava uporablja samo za transakcije B2G ali tudi za transakcije B2G in B2B. Centralna platforma se lahko vključi v modele potrjevanja, tako da ta platforma tudi potrjuje transakcije.

Težave centraliziranega modela so, da na obliko dokumenta vplivajo večinoma potrebe davčne uprave in ne gospodarskih subjektih, ki iščejo učinkovitost dobavne verige. Interoperabilnost med kupci in prodajalci je lahko omejena na izmenjavo specifičnih dokumentov (npr. račun) in ne na celoten nabor poslovnih dokumentov, kar ovira popolno avtomatizacijo nabavnih in prodajnih procesov. Poleg tega uporaba centraliziranega modela izmenjave tudi vodi v uporabo ločenih rešitev in postopkov, ki so potrebni za povezane dokumente (npr. naročilo), ki se lahko izmenjuje neposredno med trgovinskimi partnerji.

Decentralizirani CTC model izmenjave

V letu 2022 je skupina mednarodnih strokovnjakov razvila decentraliziran model CTC, ki naj bi najbolj optimalno uravnotežil potrebe države in podjetij [12]. Za razliko od centraliziranega modela, izvajajo pri decentraliziranem CTC modelu preverjanje in izmenjavo podatkov certificirani ponudniki storitev, kar predstavlja razbremenitev za delovanje državne platforme. Ta model omogoča gospodarskim subjektom, da uporabijo in podprejo obstoječe naložbe v interoperabilnost in elektronsko izmenjavo podatkov (EDI).

Vsi certificirani ponudniki storitev morajo skrbeti za vnaprej določene minimalne tehnične standarde,

da bi zagotovili interoperabilnost sistema, pri čemer lahko uporabljajo druge dogovorjene standarde zunaj območja reguliranih standardov za davčno poročanje in potrjevanje.

Certificirani ponudniki posredujejo centralni platformi samo omejen nabor podatkov, ki so na računu. Pošiljanje podatkov centralni platformi se izvede sočasno z izmenjavo poslovnega dokumenta, kar omogoča neprekinjeno dobavno verigo.

Primerjava CTC modelov

Spodnja tabela predstavlja povzetek primerjave, kako različni modeli CTC podpirajo zahteve z vidika gospodarskega subjekta in davčne uprave. Na splošno lahko sklepamo, da so s fiskalnega vidika vsi modeli CTC zmožni zagotoviti zelene fiskalne koristi, vendar pa se precej razlikujejo pri omogočanju širših gospodarske koristi in enostavnosti uporabe za gospodarske subjekte.

Tabela 1. *Primerjava CTC modelov glede na zahteve države in podjetij.*

Gradniki & zahteve	Poročanje o računih v realnem času	Potrjevanje	Centralizirana izmenjava	Decentraliziran CTC
Enostavnost izvajanja/uporabe za državo	delno	delno	NE	DA
Enostavnost izvajanja/uporabe za MSP	delno	delno	DA	DA
Enostavnost izvedbe/uporabe za večje gospodarske subjekte	DA	delno	delno	DA
Postopno uvajanje	NE	NE	NE	DA
Izkoriščanje obstoječih standardov in naložb	NE	NE	NE	DA
Kritična točka odpovedi	DA	delno	NE	DA
Interoperabilnost	NE	NE	NE	DA
Vzdrževanje in podpora	DA	delno	NE	DA
Zaupnost podatkov	DA	NE	NE	DA
Avtomatizacija dobavne verige	delno	NE	NE	DA
Inovativnost in dodana vrednost	delno	delno	NE	DA
Pravična razporeditev stroškov spremembe	delno	delno	NE	DA

Model interoperabilnosti ni vključen v primerjalno tabelo, saj sam po sebi ne ponuja mehanizmov za posredovanje podatkov o transakcijah v realnem času davčni upravi. V tabeli vrednost "DA" pomeni polno izpolnjevanje zahtev, "delno" pomeni pogojno izpolnjevanje zahtev, "NE" pa pomeni očitne pomanjkljivosti pri izpolnjevanju zahtev.

Zaključek

Posredne davčne goljufije in utaje predstavljajo pomemben problem za mnoge države po vsem svetu. Zato države preučujejo pristope za obvladovanje davčnega primanjkljaja. Eden od pristopov je uvedba tako imenovanega stalnega nadzora transakcij ali CTC, ki temelji na pridobivanju podatkov od davčnega subjekta na ravni transakcije v realnem ali skoraj realnem času.

Ker sprejemanje modelov CTC raste po vsem svetu, postaja pomanjkanje usklajenosti med zakonodajami v kombinaciji z obremenitvijo davčnih subjektov vse bolj problematično. Države imajo sedaj na voljo praktične dokaze in politično podporo, ki jo potrebujejo za spodbujanje ambicioznih programov v smeri digitalne odpornosti. Že sedaj lahko vidimo, da se CTC in druge pobude za digitalizacijo DDV pospešeno širijo v državah po vsem svetu. Uspehi, na račun zmanjšanja DDV primanjkljaja in spodbujanja avtomatizacije, spodbujajo uporabo podobnih ukrepov v številnih drugih reguliranih poslovnih in upravnih procesih.

Veliko Evropskih držav je že uvedlo CTC (npr. Italija, Madžarska), nekatere druge se na uvedbo pripravljajo (npr. Francija, Poljska). Realno je pričakovati, da bo temu zgledu sledilo več držav v Evropi. Tako širše sprejemanje CTC bo verjetno vplivalo tudi na druge države zunaj Evrope, ki jih je v preteklosti zgledovala evropska zakonodaja (npr. Avstralija, Južna Afrika, Izrael).

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TOUCHLESS ECONOMY: CHANGE IN CONSUMER BEHAVIOR AND IN BUSINESS

Abstract. The COVID-19 pandemic has changed the usual channels of contact, minimizing it in such a way as to limit the spread of the virus in the future. Under such conditions, the demand for the touchless nature of economic relations has increased, new concepts of economics have emerged, such as touchless economy. The article demonstrates one of the ways of adapting businesses and other economic agents through the use of the touchless economy model. New ways of organizing business in a conditions of low touch economy have been described. The tools of a touchless economy both digital and technological have been shown. The reasons behind the emergence of touchless concept were identified, changes in consumer behaviour that have become the basis for creating a model of touchless economy were analyzed. The pandemic impact on consumer behaviour in Ukraine and the economic environment in general are shown, the most vulnerable areas of economic activity were identified. Problem points that may stand in the way of effective implementation of this model in Ukraine were analyzed.

Keywords: *Touchless economy, pandemic crisis, behavioral change, innovative technologies, digitalization*

Introduction

In today's pandemic environment of limited contact, there is a problem of rapid adaptation and change in the nature of economic relations. In this case, the model of touchless economy is a relevant and effective option, as its main goal is to minimize contact, and the tools are characterized by a high level of flexibility.

The concept of a touchless economy was developed by the “Board of Innovation” a Dutch firm of business design and innovation strategies in response to the crisis caused by COVID-19. According to this concept, a touchless economy (or "low touch economy") is a socio-economic relationship that implies a lack of direct contact between its participants (e.g, online conferences, ordering products or other goods online, etc.) [1]. Many scientists have studied the impact of the pandemic on the current economic situation and on changing consumer behavior, including Alfonso V. [1], Di Crosta A. [2],

Guthrie C. [3], Ivkovic N. [4].

The basis of the touchless economy is a model of a digital economy. Since the model of touchless economy is relatively new one, it is merely described in economics. However, analyzing the practical implementation of this model, we can identify its features:

- elimination or minimization of direct contact between participants in economic relations;
- time savings when performing certain actions;
- high digitalization and the use of the latest technologies;
- reduction of the cost of effective organization of economic activity;
- one of the main goals of this model is to ensure the return of public life to its "normal functioning", to make possible those everyday operations that had to be limited as a result of COVID-19;
- the driving force behind a creation of effective methods of touchless economy is the level of innovation of research conducted in the country of use (we can say that the touchless economy is based on the knowledge economy).

The Purpose of the Study is to analyze the changes in behavior of economic agents (business and consumers) during the pandemic, and to identify the possibilities of touchless economy model to contribute positively to economic development in crisis conditions. The main Research Methods used were the method of scientific abstraction, historical and analytical methods that helped determine the theoretical basis of the model of touchless economy. The experimental method allowed to form practical measures using the tools of touchless economy, that aim to help business to adapt to the current volatile state of Ukraine's economy.

Influence of COVID-19 on economic relations

The COVID-19 pandemic has had a devastating effect on the global economy. International market mechanisms, despite their adaptive flexibility, have failed to deliver the expected response in a timely manner, slowing the work of many governments in the fight against the pandemic. The onset of the pandemic was marked by considerable uncertainty and the complexity of government decision-making, with most countries prioritizing the health of citizens when developing strategic goals. As a result of numerous quarantine restrictions, the economy of each individual country has been negatively affected: production, consumption, and employment have decreased. The most vulnerable were such industries as transport, construction, retail, services, tourism and hotel business [5, p. 11]. The pandemic has caused a drastic change in the nature of economic relations. Currently, their main features are:

- Change in consumer demand (consumer priorities are mostly focused on meeting basic needs, necessities, such as food, cleaning products, etc.) [2, p. 2];
- Increase in demand for personal care products (such as sanitizers or protective masks - those products that a wide range of consumers did not pay attention to before the pandemic);
- The process of buying as a result of contact restrictions acquires new features: the number of online purchases is growing;
- As before, the result of a purchase is utility maximization or receiving of certain benefits, but now the emotional benefits outweigh the rational (increasing the impact of the economy of impressions);
 - Most consumers prefer economic transactions that do not pose a threat and are safe for their health;
- Preferring a touchless method of receiving goods.

The rapid change in consumer behavior requires the same rapid response from businesses. Given the situation caused by COVID-19, entrepreneurs have three options for solving problems of their operational activities: to maintain standard operating principles and work in accordance with quarantine restrictions (which may further lead to reduced profits); to liquidate the enterprise (the option is quite common among small businesses, especially in developing countries) or to adapt their business model to a current situation.

Studies show that only 15% of companies are able to "win" by choosing to operate on the principles of their sustainable behavior in modern pandemic conditions [1]. This suggests that the best option in this case would be to adapt the business model to new market conditions. Based on the features that characterize modern economic relations, we can conclude that the most effective concept to choose from is the concept of touchless economy.

Consumer behavioral changes as a result of the pandemic

The main trends in behavioral change resulting from COVID-19 are:

- increased digital technologies adoption;
- reduced mobility (less usage of means of transport and increased remote work);
- changes in purchasing behavior (consumers buy mainly based on their own values (which during pandemics have shifted towards maintaining their own health and minimizing the risks that could harm them), online shopping share has increased),
- consumers are more inclined to save than before;

- heavier attention is paid to own health nutrition;
- changes in interpersonal behavior (increased divorce rate, people are more likely to buy pets).

All these trends are interrelated, most authors argue that the intensification of digital tools usage blurs the boundaries between work, lifestyle and social interaction, as well as between areas such as mobility, health and finance [4, p. 8].

If we analyze changes in consumption in terms of certain product categories, we can conclude that the pattern of behavior has changed in each category, including food, health and entertainment.

The Global Consumer Insights Survey has conducted a research to help businesses respond actively and effectively to changes in consumer behavior in future. The study shows that consumers spent less on the category of non-food products. Due to the pandemic, consumers are willing to spend less on: shoes and clothes (a decrease of 51%), sports equipment (a decrease of 46%), visits to restaurants (a decrease of 41%), office equipment (a decrease of 36%), health products and beauty (35% reduction) [6].

Current consumption in Ukraine can be clearly characterized by its pessimism: due to the unstable economic situation in the country, consumers often show uncertainty and distrust both when making a purchase and when planning their future purchases. The COVID-19 pandemic, worsening of economic situation and the general instability of the economic environment in Ukraine have led to a reduction in impulsive purchases and an increase in the expected rational benefits for consumers.

During the pandemic, Ukrainians began to buy more food and medicine, hygiene and beauty products, alcoholic beverages and home and garden products. Goods that Ukrainians postpone buying for the future are clothes, shoes and vacation / travel expenses. As for the digital sphere, that is increasingly replacing offline space due to the coronavirus, the use of smartphones (an increase of 70% compared to the pre-quarantine period) and computers (an increase of 44%) has increased in Ukraine [7].

Business adaptation in response to a pandemic

Changes in consumer behavior have accelerated the growth in use of digital tools in contact points between consumer and seller. The higher the level of e-commerce development in a country in 2019, the higher the growth rate of e-commerce during the COVID-19 pandemic, and the growth of e-commerce was faster where deterrence measures were stricter [1, p. 3].

Thus, as a result of the pandemic, consumer spending on e-purchases increased by 183 billion dollars

[16]. At the same time, in the first half of 2020, revenues from Amazon increased (by 34% year on year), Alibaba (by 27%), JD (by 28%), Shopify (by 74%), Rakuten (by 16%) and Mercado Libre (by 50%) [1, p. 4].

During the pandemic, the e-commerce sector faced three main challenges:

- Availability of products;
- Failures in logistics and transportation;
- The necessity of consumer protection due to restrictions.

In response to these problems, the need to create a new business model have risen. During the pandemic, e-commerce companies used new technologies for logistics and supply. E-commerce giants: Alibaba, Amazon and JD used automated technologies such as autonomous cars, robots and drones to ensure secure "touchless" delivery to customers.

In addition, most e-commerce platforms have expanded their range of services to meet new societal needs, such as online education and telemedicine. Consumer protection has also improved: in order to reduce fraud and ensure fair prices, Amazon, Mercado Libre and others have removed overly high-priced offers from their platforms.

The COVID-19 outbreak has become a catalyst for accelerating digitization, not just a temporary phenomenon. In Ukraine and globally trends in consumer behavior indicate of future significant structural changes in consumption, as it is likely that consumers will retain their modified behavior. Undoubtedly, the most successful companies in this situation will be those that manage to adapt to the general digitalization and become "touchless" in business.

For successful operation during a pandemic, businesses can use the following elements of a touchless economy [8]:

- shift to remote work and digitize ways of contact with consumers, which is often accompanied by significant innovation processes;
- where the previous option is not possible, at least provide the safest possible environment for consumers and employees.

The tools of a touchless economy include both digital and technological. The choice of a tool depends on the business model and type of activity of the enterprise. The following tools of touchless economy can be identified:

- artificial intelligence,
- Internet of Things,
- deeptech technologies (technologies created by scientific and engineering research, which usually contain scientific novelty and are unique. Examples of such technologies include electric vehicles, quantum technologies, technologies that provide cybersecurity, etc.),
- robotics, drones,
- eSports, virtual reality,
- Big Data (processing and systematization of large data sets can optimize work in many areas of business. In particular, this tool is used in digitizing process of the company's activities and its contacts with consumers (creating mobile applications and websites with direct user authorization, which allows you to quickly predict trends in consumer demand, classify products / services according to consumer preferences, etc.),
- blockchain (often used as a kind of enterprise data protection and as a possibility of quick transactions),
- fintech (financial technology),
- martech (marketing technology),
- medtech (medical technology),
- virtual assistants, chatbots, etc.

The most common solutions are: social distancing, video conferencing, protective glass to create distance, remote work, automation of technical equipment, limiting the number of people in one room and restrictions on travel / their minimization.

The effectiveness of this model can be observed by analyzing the practical experience of its application. Since the beginning of the pandemic, many companies have applied the touchless economy model in practice. For example, travel companies operating in the tourism industry have introduced a 60% hotel occupancy system to avoid overcrowding. In addition, hotel rooms remained unoccupied for 12 hours between the arrival of each new visitor. A large number of technical equipment of a preventive nature has appeared. For example, Belgian broadcasters used distance bracelets to protect actors from infection during filming. In Singapore, the practice of using patrol robots to help control physical distance in public places has become widespread. In addition, most countries use wristbands to monitor quarantine.

Japan is the most striking example of the use of tools of touchless economy and introduction of the mechanism of its functioning in business. Japan is currently one of the leaders in the market of

robotics, production of sensor communication technologies and artificial intelligence. It should be noted that these industries were a priority in Japan before the pandemic, but are now more widely used in everyday life.

As contact between people has been minimized during the pandemic, Japanese robotics and non-contact technology have gained unprecedented demand in the global market, including increased demand for robots in healthcare and services. Along with digitalization and remote work, COVID-19 was a turning point for Japanese industry towards the recovery of a weak national economy [9, p. 129].

With the outbreak of COVID-19, Japanese companies announced the development of new technologies that will help business environment to adapt more quickly to quarantine restrictions. For example, in May 2020, an elevator manufacturer Fujitec released a model with an optional touchless panel function that uses infrared sensors to select a destination based on the position of the hand above the dashboard. Touchless elevator control panels have become a popular product against during pandemic to avoid cross-contamination [9, p. 136].

NEC, another technology company that has successfully adapted to the pandemic, has developed a new face recognition system. This system recognizes exposed objects, such as eyes and other uncovered parts, to verify the subject's identity. The system can be used at the entrance to office buildings, hotels, apartments, airports and other facilities [10].

Also popular is the use of the fintech concept - modern IT institutions of innovative IT technologies. At the end of 2020, there were more than 500 startups in the world, 70 of which belonged to companies that use fintech. In particular, the most successful is the experience of companies such as Stripe (application programming interface for receiving and processing online payments), Paytm (Indian startup, whose main idea is to develop a digital wallet), Chime (American innovative online banking that works without physical branches, exclusively online), Klarna (Swedish startup that provides companies with a payment gateway to receive payments from customers) [11, p. 355].

Model of touchless economy in Ukraine

COVID-19 has led to the transition to a model of touchless economy in Ukraine as well. The level of digitalization and the use of innovation to minimize contact may be small compared to developed countries, but it should not be overlooked that steps towards further development have been taken. Thus, directly due to the pandemic in Ukraine [12, p. 85]:

- Increased online sales;
- Online payments and touchless delivery have become widespread;
- Special services in cafes and restaurants.

The following measures using the tools of touchless economy to mitigate the adaptation of business to the current volatile state of Ukraine's economy can be identified (Table 1.)

Table 1. *Solving main problems of the pandemic with the help of tools of touchless economy*

Sphere	Problems that may be solved with the tools of touchless economy	Instruments of touchless economy
Temporary accommodation and catering	Avoidance of negative consequences from the established rules of social distance, possible lockdown	Use of technologies that will help ensure maximum consumer safety: self-disinfectants at the entrance, demarcation of the hall, etc. Use of digital marketing tools (constant communication with the consumer in the digital space).
Tourism	Closing borders Self-isolation and social distance Decrease in demand	Mobile applications that will help promote local tourism, virtual reality
Transport (air transportation between countries)	Closing borders Self-isolation and social distance	Artificial intelligence technologies, short- and long-term forecasts for changes in consumer behavior, the use of chatbots and digital means of sales promotion
Logistic transportation	Closing borders Disruption of supply chains	Digital register that uses artificial intelligence to control the supply chains
Sphere of entertainment	Social distance Behavioral changes of consumers	Virtual reality E-sports
Industrial production	Closing borders Disruption of supply chains Social distance	Adaptation of production lines through the use of industry 4.0 technologies: 3D printing, artificial intelligence, unmanned aerial vehicles
Wholesale and retail trade	Social distance Self-isolation The transition to a digital economy	Emphasis on self-service Use of robotics, touchless payment

Source: compiled by the authors

Conclusions

The structural changes in the economy that took place during the COVID-19 pandemic have led to the emergence of a new model of economic relations - the model of touchless economy. The distinctive feature of this model is a high level of digitalization in production of goods and services.

This makes the model a trigger for changes in the external environment, and, therefore, in today's pandemic environment, the concept of touchless economy is the most advantageous in usage, both in the business environment and in general by all economic agents.

Among the reasons that led to the emergence of the concept of touchless economy are: changes in consumer behavior, sectoral, macroeconomic, geopolitical changes, the emergence of new opportunities and resources, increasing the use of digital technologies. However, the biggest impact is the change in consumer behavior, that requires a rapid response from business. We can identify the following trends in consumer behavior, which are currently observed the most: increasing the number of online purchases, the predominance of emotional benefits over rational, purchases are based on consumer values (the need to protect their own health, minimize risks when using services enterprises, purchases of goods, etc.), consumers increasingly prefer safe purchases that do not pose a threat to their health.

In accordance with the change in consumer behavior, the principles of business operation have also changed. Thus, we can already see many practical usage of tools of touchless economy, such as: artificial intelligence, robotics, unmanned aerial vehicles, e-sports, virtual reality, Big Data, fintech, martech (marketing technologies), virtual assistants, chatbots.

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NEW LEGAL FRAMEWORK FOR SUSTAINABLE BUSINESS IN THE EU

Abstract. In June 2019 European Parliament and Council adopted the Directive 1023/2019 on preventive restructuring frameworks, on discharge of debt and disqualifications and on measures to increase the efficiency of procedures concerning restructuring, insolvency and discharge of debt (Directive on preventive restructuring framework). This is an important step not only in harmonizing national regulations but also first document on the EU level enabling companies and other entities in financial difficulties to continue their business by restructuring of their assets and liabilities, any other part of their capital structure, as well as by carrying out operational changes. The purpose of the preventive restructuring frameworks is to encourage all business entities potentially facing such difficulties to restructure effectively at an early stage and thus to avoid insolvency. Harmonization process that follows represents an important challenge for all EU national legislators. Authors of this paper analyze the new framework, its effects on business performance and provide a comparative overview of implementation of new framework in EU countries, which has to be completed by July 2022.

Keywords: *legal framework, sustainable business, preventive restructuring, EU*

Introduction

EU Directive 1023/2019 on preventive restructuring frameworks provides new legal instruments available for debtors facing financial difficulties. Some countries have already had different insolvency prevention procedures [1], but the objective of the new frameworks is to uniform national legislations in the EU. Preventive restructuring frameworks are available for all business entities, legal and natural persons, who are in the position of debtors in a business relationship. Debtors facing difficulties likely to lead to insolvency are allowed to use new instruments to prevent the insolvency in order to ensure the viability of business, to discharge of debt and to implement measures increasing

the efficiency of restructuring, insolvency and discharge of debt [2]. However, these new frameworks do not apply to debtors in financial sector. Directive 1023/2019 excludes insurance/reinsurance undertakings, credit institutions, investment firms or collective investment undertakings and other financial institutions, and entities public bodies and natural persons non performing business activity from its field of application.

Main tool of crisis and insolvency prevention is debt and business/corporate restructuring. It may emphasize one or several measures aiming the debtor's business. By these measures, changes may be performed in liabilities or any other part of the debtor's capital structure. Also, composition, conditions or structure of a debtor's assets may be the subject of restructuring measures (for ex. assets or parts of the business or the business as a going concern may be sold). Finally, any other necessary operational changes, such as the termination or amendment of contracts or the sale or other disposal of assets. It may also include measures such as debt-to-equity swaps. In any case, such operational measures have to comply with the general requirements of civil law, labour law rules and safeguards. [3]. All restructuring measures are based on adopted restructuring plan. This process includes different parties such as creditors, employees, or classes of creditors and equity holders, whose claims or interests are directly affected by a restructuring plan.

The objective of restructuring process is to enable debtors in financial difficulties to continue their business. However, depending on economic and financial situation of the debtor, the continuation after restructuring may be conducted in whole or in part. Primarily preventive restructuring frameworks have as a purpose to enable debtors to restructure effectively at an early stage and to avoid insolvency. In that sense, restructuring allows limiting the unnecessary liquidation of viable enterprises. Further, it prevents job losses and the loss of know-how and skills, and maximize the total value to creditors. This is very important for creditors, since their claims will more likely be satisfied in comparison to payments in the liquidation of the enterprise's assets or any other situation of settlement in the absence of a plan [4]. Finally, the preventive restructuring allows to owners and the economy as a whole to receive the payment, which is unlikely in any crisis situation.

New Directive assumes that enterprises, in particular SMEs, represent 99 % of all businesses in the European Union, would benefit from a more coherent legislative approach at Union level [5]. In the practice, most SMEs are more likely to be liquidated rather than restructured. The main obstacle is that they have to bear large costs that are disproportionately higher than those faced by larger enterprises. Also, SMEs facing financial difficulties, often do not have access to the necessary resources to cover high restructuring costs. In order to allow them to restructure at low cost, EU

Commission considers to propose a comprehensive check-lists for restructuring plans, especially adapted to the needs and specificities of SMEs. In addition, early warning tools should be put in place to warn debtors of the urgent need to act, taking into account the limited resources of SMEs for hiring experts.

Early warning tools and access to information

Among the instruments for preventive restructuring, EU Directive 1023/2019 provided the obligation for member states to ensure that debtors have access to one or more clear and transparent early warning tools. These legal instruments should allow debtors to detect important circumstances leading to a likelihood of insolvency and which may be the signal to act without delay [6]. Early warning tools may be used as an internal or self-assessment and as external intervention. Provisions of the Directive provide that early warning tools may include: 1) alert mechanisms when the debtor has not made certain types of payments, 2) advisory services provided by public or private organisations and 3) incentives under national law for third parties with relevant information about the debtor, such as accountants, tax and social security authorities, to flag to the debtor a negative development [7]. Thus debtors should be encouraged to search for solution for envisaged or forthcoming financial difficulties in negotiations with affected parties and especially creditors in out-of-court settlements. In order to protect rights and interests of all affected parties, EU member states have to ensure that debtors and employees' representatives have access to relevant and up-to-date information about the availability of early warning tools and procedures and measures concerning restructuring and discharge of debt. In practice, that will mean that the states will have to publish all relevant information on access to early warning tools on the official pages of public ministries and relevant agencies.

As incentive for debtors to react once the likelihood of insolvency is detected, some new duties were introduced for directors. Directive 1023/2019 on preventive restructuring frameworks provides that directors will have due regard, as a minimum, to the interests of creditors, equity holders and other stakeholders, the need to take steps to avoid insolvency and the need to avoid deliberate or grossly negligent conduct that threatens the viability of the business. All EU member states have to harmonize their legislations with regard to these provisions.

Availability and facilitating the use of preventive restructuring frameworks

For a long time financial difficulties of debtor were followed by negative image in public and debtors often undertook business recovery measures in a late stage of crisis and once their business was

irreversibly compromised. That was the reason to ensure that, when an insolvency is threatening the business, debtors have access to the adequate preventive restructuring instruments. The new frameworks should enable them to restructure the business, for the purpose of preventing insolvency and ensuring their viability. There is no preference comparing to other instruments for avoiding insolvency, protecting jobs and maintaining business activity [8]. Depending on type of debtor and/or causes of business crisis, applied preventive restructuring instrument may consist of one or more procedures, measures or provisions. Directive 1023/2019 on preventive restructuring frameworks sets on the equal level instruments taking place in and out of court with any other restructuring instrument provided by the national law. However, it ensures that such restructuring frameworks afford debtors and affected parties the rights and safeguards in a coherent manner.

Once the preventive restructuring instruments are made easily accessible to the debtors and once they are encouraged to use them, it is also important to allow debtors to carry them out efficiently in order to keep sustainability of the business. The debtor should have the opportunity to conduct easily negotiations with parties affected by restructuring process. For that purpose, new preventive restructuring frameworks provide two facilitating instruments, such as debtor in possession and stay of individual enforcement actions. The only authority entitled to order these facilitating measures is the court. These measures are ordered upon the proposal of the debtor. Until recently, such instruments were not available until entering the insolvency proceedings, in which debtor often faced the loss of control over its business. Keeping the debtor in possession allows to conduct negotiations on restructuring plan in the same legal position as before using the instrument and to sustain the business while negotiations are in progress. Also, negotiations on restructuring plan are facilitated by stay of any enforcement actions taken by the creditors. Although this is only interim instrument, lasting 2-3 months, it provides an important relief until the negotiations with main creditors are completed [9]. By these means, debtor has precious additional time to elaborate and submit draft of restructuring plan with all necessary measures to implement.

Restructuring plan

The nucleus of the preventive restructuring process is the restructuring plan. In its basis, it is negotiated agreement providing legal ground for restructuring process and allowing restructuring measures to be applied. It may be concluded between debtor and some or all creditors out of court proceedings or be confirmed by the court. This will also decide on its collective or non-collective effect. The out of court adoption of the plan may be more or less formal. It may be adopted after informal negotiation are completed, assisted by a mediator or supervised by the judicial authority. Since the restructuring plan is a preventive instrument, the only entitled to submit it for adoption is

the debtor. In the case of a company, this has to be decision taken by assembly of equity holders. Directive 1023/2019 on preventive restructuring frameworks sets minimum requirements for any restructuring plan as preventive instrument submitted for adoption or confirmation by a judicial or administrative authority. It has to provide 1) the identity of the debtor, 2) the debtor's assets and liabilities at the time of submission of the restructuring plan (including a value for the assets), 3) a description of the economic situation of the debtor, the position of workers and a description of the causes and the extent of the difficulties of the debtor, 4) the affected parties (whether named individually or described by categories of debt) and their claims or interests covered by the restructuring plan, 5) the classes into which the affected parties have been grouped, for the purpose of adopting the restructuring plan, and the respective values of claims and interests in each class (if applicable), 6) the parties, named individually or described by categories of debt in accordance with national law, which are not affected by the restructuring plan, with a description of the reasons why it is proposed not to affect them, 7) the identity of the practitioner in the field of restructuring, 8) the terms of the restructuring plan, including the statement of reasons which explains why the restructuring plan has a reasonable prospect of preventing the insolvency of the debtor and ensuring the viability of the business and the necessary pre-conditions for the success of the plan [10]. Each EU member states may also require additional information in the plan, such as statement of reasons for restructuring made or validated by an external expert or practitioner in the field of restructuring if plan provides its appointment in the process.

After the plan is submitted, all parties affected by the plan have right to discuss and to vote on its adoption. Parties that are not affected by a restructuring plan do not have right to vote. The plan proposed for adoption may exclude from the right to vote equity holders, creditors whose claims rank is below the claims of ordinary unsecured creditors in the normal ranking of liquidation priorities and any related party of the debtor or the debtor's business with a conflict of interest [11]. Since the debtor drafts the plan and divides affected parties in voting classes and although the plan is adopted in out-of-court process, the formation of classes may need to be examined by a judicial or administrative authority. Such a plan remains the out-of-court agreement between the debtor and affected parties i.e. creditors. This allows to protect both interests of creditors and of the debtor submitting such a plan for adoption and to prevent any discrimination of affected parties.

Judicial confirmation of the restructuring plan

Restructuring plan as preventive instrument may also be confirmed by the court. Such confirmation provides to it a special legal quality, since the plan becomes a compulsory enforceable instrument. Until then, a plan adopted by debtor and affected parties bounds as any other agreement concluded

under the rules of Civil Law. Without judicial confirmation, it relies on good faith of the debtor [12]. Therefore, Directive 1023/2019 on preventive restructuring frameworks sets conditions for restructuring plan to be binding for the parties. Only restructuring plans confirmed by a judicial or administrative authority 1) affecting the claims or interests of dissenting affected parties, 2) providing new financing and restructuring plans and 3) involving the loss of more than 25 % of the workforce (if such loss is permitted under national law), are binding for debtor and all affected parties [13]. Such instrument may be considered as a type of judicial pre-insolvency proceedings. The competent judicial or administrative authority may refuse to confirm a restructuring plan if it would not have a reasonable prospect of preventing the insolvency of the debtor or ensuring the viability of the business. It may also be required from such authority to confirm a restructuring plan in order for it to become binding, the decision is taken in an efficient manner with a view to expeditious treatment of the matter.

In every multiparty business relation, especially where dissent of creditors prevents the restructuring plan to be adopted, debtor in possession and stay of enforcement actions are not sufficient to allow restructuring process to be carried out. That is the reason for introducing instruments facilitation adoption of the plan. For that purpose, the use of such an instrument has to be confirmed by a competent authority. A restructuring plan which is not approved by affected parties, in every voting class, may be confirmed by a judicial or administrative authority upon the proposal of a debtor or with the debtor's agreement, and become binding upon dissenting voting classes (*cross-class cram-down*). However, this does not mean any discrimination of parties. In order to impose the restructuring plan to opposing parties, Directive 1023/2019 on preventive restructuring frameworks provides that the restructuring plan has to fulfil certain conditions. Such restructuring plan has 1) to be confirmed by a judicial or administrative authority and 2) it has been approved by: a) majority of the voting classes of affected parties, provided that at least one of those classes is a secured creditors class or is senior to the ordinary unsecured creditors class; or that b) at least one of the voting classes of affected parties or where so provided under national law, impaired parties, other than an equity-holders class or any other class which, upon a valuation of the debtor as a going concern, would not receive any payment or keep any interest, or, where so provided under national law, which could be reasonably presumed not to receive any payment or keep any interest, if the normal ranking of liquidation priorities were applied under national law, 3) ensures that dissenting voting classes of affected creditors are treated at least as favourably as any other class of the same rank and more favourably than any junior class and 4) no class of affected parties can, under the restructuring plan, receive or keep more than the full amount of its claims or interests [14]. For claims of affected creditors in a dissenting voting class, it may be provided the satisfaction in full by the same or equivalent means

where a more junior class is to receive any payment or keep any interest under the restructuring plan.

Planned measures in the restructuring plan are based on the existing value of the debtor's assets. However, creditors claims will be paid from the future profit resulted from the recovered business performance. Since the plan of restructuring has an impact on rights of creditors, equity holders and other affected parties, it is important to provide to them a detailed valuation of the debtor's business situation before voting. In order to protect their interests, the judicial or administrative authority may take a decision on the valuation of the debtor's business, but only where a restructuring plan is challenged by a dissenting affected party. For the same purpose, judicial or administrative authorities may appoint or hear properly qualified experts.

In the voting on restructuring plan, equity holders may be excluded from the process. In that case, they are not allowed to unreasonably prevent or create obstacles to the adoption, confirmation and implementation of a restructuring plan. Directive 1023/2019 on preventive restructuring frameworks ensures protection of individual and collective workers' rights provided by EU and national labour legislations in the event of preventive restructuring. These rights will not be affected by the preventive restructuring framework: the right to collective bargaining and industrial action, the right to information and consultation in accordance with Directive 2002/14/EC and Directive 2009/38/EC and the rights guaranteed by Directives 98/59/EC, 2001/23/EC and 2008/94/EC [15]. If the restructuring plan includes measures leading to changes in the work organization or in contractual relations with workers, those measures have to be approved by those workers, if national law or collective agreements provide for such approval in such cases.

Legal effects of the restructuring plan.

Since restructuring plan does not have to include all stakeholders as in an insolvency plan, it has not always a collective effect. Some parties may remain out of the plan and others do not have to vote for it. Legal effects of the restructuring plan depend on the type of procedure of its adoption. Out-of-court adopted restructuring plans have the same legal effect as any other agreement and bounds only the parties who voted for it. However, if the restructuring plan is provided by the judicial confirmation, it will be binding for all affected parties named or described in the plan and represents an enforceable title. If affected parties are from the different countries, it is important to provide cross-border effect of the plan as well. This issue has still not been resolved neither by the EU regulations nor by the decisions of the Court of Justice of the EU. On the one side, Art. 1 (2) of the EU Regulation 1215/2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters excludes such agreements from the field of its application if they relate to bankruptcy, judicial

arrangements, compositions or analogous proceedings [16]. Also, EU Regulation 848/2015 on insolvency proceedings and their cross-border effects still has not preventive restructuring proceedings listed in its Annex A, since they have no mandatory collective effect required by the Art. 2.1. (1) [17]. On the other side, Court of Justice of the EU has not taken stand on this matter. Consequently, agreements on restructuring have effect limited only on national jurisdictions. Therefore, this will require in the future a recast of the Directive 1023/2019 on preventive restructuring frameworks, as well as the respective EU regulations and adequate decisions of the Court of Justice of the EU.

Once the restructuring plan is adopted and confirmed, Directive 1023/2019 on preventive restructuring frameworks provides adequate protection for new financing, interim financing and other restructuring related transactions. EU member states have to introduce in national legislation a minimum protection, especially if the debtor subsequently faces an insolvency. In that case, new financing and interim financing may not be declared as void, voidable or unenforceable [18]. Also, the grantors of new financing or interim financing will not incur civil, administrative or criminal liability, if such financing is detrimental to the creditors. However, Directive allows exception may be set by the national law. This situation may be avoided if a competent judicial or administrative authority performed *ex ante* control of the interim financing and confirmed the restructuring plan.

New legal framework also gave an important incentive to the parties affected by the restructuring to use out-of-court instruments for negotiating and adopting the plan. Among them, mediation process has an important role. In the EU, on mediation in civil and commercial matters applies Directive 2008/52/EC of 21 May 2008. Also, European Parliament adopted on 13 September 2011 the Resolution on the implementation of the directive on mediation in the Member States, its impact on mediation and its take-up by the courts [19]. However, mediation agreements as legal ground for restructuring still have limited effect, since Art. 3. 1. (a) includes from application of this directive all mediations conducted by a judge who is not responsible for any judicial proceedings concerning the dispute in question, as well as attempts made by the court or the judge seized to settle a dispute in the course of judicial proceedings concerning the dispute in question [20]. However, mediation as an instrument has many advantages in the practice. It is much less expensive than other proceedings, provides confidentiality, allows parties to reach creative solution and to maintain good and sustainable business relation. Its disadvantages are mainly mistrust of parties and lack of enforcement title.

Finally, Directive 1023/2019 on preventive restructuring frameworks introduces measures for

increasing the efficiency of procedures of restructuring, insolvency and discharge of debt. These measures relate judicial and administrative authorities and practitioners in the field of restructuring. In the process of implementation of the new preventive restructuring frameworks, judicial and administrative authorities in the EU member states have to provide to the competent authorities dealing with respective procedures of restructuring, insolvency and discharge of debt suitable training, necessary expertise concerning their responsibilities as well as efficient and expeditious carry out of procedures. As for practitioner in the field of restructuring, it covers a large number of professions. Contrary to insolvency proceedings, it includes not only insolvency administrators, but also tax advisers, auditors, lawyers and other persons suitable to be appointed in the preventive restructuring matter. These practitioners also have to receive adequate training and expertise for their responsibilities, but also for their eligibility, process of appointment, removal and resignation [21]. In order to secure efficiency of the implemented instruments, Directive 1023/2019 on preventive restructuring frameworks provides that in procedures of restructuring, insolvency and discharge of debt the parties, practitioners and respective judicial and administrative authorities have to use electronic means of communication both in national and in cross-border restructuring matters. Restructuring practitioners have to avoid any conflict of interests and both debtors and creditors are entitled to object to the appointment of the restructuring practitioner. Therefore, it is important that this training provide information on clear, transparent and fair process and especially for restructuring with cross-border elements. Within the EU member states, national authorities have to provide appropriate oversight and regulatory mechanisms for effective supervision of the work of restructuring practitioners, in the same way as for insolvency administrators. This has to ensure that their services in matter of restructuring are performed impartially, independently and in a competent and effective manner. In that sense, restructuring practitioners have to provide adequate insurance for professional accountability.

Implementation of the Directive 1023/2019 on preventive restructuring frameworks in the EU Member states

Directive 1023/2019 on preventive restructuring frameworks provides that EU member states have to adopt and publish by 17 July 2021 the laws, regulations and administrative provisions necessary to comply with this Directive. For member states, encountering particular difficulties in implementing this Directive, an extension of a maximum of one year of the implementation period is provided and they have to notify to the EU Commission the need to use of this option. However, this deadline was set before the crisis caused by pandemic of COVID-19. Consequently, in only several EU member states national legislation is complied with provisions of the Directive. In the implementation process,

two main types may be distinguished: German model introducing completely new regulation and French model of partial reform of the existing regulation [22]. Many states are still in the process of drafting or discussing government proposal on implementation on new preventive restructuring frameworks. Thus, the implementation process in all EU member states should be completed in the following months.

Table 1. *Status of implementation of the Directive 1023/2019 on preventive restructuring frameworks in the EU Member states.*

	EU Member state	Status	Implemented through/existing proceedings
1.	Austria	Implemented	Adopted new regulation
2.	Belgium	Draft law	Some proceedings already existing
3.	Bulgaria	Draft law	Some proceedings already existing
4.	Croatia	Draft law	Some proceedings already existing
5.	Republic of Cyprus	Draft law	/
6.	Czech Republic	Implemented	Adopted new regulation
7.	Denmark	Implemented	Amended existing regulation
8.	Estonia	Draft law	/
9.	Finland	Draft law	/
10.	France	Implemented	Amending existing regulation
11.	Germany	Implemented	Adopted new regulation
12.	Greece	Implemented	Adopted new regulation
13.	Hungary	Implemented	Amended existing and adopted new regulation
14.	Ireland	Draft law	Some proceedings already existing
15.	Italy	Implemented	Adopted new regulation
16.	Latvia	Draft law	/
18.	Lithuania	Implemented	Amending existing regulation
19.	Luxembourg	Draft law	Some proceedings already existing
20.	Malta	Draft law	/
21.	Netherlands	Implemented	Adopted new regulation
22.	Poland	Implemented	Relevant proceedings already exist
23.	Portugal	Implemented	Adopted new regulation
24.	Romania	Implemented	Amended existing regulation
25.	Slovakia	Implemented	Amended existing and adopted new regulation
26.	Slovenia	Draft law	Some proceedings already existing
27.	Spain	Implemented	Some proceedings already existing
28.	Sweden	Draft law	Some proceedings already existing

Conclusions

EU legislators had big expectations from the Directive 1023/2019 on preventive restructuring frameworks and its implementation in national legislation. It should provide a uniformed legal framework allowing business entities facing financial difficulties and likelihood of insolvency to use preventive restructuring instruments to secure sustainability of their business and relations with their

creditors. However, big challenges also stand before many countries. Only several EU member states already introduced new preventive restructuring instruments and other were considerably slowed down by crisis caused by the pandemic of Covid-19. Since business crisis prevention requires a proper reaction, some early warning mechanisms and specific duties of debtor's directors were introduced. Preventive restructuring frameworks cover pre-insolvency out and in-court proceedings, allowing business entities as debtors to perform measures in order to change their liabilities, capital structure or assets and other operational measures in order to recover their business in crisis. For purpose of effective use of instruments, legislator have to make them easily available for debtors and introduce measures to be ordered by the competent judicial authority on keeping debtor in possession and stay of individual enforcement actions. This should encourage debtors to use preventive restructuring instruments rather than to react late and once the business crisis becomes irreversible. Debtors may use simple negotiating on restructuring plan, apply for assistance of a mediator, which costs less and provides more confidentiality, submit the plan for adoption in or out of court proceedings or even require judicial confirmation of the restructuring plan. Such judicial confirmation provides to the restructuring plan a binding effect for affected parties and quality of a compulsory enforceable title. It may also provide impose the plan to dissenting parties. In addition, Directive 1023/2019 on preventive restructuring frameworks provides a requirement for EU member states to introduce special trainings for competent judicial and administrative authorities dealing with restructuring and for restructuring practitioners, appointed upon request, allowing them to perform independently and in competent and effective manner. The results of the implementation of new regulation in practice are to be expected when the debtors start to use preventive restructuring instruments and when the first judicial decisions are rendered. In the near future, new regulations on preventive restructuring of SMEs and on cross-border effects of preventive restructuring should also be expected.

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THE EMPHASIS OF RENEWABLE ENERGY FROM THE ASPECT OF SUSTAINABLE DEVELOPMENT

Abstract. *The transition from conventional to future energy sources will not happen overnight. That is why we need to work constantly on creating a clean, safe and inexhaustible way of producing electricity. Wind farms here impose themselves as the logical choice of the safest cleanly produced energy. Of course, we should use the hydro potential when it comes to mini hydro power plants, but as well we should be aware of the fact that the hydro potential that Montenegro has for this type of investment is quite limited. The share of renewable energy sources in the future will be significantly higher, because there are fewer and fewer non-renewable energy sources, and their harmful impact on the environment and climate is becoming more obvious. With the development of technology, renewable energy sources are expected to become economically competitive with conventional energy sources. Several technologies, especially those for the use of wind energy, biomass and solar radiation, are already becoming economically more competitive. The process of adopting new technologies is relatively slow due to the still high starting price, but of great importance in the application of energy from renewable sources are their environmental friendliness and encouraging the construction of plants for the production of "clean" energy from them.*

Keywords: *Renewable energy sources, sustainable development, environmental management*

Introduction

Observing the global changes that have taken place in recent decades and their negative impact on both the environment and the quality of life, more and more attention is paid to preserving the planet

Earth and improving the quality of life in terms of pollution and health. The challenge for our country is how to take advantage of the chance that with the introduction of renewable energy sources, the domestic industry that produces equipment for these areas, will replace the industry today that relies on thermal energy. In the last few years, Montenegro has been making great strides in order to ensure the reduction of harmful gas emissions. The initial steps are considered to be the membership in unions, alliances and organizations formed with the above-mentioned goals, as well as the signing of certain agreements:

- 03.11.2006 - Access to the Energy Community
- 23.03.2007 - Kyoto agreement ratified. The agreement obliges industrialized countries to stabilize greenhouse gas emissions.
- Convention on Long-range Trans boundary Movements of Pollutants and Related Protocols:
- EMEP protocol (long-term funding for monitoring and evaluation of long-range air pollution transmission
- Protocol on heavy metals (reduction of cadmium, lead and mercury emissions)
- POPs protocol (reduction of dioxins, furans, polycyclic aromatic hydrocarbons)
- Gothenburg Protocol (setting a maximum national level for the emission of certain pollutants)
- Vienna Convention and Montreal Protocol - reduction of emissions of ozone-depleting substances
- Sofia Declaration - introduction of CO₂ taxes, encouragement of renewable energy sources and gradual abolition of coal subsidies [13]
- Paris Agreement - the goal is to prevent the rise in temperature by reducing GNG emissions to the level of 3,667 kilotons.

At the beginning of 2020, Montenegro established an Environmental Protection Fund - ECO Fund, whose main activity should be the encouragement and development of projects that would contribute to environmental protection [15]. This is considered to be the most significant step of Montenegro in ensuring the reduction of harmful gas emissions. Some of the activities of the ECO Fund are:

- Implementation of national strategic planning documents in the field of environmental protection, sustainable development and energy efficiency;
- Mediation related to the financing of environmental protection, EE and RES from the provided funds
- Maintaining a database of programs, projects and similar activities
- Establishment and realization of cooperation with international and domestic financial institutions and other legal entities and individuals , in order to finance projects

The mission of the ECO Fund is to raise and invest funds in building a sustainable society in Montenegro, which will be based on the efficient use of all natural resources and low-carbon development.

The concept and types of renewable energy sources

Renewable energy sources (RES from renewable energy sources), formerly permanent energy sources, are energy resources used for the production of electricity or heat, or any useful work, and whose reserves are constantly or cyclically renewed. The very name renewable, as well as durable, comes from the fact that energy is consumed in an amount that does not exceed the speed at which it is created in nature [1].

Comparison of renewable and non renewable energy sources features:

	Non renewable energy sources	Renewable energy sources
The possibility of storage and transport	Easy warehousing Easy transport	At most renewable energy sources the storage and transport is not possible
Constancy	Yes	No
The size of the investment for the construction of the plant	lower investment per unit of power high additional costs for the supply of energy that burns	High units per unit of power there are no additional costs because there are no purchases of energy that burns
Operation and maintenance costs	High as life expectancy flows	Low

Source: Zorana Mihajlović Milanović (2010) Renewable energy sources; Megatrend University

Energy resources include the following resources:

- geothermal energy,
- water energy (hydropower),
- solar energy (solar energy),
- wind energy,
- tidal energy and
- biomass energy [3]

All these types of energy are indestructible and therefore should be used to the maximum, on the one hand because they are renewable and on the other hand, it is energy that does not create waste, does not create pollution, does not create problems related to clean air, clean environment and clean water, and does not affect sustainable development [14].

Renewable energy sources in the world: state and use

Although the potential of renewable energy sources is enormous (the Sun alone supplies the Earth with about 15,000 times more energy than humanity consumes today), current technological developments do not allow relying solely on them. Most of the energy obtained from renewable sources refers to the energy of watercourses, while the share of other renewable energy sources is relatively small today [2].

Figure one shows the world's primary energy consumption in 2020.

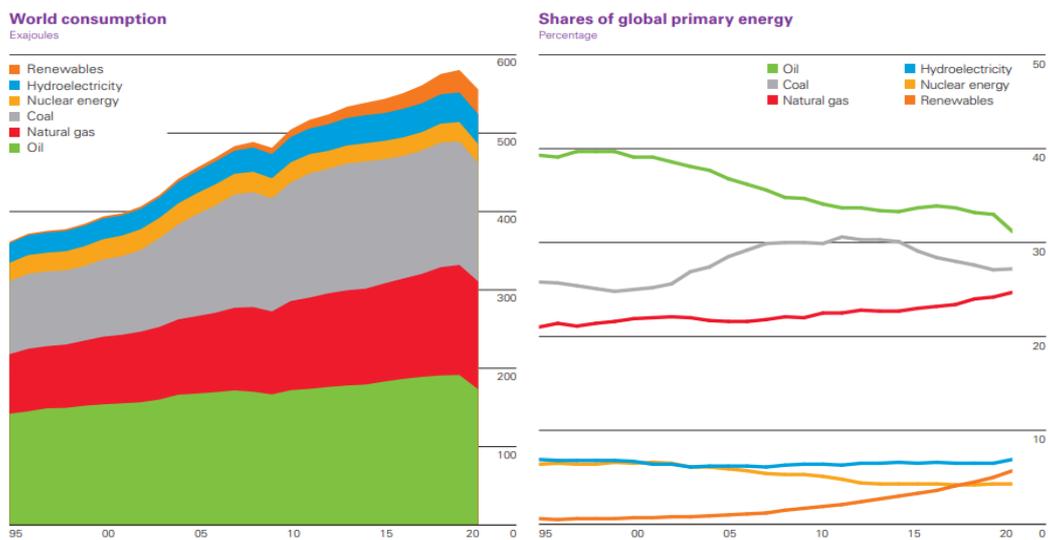


Figure 1: World primary energy consumption in 2020

Source: Statistical review of world energy 2021.

Figure two shows the primary energy consumption by region.

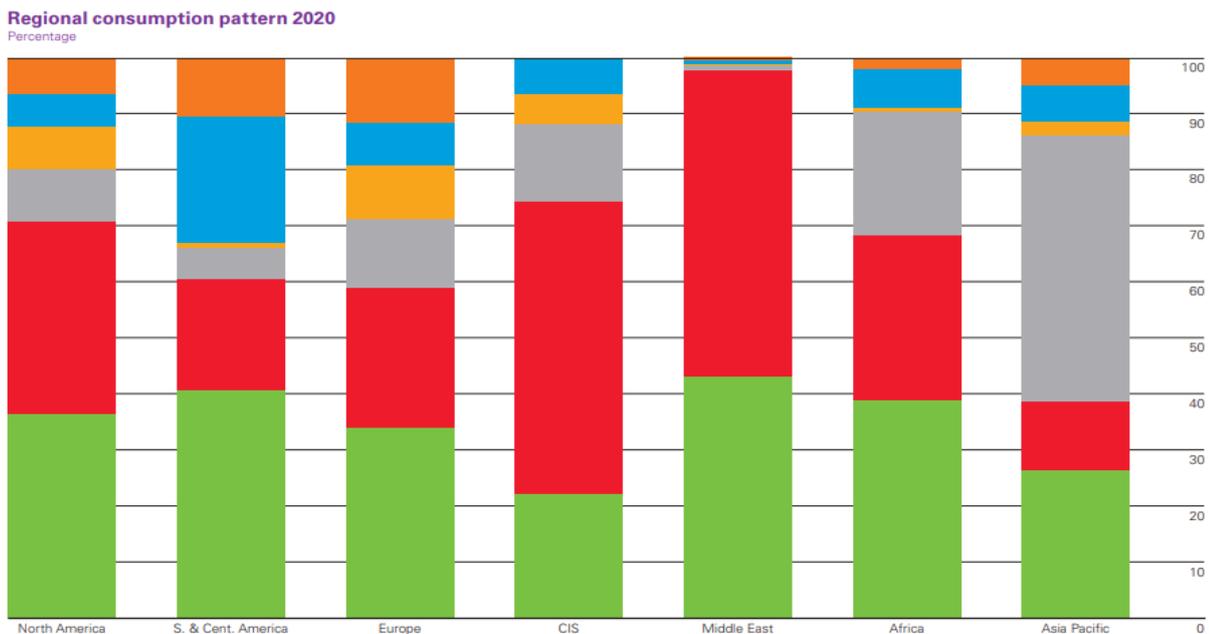


Figure 2: *Primary energy consumption by regions*

Source: Statistical review of world energy 2021.

Greater use of renewable energy sources is therefore possible if the awareness of each individual about the need to switch from non-renewable to renewable sources develops. In order to achieve this goal, communication strategies with clearly defined phases are needed, which will enable a better understanding of the need for greater use of renewable energy sources, creating a communication model that will enable an effective campaign aimed at raising public awareness and involvement in the promotion process of all interested parties. [20] Strategic thinking means looking to the future, introducing new technologies, taking advantage of potential opportunities from the external environment, using internal advantages, always looking for better alternatives. Today, the question is no longer whether to plan, but how to implement strategic planning that leads to achieving the goals of the organization in the best possible way. One of the most important projects in Montenegro, which testifies to its focus on renewable energy sources, is Solari 3000+.

Renewable energy sources in Montenegro

Renewable sources in the gross final energy consumption in Montenegro have a share of 44.8%. In relation to the obligations of Montenegro regarding the share of renewable sources in gross final consumption (33%), this share is much higher, which is desirable in any case. What is particularly favorable in achieving this share is that only a small part (slightly above 15%) of the total production of energy from renewable sources will need financial incentives [8].

For the economy of Montenegro, and especially in the sector of small and medium enterprises, it will be important to increase the inclusion of renewable energy sources. Primarily for the adoption of new technologies and job creation. However, it should be borne in mind that the experience of countries in the region shows that subsidizing renewable sources does not bring the expected effects, in terms of economic recovery and job creation. Investors, who are mostly foreign, supply almost all equipment, materials and even labor, as much as possible, from their countries. Thus, the country in which such investments take place does not benefit much from them. The main benefit is foreign investors, i.e. the economy of their countries [17]. However, this does not mean that the introduction of new technologies should be stopped, but that the dynamics and structure of incentives should be chosen, which is appropriate to the technological, energy and economic situation in Montenegro. If the envisaged goals related to the use of renewable energy sources are achieved, the necessary investments in environmental protection will be reduced. In order to encourage investments in the energy sector, due to the amount of necessary investments, long-term nature of investments and risk of investment outcomes to unpredictable movements in energy prices, the Government of Montenegro will, if possible, provide conditions that will make such investments less risky. These conditions in this context are: legal security, efficient state administration, macroeconomic stability, acceptable level of tax benefits, adequate human resources, construction of economic infrastructure, protection of market competition, existence of financial incentives for investments, existence of specialized state institutions for investment promotion, etc. [12]

According to the scenario proposed by the Energy Development Strategy of Montenegro, Montenegro's energy dependence increases from 43% in 2008 to 52% in 2015. In 2020, after the construction of large hydropower plants and TPP Pljevlja II, energy dependence will fall to 25.5%. After that, it grows again to the level of 31.3% in 2030. This is a relatively good situation in the given circumstances. For comparison, the EU as a whole is expected to have an energy dependency level of around 70% in 2030. Therefore, any sensible energy policy should aim to reduce energy dependence as little as possible. However, the possibilities in this regard are often very limited. When it comes to Montenegro, the growth of oil and natural gas imports is going faster than the growth of energy production from domestic resources after 2020. And that is the main reason for the increase in energy dependence.

Production of electricity from the sun in Montenegro

Each region in the territory of Montenegro has a certain number of sunshine hours per year, depending on the position, the radiation, temperature and other parameters by which we arrive at the Specific

annual yields of electricity [6]. Photovoltaic systems work by absorbing solar energy and transforming it into electricity, which is consumed by each individual. What is the potential of solar energy is defined as global radiation to the horizontal surface on an annual basis (GHZ) expressed in kWh / m² / day. The maximum value for Montenegro is 4.39 kWh / m² / day in the area around Ulcinj to at least 3.60 kWh / m² / day in the north, with a favorable marginal value of 4.00 kWh / m² / day representing 37% of the area the state of Montenegro.

Annual global radiation on the territory of Montenegro:



Figure 3: Annual global radiation in Montenegro

The intensity of solar radiation in Montenegro is among the highest in Europe, where the amount of solar radiation, especially in the coastal and central areas, can be compared with the amount of radiation in southern Italy or Greece. Having in mind the above, Montenegro shows great potential for the introduction of solar energy systems, since the number of hours of sunshine (insolation) is over 2,000 hours per year for most of Montenegro and more than 2,500 hours per year along the coast. The conversion of solar energy into electricity is done using photovoltaic systems. The photovoltaic system primarily supplies consumers in the facility while the excess energy is delivered to the distribution network [7].

The use of solar energy has been growing steadily for almost a few years now, and is beginning to play an important role in the electricity mix in most countries. Photovoltaic cell technologies and concentrated solar energy are evolving rapidly, and the investment is growing. For most countries, the biggest obstacles to greater use of solar energy are complicated legislation and insufficient

incentives from governments.

Being aware of the importance of launching projects that will enable the production of electricity from renewable sources, and having in mind the state of the ``Pljevlja`` Thermal Power Plant, as well as the transmission and distribution network, and that Montenegro could face huge not only energy problems, the Ministry of Ecology, Spatial Planning and Urbanism, EPCG, the Ministry of Capital Investments and the Environmental Protection Fund - Eco Fund have decided to launch an initiative for the implementation of the Solari 3000+ project.

So far, CO₂ emissions from TPP Pljevlja accounted for more than half of CO₂ emissions in Montenegro and produced almost 40% of the total electricity produced in Montenegro. These problems in exceeding the allowed working hours make the situation almost ultimate, any investment in RES is more profitable than insisting on production based on fossil fuels. On the other hand, if 3,000 households install photovoltaic systems with an average power of 7 kW, electricity production of 24 to 34 GWh per year is expected. So, households - as before, only consumers would become producers of electricity.

Since Montenegro is not a member of the EU, it is not part of the CO₂ emissions trading system (ETS), which makes the price lower than the prices in the EU, because the price of CO₂ emissions is not a component of the price. For this reason (in addition to the primary goal of reducing pollution), the Economic Community has instructed non-EU Member States to internally regulate (charge) CO₂ emissions. In the report "A carbon pricing design for the Energy Community" published in January 2021, the Economic Community clearly defines the current situation, reasons, goals and how to set prices for CO₂ emissions. The pricing model should also have a transition component, and the price would certainly be more favorable than in the case of trade in EU markets. The model is not only aimed at charging, but above all motivating towards the orientation towards Green Energy [11].

In order to show the positive effect that the introduction of trade in licenses (the total number of licenses is decreasing from year to year) in the EU, the following is an overview:

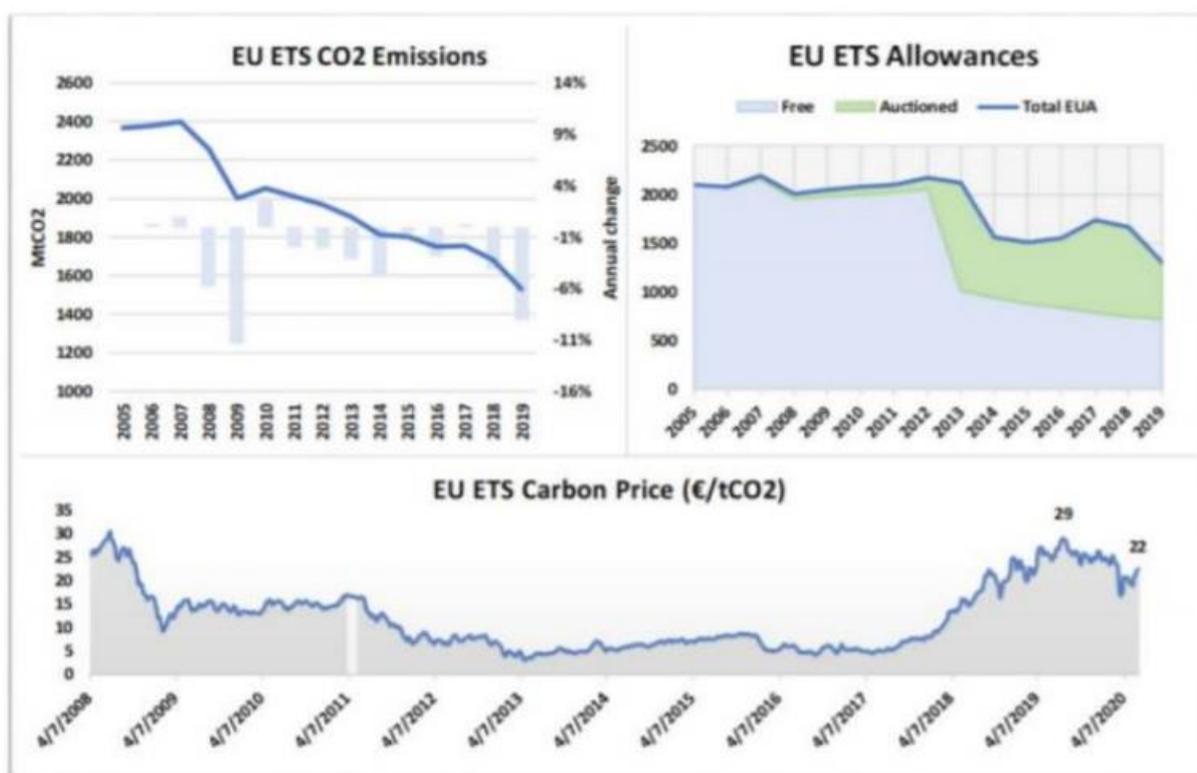


Figure 4: *Effects of the introduction of the CO₂ permit trade market*

Sourcer: A carbon pricing design for the Energy Community

The presentation shows a constant decline in CO₂ emissions in EU countries, which is a consequence of the growing orientation towards renewable energy sources, and the shutdown of plants that worked by burning fossil fuels. On the other hand, we see a constant tendency to increase the price of emissions, which is an additional motivator for the community's orientation towards Green Energy. The constant growth of the price of emissions will cause the growth of electricity prices, and at some point it will become an unprofitable and unprofitable form of electricity generation [5].

As the collection of CO₂ emissions in the present case has led to significant positive effects, the measures introduced by the EU for non-EU member states should also have the same positive effect. The cost-effectiveness of a project of this kind is of little specific character. First of all, there are several goals (impact on the economy of Montenegro, impact on households, as well as the impact on EPCG, and therefore it is not easy to see the cost-effectiveness.

The main goals of this project are:

- Increasing the share of electricity obtained from solar sources, as one of the directions in which Montenegro has committed itself to the EU
- Positive effect of the household, which can produce its own electricity and significantly reduce electricity bills
- On the part of EPCG, in addition to the social goals related to increasing the participation of

Green Energy, EPCG will have a financial profit from investments of this kind, as well as acquiring the necessary knowledge for further development of solar energy in Montenegro. In addition to financial profit, EPCG will develop and get acquainted with various technologies and methods used in the world for solar energy consumption, which has been extremely important for some time, given EPCG's plans to focus on renewable energy sources.

Wind electricity production in Montenegro

So far, no extensive research has been done in Montenegro in order to use wind energy. These are mostly data from hydro meteorological stations, but their results are still insufficient for significant use of wind energy for electricity production, but they can be used in finding the best locations for the construction of wind generators. According to research on the wind speed spectrum at meteorological stations in Montenegro, potential areas that could have "good" wind strength are the area around Niksic, southwestern Montenegro, mountain passes above the sea and the coast. However, more detailed research is needed in these areas in order to find the locations with the best wind power. More detailed research measurements were performed at the locations of Ilino brdo and Vučje. At these locations, the average wind speeds that are above the criteria were obtained, but there are also periods during the year when those speeds are significantly below the predicted criteria.

Measurements from March 2002 for the area of Nikšić gave a wind power of $30 \text{ W} / \text{m}^2$, while the measured power for the same month in Vučje was as much as $225 \text{ W} / \text{m}^2$. At one of the mountain passes in western Montenegro - Ilino brdo, the first wind generator with an installed capacity of 500 kW and a planned annual production of 1.25 - 1.80 GWh was built. It was the first implemented project of using wind energy for electricity production in Montenegro. After a short operation, the wind farm was disabled due to lightning strikes. According to the European Atlas of Winds, the southern Adriatic belongs to the medium windy seas, which means that there is a possibility of building offshore wind farms (offshore facilities). Potential areas for the construction of wind farms are located along the coast from Ulcinj to Herceg Novi, about 20 km wide and about 1000 km², where the average wind speed is $V_a = 7 \text{ m} / \text{s}$, and with the average Power $P_a = 400\text{-}600 \text{ W} / \text{m}^2$. Reefs and high hills along the coastline are also potential locations where wind power at a height of 50 m can be above $800 \text{ W} / \text{m}^2$ (above Budva, Kotor, Tivat ...). Also, the area of Zabljak is rich in winds where measurements should confirm the potential and determine suitable locations for the construction of wind farms [19].

In order for wind energy to be used more significantly for the production of electricity in Montenegro, it is necessary to conduct more extensive research. Wind energy offers many benefits, which explains

why it is the fastest growing energy source in the world. Today, significant funds are allocated for research activities, in order to address the challenges for more significant use of wind energy. Wind energy is a renewable energy source and together with the energy sources of the sun, water, biomass and geothermal energy represents an inexhaustible potential. Wind energy is the cheapest renewable energy source available in the world today. Costs per kilowatt-hour are between 4 and 6 cents, depending on the strength of the wind and the way certain projects are financed. The global wind potential at land-based locations is estimated between 20,000 and 50,000 TWh (terawatt hours) per year. To this we can add the great potential of the wind on the high seas, the so-called off shore wind. Wind energy has to contend with conventional sources in the field of costs [4]. Depending on the potential of the wind in certain areas, wind farms may or may not be cost-competitive. Even though wind energy costs have dropped significantly over the past 10 years, the technology requires more initial investment than fossil fuel generators. The main disadvantage of using wind as a source of energy is its intermittent occurrence, which prevents its constant use and production of energy whenever there is a need. Energy obtained from wind cannot be accumulated, nor can the complete wind potential be used to meet the demand for electricity in a given period of time. Locations with good wind potential are located in remote places, far from cities where electricity is needed. Also, windmills have a relatively low level of impact on the environment, compared to other conventional power plants, which is reflected in the existence of a certain degree of noise produced by windmills, aesthetic experience, and sometimes birds die from propellers while flying over a windmill farm. However, what is gratifying is that most of these problems will be solved through the development of technology or an adequately chosen location for windmills [18].

Hydropower production in Montenegro

Montenegro has significant untapped potential of renewable energy sources, especially quality hydro potential. Excluding hydropower potential related to large hydropower plants, it is economically justified for Montenegro to double the current use of renewable energy sources (small hydropower plants, salt energy, wind energy and biomass).

When it comes to the potential of small hydropower plants, 70 locations have been estimated for them on the following rivers: Morača, Zeta, Lim, Piva, and Ibar. The main benefits that the state would have from the construction of small hydropower plants relate to the provision of electricity and the payment of taxes to the budget. At the same time, the domestic economy would benefit from participating in the proposals of foreign companies that invest in energy resources, and thus increase employment opportunities for local people in rural areas, given that there are the greatest potentials of this energy.

Electricity produced in small hydropower plants is more expensive compared to that produced in large systems. Therefore, in developed countries this type of state production is aided by subsidies. Another issue that needs to be addressed, and which is important from the point of view of potential investors, is the guarantee that the produced electricity will be incorporated into the entire energy sector. If private investors find a motive to invest, the role of the state would be to adopt rules governing private investment and electricity generation. Therefore, the state should impose an obligation on Electric Power Industry of Montenegro to incorporate the produced energy into the distribution system. The state must clarify whether it intends to burden the producer with some additional costs, whether it will give guarantees regarding the price of electricity, as well as to allow investors to obtain all the necessary documents as soon as possible. In a word, the state should enable private capital to be engaged in the production of small hydropower plants. If this is not done in time, all efforts will be left to the force of nature [16].

lessons from which we should all learn	<p>Among the former Yugoslav republics, Slovenia has gone the furthest compared to others when it comes to the use of renewable energy sources. There are about 400 small hydropower plants in the country, including micro, mini and small hydropower plants up to 5mW, of which 170 are privately owned. The installed capacity of small and medium hydropower plants is 150 mW. Annually, they have the ability to produce 3% of energy in Slovenia. The best indicator of the development of this business is the fact that currently there is no vacant location in Slovenia where there is an economic justification for the construction of new small hydropower plants. In the theoretical sense, Slovenia can produce 2000GWh annually in small hydropower plants.</p> <p>In Slovenia, the state does not subsidize prices. Namely, when a small hydropower plant acquires the status of "qualified", which makes it a privileged producer, the energy it produces has the right to be purchased at guaranteed prices. Currently guaranteed prices are 60e per MWh.</p>
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Source: Zorana Mihajlovic (2010) Renewable energy sources: Megatrend University

Conclusion

Life on Earth originated and survived for millions of years thanks to favorable climatic conditions. Climate can be seen as a renewable resource whose energy component is solar energy, and the material component is the oceans as water reservoirs. The energy of the sun stimulates the circulation of water on Earth and thus enables life. Where there is no water there is no quality of life, e.g. in the deserts. Climate change on Earth has reached such a level that we can talk about a climate crisis. The vision of overcoming this crisis is very clear and it is a return to less harmful energy sources.

The transition from conventional to future energy sources will not happen overnight. That is why we need to constantly work on creating a clean, safe and inexhaustible way of producing electricity. Wind farms here impose themselves as the logical choice of the safest cleanly produced energy. Of course, one should use the hydro potential when it comes to mini hydro power plants, but one should be aware of the fact that the hydro potential that Montenegro has for this type of investment is quite limited [9].

The share of renewable energy sources in the future will be significantly higher, because there are fewer and fewer non-renewable energy sources, and their harmful impact on the environment and climate is becoming more pronounced. With the development of technology, renewable energy sources are expected to become economically competitive with conventional energy sources. Several technologies, especially those for the use of wind energy, biomass and solar radiation, are already becoming economically more competitive. The process of adopting new technologies is relatively slow due to the still high starting price, but of great importance in the application of energy from renewable sources are their environmental friendliness and encouraging the construction of plants for the production of "clean" energy from them. Most investments in the field of renewable energy sources consume less materials and labor during their construction, as well as less investment during their maintenance. As the existing reserves of fossil fuels are constantly decreasing, it is clear that their prices will continue to rise, which gives room for the development of renewable energy sources. Imports of fossil fuels are an increasing burden on national economies. By applying measures offered by energy efficiency technologies and local renewable energy systems, local resources are used. When money stays at the local level it creates a multiplier effect. By producing and developing technologies, it is possible to encourage exports, providing an incentive for trade surplus. Renewable energy technologies are clean, have much less impact on the environment than conventional energy technologies. Renewable energy sources are infinite. Other energy sources are finite and will one day be consumed [10].

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THE POTENTIAL OF UNIVERSITIES TO PROMOTE AND FACILITATE SUSTAINABLE DEVELOPMENT

Abstract. *Contemporary education requires sustainability to be incorporated in higher education institutions that have a responsibility to enhance the consciousness of sustainable development among future leaders and sustainable managers. Sustainability must be integrated not only into the curriculum and across various disciplines but also institutional strategies must enable the achievement of sustainable goals. In addition, campus management should measure ecological footprints for the efficient use of resources, reduction of waste and pollution. Likewise, universities need to pay attention to sustainable consumption, green procurement, environmentally friendly buildings and transportation system. Furthermore, sustainable universities communicate with all stakeholders to balance conflicting interests as well as to transmit knowledge and education in the area of sustainability. Therefore, the interdependence of economic, environmental, and social pillars suggests a long-term and holistic approach supporting sustainable initiatives. For this reason, only by redesigning systems and structures, universities can contribute to the transition towards sustainability-centered society. Since studies about Education for Sustainable Development are important, the nexus between sustainable development and educational systems needs to be explored. Thus, this paper contributes to the insight of sustainability-focused education and outlines the responsibility of universities to foster sustainable development. Based on the GreeMentric data, emphasis is placed on declarations, guidelines, and rankings to inspire the practical implementation of sustainable-related activities in universities.*

Keywords: *Sustainability, Sustainable Development, Sustainable Development Goals, SDGs, HEIs, University, Educational Programs*

Introduction

Contemporary education requires sustainability to be included in higher education institutions that have a responsibility to create awareness of sustainable development and to train future leaders and sustainable managers. Sustainability should be integrated into the curriculum, but also into the institutional framework and strategies in order to achieve sustainable goals. Economic, social, and environmental issues should be incorporated into universities' subsystems and strategies, which enable them to move toward a holistic approach rather than a short-term economic focus. Interconnection of economic, social, and environmental issues implies applying a long-term view and a holistic approach rather than focusing on short-term financial gain. For this reason, sustainable and social entrepreneurship, social and eco-innovation should be supported by Higher Educational Institutions (HEIs), and encourage sustainable business models. The sustainability model of an HEI

includes tools for implementation and measurement of sustainable development from an institutional perspective. Yet, the dissimilarities in priorities and opportunities in terms of sustainability objectives and execution between universities in developed and developing countries need to be taken into consideration, since they have different resources at their disposal.

Moreover, campus management should pay attention to their ecological footprints in terms of utilizing resources, waste, pollution, and promote sustainable consumption including green procurement, environmentally friendly buildings, and transportation used for commuting. Furthermore, universities can contribute to the transition of sustainability-focused knowledge in society through constant communication with all stakeholders. Consequently, university structures need to be redesigned in order to support sustainable initiatives in both theory and practice. On the other hand, obstacles to achieving sustainability goals can vary from stable academic personnel who teach sustainability-related subjects to academic programs in sustainability to university structures and management support including rectors, deans, and administrative authorities. In addition, both academic staff and students need to be motivated and interested in sustainability. Therefore, activities, methods, approaches, tools and their interrelation within subsystems play an important role to realize university sustainability goals.

A sustainable university creates educational programs and curricula in consideration of sustainable development goals and implements practical activities and projects to ensure sustainable on-campus facilities. Despite the significance of the topic, there is still a lack of studies concentrating on the Sustainable Development Goals (SDGs) in HEIs. Thus, the nexus between the two needs to be discussed. Although universities increasingly try to introduce SDGs in their teaching and research, the implementation of SDGs transcends the curriculum development and pursues sustainability in all their activities. This paper contributes to the insight of sustainability-focused education systems and explores the role universities play in facilitating the implementation of Sustainable Development Goals. It emphasizes the importance of university degree programs and courses to be dedicated to sustainability. It also outlines how national and international declarations and guidelines inspire the practical implementation of sustainable-related activities in universities.

Literature Review

The definition of a Sustainable University offers a comprehensive view of the contribution of universities to sustainable development. In particular, a Sustainable University strives to minimize negative effects on the environment, economy, and society, while accomplishing its mission of teaching and research as well as taking responsibility to help society in transition to more sustainable

lifestyles through partnership and communication with stakeholders [1-2]. Integration of sustainability into the HEI systems can improve the performance, and generate or enhance the awareness of sustainability and sustainable use of natural resources. This also contributes to social innovation, quality of life, responsible behavior, production, and consumption to solve environmental and social issues concerning natural resources and inclusive development [3-5].

Since HEIs serve society in terms of research, knowledge transfer, and skills development, they can provide decision-makers at the local or international level with scientific studies to adopt sustainability policies as well as with innovative solutions for achieving SDGs [6-8]. In addition, universities can develop models for the integration and implementation of sustainability in HEIs. Incorporation of sustainability into the curriculum can be accomplished through the development of sustainability-related courses, albeit sustainability concepts and principles can be included in regular courses [9-11]. Sustainability-oriented courses can be found in various disciplines such as geology, geography, sociology, politics, ecology, economy, and business. For instance, sustainability is integrated into business ethics and corporate responsibility courses.

In general, sustainability is embraced in research and teaching, however, they need to be implemented in practice on campuses through sustainability policies [12]. Although universities are considered to contribute to sustainability development, they should not only develop curricula but also pursue sustainability; thus, universities need to implement sustainability rather than just teach it [13].

Many universities encourage students to engage in sustainability issues and stimulate discussions about SDGs [6]. They also manage their facilities in a sustainable way to ensure the minimization of negative footprints of their campus operations, such as carbon emissions, pollution, water, and energy consumption [14]. Recent studies discovered the following campus policies and actions implemented by different universities to achieve sustainable operations [15]: reducing consumption and emissions, improving energy efficiency, introducing renewable energy sources, promoting sustainable water usage, sustainable landscaping, and green purchasing, implement sustainable diet practices.

Studies suggest that sustainability is not integrated into the system and strategy of HEIs, but rather the sustainability-related activities are implemented fragmented without a formal strategy [16]. Therefore, a strategic approach can ensure close cooperation of different subsystems of universities: (1) the structure including operations, governance, and management; (2) the value proposition comprised by research and teaching, and (3) the market with education and mission [16].

On the other hand, sustainability help universities overcome many barriers, achieve success, and realize their missions and functions effectively as sustainability initiatives can increase students' interest and motivation, as well as attract funds and investments, and improve partnership among different sectors [6].

Declarations, ranking systems, and guidelines promote sustainability at universities worldwide and help them develop frameworks to implement sustainable development goals as well as to improve sustainability-related courses. Many universities joined sustainability declarations and took responsibility to integrate sustainability concepts into their institutions through education policies [17]. The first - Talloires declaration was signed in 1990 in France, followed by another international meeting of university leaders in Rio de Janeiro, Brazil in 1992, and the next - Halifax Meeting highlighted ecological issues and increasing poverty and agreed to cooperate to solve global sustainability-related problems [18-19]. After that, Agenda 21 was adopted in 1992, which emphasized that HEIs should go beyond teaching and research to contribute to sustainable development [19-20]. Table 1 summarizes the subsequent declarations focusing on different issues of sustainability development.

Table 1. *University Sustainability Declarations*

Year	Declaration	Focus
1993	Swansea Declaration of the Association of Commonwealth Universities	Environmental sustainability
1993	Kyoto Declaration of the International Association of Universities in Kyoto, Japan	Environmental sustainability
1994	Copernicus University Charter for Sustainable Development of the Conference of European Rectors in Geneva, Switzerland	Environmental sustainability, regional approach
2001	Lüneburg Declaration on HE for Sustainable Development on the occasion of the International COPERNICUS Conference	Holistic approach to sustainability
2005	Graz International Conference Declaration on Committing Universities to Sustainable Development	Holistic approach to sustainability
2014	Nagoya Declaration on HE on Education for Sustainable Development	Holistic approach to sustainability
2014	International Association of Universities Iquitos Statement on HE for Sustainable Development	Holistic approach to sustainability

Source: Based on Kohl et al., 2022; Mio, 2013.

In addition, Summits and Conferences (Table 2) organized by the UN and UNESCO included universities to underline their important role in the implementation of sustainable development^[1]_{SEP} [18].

Table 2. *Global Summits for Sustainable Development included HEIs*

Year	Summit, Conference	Place
1997	Thessaloniki Declaration, International Conference on Environment and Society: Education and Public Awareness for Sustainability	Thessaloniki, Greece
1998	World Declaration for Higher Education or the Twenty-First Century: Vision and Action	Paris, France
1999	World Conference on Science	Budapest, Hungary
2002	World Education Forum (Education for All)	Dakar, Senegal
2002	World Summit on Sustainable Development	Johannesburg, South Africa
2009	Bonn Declaration	Bonn, Germany
2009	World Higher Education Summit	Paris, France
2012	The Future we want Rio+20 Declaration	Rio de Janeiro, Brazil
2014	Aichi-Nagoya Declaration on Education for Sustainable Development	Aichi- Nagoya, Japan

Source: Based on Kohl et al., 2022.

Furthermore, Global Action Program on Education for Sustainable Development (2015) and UNESCO Education for Sustainable Development for 2030 Framework (2020) focus the attention of HEIs on promoting and implementing sustainable development, and being an example of best practices in sustainability [18].

It is worth noting that Agenda 21 Chapter 36 contains the definition of Education for Sustainable Development (ESD), which is comprised of the following ideas: developing accessible quality basic education; redesigning the education system to address sustainability; creating public awareness of sustainable development; promoting sustainability through training in private and public sectors [21]. Moreover, ESD is acknowledged and recognized as a crucial part of SDG, in particular, SDG 4 - Quality Education is considered to be a foundation of all other SDGs [22-23]. In addition, Target 4.7 accentuates the role of education to stimulate sustainable development and sustainable lifestyles [4], and SDGs 2, 3, 7, 8, 9, 13, 14, 17 focus on education, research, science, and training [18; 24].

Data and Results

This research is based on the Greenmetric website ranking to derive data. UI GreenMetric ranking indicators include six categories: Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transport, and Education [25]. Universities are encouraged to join GreenMetric to assess their green initiatives and improve their sustainability performance. The ranking system encompasses all three pillars of sustainability - economic, social, and environmental. GreenMetric gathers data from

universities in 84 countries, six regions, and three subregions. According to the ranking, the top ten sustainable universities are located in the Netherlands, UK, USA, Ireland, Germany, and Brazil (Figure 1).

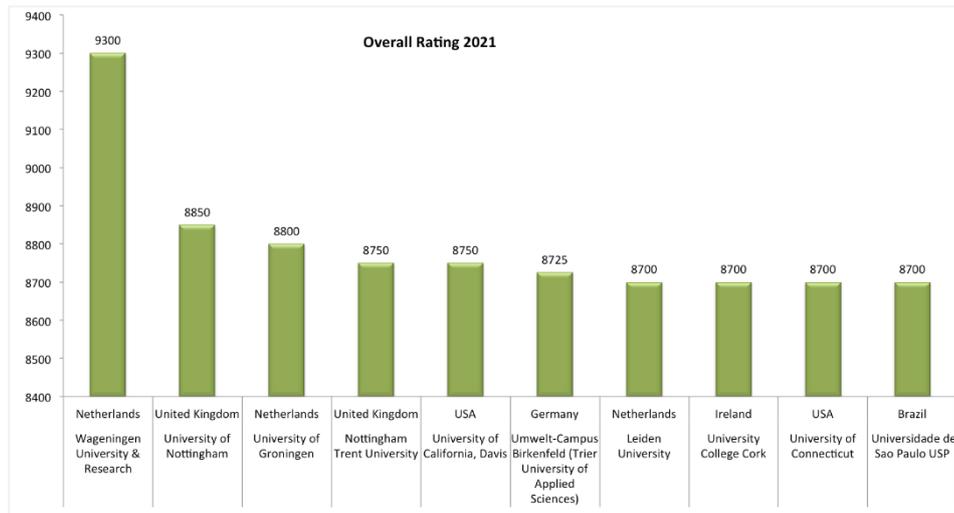


Figure 1. *Top Sustainable Universities according to Greenmetric*

Source: Based on data from UI GreenMetric <https://greenmetric.ui.ac.id/rankings/overall-rankings-2021>

With regard to different categories, the leading university in Setting and Infrastructure is the University of Nottingham in the UK, while Leiden university in the Netherlands has the best score in Energy and Climate change, and the better results in transportation have the university in Brazil (Figure 2). Interestingly, Waste and Water categories 5-6 universities have the same scores.

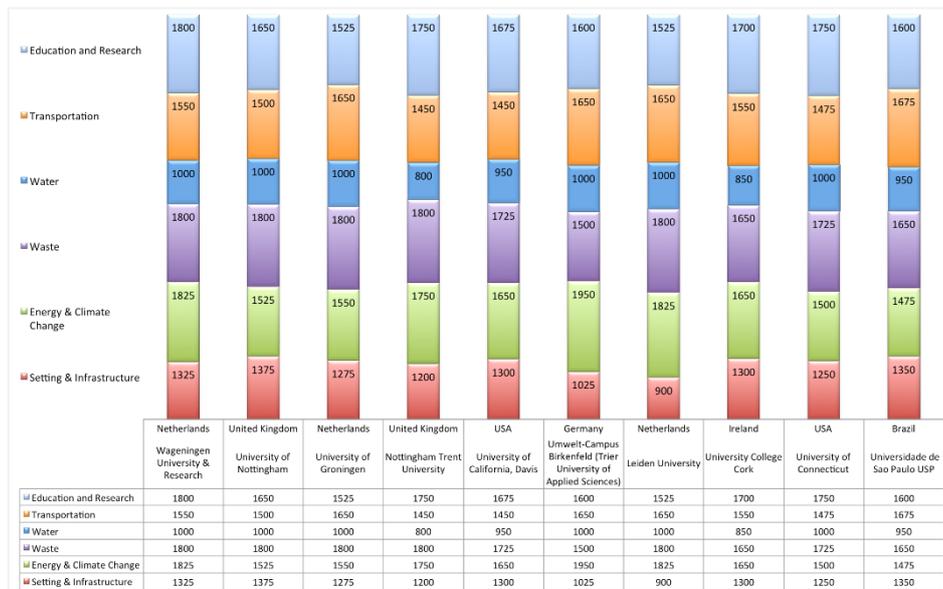


Figure 2. Top Sustainable Universities by six categories

Source: Based on data from UI GreenMetric <https://greenmetric.ui.ac.id/rankings/overall-rankings-2021>

Conclusions

This research explored the role of universities in promoting sustainability. HEIs' contribution is twofold: research and education and serving as an example of implementing sustainable development. Education institutions around the world try to incorporate sustainability sciences within the educational framework, but also promote sustainability activities on campus. Sustainability-oriented courses, programs, and activities can facilitate building a more sustainable society.

Higher education institutions should systematically integrate the sustainability development goals into research and teaching programs as well as into their mission, strategy, and policies. For this reason, they should develop tools, methods, and approaches to measure progress and improve performance. Universities have access to students, and hence, to future leaders and decision-makers, who need professional skills and knowledge to promote and contribute to sustainable development through integrated education for sustainable development. Academic programs and campus activities can provide students with motivation, creativity, and capabilities to address SDGs.

This research found that 912 universities from 84 countries located in Asia, Europe, North America, Latin America, Africa, Oceania, Middle East, ASEAN, and Pacific Rim participate in UI GreenMetric to measure and improve their sustainability performance. The ranking evaluates top-rated universities with self-assessment results. Obviously, more and more universities are engaged in sustainability-related activities as the demand for it is increasing. The current generation is aware of sustainable

development and the number of conscious citizens growing in line with economic, social, and environmental challenges. Urgent problems modern society is facing will be solved through education and research, but also by being an example of best practices implemented on-campus facilities. Therefore, the involvement of universities in achieving sustainable development goals is critical.

Future studies can explore obstacles to integrating sustainable development in universities, and opportunities that can advance sustainability in HEIs.

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EUROPEAN UNION CONTEXT FOR SUSTAINABILITY MANAGEMENT

Abstract. *The scope of the paper is to expose, what are European Union (EU) environment context, theory, legislation and good practices for managing the sustainable development. A survey was done to answer questions: What is the management efficiency in public and in private sector? Is the management knowledge of EU context good? Are the management preconditions implementing? Good management practices and existing EU documents, legislation and methodology are to be used. Management is to be aware about materiality and risks. Its responsibility is to manage problems and challenges of sustainable development. However, the implementation of state government policies and programs has limited guidance by the specific sectors management for incorporating sustainable development in the specificities of creation of public policies and programs. Benchmarking of good management practices is developing; however, management seldom reads EU methodologies. That is why EU context for sustainability management is badly known. The main context of the objective of this paper is to identify challenging aspects of managing sustainable development: not only UN SDG Agenda 2030 is ambitious, with very concrete targets, sustainability is also an important value that needs priority of action also within the EU environment.*

Key words: *sustainability, materiality, challenge, system and result based management*

Introduction

Good practices and existing documents, legislation and methodology are to be used in the EU context. Also, management is to be aware about materiality and risks facts. Its responsibility is to cope with problems and challenges of sustainable development. However, the implementation of state government policies and programs has limited guidance by the specific sectors management for incorporating sustainable development in the specificities of creation of public policies and programs. Benchmarking of good management practices is developing, however management seldom read EU methodologies also they are disseminated as an open resource. That is why EU context for sustainability management is badly known and rarely well elaborated within strategies, action plans and project proposals.

The main objective of this paper is to identify challenging aspects of managing sustainable development: not only UN SDG Agenda 2030 [8] is ambitious, with very concrete targets, sustainability is also an important value that needs priority of action also within the EU environment. That is why governance and managers are to address materiality, challenges, and risk.

The survey was done to get some information about awareness and management maturity, efficiency of management functions and key characteristics that sustainable management need. The fact is that government officials - through policies, programs, and regulations administration departments and agencies - have a significant influence on almost every aspect of society while having a significant potential for contributing to sustainable development.

Sustainable development and management challenges

Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs [4]. There is the need to integrate environmental, economic and social factors in the making of all decisions by government. These are basic facts that management is to be aware and to embed these facts as pillars of sustainable development involves considering environmental, economic, and social objectives when developing and implementing public policies and programs. Further considering the needs of the present as well as the needs of future generations is important, integrated decision making and a long-term approach to planning. A great number of characteristics of sustainable development represent the key management challenges.

Basic or common requirements for managing sustainable development could be: applying suitable practices, applying relevant and good information, also applying and understanding frameworks and directives.

Applying suitable practices and analytical techniques such as cost-benefit analysis and multi-criteria analysis can help integrate environmental, economic, and social considerations. Foresight analysis, transition management, and sustainable design modelling are useful for considering the potential long-term effects of proposed policies and programs. Management responsibility is to involve stakeholders in the planning process when considering what is priority, what will be performance and financial instrument used (EU cohesion and structural funds, recovery, and resilience mechanism ...). Efficient management is applying relevant and good information. Efficient management is based on the potential and actual effects of policies and programs within EU environment. EU projects performed are openly disseminating their information, Eurostat platform is user friendly made with suitable indicators. However, it is still on management to prepare system management with its important sub-system that is financial management system to perform well-functioning measurement and accounting systems. They are important for understanding, follow-up or monitoring the environmental, economic, and social effects of policy – making, program and projects performance.

Applying and understanding frameworks and directives, EU frameworks (logic framework, European Quality Framework, European Framework of Quality Management, EFQM, etc.) are important instruments to use, when considering environmental, economic, and social effects. They are to be used when developing policymaking or scenario of proposals, and also when preparing calls for proposals of EU funding. The frameworks enable system and integrated approach what is must for a good management practice and a prerequisite for sustainable development.

Control and management

Control can be inside or outside the organization or institution. It is on macro and on micro level. The most important is system control. There are three types which are must within EU legislation: monitoring, audit, and evaluation [10]. Their requirement details are put down in secondary law in regulations: for cohesion and structural funds, etc. Management structures are responsible to implement EU strategy on all levels: EU, state, regional, on the level of policy, programmes, and project. There is a segregation of duty and managers are accountable for efficient use of resources. There is a need to manage knowledge, on all levels, in all three sectors: public, business, and civil society, all partners in the same way.

Management culture is to be built. Quality of management is imperative by structural fund regulation. But sometimes the management perception of its transparency and quality system is not perfect. Evaluation could be welcomed not to be any more a threat of control but a useful help for effective and efficient use of resources. In global competition everybody is turned to market driven economy – besides business sector, also civil society, and public sector. Companies *require* quality, value, service, innovation, and speed to market for business success. The knowledge-based activities of developing products and processes are becoming the primary internal functions and the greatest potential for providing competitive advantage.

Management - in the context of European environment - overgrows only managing public expenditure, it is to manage programmes and policy interventions to come to results during financial perspective. When the budget should be namely programmed according to activities and results, most of the actions is under the responsibility of the main social partner – the state and public institutions. Management in public sector must implement processes to be efficient, outcomes, results to be realised and state policies to be effective – to have an impact. Public funds management should also manage a huge budget to bring results. It is performance of activities that becomes important. That is why performance management (of policy and measures and their financial issues) has to become more developed. There is a risk if the management approach does not become an integral part of the

policy on all levels. And it also, must be under control.

The Court of Audit of the Republic of Slovenia does a lot of audits over efficiency in public sector [5]. The Court performs two kinds of audits: the regularity one and performance audits. The performance audits examine how well government programs and activities have been managed, using criteria such as regulatory requirements, policy and program commitments, standards, good practices and principle of “due care”. In most cases the audits report bad efficiency.

System management decision making

Economic growth alone is not enough; for sustainability, the economic, social, and environmental aspects of any action are interconnected. In this context, the key management challenges of sustainable development are integration. Policy and decision makers need to identify, assess, and compare potentially conflicting values and objectives. Management role to prepare data, analysis or comparison of conflicting goals are essential. Management requires cooperation across departments as well as between ministries and levels of government. They are assessing financial and non-financial effects [1].

Especially for sustainability, management is to be aware that nature and its components are resources, and they value. The nature is natural capital, and its valuation is to be relevant. However, the effects of government policies and programs on ecosystem services and natural as capital cannot always be valued by direct reference to observed market prices. Before an analyst values such effects, an asset must be identified and measured. The due care of management accountancy is put down in accountancy standards (Slovene accountancy standard no.1 [3]). Nature and its assets are the potential and valuable opportunities to create new and sustainable added value. But the management responsibility is due care and to develop innovative solutions, even solutions to conflicts related to sustainable development. Besides a value as accountability, transparency is important. It can even enhance an organization’s reputation in the eyes of stakeholders and the community.

As sustainability frames multiple objectives, there is a need for structured or system decision-making.

Management responsibility is to:

- Define the problem or identification of materiality, risk, problems, and challenges in the context of sustainable development.
- Specify the objectives and measures.
- On the basis of needs analysis and situation analysis to create alternative scenarios.

- Identify the consequences, including risks.
- Clarify results and impact [1].
-

Management must work on his competences about planning, also he has to learn how to align short-term objectives with long-term social, economic, and environmental goals. As EU countries face ageing of its population this is of utmost importance for social planning and alignment of short-term objectives with long-term goals. Management occupation is an analysis in which he examines how current decisions could affect the future generations to meet their own needs and how current knowledge and technology could be applied to meet those needs [1].

The European Commission and a number of member countries of OECD [2] are applying documents and practices such as cost-benefit analysis, multi-criteria analysis, numerical modelling, foresight analysis, transition management, and empowering stakeholder participation to examine options and alternatives for achieving policy objectives. The European Commission uses an analytical tool called “sustainability assessment” to consider the positive and negative effects of policy proposals [12]. European Commission arranges also workshops: the material is online [7] to ensure the knowledge for decisions based on facts and analysis done. It is of utmost importance that concerned stakeholders have been consulted.

The EU methodology [1] is clear and prepared to use: the approach includes defining the problem and setting objectives for the policy. Decision makers then develop policy options and assess their impact, compare and rank them, and identify the preferred option. They then plan how they will implement the policy, identify key performance indicators, and outline monitoring and evaluation arrangements. Finally, a review panel conducts an independent review of the assessment process, methodologies, and results. It is management task further to prepare specific theme guidelines and supporting documents: examples of best practices, indicators, data sources, models, templates, contacts, and references [10].

Managing good information

Policy makers and managers cannot make informed decisions without access to good information. Managers assess sustainable development policies, require information better indicators that reflects environmental, economic, and social values. For quality information its basic value criteria are: relevance, accuracy, accessibility and coherence. They are the quality assurance framework elements. These are the same as value criteria when evaluators asses the quality of projects and programmes as the quality is to be assured in standards, concepts, classifications and methodology used.

The relevance of information refers to the degree to which it meets the evolving and highest-priority needs. The accuracy is the degree to which the information correctly describes the phenomena it was designed to measure. The accessibility of information refers to the ease with which it can be obtained from the producer and its suitability. The coherence reflects the degree to which it can be successfully brought together with other information within a broad analytic framework and over time.

A key challenge for managing sustainable development is know when a program or a policy has achieved its expected results and contributed to sustainable development [9]. That is why managers develop performance indicators and evidence-based information. It is management's responsibility to establish performance expectations and performance indicators. Management has to know also when and how to use sustainable development indicators as they can be problematic, including data availability and quality. However, indicators are relevant to decision makers, citizens, and stakeholders outside the scientific and technical communities.

The International Federation of Accountants has developed a sustainability framework [11] to help professional accountants influence the way organizations integrate environmental, economic, and social considerations into their objectives, strategies, management, and definitions of success. The framework also includes advice on how to incorporate environmental and other sustainability issues in an organization's financial statements and reports. There are also the environmental management system standards (ISO 14001) of the International Organization for Standardization (ISO) that is of help to organizations to develop and implement environmental management policies and objectives that take into account their legal requirements and impact on the environment. ISO 26000 guides organizations on social responsibility. The social accountability standard (SA8000) was developed even in 1997. From 2000, more and more companies started to enlarge their corporate reports to include social issues, leading the way for sustainability reporting. The most important drivers for the quality of sustainability reports are the guidelines of the Global Reporting Initiative (GRI). Indexes to measure the welfare of a nation - the United Nations elaborated as Human Development Index. It combines measures of life expectancy, literacy, educational attainment, and GDP per capita.

It can be said that a number of frameworks, policies, guidelines, and directives are put in place that call upon management to read and consider environmental effects and social and economic benefits. It is urgent that management makes its progress in planning and decision making. Management needs to anticipate the needs for scientific advice, draw advice from EU sources to ensure the quality, integrity, and objectivity of the facts and data for transparent and open decision-making processes.

As EU encourages strategic environmental assessments of policy, plan, or program proposals, management should respect EU and international obligations in areas as human rights, health, safety, security and the environment. When ministries develop new policy and program initiatives, they should use EU documents as they provide the rationale for the policy or program with objectives, results and outcomes, options, and risks.

Survey and its methodology

The paper concept is to assess the efficiency of management in public and private sector in Slovenia in 2021 within the EU sustainability context of policy making and EU values. Within this context than to answer questions about management efficiency and preconditions for it.

To measure efficiency the methodology used an adapted model for framing questions. The model is a mixture of EFQM, model P3M3 (Portfolio, Programme and Project Management Maturity Model [13]) and model Scirroco, presented in the European week of Regions and Cities in Brussels, 10th of Octobre 2017.

The questionnaire was prepared to answer about five managerial basic functions and three managerial preconditions. Each question had six sub-questions, that were ranked following Likert from 0 to 5. Respondents have higher education; those working in public sector described (each characteristic on six levels) management efficiency in public sector, those from private – the private sector management. Data were collected in 2021. The research questions are: What is the maturity of management efficiency in public and in private sector? Is in the EU context management knowledge in public and private sector good; are the preconditions for good practice are implementing?

Findings

Management efficiency in its five functions and preconditions for good practice

The survey showed that management efficiency is fair in its all five functions (leadership, programming, organisation and coordination, HRM and control), however the efficiency in all five functions is higher (differences are big) is private sector. Following the sustainability EU context, it is not good that the position of management programming in public sector.

The worst assessment of management efficiency goes to HRM in both sectors. Employees are at least satisfied with their human resource management.

Table 1. *Management efficiency in public and private sector by five key management functions, 23.12.2021 (assessment following Likert scale 0 do 5).*

	Public sector	Private sector
Leadership	2,48	3,48
Programming	2,61	4,33
Organisation and coordination	2,84	3,71
Human resource management	2,32	2,85
Control	3,09	3,90

Preconditions for good practice of management efficiency

Preconditions for good management practice got too low scores. Ambition is utmost low in public sector (2,43). Readiness to changes is relatively the highest (in public sector 3,40 and in private sector 3,72), what is still too low. These findings show that the management is not mature and that it still needs a lot of capacity building. However, the private sector is doing harder in the capacity building field. But it is very important action also for public sector, also that capacity building of its human capital (politicians, administrators, management and others employees) goes along with institution building, too.

Table 2. *Preconditions for management efficiency, 23.12.2021 (assessment following Likert scale 0 to 5).*

	Public sector	Private sector
Readiness to changes	3,40	3,71
Ambition of an organisation and of management	2,43	3,66
Capacity building	3,38	3,90

Conclusions

The survey was done to get some information about awareness and management maturity, efficiency of management functions and key characteristics that sustainable management needs as preconditions. The fact is that government officials - through policies, programs, and regulations administration departments and agencies - have a significant influence on almost every aspect of society while having a significant potential for contributing to sustainable development.

The answer to question: What is the maturity of management and its efficiency in public and in private sector is, that it is not good. It is better in private than in public sector. Within the EU context management knowledge is not good enough that management could be efficient. Management competences in private sector are relatively better. However, in each of five basic managerial functions management efficiency is worse in public than in private sector. Among five functions in both sector the worst situation is with human resource management.

The management is not fulfilling some preconditions that management good practice is demanding to implement. Those are: readiness to changes, ambition and capacity building. All three dimensions of management maturity are needed for managing sustainable development. It involves considering interrelated environmental, economic, and social effects and considering policy and program objectives over an intergenerational time-frame. There is a need and ambition to introduce integrated and long-term approach. And it is management responsibility capacities to build in person, of organisation and institution building.

Managing sustainable development also includes applying relevant government guidance and directives intended to support a sustainable development approach throughout the five management functions doing over management cycle.

Management should read more a number of documents about sustainability principles, international and EU commitments that EU existing strategies have been considered and integrated within the country legislation and strategy: the cohesion strategy, the strategy for resilience and recovery a smart 2030 specialisation strategy 2030 in Slovenia as programming – one of five basic management functions – is in public sector in very bad position.

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ENERGY EFFICIENCY AS AN INNOVATIVE BUSINESS MODEL

***Abstract.** This paper includes research on energy efficiency with the aim of reducing energy consumption while minimizing greenhouse gas emissions and ensuring quality of life. This paper represents the benefits of renewable energy sources, the adoption of green practices in building construction, with the application of modern technology and instruments with the aim of raising awareness and knowledge in the process of sustainable development in order to achieve economic, environmental and social sustainability and energy efficiency. Along with the analysis of the current state of the energy sector in Montenegro, efforts to restore energy efficiency, solve environmental problems and focus on the development of the state in the direction of sustainable development were presented as well. The concept of decentralization was also presented, that is, the delegation of powers from the central government to the local level, with its advantages for achieving sustainability.*

Keywords: *energy efficiency, sustainable development*

Introduction

Energy efficiency and security are considered to be issues of great importance globally. The result of numerous conferences and summits is that the security of the human environment is endangered, so it is necessary to reduce the use of non-renewable energy, with a focus on renewable energy sources with maximum realization of energy use and reduction of environmental pollution.

Of course, all this indicates that all segments of society must pave the way to sustainable development with the involvement of the public in the broadest sense, in order to raise environmental awareness with constant training related to this issue. Energy factor is very important for sustainable

development because it is necessary for all sectors, that is, their activities (social, economic and political).

The tendency to reduce the consumption of energy from non-renewable sources and shifting focus on renewable sources guarantees the reduction in air pollution by exhaust gases and thus reduces the devastation of the human environment.

In this paper we will try to prove that it is necessary to motivate working organizations and the people of Montenegro to focus on sustainable development, through the following activities:

- to explain and prove that it is very important to constantly assess the environmental impact on a case-by-case basis;
- that all working organizations in the local government are responsible for negligent business;
- that there is a dialogue - a public debate on all problems in the human environment.

In order to achieve overall sustainable development, it is crucial that all people should and must be truthfully informed about the necessary procedures for sustainable business, quality of life and goals for sustainable management, energy efficiency in particular, with special involvement of individuals, that is, local government representatives.

This paper seeks to draw attention to the fact that energy efficiency leads to sustainable development, that is, sustainability in the economic sector, social sector and preservation of the human environment. Institutional cooperation between state and local governments is important for the implementation of sustainability, provided that the local government has the greatest authority. That is, that local government can independently decide about issues in their area.

Given the good practice of delegation of powers and decision-making at the local level it is necessary for entrepreneurs to behave with the attitude towards sustainable development with the local population.

Problem solving and realization at the local level has proven to be an easier, better and safer way to implement sustainable development. Therefore, it is important that the local government is independent in making decisions in the area under its jurisdiction. The local government should emphasize the importance of sustainable development while respecting all three basic pillars of sustainability (economic, environmental and social) [1].

The aim of this paper is to emphasize the need to reduce energy consumption, that is, increase energy

efficiency in order to achieve sustainable development in Montenegro, that is, achieve sustainability between all three basic pillars of sustainable development (economic, social aspect and environmental protection).

In order to successfully implement this aim, there is a need for good institutional cooperation between authorities at state and local levels. This aim emphasizes that institutional government at the local level should be independent in decision-making for solving problems in its area.

The subject of research activities of this paper is to achieve reduction in energy consumption in all areas of human activities that lead to sustainable development of Montenegro, that is:

- theoretical research with reference to defining the concept of energy efficiency with indirect impact on environmental protection and achieving sustainable development;
- success analysis of the policy for increasing energy efficiency, that is, reducing energy consumption for the same or better comfort in the existing conditions of the energy balance of Montenegro;
- proposal for the reform of sustainable development policy in Montenegro.

The paper highlights research questions:

- that renewable energy sources are justified and cost-effective, among other things for Montenegro as well, and that they significantly contribute to the concept of energy efficiency for sustainable development.
- the establishment of economic instruments leads to environmental protection - sustainable business and greater energy efficiency.

The paper has two main goals:

The scientific goal of the research is the analysis of the established degree of reduction of energy consumption, that is, application of energy efficiency in Montenegro as well as the synthesis of scientific explanation influenced by the reformed political system, in order to achieve greater energy efficiency in Montenegro, with the model for better and safer approach towards greater energy efficiency proposed by local government.

The social goal of the research is that the statements obtained can be used to find new models in the application of energy efficiency as a model of sustainability in Montenegro.

The purpose of the research is reflected in the application of theoretical knowledge about sustainable

development and in examples of energy efficiency in everyday practice. The research will try to indicate the conditions that should be met in energy efficiency in order to ensure sustainable development in Montenegro with innovative solutions.

The research will take into account the specifics that characterize the studied subject of research and on that occasion will apply different methods in order to meet the basic methodological requirements: objectivity, reliability, generality and coherency.

Energy efficiency and globalization

Great use of non-renewable energy sources and their depletion as well as environmental pollution with extreme consequences for climate change influences people to change their behavior towards planet and shift focus to renewable sources of energy with the aim of reducing environmental pollution. [2] Later, with raising awareness and the emergence of technological solutions, people focus on renewable sources of energy which do not pollute environment.

Under the term energy efficiency, we mean that various measures and technological solutions minimize energy consumption while maintaining comfort or improving it [3].

Given the importance of the energy system, each country plans its own energy balance for each year, which includes its current state, possible imports and other characteristics as well as various changes during use [4]. Energy balance is very important for each country due to both possible reduction and total cost in the energy sector, that is, planning and forecasting of economic energy development and national economy.

Annual planning and monitoring of the energy balance leads to energy trends that are monitored through the following energy systems:

- Primary system that includes basic energy system with energy available for use. This system combines total production from country's potential and net energy imports.
- Transformation system that includes necessary energy sources for conversion into energy (this process includes consumption as well as all losses incurred in the process to the user). This system covers all energy producers.
- Final energy system, which shows non-energy consumption for energy needs, when using various energy sources.

If we look at energy production from the economic point of view, then we conclude that it is produced

in the cheapest way, that it is high quality and that it meets the needs [4]. Nowadays, with an increasing number of inhabitants on the planet, energy consumption is increasing as well, but it should be used in the best possible manner - as efficiently as possible. This means that every country must view energy as a strategic problem and pay special attention to energy production, but also to the protection of the human environment.

In order to achieve the goal of good energy production, to use energy efficiently and to protect human environment as much as we can, it is important to know that it is necessary to have a well-functioning institutional framework, compliance with legal regulations and economic reforms in the energy sector. In order to achieve energy efficiency, we must shift more focus on the use of renewable energy sources.

Reduction of fuel consumption, that is, energy efficiency reduces greenhouse gas emissions, which has become one of the highest priorities both for the governing structures of the European Union and for the general public and car manufacturers over the past decade, which is also the case with air quality and global warming. In this sense, the energy efficiency in transport has played a significant role among the strategic measures for achieving sustainable development in the developed world, which has recently become a trending topic in our region.

Importance of energy efficiency and sustainable development

At its core is the simple idea of providing a better quality of life for everyone, both today and for generations to come, or in other words "development that meets the needs of the present without compromising the ability of future generations to meet their own needs", which is a generally accepted international definition of sustainable development [5].

We need a more advanced society based on a strong economy, better accessibility of services and an attractive and safe environment. International co-operation is also needed in order to overcome environmental problems, facilitate trade development and help the poorest on the path towards global society. It is necessary to increase resource efficiency, in which energy efficiency is one of the basic priorities. At the Rio de Janeiro summit in 1992, UN member states adopted the provisions of Agenda 21 - a comprehensive plan of action to achieve sustainable development worldwide. That document defines the principles of sustainable development. According to this document [6], the transport sector plays a fundamental and positive role in economic and social development.

However, we must bear in mind that transport demand will continue to grow in the future. Transport

participates with approximately 30% in energy consumption for commercial purposes, and with about 60% in global oil consumption. Accelerated motorization and insufficient investment in urban transport planning, traffic regulation and infrastructure in developing countries are creating increasing problems in terms of traffic collision (injuries and deaths), health problems, noise, congestion and reduced productivity similar to developed countries. There is a need to review existing transportation systems and to manage systems more efficiently [7].

The fact is that the percentage of CO₂ emissions from transport is constantly increasing. Therefore, any activity aimed at reducing CO₂ emissions must include limitation of aforementioned emissions from transport. This is primarily about the possibility of reducing the emission of harmful gases from two main sources - passenger and freight land vehicles. Of the total transport-related emissions, these two sources account for approximately 75%. Another important source is air traffic, while railways as well as river and marine traffic are minor sources [8].

The situation in our country is relatively bad, in terms of energy efficiency and sustainable development of the transport sector, due to the fact that the average age of the fleet is around 16 years, which means that a significant number of vehicles older than 20 years participate in traffic [8]. This means that unreliable vehicles are involved in traffic, which poses a great potential danger to people and the environment. The number of traffic collisions (as well as the number of injured and dead) is very high, and a significant number is caused by the poor technical condition of vehicles. In addition, vehicles have a negative impact on the environment with exhaust gases, waste and noise: a large number of vehicles do not have the ability to move around developed countries.

Improving the reduction of energy consumption with a focus on the use of RES is an important and priority task for the next decade. The NSDS report highlighted the need to use the best possible experiences of other countries as well as to use abundant potential of RES (water, wind, solar radiation, biomass and waste) to generate clean energy. The need to introduce green / sustainable building standards was also highlighted. Energy efficiency and RES are recognized as areas of great importance for climate change mitigation, which at the same time create opportunities for economic and social well-being. Although there has been a noticeable progress in creating legal frameworks, adopting plans and strategies, implementing energy efficiency and RES programs, it was also concluded that energy efficiency and the share of RES (wind, solar energy, biomass and small and medium hydropower) for production and energy consumption is very low. Therefore, it is important to take the right step in taking more systematic and ambitious measures in order to achieve national sustainability goals [7] and to meet requirements arising from EU and UN policies.

Contribution of civil society

The civil society should, in principle, play an important role in formulating any agreement on energy efficiency. The activity of the Montenegrin civil society is very good and often in opposition to the state administration. Consequently, their opinion is not taken or considered for proposals in the energy sector.

Globally, several important reports analyzing energy consumption and suggesting possible ways of progress have been produced by leading international NGOs in recent years [9]. The World Wide Fund for Nature (WWF), for instance, set out a vision of a world that is 100% powered by renewable energy by the middle of the last century. The authors of the report claim that switching to renewable energy sources is not only the best choice, but also the only option that humanity has. The plan presented in the report is based on two main assumptions:

- total final energy demand in 2050 will be approximately at the level of consumption in 2000 and
- 95% of energy will be from sustainable sources (meaning, without nuclear energy, coal, gas and oil, and without significant increase in hydropower).

Likewise, Greenpeace and the European Renewable Energy Council (EREC) reports in 2010 set out a long-term plan to completely eliminate fossil fuels in the second half of this century. The authors of the report speak of this "Energy (R)evolution" as a necessary response to the challenges of climate change [10].

Sustainable development and economic growth

In the story of the context of sustainable development, it is necessary to recall that it is a form of development that seeks to establish a balance between economic, environmental and social goals. However, the fact is that for decades, profit maximization and growth of national economies have been the main goals.

The fact is that in the period of transition, economic growth was considered first, and after achieving economic inequality it was concluded that pollution increased over time, so at that point, it was considered to reduce the degree of environmental degradation [11].

From an environmental point of view, important data such as resource use, emissions, biodiversity loss, land degradation, deforestation as well as basic data on water and air quality must be taken into

account.

Environmental quality is better in countries with a more equitable distribution of income, a high literacy rate and respect for civil and political rights.

In many countries, especially those with low incomes, it was concluded that the environmental quality is better if income is more equitably distributed and if literacy rates are high, provided that civil and political rights are more respected.

It is noticeable that the Western Balkans has accepted the legislation of the European Union in the field of environmental protection and that they are moving towards clean energy. Thus, Western Balkans reaffirmed its ambition to encourage decarbonization, renewable energy sources and energy efficiency, which will strengthen its path towards the European Union. This has been achieved through cooperation with all relevant participants such as the Energy Community, civil society organizations and international financial institutions [12].

Energy efficiency measures

Montenegro is recognized as a regional energy hub and a leader in the production and use of energy from renewable energy sources with recognized and accepted goals for 2022:

- Increase of production from RES to 42% in relation to final consumption.
- Reduction of the total energy deficit, by increasing the use of RES and stimulating end consumers to become producers of electricity.
- Promotion of research and innovation to create technologies for reduction of environmental pollution.
- Increasing energy efficiency by taking energy from RES for all housing and business needs.
- Application of eco funds for the adaptation of tourist and residential buildings.
- Electrification of transport, with emphasis on public transport.
- Application of the concept of smart grids.
- Preparation and beginning of implementation of strategies for eco-friendly use of coal in various energy resources.

For energy production in Montenegro, projects from renewable energy sources with a focus on solar power plants should be implemented. So far, two large wind farms and small solar energy projects have been implemented. In addition to the aforementioned activities, the project of installing an undersea power transmission cable has been completed, which will enable the connection of the

electricity system of Montenegro and Italy. If the need for implementation of energy storage capacities is added to the above, primarily with the aim of increasing the reliability of consumer power supply, it becomes clear that the Montenegrin energy system gets a completely new physiognomy. Accordingly, economical, environmentally friendly and reliable production, transmission and use of electricity, as well as the method of optimal management, are becoming the main challenges of the modern Montenegrin energy sector.

There is a potential in Montenegro for Renewable Energy Sources (RES). Hydropower is already providing for two-thirds of the country's total energy production, and only 17% of the theoretical hydropower potential has been exploited so far. Until recently, hydropower has been the only renewable energy source that contributes to significant energy production in Montenegro.

The average annual number of sunshine hours in Montenegro is more than 2,000 hours, while in coastal areas the number of sunshine hours exceeds 2,500 hours annually. The construction of the first large solar power plant is also planned, while solar energy has, so far, been mostly used for solar thermal heating and cooling.

In 2010, Montenegro was seriously involved in a ten-year strategy called "Europe 2020" [13]. This strategy has ensured growth and created job opportunities within the EU. The economic crisis has shown the weaknesses of society, and posed new challenges to the EU, such as globalization, overexploitation of natural resources, and population aging. Relying on European values such as the single market, common trade policies and other policies at EU level, Member States must make individual efforts to address the economic crisis and rise to new challenges, while respecting the foundations of European politics [7].

In addition to resolving the economic crisis, the Europe 2020 strategy also aims to create [7]:

- smart behavior (economic activities based on knowledge and innovation),
- sustainable behavior (economic activities that use the potential of green economy more efficiently and with activities that lead to competition),
- inclusive behavior (an economy that brings social and territorial cohesion).

Special energy efficiency measures are focused on the construction sector with the application of systemic energy use with the application of new technology and innovation. A smart building (house, apartment, building) is a complex building imbued with a system of smart installation, with the absolute ability to manage a complete system tailored to meet human needs and desires [14].

The question arises: what about the buildings that were built earlier? The facility is inspected with the aim of determining the energy system and a report on the determined condition is made. Based on the report, a decision is made on the implementation of the necessary activities for maintenance, that is, improving the efficiency of the energy system in the facility in question [7].

Recommendations for future

More good recommendations can be drawn from this research. There are potentials in Montenegro that can reduce electricity consumption or, better yet, improve energy efficiency in building construction, which greatly contributes to overall energy efficiency.

The fact is that there are certain reasons that in some way hinder the implementation of policy for increasing energy efficiency. Here, we could point out the economic incompetence of a certain part of the people, the lack of motivation to invest in this area, perhaps negative interest rates, and perhaps even the public being insufficiently informed as well.

Such activities require a clear policy aimed at reducing consumption, increasing energy efficiency, while preserving and protecting the environment and the sustainability of the economy, ecology as well as ensuring social dimensions.

Such approach to addressing the increase of energy efficiency requires the implementation of new approaches and methods to finance energy efficiency. It is also important to present, encourage, develop and implement programs with new innovative technologies in the local government that would attract investments to improve energy efficiency.

Conclusion

The purpose of this paper is to analyze energy policy and practice in Montenegro, to assess the extent to which it contributes to or hinders the achievements of sustainable development and environmental goals of the country, as well as to present a draft of possible guidelines for the future. Special attention is paid to the connection between energy and sustainable development and the possibility of transition to green renewable energy sector. Key findings from previous analyses of the main achievements and challenges in implementing the concept of the ecological state are also included in this paper as a reference frame for overall considerations.

It can be concluded that Montenegro has numerous problems in the energy sector, and many have

their roots in the time of Yugoslavia. However, some steps have been taken in the right direction, as Montenegro has real obligations to open and develop the energy market and join the EU's integrated energy market.

Above all, it is necessary to promote the protection of human environment, the benefits of green building with the application of the latest scientific achievements for the use of renewable energy sources and the use of natural building materials, in order to reduce harmful effects on health and the environment.

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***Section: Knowledge Management and Business Process
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KNOWLEDGE CONTROL IN MODERN COMPANIES THROUGH THE PRISM OF ORGANIZATIONAL CULTURE

***Abstract.** Modern business conditions require companies to constantly improve in order to adapt to new changes. Survival, growth and development in increasingly growing and dynamic market can only be ensured by those companies that get information and knowledge on time. Today, knowledge is the most important resource that provides a competitive advantage to every company. Therefore, adequate management of this resource is necessary. However, organizational culture can very often be an obstacle to this. Organizational culture is one of the key components of management that should create a favorable environment and this way enable the efficient use of knowledge. Therefore, creating an organizational culture that will recognize the importance of collective knowledge is one of the prerequisites for effective knowledge control.*

Keywords: *organizational culture, knowledge, knowledge control, human resources.*

Introduction

Modern companies view their business processes as knowledge processes. This implies the creation of so-called organizational knowledge. Not only the creation but also the dissemination and application of knowledge throughout the company. Therefore, knowledge should be available to all employees in the company. This knowledge is the only source of real competitive advantage. This is the driving force for innovation, which reflects the competitive advantage of every company. However, a large number of companies in modern conditions do not use their competitive advantages, meaning inadequately use of existing knowledge. In order for knowledge to be used adequately, it is necessary to create conditions for that. It's known that employees are the main sources of knowledge in the company, but the problem of management is to motivate employees to share their knowledge with others. As most of the knowledge is in the minds of the employed, and organizational culture influences the thinking and behavior of employees, it is necessary to consider the importance of it on the efficiency of knowledge management in companies.

This paper analyzes knowledge through the prism of organizational culture and aims to point out the connection between the organizational culture and the concept of knowledge, emphasizing the importance of implementing knowledge in modern companies.

Something about knowledge

The base of human existence is knowledge. Knowledge is seen as an "insensibly " embedded system in every segment of the company. It is crucial for a successful company, but also for the development of society. What is knowledge? The most commonly used definition of knowledge by Nonaka and Takeuchi (1995), who define knowledge as the justified belief that increases the capacity of an entity to take effective action [11]. From the aspect of the company's function, knowledge can be defined as a set of skills or capacities that an individual has, and which is needed in a particular situation, in order to solve a problem and make the right business decisions [5]. Viewed in the context of organizational culture, knowledge represents our beliefs, attitudes, values that are based on a meaningfully organized set of information that we come to through experience, communication, or inference [16].

Knowledge is a dynamic process that needs to be constantly adapted, shared, renewed, and improved. The strength of a modern company is reflected in how much employees are willing to adopt and share knowledge. Certainly, companies in which employees are positively oriented towards the acquisition, improvement, and use of knowledge are a great advantage over other companies. The only way for a company to be among the best is to learn faster and better than the competition [6].

In an attempt of knowledge systematization, different classifications of knowledge have emerged. From the aspect of business and functioning of the company, the most important are those classifications that contribute to efficient knowledge management. In this sense, we distinguish between explicit and implicit (silent, tacit) knowledge. Explicit knowledge is the one that is expressed by formal language, which by its nature can be transferred to others. Implicit knowledge is the one that is embodied in the experience of an individual and represents his personal knowledge (beliefs, attitudes, ideas). This knowledge is difficult to explain and pass on to others. However, managers strive to create explicit knowledge, because it is most often collective and can be transferred. This knowledge is a source of competitive advantage for a company and can contribute to the growth and development of the company [13]. Depending on the type of knowledge, the sharing of it in the company also depends. Only the knowledge shared with all employees in the company is important. Knowledge can be transferred between individuals and organizational units in a company as well as between multiple companies or multiple organizations. Companies that are focused on growth and development are constantly looking for new information and new ways of working [4].

Can knowledge be managed?

The process of knowledge management consists of a large number of activities that identify, create,

present, and share knowledge. This concept appeared in 1995, and since then special attention has been paid to this issue. In that period, companies appeared that compare knowledge management to human capital management. We can say that the intensity of research on the concept itself is growing because companies do not know the kind of knowledge they are working with and whether they use it in the best way. Certainly, the desire and interest of every company are to manage knowledge and use it in the best possible way. According to one study the average firm uses only 20% of the knowledge available to it [15].

Knowledge management is a process of creation, collecting and using knowledge to improve company performance. Management process knowledge includes the knowledge management of all employees and its application in order to create new values and strengthen competitive advantages in the market [6].

To successfully manage knowledge, it is necessary to identify all sources available to one company. In general, two sources of knowledge can be identified: internal and external. Internal sources are in the "heads" of people and expressed through the behavior of employees. They are in various documents and databases of the company. External sources knowledge of general importance and include publications, universities, etc.[16]. The first variant refers to companies that use the information exclusively from their sources. However, the orientation of the company to predominantly internal sources can negatively affect the competitive position of the company. The second variant refers to those companies that are oriented only to external sources of knowledge, which causes instability in the business because those are quite cheap and accessible to everyone. The third variant is created by using knowledge from internal and external sources. This variant is considered the best because it is a combination that eliminates the shortcomings of orientation only to internal or only external sources of knowledge.

For a company to successfully control knowledge, its management must determine which knowledge constitutes the key competencies of the company. Therefore, it is necessary to define the strategy of the knowledge management process. This strategy defines the activities that should be taken to achieve a competitive advantage. The management of the company should also have a vision of future knowledge needs. In this regard, it should take the following actions:

- to identify the knowledge that the company currently has and in what form it is available,
- to analyze how knowledge can affect creating the added value and the effects of its use,
- to identify possible obstacles in the use of knowledge, to eliminate them,
- if its use resulted in new opportunities to use.

The knowledge management process is an activity that requires continuous adjustments and improvement of opportunities. It is very important to emphasize the acquisition of new knowledge, while managing it, since knowledge quickly becomes obsolete. One of the prerequisites for effective knowledge management is to create an organizational culture that will help implement and activate it so that it creates additional value for the company.

Knowledge in the function of organizational culture

Organizational culture as an important component of management is very important for the concept of knowledge. Organizational culture is seen as "a system of assumptions, values, norms, and attitudes that members of a company have developed and adopted through shared experience, which are manifested through symbols that guide their thinking and behavior ." [9]. Some research has shown that of all the factors influencing knowledge management, organizational culture has the largest percentage [10,2] . In this context, culture should be a favorable environment for the implementation of the concept of knowledge.

Only a culture that is characterized by: orientation towards people, openness, learning, knowledge sharing, teamwork, willingness to take risks, and willingness to change can have a positive impact on knowledge management and in such a culture it can be shared. Otherwise, organizational culture is an obstacle to the concept of knowledge and needs to be changed. Changing organizational culture is not an easy process, because it is hard to get people to share their knowledge. Traditionally, employees keep their knowledge to themselves, because they believe that by sharing it, they will lose their positions in the company. Therefore, it is crucial for the transformation of organizational culture to identify the most optimal relationship between the existing organizational culture and knowledge and to conceive the right strategy in the direction of implementing changes in organizational culture. Depending on the organizational culture, knowledge is formed, meaning organizational culture forms assumptions about what knowledge is. Accordingly, we distinguish between individual knowledge (knowledge of individuals), social knowledge (knowledge of a group of people), and structured knowledge that is represented in the company through rules and procedures. Also, culture determines the boundary between the individual, group, and organizational knowledge. It depends on the organizational culture in the company (cultural assumptions and norms) which knowledge an individual will keep for himself, and which he will share with others. People often do not want to share individual knowledge considering it a source of power in the enterprise [9,8].

So, as it was said about its values, norms, and assumptions, it determines what is individual and what is organizational knowledge. In that sense, it defines knowledge and competencies that are valuable

for the company, forms the interactions and communications through which organizational knowledge is created, disseminated, and used. Thus, organizational knowledge becomes relevant and makes sense only if it can be managed, meaning if it is used in the company. By sharing it, individual knowledge is transformed into group one and it has a positive impact on the company's business. The process in which individual knowledge is transformed into group knowledge is called the process of socialization (the process of creating group knowledge/ organizational knowledge). Through this process, implicit knowledge (discussed earlier) is transferred from one individual to another. An interesting example is a master and the apprentice, where the master does not explicitly transfer his knowledge to the apprentice, but the apprentice through the process of social interaction "absorbs" knowledge from the master. The process of articulation transforms the implicit into explicit knowledge. In this way, individual knowledge (knowledge that was only in the possession of individuals) turns into the common good of the organization. This is not simple, because it is necessary that the one who possesses implicit knowledge has the ability and will to articulate it in explicit knowledge, that is organizational knowledge. This process allows information to be disseminated in the company and available to all and can be used. However, this is not the end of the process. With constant use, explicit knowledge becomes routine, an integral part of the mental schemes of both employees and managers, and turns into implicit knowledge. This process is called the internalization of knowledge. So, every day, at their workplace and through various training, employees enrich their explicit knowledge, which is again articulated in the implicit. Now the level of implicit knowledge is higher and more diverse. Of course, new and enriched implicit knowledge is again converted into explicit one, this way closing the circle of knowledge conversion.

The knowledge used in this organization after this process is new and improved. The use of this knowledge is manifested in the changed and improved behaviors of employees in the company, meaning their decisions and actions. As a result of these changes, companies will be able to respond to environmental demands and improve their business [1].

One of the problems in the process of knowledge management is the problem of employee motivation [7]. Employees in the company are the bearers of knowledge and new ideas. They are the most important business resource. The goal of knowledge management is to create new knowledge and share it among employees, ie turn implicit knowledge into explicit knowledge. The question is how to motivate workers to share their knowledge with others. In order for the organizational culture, in that sense, to support and motivate employees, it should enable them: personal development, work environment in which they can perform their tasks, the ability to do work to meet all standards, adequate material reward and the like.

Importance of knowledge management for enterprise performance

Knowledge management in the company can be viewed in terms of effectiveness, efficiency and innovation. Effective knowledge management is especially manifested through the rapid collection of information and timely decision-making, which results in adaptation to dynamic business conditions. Effective knowledge management can be compromised in two cases. The first type of problem occurs when employees leave the company. By leaving the company, employees take away the knowledge they have acquired in the company. With the loss of such knowledge, the competitive advantage of the company is lost, which has a negative effect on the effectiveness of the company. The next problem may arise when new employees arrive, in the case when the knowledge of new employees is incompatible with the knowledge needed by the company, which adversely affects its performance. Viewed from the aspect of efficiency, knowledge management can provide the company with greater productivity and efficiency if employees are motivated to participate and openly share knowledge. In the context of innovation of companies that manage and share knowledge, I can expect that their employees are carriers of new ideas, new innovative processes, innovative solutions to problems, and then we say that the company is innovative, which positively affects its performance [3].

Knowledge management is important because it leads to the reduction of business errors, faster decision-making and problem solving, cost reduction, increased employee independence, improved employee relations and improved production quality [14]. Knowledge management also provides: a greater degree of innovation by encouraging the free expression of ideas, improving services provided to consumers, increase revenue through better placement of products and services, reduce worker turnover, improve labor operations and reduce costs [12].

Conclusions

In modern business conditions, it is clear that knowledge is the most important capital of a company. In that sense, it is necessary to develop an efficient system of managing that capital, because that leads to significant savings, higher productivity, better performance of business activities and the creation of competitive advantage. If there is only knowledge in the company and not a knowledge management system, the knowledge will not be used effectively. In order for it to be used effectively, it is also necessary to motivate employees to share knowledge, meaning to create an organizational culture that will enable the personal development of each individual, a work environment in which they can perform their tasks, the ability to get the job done to meet all the necessary standards.

Organizational culture is a mechanism that coordinates and controls knowledge.

The recommendation would be to create an organizational culture that is characterized by: team work, openness, knowledge sharing, employee participation in decision-making, cooperation, flexibility, loyalty, high sense of responsibility, willingness to take risks and the like. Such an organizational culture is a fertile ground for the concept of knowledge management. In order to realize the above, it is necessary for companies to give up traditional business and way of working, which is quite inefficient for the concept of knowledge.

A special segment for business success and knowledge implementation is the employee rewarding policy. Adequately rewarded employees will have the desire to acquire and share knowledge, which implies a comparative advantage of the company and increase business success.

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PREFERENCE LASTNOSTI ZDRAVIL V PROSTI PRODAJI

Povzetek. *Teorija obetov, psihološka teorija, ki sta jo leta 1979 predstavila Amos Tversy in Daniel Kahneman v članku »Teorija obetov: analiza odločitve pod tveganjem«, opisuje, kako ljudje sprejemajo odločitve, na podlagi alternativ, ki vključujejo tveganje in pridobivanje. Ljudje sprejemajo odločitve na podlagi zaznanih izgub ali dobičkov. Teorija obetov se danes koristno uporablja v različnih disciplinah. V našem prispevku bomo obravnavali pomen izgub in pridobitev, ki jih uporabniku dajejo zdravila v prosti prodaji. Osredotočili se bomo na koristi in morebitne neželene učinke pri osebah, starih nad 50 let. V raziskavi bomo uporabili metodo Conjoint analize.*

Ključne besede: *teorije odločanja, teorija obetov, psihologija, marketing, komuniciranje, zdravila*

Uvod

Okolje, v katerem živimo, postaja vedno bolj kompleksno. Globalizacija in tehnološki napredek pomembno vplivata na to, kako sprejemamo odločitve. Avtor [1, p. 67] se strinja in poudari, da uspešno upravljanje sprememb in posledično sprejemanje odločitev ima ključno vlogo, da organizacije preživijo in ostanejo konkurenčne in preživijo v tem hitro spreminjajočem se poslovnem okolju.

Za kakovostno sprejemanje odločitev potrebujemo kakovostne informacije, ki pa niso vedno na voljo ali pa jih je današnjih časih na voljo celo preveč in je posledično težko presoditi, katere so tiste ključne. Posledično sprejemamo številne odločitve na temeljih, povezanih z negotovostjo, s sprejemanjem tveganj ali celo v nevednosti. To pomeni, da moramo sprejeti odločite na podlagi pogosto nepopolnih informacij ali opazovanj z rezultati, ki niso predvidljivi.

Z naraščanjem kompleksnosti sprejemanja odločitev vse več avtorjev različnih disciplin raziskuje, kako ljudje se ljudje odločamo v sodobnem poslovnem okolje, ki ga pomembno zaznamuje hitrost sprememb in negotovost. Posledično so nastale številne teorije, med katerimi pomembno pozornosti

prevzema ravno teorija obetov.

Posledično se v članku osredotočamo na teorijo obetov. Teorijo obetov avtorja Kahneman & Tversky razlagata, kako ljudje sprejemamo odločitve v negotovih pogojih. Študija Kahnemana in Tverskyja iz leta 1979, ki sta preizkušala finančne odločitve v negativnih pogojih, je ugotovila, da takšne sodbe bistveno odstopajo od predpostavk teorije pričakovane uporabnosti, ki je imela do takrat izjemen vpliv na znanost, politiko in industrijo. Ugotovila sta, da ljudje pri sprejemanju odločitev v negotovosti ne upoštevamo načela racionalnosti, na kar je opozarjala predhodno temeljna teorija pričakovane koristnosti.

V teoretičnem delu smo se torej osredotočili na teorijo sprejemanja odločitev, s poudarkom na teoriji obetov, v empiričnem delu pa smo teorijo obetov uporabili v praksi in preverili pomen izgub in pridobitev uporabnikov zdravil v prosti prodaji. Pri tem smo se omejili na ciljno skupino žensk, ki smo jih razdelili v 2 skupini, stare pod in nad 50 let. Po temeljitem premisleku smo se odločili, da uporabimo Conjoint analize, saj predstavlja odlično metodo za ocenjevanje izdelkov in njihovih lastnosti.

Teoretična izhodišča

Teorija sprejemanja odločitev

Teorija sprejemanj odločitev, ki se ukvarja s procesom sprejemanja odločitev, je interdisciplinarno področje, ki ga raziskujejo tako filozofi in psihologi kot ekonomisti, informatiki, matematiki in statistiki [2, 3, 4, 5, 6, 7, 8, 9] z namenom spoznati, kako posamezniki in skupine sprejemamo odločitve.

Teoretiki z močnim matematičnim znanjem raziskujejo zlasti logične posledice vpeljave določenih pravil v smeri sprejemanja odločitev ali matematične funkcije različnih opisov racionalnega vedenja, medtem ko so teoretiki, podkovani v družbenih vedah, usmerjeni v eksperimente in druge oblike raziskav, z namenom ugotavljanja, kako se ljudje resnično obnašajo, ko sprejemajo odločitve [8, p. 3].

Kljub različnim pogledom znanstveniki teorij sprejemanja odločitev se v pretežnem delu strinjajo z nekaj osnovnimi koncepti. Avtor [7, p. 3] verjame, da se vsi strinjajo, da je smiselno razlikovati med deskriptivno in normativno teorijo sprejemanja odločitev. Teorije deskriptivnega odločanja skušajo razložiti in napovedati, kako ljudje se dejansko odločajo. To je empirična disciplina, ki izhaja iz eksperimentalne psihologije. Normativne teorije si prizadevajo dati recepte o tem, kaj naj bi se

odločali racionalno. Deskriptivna in normativna teorija odločanja sta torej dve ločeni področji raziskave, ki jih je mogoče preučevati neodvisno drug od drugega. Na primer, z normativnega vidika se zdi zanimivo vprašati, ali bi ljudje, ki obiščejo igralnice, morali igrati toliko kot igrajo. Poleg tega se zdi, ne glede na to, ali je to vedenje racionalno ali ne vredno pojasniti, zakaj ljudje sploh igrajo na srečo (čeprav vedo, da bodo z veliko verjetnostjo izgubili denar).

Tudi avtorja [2, p. 2-3] prav tako pojasnita v tej smeri, da analitiki normativnega odločanja proučujejo določena vedenjska pravila o tem, kako je treba sprejemati odločitve za čim večjo učinkovitost odločevalca, medtem ko analitiki deskriptivnih odločitev preučujejo, kako se odločitve dejansko sprejemajo v praktičnih kontekstih.

V teoriji sprejemanja odločitev so pomembni izrazi, kot so tveganje, nevednost in negotovost. Avtorja [6, p. 13] verjameta, da gre pri odločanju v negotovosti za sprejemanje odločitev, katerih posledice niso povsem predvidljive, saj se bodo v prihodnosti zgodili dogodki, ki bodo vplivali na posledice zdaj sprejetih ukrepov.

Pri tveganih odločitvah odločevalec pozna verjetnost možnih izidov, medtem ko odločitve, ki temeljijo na nevednosti, so predmet neznanje ali neobstoječe verjetnosti. Negotovost se uporablja kot sinonim za nevednost ali kot širši izraz, ki se nanaša na tveganje in nevednost. Čeprav odločitve sprejete v nevednosti temeljijo na manj informacijah kot odločitve sprejete s tveganji, iz tega ne sledi, da morajo biti odločitve sprejete v nevednosti tudi težje [7, p. 6].

Teorija obetov

Sprejemanje odločitev je kompleksen kognitiven proces, ki je bil predmet raziskave številnih avtorjev. Kahneman & Tversky [10] sta v znanstvenem članku predstavila kritični poglede na obstoječih teorij na področju sprejemanja odločitev pod tveganjih in razvila alternativni model, imenovan teorija obetov (ang. prospect theory).

Izbira med tveganimi obeti kaže na več prodornih učinkov, ki niso v skladu z osnovnimi načeli teorije pričakovanih koristnosti. Teorija obetov ukvarja s tem, kako ljudje presojava tveganje in sprejemamo finančne odločitve v negotovih pogojih [11].

Teorija obetov je med najvplivnejšimi okviri v vedenjski znanosti, zlasti v raziskavah o tveganim odločanju. Teorijo obetov so preučevali številni avtorji [7, 11, 12, 14, 15 idr.].

Teorija obetov stopila v ospredje pred takrat prevladujočo teorijo pričakovani koristnosti zaradi dveh funkcionalnosti. Ti sta vrednost in verjetnost. 7, p. 298]. Teorija obetov je v štiridesetih letih od njenega nastanka pomemben vpliv na razumevanje odločanja v znanosti, oblikovanje politik in razlago vedenja na različnih področjih od potrošništva, posloводства in zavarovalništva do javnega zdravja ter varovanja okolja. Postala je ena najvplivnejših teorij v vedenjski znanosti. Nenazadnje, je eden izmed avtorjev, tj. Kahneman, za svoje delo na področju odločanja pod tveganimi pogoji in integracije psiholoških spoznanj v ekonomijo, leta 2002 prejel celo prestižno Nobelovo nagrado [11].

Vpeljava teorije obetov je sprožila številne diskusije, znanstveniki pa so razglabljali med drugim tudi o njenih številnih prednostih [11, 12, 13]. Avtor [12]. sistematično razloži, da omenjena teorija ponuja številne prednosti, ki upravičujejo njeno uporabo, vendar ima tudi nekatere vidike, ki omejujejo njeno širšo uporabnost. Med prednosti navede: alternativni model racionalnim in ostalim teorijam, omogoča razlago dinamičnih sprememb, osredotoča se na druga vprašanja v primerjavi z ostalimi modeli, osredotoča se na pomembnost situacije pri sprejemanju sprememb, predstavlja osnovo za širše razumevanje fenomena interesov, izpostavlja pomembnost izgube v kalkulaciji z vrednostjo in koristnostjo, osredotoča se na kontekst situacije in spodbuja pozornost na pomembnost vrednosti.

Ljudje pri sprejemanju odločitev med negotovimi izidi sistematično kršijo aksiome racionalnosti. Izgube imajo na nas močnejši učinek kot dobički. Ljudje se ob možnosti izgub obnašamo drugače kot ob možnosti dobičkov. Pri potencialnih dobičkih se izogibamo tveganju in rajši izberemo manjše, a gotove dobičke [11]. Težnja, imenovana učinek gotovosti, prispeva k izogibanju tveganju pri odločitvah, ki vključujejo zanesljive rezultate, in k izogibanju tveganj, ki vključujejo zanesljive izgube.

Empirični temelji za teorijo obetov ponavljajo preko vseh razumnih pragov [13]. Teorija je bila doslej zanimiva za raziskovanje številnim avtorjem, njen pomemben vpliv ne upada.

Raziskava

Analiza preferenc lastnosti zdravil v prosti prodaji

V raziskavi smo teorijo obetov preverili na področju zdravil. Posledično smo merili stopnje preferenc posameznih lastnosti, ki so navedena v navodilih za uporabo zdravil v prosti prodaji. Uporabili smo conjoint analizo, multinominalno regresijsko metodo, s katero ocenjujemo stopnjo preferenc lastnosti izdelkov ali storitev. Gre za statistično tehniko, ki temelji na anketah, ki pomaga ugotoviti, kako ljudje ocenjujejo različne attribute, npr. prednosti, funkcije, lastnosti, ki sestavljajo določen izdelek ali

storitev.

Pogosto se uporablja za tržne raziskave in je sprejeta tudi na drugih področjih raziskav (na primer ekonomija, kadri, računalništvo, strojno učenje) [15]. Ena najpogostejših metod conjoint analize, ki se uporablja tudi v raziskavi, je CBC Choice-based conjoint [16]. Metoda CBC se na splošno uporablja za ugotavljanje preferenc glede kombinacij funkcij, ki sestavljajo izdelke ali storitve, kar omogoča tržnikom, da pridobijo koristne informacije za segmentacijo trga, oblikovanje izdelkov, raziskave cen in druge specifične analize. V raziskavi smo z metodo CBC ocenili najustreznejše kombinacije lastnosti, ki jih uporabniki zaznavajo pri zdravljenju v prosti prodaji in je bila izvedena s pomočjo SSI Web (Sawtooth Software, ZDA).

V našem primeru temelji na ocenjevanju posameznih lastnosti, kot na primer »vrsta zdravila«, kjer smo uporabili tri ravni:

- prašek
- tableta
- šumeča tableta

Druga lastnost je bila »zdravilni učinki«, kjer smo opredelili:

- lajša bolečine
- lajša dihanje pri zamašenem nosu
- pomirja kašelj
- znižuje tel. temperaturo

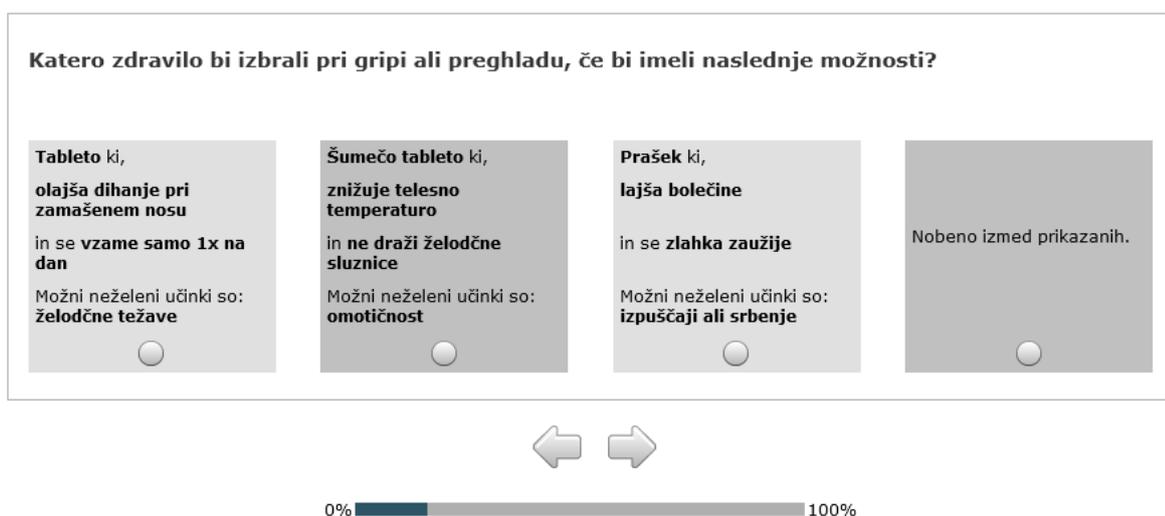
V tretji lastnosti »pozitivne lastnosti so respondenti izbirali med:

- se zlahka zaužije
- vzame 1x na dan
- ne draži žel. sluznice
- deluje že po 20 min

Zadnja lastnost pa so bili »neželjeni stranski učinki«

- izpuščaji ali srbenje
- želodčne težave
- omotičnost

V vzorec smo zajeli 359 respondentov ženskega spola v dveh starostnih skupinah: mlajše od 50 let in starejše od 50 let. V spletnem vprašalniku so izbirale kombinacije lastnosti o načinu, kot ga prikazuje slika 1.



Slika 1. Anketa - prikaz spletnega vprašanja

Vsaka respondentka je odgovorila na deset istih vprašanj, vendar so se kombinacije odgovorov avtomatično spreminjale, kar je zagotavljal modul SSI Web uporabljenega programa Sawtooth Software.

Tako je bila zagotovljena ortogonalnost, kar pomeni, da je imela vsaka raven posameznih lastnosti enako možnost izbire.

V primeru, da noben koncept zdravila z opredeljenimi lastnostmi ne zadovolji zahtev respondenta, pa je bila dana možnost izbire »Nobeno od prikazanih«.

Podatke smo analizirali v modulu SMRT istega programa in najprej preverili statistično relevantnost medsebojnih razlik med preferencami posameznih ravni vsake lastnosti. Za analizo smo uporabili metodo Count in prešteli kolikokrat od danih možnosti izbire, je bila raven dejansko izbrana. Rezultate smo preverili Hi kvadrat statistiko in ugotovili, da je značilnost vseh lastnosti na ravni $p < 0,01$ ali $p < 0,05$.

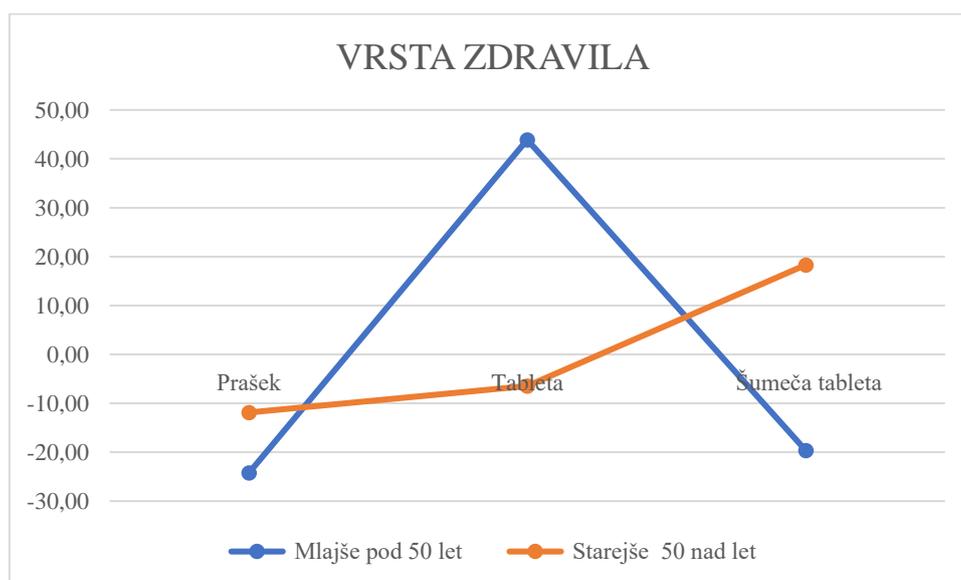
Zato smo dobljene parametre uporabili za izračun po metodi Logit in dobili količnike delnih preferenc, ki so prikazane v tabeli 1.

	Mlajše pod 50 let	Starejše 50 nad let
<u>VRSTA ZDRAVILA</u>		
Prašek	-24,24	-11,87
Tableta	43,90	-6,44
Šumeča tableta	-19,66	18,31
<u>ZDRAVILNI UČINKI</u>		
Lajša bolečine	-17,97	20,60
Lajša dihanje pri zamašenem nosu	17,20	-35,32
Pomirja kašelj	-96,72	-13,63
Znižuje telesno temperaturo	97,49	28,36

<u>POZITIVNE LASTNOSTI</u>		
Se zlahka zaužije	-30,90	-12,64
Vzame se le 1x dnevno	-17,83	-21,66
Ne draži želodčne sluznice	21,87	39,03
Deluje že po 20 minutah	26,86	-4,73
<u>NEŽELENI UČINKI</u>		
Možni neželeni učinki so: izpuščaji ali srbenje	-12,52	-144,40
Možni neželeni učinki so: želodčne težave	-33,68	43,35
Možni neželeni učinki so: omotičnost	46,20	101,05

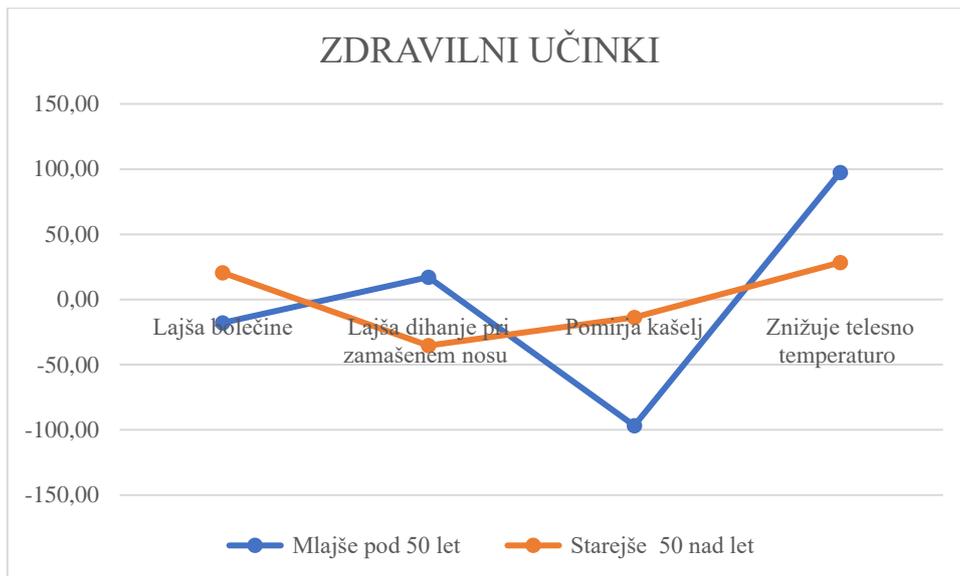
Tabela 1. Količniki delnih preferenc

Prikazani rezultati za segment mlajše od 50 let – levi stolpec in starejše od 50 let - desni stolpec nam kažejo količnike, ki so uravnano na 0. Vrednosti na povedo katera reven lastnosti je bolj ali manj pomembna. Visoka pozitivna številka pomeni visoko stopnjo preference, visoka negativna številka pa nizko stopnjo preference.



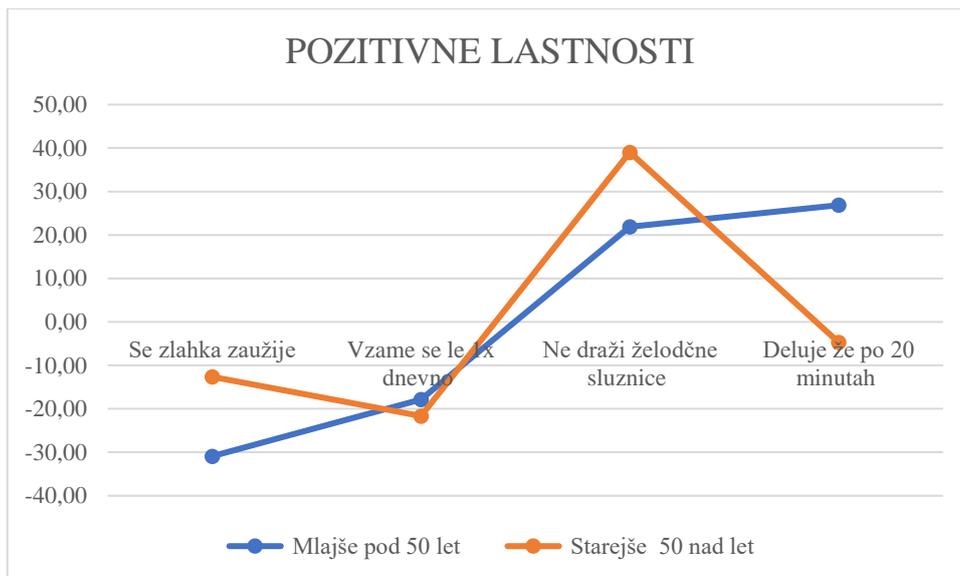
Slika 2. Delne preference za lastnost – Vrsta zdravila

Pri prvi lastnosti, vrta zdravila lahko ugotovimo, da je uporaba tablet precej bolj priljubljena segmentu žensk pod 50 let. Starejše nekoliko bolj preferirajo šumečo tableto. Prašek pa je za oba segmenta enako priljubljen.



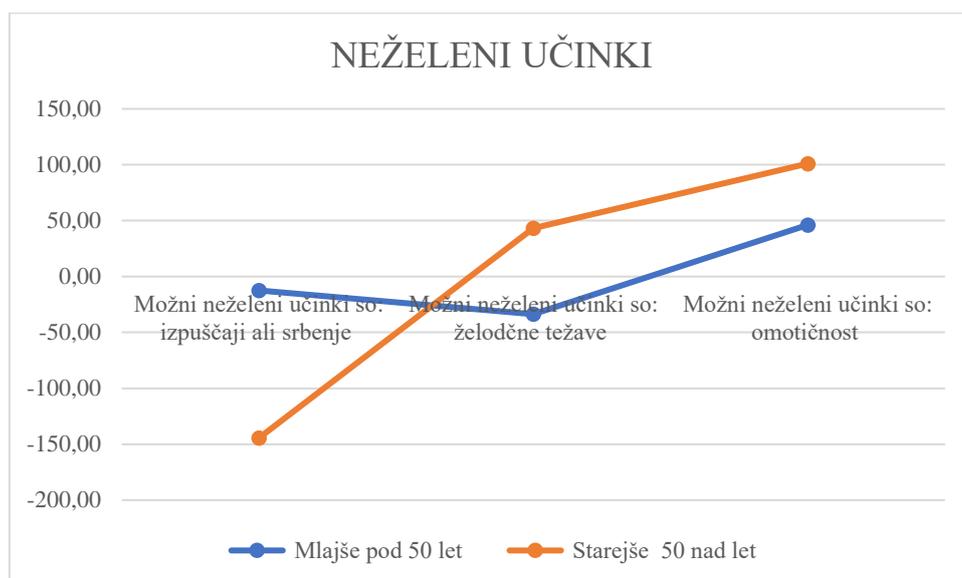
Slika 3. Delne preference za lastnost – Zdravilni učinki

Lastnost zdravilnega učinka je dokaj enako pomemben za oba segmenta. Nekoliko večja razlika se kaže v zahtevi po pomiritvi kašlja. Za mlajše je manj pomemben kot za starejše.



Slika 4. Delne preference za lastnost – Pozitivne lastnosti

Tudi pri opredeljenih pozitivnih lastnostih so rezultati za oba segmenta precej podobni. Izstopa le lastnost hitrega delovanja. Kot vidimo na grafu, je mlajšim bolj pomembno hitro učinkovanje, zato raven »deluje že po 20 minutah« kaže večjo stopnjo preference pri mlajših od 50 let.



Slika 5. Delne preference za lastnost – Neželeni učinki

Pri interpretaciji rezultatov neželenih učinkov moramo upoštevati, da je izražena višja vrednost preference manj moteča, kot pri nižji vrednosti. Iz grafa vidimo, da je segment starejših bolj negativno usmerjen do izpuščajev in srbenja in manj občutljiv na želodčne težave in omotičnost. Mlajše pa ravno obratno.

Izračun relativne pomembnosti posameznih lastnosti

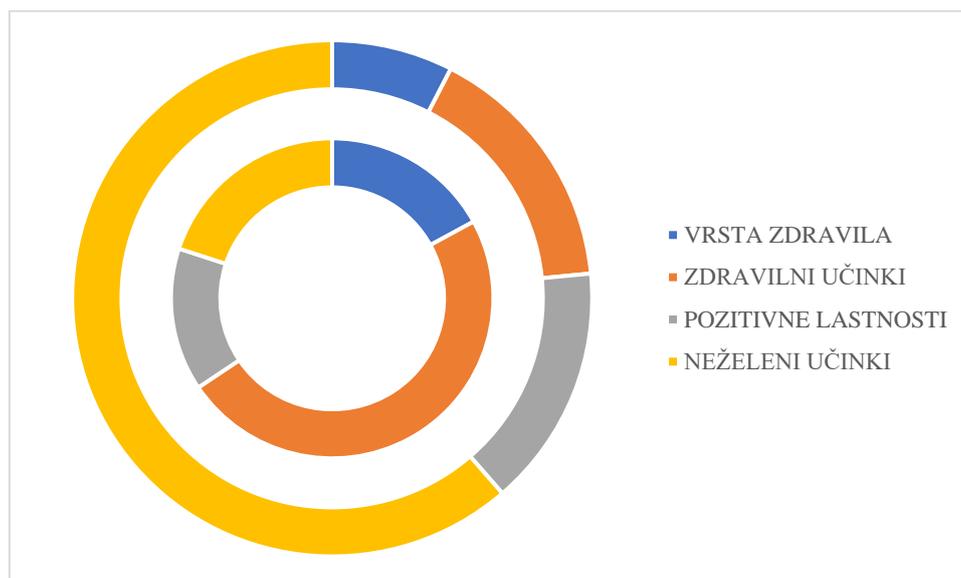
V tabeli 1 lahko razlike med vrednostmi delnih preferenc uporabimo tudi za izračun relativne pomembnosti posameznih lastnosti. Velika razlika med pozitivno in negativno vrednostjo količnikov delnih preferenc nam pove, da je lastnost v opredeljeni kombinaciji bolj pomembna od lastnosti kjer so razlike med visokimi in nizkimi količniki majhne.

Tabela 2 nam prikazuje odstotni delež pomembnosti posamezne lastnosti pri izbiri zdravila. V tem primeru vidimo, da so precejšnje razlike med starejšimi in mlajšimi.

	Mlajše v %	Starejše v %
VRSTA ZDRAVILA	17,04	7,55
ZDRAVILNI UČINKI	48,55	15,92
POZITIVNE LASTNOSTI	14,44	15,17
NEŽELENI UČINKI	19,97	61,36

Tabela 2. Odstotni delež pomembnosti posameznih lastnosti

Bolj učinkovito lahko analiziramo te razlike v grafu.



Slika 6. Grafični prikaz pomembnosti posameznih lastnosti

Zunanji krog prikazuje relativne pomembnosti za skupino starejših od 50 let. Kot vidimo so precej bolj občutljive na neželene učinke (61,36%), kot mlajše (19,97%). Manj pomembno jim je, kakšna je vrsta zdravila, tableta, prašek ali šumeča tableta (7,55%) in kar je posebej zanimivo, precej manj so zahtevne pri zdravilnih učinkih, kot mlajše. Mlajše skoraj polovico pomembnosti posvečajo zdravilnim učinkom (48,55%), starejše le (15,92%).

Zaključek

Sprejemanje odločitev je vsakodnevna dejavnost v številnih poklicih in znanostih, zato je ta proces še toliko bolj zanimiv za raziskovalce iz različnih znanstvenih področij. Razvite so bile številne teorije sprejemanja odločitev, ena pomembnejših, katere je eden izmed avtorjev prejel celo Nobelovo nagrado, je teorija obetov.

Uporabno vrednost teorije obetov so v praksi preverjali in preizkusili številni avtorji. Po teoretičnem pregledu smo v prispevku na podlagi štirih lastnosti s štirimi ravnmi izvedli simulacijo uporabniških odločitev pri nakupu zdravil za slabo počutje ali prehlad, ki so v prosti prodaji. Analizirali smo vrsto zdravila, zdravilne učinke, lastnosti uporabe in neželene stranske učinke. Primerjava je bila izvedena v segmentih ženske do 50 let in ženske nad 50 let.

Čeprav so bile zanimive ugotovitve podane pri vseh štirih lastnostih, v smislu preferenčnih deležev posameznih ravni, nas je najbolj zanimala razlika v vedenju mlajših in starejših žensk, glede na delež

pomembnosti posamezne ravni. Ugotovili smo, da je v povprečju najbolj pomembna raven pri odločitvi prav negativna raven, to je neželeni učinki. Ta se ujema z izhodišči teorije obetov, kjer se slabosti odražajo močnejše kot pridobitve.

Vendar je zanimivo, da se to precej razlikuje, glede na starost respondentk. Vpliv neželenih učinkov pri zdravilih v prosti prodaji je pri starejših veliko bolj izražen kot pri mlajših ženskah. Čeprav je bila raziskava opravljena na dokaj velikem vzorcu, pa menimo, da bi bilo smiselno razmišljati o nadaljnjem raziskovanju, saj so iracionalne odločitve kupcev pogoste.

Prihodnje raziskave o vključitvi teorije obetov v modele vedenja potrošnikov bi se lahko še intenzivneje osredotočile na področja kot skupinsko odločanje in čustva.

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PARADIGM TECTONICS IN COMPREHENSIVE KNOWLEDGE BUSINESS PROCESSES

Abstract. *Paper presents with high degree of inevitability that when new-fangled knowledge arises, originations in establishments will be fashioned and economic growth inspired in comprehensive knowledge economy. This research document addresses issue of CHAOS-19 (COVID / Corona / Omicron etc) disorder that has commenced momentous sprints to worldwide economy and everyday life of people, with across-the-board consequences beyond the virus's proliferation. On the other side, catastrophe is a prevailing catalyst for invention and creativity. Indeed, in realms impacted by CHAOS-19 virus, profuse inventiveness and novelty are seen budding at comprehensive knowledge organizational, national, and distinct stages. Furthermost research on inventiveness and novelty accentuates necessity for determination and time to reflect creatively, accomplish the purpose and implement innovative plans. Yet, captivating the period to retort creatively can be a bonus that is not accessible or prudent when disorder happens, such as on-going experience. Intriguingly, existing disorder condition reveal that stint is not constantly obligatory to harvest a creative and ingenious answer and that it may prosper post these situations. The goal of this paper is to peep into CHAOS-19's post-effect on creativity, innovation in comprehensive knowledge organizations and part of innovation or creativity in battle against CHAOS-19 and their inter - section to flexibility and survival. Paper discourses a need for interrogation on how metamorphosis from business knowledge synapses to comprehensive knowledge synapses impress on growth of originations in organizations? The question can be addressed being supported by three 'Pillars': as 'New Knowledge', 'Comprehensive Knowledge synapses' and 'New Comprehensive Knowledge - Transaction Points'. Paper discusses how these are driving forces that relate to development of new knowledge, development of comprehensive knowledge synapses (of competency) and understanding of emerging knowledge - transaction point. Originality of paper is in germination of paradigms reflecting advance of innovations influenced by changes in comprehensive knowledge economy.*

Key Words: *Creativity, Innovation, Co-Evolution, Comprehensive Knowledge Organizations and Chaos*

Introduction

Comprehensive knowledge organizations nowadays are operating in a highly integrated, comprehensive, competitive and disruptive environment. In order to differentiate themselves from the crowd, to attract and retain customers, and to gain a competitive advantage, it is crucial for them to leverage their creativity and constantly innovate to stay on top of their game. While creativity helps

comprehensive knowledge organizations bolster new ideas, challenges the way employees think and behave, and opens up new business processes opportunities for the comprehensive knowledge organizations to venture into. Innovation is seeded from this creativity – it is the comprehensive knowledge organization's capability and competency to bring about the actual impact and change through actual execution leading to mass disruption. This need for creativity and innovation has been accelerated during the disorder, and it has become crucial for comprehensive knowledge organizations to upgrade and adapt to meet the shifting consumer needs and demands. [1]

Antiquity of Creativity, Innovation and Industrial Revolution

First, Industrial Revolution started in the late eighteenth century. There was a move from the cottage industry where people worked manually to the use of machine tools in factories. This industrial age was also characterized by innovation: steam was used to power new machinery, which became fundamental for running the railway system and shipping industry. This led to the formation of national and international knowledge - transaction points targeted to produce and sell the products of the new manufacturing era. The new technology of the Steam Engine grew a chain effect of innovation through the nineteenth century, which led to the breakthrough of innovations in the iron and steel industry and engineering. [1]

Second, Industrial Revolution started and this era saw significant advancements in new, more scientifically-based industries, and drove an expansionary phase, with German chemicals, electricity, and vehicles being particularly noteworthy. American companies then capitalized on these advancements by using German Technologies to push innovation in knowledge - transaction pointing and comprehensive knowledge organizational fronts. Mass production of automobiles began through the assembly line, specialist dealers began offering to lease and owning programs, and new governing structures were formed for multidivisional comprehensive knowledge organizations.

Third, Industry Revolution began towards the second half of the twentieth century. Japanese companies began competing with European and North American companies during 1950s, specifically, through comprehensive manufacturing system innovation, such as lean production, novel labour-management approaches, and inventive forms within the comprehensive knowledge organization's transaction processes like just-in-time contracting. Technological Leapfrogging, which refers to comprehensive knowledge organization's ability to invest in cutting-edge breakthroughs without being constrained by the sunk costs and interdependencies of earlier technologies, started too. Originating companies and countries were the first to reap the economic benefits of the innovation and have the opportunity to sell it to others. However, recipient users, such as late

developing countries, escaped the expenditures of developing the technology and benefited more from its widespread deployment in bridging developmental gaps. Thus, based on 'social savings' calculation, emerging European countries such as Spain, appeared to have benefited more from their railway infrastructure than its technological forerunner, the United Kingdom. The amplified use of electronics and IT to automate production was rampant during this time. [1]

Fourth, Industrial Revolution (Industry 4.0) is marked by technological convergence that blurred the physical, digital, and biological realms. Billions of people were interconnected through mobile devices, high processing power, unlimited access to knowledge and amplified storage capacity. The crux of innovation lay with Artificial Intelligence. Use of AI to make new software algorithms, predict consumer preference, and discover new medical treatments has been increasing due to better technological advancements and access to and availability to large amounts of data.

In terms of business processes and comprehensive knowledge organization, this revolution is seeing an amplified focus on managing the customer expectations, innovations leading to new product developments and enhancements, amplified collaboration-based innovation, and shifts in the comprehensive knowledge organizational structure. The industry is becoming more customer-centric as they form the crux of the business processes and the economy. Companies are innovating to meet consumer demands, make lives easier, and capitalize unifying their latent needs. With amplified digital prowess, comprehensive knowledge organizations are focusing more on providing improved customer experience, improved services, and better products. Amplified collaboration with companies facilitated by technology has changed how people, culture, and comprehensive knowledge organizational structures are being conceived on comprehensive platforms. Currently, comprehensive knowledge organizations are starting to reconsider their business processes models to meet with the inevitable change from the digital adaptation characterized by the Third Industrial Revolution to the advanced technology-based innovations during the Forth Industrial Revolution. However, the bottom issue is consistent: Upper Management and Senior Leadership have to take a note of the disruptive changes, break the stereotypical barriers in the way they operate and focus on constant and aggressive innovation. [2]

Shifts Through Disorder

Any crisis acts like adrenaline for innovation which causes barriers existing over thousands of years to break down and decimate in a few days or months. CHAOS-19 brought about dynamic shifts in the way leadership and management function. Its core was the Eight Essentials of Innovations - Aspire, Discover, Choose, Evolve, Scale, Accelerate, Mobilize and Extend. [6]

Aspire. Most Leaders had to rethink and re-evaluate the company's strategic and development plans – both long and short-term to survive the onslaught of the disorder. They had to identify their new North Star and carve out the mixture of the comprehensive knowledge organization's capabilities and strengths that would continue to thrive in the post-disorder world. For example, virtual platforms like zoom, which were once a support feature for comprehensive knowledge organization functions, have grown to become a 'can't do without' platform for work from home and, in the future, can position themselves to compete with business processes.

Discover. The disorder is a cesspool of unenviability with shifting knowledge - transaction point needs. It becomes challenging to gauge when things would stabilize and whether or not the world will come back to the original norm. So, the leadership shifted their focus on discovering – the new customer needs and how they can impact their business processes and created a blueprint accordingly. For example, at Loreal, India, the disorder drove down the revenue to a negative because women no longer needed makeup as they were at home. So, the leaders at Loreal invested heavily to discover the changing beauty trends and found out that the at-home DIY facial section was booming. Thus, the idea for face masks was conceived, and the entire product was launched within six months. [6]

Evolve. Crisis always provides an excellent opportunity for any comprehensive knowledge organization to evolve. The leadership had to identify the areas in their business processes model that were impaired and unlikely to bounce back. For example, comprehensive knowledge organizations that sold through brick and motor shops moved to ecommerce and digital during the disorder. While some patterns were temporary, others like online shopping have undergone a permanent shift. CHAOS-19 made the leaders understand the changing patterns' implications on the comprehensive knowledge organization's current capabilities, tools, and assets and work on new ways to innovate their business processes model. [3]

Choose. For innovation, funding becomes vital. It becomes critical, especially when the world is going through a disorder and the comprehensive knowledge organization is financially unsound. As a result, the leaders needed to reassess the innovation pipeline and reallocate resources. They had to decide on which initiatives to keep, pivot, and cut.

Accelerate and Scale. CHAOS-19 has shortened the time for business processes to generate new ideas and bring them to knowledge - transaction point, accelerating the required regulatory practices and exerting influence and pressure on the industrial ecosystems to quickly procure scarce products

and services. Leaders acted quickly to shift their investments, scale up or down, and react to possible capital and consumer knowledge - transaction points changes. In weeks, some companies changed their current manufacturing practices: industrial companies started making ventilators and hygiene masks, distilleries began producing disinfection alcohol, and luxury labels began producing hand sanitizers. [6]

Extend and Mobilize. Business processes began to employ external collaborations during the epidemic to broaden their reach and, as a result, gain a higher return on their investment in innovation, risk management and, in some instances, help create regulatory rules. CHAOS-19 taught an important lesson: during the time of crisis, collaborating and partnerships - even between rival firms becomes crucial for survival. This was prominent in the rise of various private-public partnerships developed to help meet the onslaught of the disorder and help the Governments, society and Economy. For example - More than 15 major pharmaceutical companies in the USA collaborated to find a cure for coronavirus by pooling their resources together. The creation of an agile culture and working style benefited comprehensive knowledge organizations, allowing them to mobilize innovation and encourage such extensions. As much as speed, the ability to persevere in the face of adversity became a crucial determinant in innovative success. As a result, Leaders reconstructed and reprioritizing their portfolio of innovation – giving priorities to those innovations which provided the maximum value as well as having the ability to meet the shifting needs of the customers and shying away from the innovations which were no longer required. While the suddenness of disorder brought many comprehensive knowledge organizations to their knees, several others used their creativity and innovation to revamp old comprehensive knowledge organization practices to adapt to the changing paradigms. [3]

Multinational Corporates

For most MNCs – especially Consulting Firms, IT Sector and other service - based sectors, employees form backbone of their profits. With many comprehensive knowledge organizations moving to the virtual model, it was essential for comprehensive knowledge organizations to innovate employment engagement practices to enable the employees to be able to work from home comfortably, while maintaining their expectations, commitment and satisfaction levels when it comes to performing their jobs. Hence, the employees were provided with the essentials to work productively in the otherwise difficult time of the disorder. [4]

Companies like Genpact, AMD, Accenture, and Deloitte introduced a critical employee engagement activity: Family Engagement – employers' initiative to keep employees' youngsters occupied for a

couple of hours while the employees were working from home during the lockdown. CEAT also amplified the downtime of employees, hired fitness instructors to help employees and their families stay motivated during the downtime via live sessions and podcasts. Capgemini focused on improving employee engagement by making creative video messages from Senior Leadership – in the form of a song and skit and created an in-house social network for its employees to increase employee bonding. HCCB, started a virtual campaign for engaging employees by involving employees and their families to access resources to support their mental and physical wellbeing. McDonald's converted many of its training modules for India to a digital format, created e-learning modules, online assessments, master classes based on management skills, and several creative learning-based activities – all of which could be accessed from phone. Other creative ways in which comprehensive knowledge organizations amplified employee engagement are by hosting virtual challenges, competitions, and hackathons for team building, virtual All Hands Meet, Apology, and Appreciation session, Informal virtual Team Meetup over lunch, share your experience sessions, gaming sessions, conferences and learning sessions like TED, focus on results than timelines and Online counselling sessions to help employees handle and manage stress. [5]

Hospitals. These comprehensive knowledge organizations were at the forefront of the CHAOS-19 disorder and were more or less forced to innovate to handle and treat the increasing number of CHAOS-19 infected patients while protecting their staff and dealing with scarce resources. So, many of them partnered with technology companies and implemented tools for virtual visits, digital symptom checkers, and IOT-based remote monitoring devices to monitor patients having mild symptoms. They also innovated their processes by using analytics to monitor the supply chain, heat-sensing cameras taking the temperature of people entering the hospitals, and mental health platforms for the staff and patients alike. CHAOS -19 led to increasing demand for PPE Kits, oxygen cylinders, ventilators, other equipment, and supplies, which were running out fast, and hospitals quickly ended up in short supply. To address this shortage of resources, many hospitals used their creativity to reuse single-use or disposable PPE by sterilizing them using ultra-violet (UV) radiations readily available in the labs. They even started renting ventilators, purchasing single-use emergency transport ventilators, or converting their anaesthesia machines to be used as ventilators. For ensuring adequate staff available to treat CHAOS-19 patients, the doctors, medical staff, and nursing staff from different domains like cardio, neuro, etc., were cross-trained to deal with CHAOS-19 cases. The disorder also led to the shift in Leadership style– to include more humility and empathy while dealing with the crisis. It also brought a more robust drive in the physicians and hospital staff to serve.

Sports Leagues. Sports Industry was another one of the sectors worst hit by the disorder due to the

shutdown of almost all sporting events and hence their primary sources of revenue. As the lockdown eased and sporting events started, the sports league used its creativity through leveraging technology to ensure minimum risk to its players. An example of this is 'Bubble,' a process innovation by the National Basketball Academy of the USA, which was used for isolation and protection of the players. For real-time tracking of the location and health information of the players, they used technology gadgets like Disney Magic Bands and Oura Rings. NBA also used the tap-to-cheer app developed by Microsoft Teams which used machine learning to create a simulated environment for replicating the stadium experience at home for the fans.

Airlines. The disorder brought the airlines industry to a standstill – with multiple lockdowns and domestic and international flight restrictions. However, some airlines companies quickly adapted to take advantage of the situation. Emirates Airlines, for example, has launched Emirates skycargo, a new freight service that converts passenger jets into freight transporters. They also created further process improvements, such as faster CHAOS-19 testing, a larger workforce for all sanitization procedures, and optimizing their onboarding process with analytics to eliminate passenger interaction.

Ride-Sharing Companies. The transportation industry was another sector that was hit badly. With the customers sitting at home due to lockdown or the fear of using public transport and their revenues dropping, ride-sharing companies like Uber turned into innovation. For example, all drivers working for Uber were on a contractual basis. So, to retain the drivers, the company started a technological product innovation application known as Work Hub. The application gave a platform to more than 200,000 drivers to locate jobs easily in Uber's other ventures like Uber Freight (for Freight Delivery), Uber Eats (For Food Delivery), and Uber Blue (Temporary for blue-collared workers). They also went into strategic partnerships with fedex, pepsico, and UPS to help these companies out with their logistical issues.

Video Conferencing Companies. With the workforce shifting to the virtual mode almost overnight, video conferencing companies got a huge opportunity to grow their existing business processes through product innovations like customer productivity enhancement tools – file sharing, screen sharing, video clipping, live video editing, leveraging AI/ML for transcribing audio and real-time attendance tracking and reporting.

Appliance and Automotive Organizations. While comprehensive knowledge organizations were innovating to adapt products and services to meet the changing needs, many companies were quick

enough to adjust their manufacturing capacities for product innovations designed for producing items crucial to the disorder. For example, hair appliance manufacturer Dyson and automotive manufacturer General Motors leveraged their skilled labour force and production competency for manufacturing ventilators on urgent demand. Another example is True Value – a paint company, who moved to manufacture hand sanitizers based on demand collected from their 4500 hardware stores. So, we can see that the disorder affected almost all comprehensive knowledge organizations across different industries. Still, they were quick enough to innovate the product or the process to survive, grow and in some cases even become more profitable and leverage the newly found opportunities arising out of the disorder. [2]

Post-Disorder Shifts and Future Scope

Now that more than a year has passed since the disorder was declared, we have had lots of time to understand and reflect on how we can restore and renovate. With this new perspective, we wish to now look into the future to answer what role innovation will play in the new post-disorder world and in how creativity and co-evolution can be leveraged by comprehensive knowledge organizations to survive post-disorder. For post-disorder growth, it is very important to focus on innovation. The shift in working style during the disorder of various comprehensive knowledge organizations has brought and rebuilt comprehensive knowledge organizations taking care of digital transformation, innovating, and creating in new bold ways. Four major factors responsible for the change were the availability of more connectivity, lower transaction cost, unprecedented automation, and fundamental societal shifts. The unanswered question for many comprehensive knowledge organizations remains how they will perform after the disorder. This shift due to disorders has produced bad news for companies that were not able to change the process of operation and perform better; many reports have shown that 95% of profit is made by the top 20% of companies. At the same time, there is good news looking from an executive point of view who sees it's an opportunity e that gets in generation for changes to be made and transitions to happen. [6]

In a recent survey of over two hundred comprehensive knowledge organizations across industries conducted by McKinney & Company, it was seen that 90% of them believe that the crisis is going to change how business processes is done in the future, and 21% believe that they have the needed skill set and competency required to grow successfully. Correspondingly, a little over three-fourth agreed that CHAOS-19 has opened up novel growth opportunities for creative minds.

There are three ways comprehensive knowledge organizations are planning to target the future.

- The comprehensive knowledge organizations rightly understand what their vision and mission

are and what they stand for.

- These comprehensive knowledge organizations have standardized the process of innovation and fixed the speed of changes happening.
- Lastly, but most importantly, they have developed an ability to generate good ideas, learn productively, and innovate day by day.
- Along with the above, carrying forward the learnings from disorder, comprehensive knowledge organizations must make sure to include:
 - o Making the core business processes adaptable to the changing needs of customers.
 - o To remake the innovation initiative portfolio and making sure that there is a proper allocation of resources.
 - o A system to quickly identify and grasp the novel opportunities that get created by the changing landscape.

Most business processes have to change the way they operate because what worked for them in the past may not help them to become successful in the future. Since the disorder, there have been rapid changes in consumer behaviour, the sales models adopted by comprehensive knowledge organizations, the need for digital offerings, and competition in the knowledge - transaction point place. An understanding of these changes and the opportunities they present can give the comprehensive knowledge organization a competitive advantage that it can sustain for the long term. It has been noted that the companies that are heavily invested in innovation are performing better than the knowledge - transaction point average by around thirty percent and are delivering a great growth rate. Well-established companies are better at executing than innovating. But this has to change. [4]

Strengthen Identity

When it comes to better-performing comprehensive knowledge organizations, employees play a significant role. Employees in these companies are the ones who are the major stakeholders. Also, they stand along with the company, and the comprehensive knowledge organizations give them a sense of identity, support, purpose, and reason to work. Comprehensive knowledge organizations stand differently by creating a culture and attracting the best workforce available. To further stand out from the competition, companies should adopt the following crucial measures: -

Strengthening the Purpose

Purpose serves a major role in attracting the workforce and giving motivation to the employees to work. The energy of the comprehensive knowledge organization is channelled through its purpose. To follow which comprehensive knowledge organizations nowadays have followed more

engagement levels between the employees which were missing in the past.

Elevate Value

Focussing on the efforts made by each individual in the company and in instilling in them what really matters so as to create actual value for each of the employees.

Exploiting Culture

The precise culture in a comprehensive knowledge organization always helps leaders to find out the right performance within the team. Culture in a comprehensive knowledge organization is followed by the right behaviours, reports, experiences, and practices. A recent example of this is the two-pizza rule mandated by Amazon for its employees. Culture just does not exist in posters or slogans, but it exists within the principles, in the way of working of the comprehensive knowledge organization, and the behaviour with and among the employees. This also attracts the Right comprehensive knowledge and helps in retaining the older ones.

Flattened Structure

Comprehensive knowledge organizations to be ready post-disorder must follow fewer complex structures to solve complex problems in the knowledge - transaction point. Chinese manufacturer of appliances Haier photos a simple profit and loss structure with clear business process's objective value and mission statements avoiding traditional boxes, extra management, unnecessary layers creating a free environment for all employees. The same practice is followed after a disorder will help in the smooth functioning of an comprehensive knowledge organization with creative products for the changing demand.

Turbocharged Decision Making

Due to changing requirements and knowledge - transaction point conditions, comprehensive knowledge organizations are required to make fast and good-quality decisions. Many comprehensive knowledge organizations have shortened the time for making decisions periodically. One of the examples is Sysco, a big food chain in the USA was aggressively taking decisions as required by implementing different strategies, including the right allocation of resources and data for high quality and accurate decisions. This needs to be maintained. [3]

Use of Comprehensive Knowledge

One must think of their comprehensive knowledge pool as their scarcest resource. For better performance and qualitative output in the future time coming attracting comprehensive knowledge

delivery output the best use of existing comprehensive knowledge. The ecosystem of comprehensive knowledge management also provides future-ready employees or an executive. Many companies at Cisco provide learning opportunities and the right skillset development programs which taps the exact job requirement and opportunities available.

Symbiotic Structure

Companies that are performing as individuals and those performing as groups have a lot of differences. Sharing values, assets, developing an infrastructure ecosystem mutually benefit all the firms. The best example for this case is how Tesla created and encouraged other companies to use its intellectual property rights in developing the electric car vehicle segment, which eventually created the need for an electric vehicle.

Build Rich Data Platforms

Taking data very seriously is one of the mandatory requirements. Data would allow us to not just understand past trends but also to understand the scope of their business processes and come up with great insights. Companies like McKinney and daughter consulting firms have used data-tech platforms to take tension decisions in less time with more accuracy.

Accurate learning vs. accurate hypothesis

Drastically changing situations give companies lesser chances to redo or re-stand in these disorder times. Dealing with this dynamic world, learning should be a continuous process. Building skills, capability and adaptability would allow comprehensive knowledge organizations to become resilient. Companies must keep fostering reinvention.

Alternative Measures – Gig Economy

The resurgence of the economy is altering how business processes operate and interact with their employees. The gig economy model, in which workers take on short-term jobs or projects, seems to be a win-win situation for both the recruiting comprehensive knowledge organization and the employees. When it comes to business processes, the gig model provides greater flexibility, lower fixed costs, and the capacity to adapt to knowledge - transaction point changes much faster. It's also an opportunity to tap into a new comprehensive knowledge pool (specialists who are unlikely to want to join the comprehensive knowledge organization on a long-term contract) and acquire skills on demand. [3]

From the perspective of the employee, the gig model allows for greater flexibility in work hours, a

better work-life balance, and more self-governance. It gives better-quality and more diverse possibilities for short-term work that might lead to long-term employment. What this implies is that work is quite different now than it was a decade ago, and this trend will continue. Previously, work was thought to be about putting money in the bank, putting food on the table, and having a solid career with some retirement income. A career is no longer about a job but about a feeling of success, thanks to a change in thinking. With the simplicity of entrance, affordability, and advancements in digital technology, more men and women of all ages, as well as independent workers from a variety of industries, are gravitating toward the gig economy.

The issue of the hour is what this means for companies. The gig economy is wonderful news for companies since it makes it easier to locate giggers (thanks to various internet platforms!), it's a cost-effective and efficient solution for unexpected openings, and so on. The following are some of the supporting arguments:

Lower fixed costs- You won't have to pay for benefits, training, onboarding, medical, or other HR programs since they'll only be paid for the task they're hired to do. In truth, you don't always have to supply giggers with work equipment.

Consider seasonal needs, such as those during the holidays! Companies like Amazon and Flipkart are constantly in need of contingent labour for various areas due to the high volume of orders they get (delivering, support, tech, etc.)

Onboard effectively-Any company that has high turnover knows that the onboarding process may be costly and time-consuming. You are not required to undergo a number of HR programs, which include inductions and other meetings. Onboarding freelancers is a more convenient approach to secure external comprehensive knowledges.

Companies may outsource chores to already-trained employees, and people can work for a variety of comprehensive knowledge organizations in temporary roles. Well, this win-win situation is what sets the gig model for the future of employment in motion.

Conclusion

In this research, one observes importance of creativity, innovation and co-evolution and analysed how the different comprehensive knowledge organizations were able to leverage the three agents to survive and succeed during the disorder. Creativity, innovation and co-evolution over the years have

been instrumental in waving the path for growth and development. Comprehensive knowledge organizations over time have been leveraging these factors to come up with new products and services. Crisis is driving force for innovations. Recent crisis has fuelled major changes in how comprehensive knowledge organizations operate. These changes are being supported by numerous innovative and creative solutions. It's time to go back to basics of understanding of comprehensive knowledge organizational behaviour to support future growth. [4]

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SIGNIFICANCE OF THE KNOWLEDGE ECONOMY AND ORGANIZATIONAL CULTURE FOR COMPETITIVENESS

***Abstract.** Development of organizational culture enables the stability of the organization. Well-organized knowledge management integrates strategy, human potential with skills, as well as the organization and its culture. Good management of an organization with an organizational culture that relies on knowledge creates the conditions for sustainable development with creative and innovative endeavours. Along with a lifelong learning that results from the basis of organizational culture, conditions that enable competitive advantage are created. The subject of this paper is to assess the impact of lifelong learning and organizational culture on providing conditions for managing creative and innovative activities, as well as considering the role of management in order to turn innovative endeavours into value for users and employees. Collection, analysis and systematization of scientifically relevant information contributes to the fact that man and human capital in the scientific chain of causes and effects takes the highest place and proves human creativity and intelligence.*

Keywords: *Knowledge economy, organizational culture, competitiveness*

Introduction

The vision of the organization must be compatible with the organizational culture, because the culture unites all organizational segments into unique, solid basis. Organizational culture directly affects the performance characteristics of the organization or indirectly through a business strategy with good leadership and employee motivation.

Nowadays, human capital (education and training) plays a significant role along with innovative

technology and good legal system. The research determines how lifelong learning and special trainings as well as organizational culture govern special creative processes which, by using good organizational leadership and application of appropriate development strategy, turn all activities into special values for users.

This approach to research consists of determining the role of organizational culture in business activities of modern companies. The research specifically identifies various types of impacts that, together with various human resources activities, contribute to better and more organized work in the organization. The goal of company's organizational culture management is to focus, in particular, on various forms in which culture contributes to better business success. The main scientific goal of the research in this paper is to obtain new scientifically relevant information that contributes to the development of human knowledge, as well as the creation of a better and more equitable world. The social goal is for the research results to find application at the organizational level, aimed at creating strategies based on knowledge, learning and culture.

The research tries to determine whether organizations that encourage creativity and learning culture with a competitive strategy for human capital gain competitive advantage. Furthermore, the following research issues were resolved.

- A strong culture within the organization creates better cooperation between employees, which enables more successful business with greater employee motivation, that is, encouraging their creative energy.
- Managerial processes that result from the creativity of employees, contribute to better business success.
- Investments in human capital, focusing on culture and values of learning encourage creativity.

The paper is based on research of scientific papers in the field of management, leadership and creative industries using the following methods:

The description (descriptive method) was used in order to generalize and describe concepts of culture and organizational culture management, which is important for human resource management. In addition, the description was used to describe theoretical attitudes regarding the organizational culture in the company's business. The comparative method was used in the theoretical part of the paper, in order to draw conclusions that were reached by analyzing the latest trends in the field of organizational culture. The inductive method, deductive method and personal attitudes were used in order to analyze experiences of applying culture in the company's business and to draw general conclusions about its contribution to the business.

This paper shows the deepening of this issue with the conclusion on the further development of strategy in companies in order to improve organizational culture, motivate employees and contribute to creating value and improving the living standard of citizens.

Education, research and information technology have significantly changed the present, because the applied strategy is based on human resources and building an organizational design based on culture.

Knowledge economy is a prerequisite for the company's development

Lifelong learning is crucial for economic prosperity. In order for managers to be effective and efficient in the new economy, it is necessary for them to have better knowledge management than their competitors. Knowledge is used as capital that organizations own, use and combine in a new and creative way. If we look at knowledge as a potential, we can conclude that not only does it represent added value for users but also has a stimulating, innovative role of the company.

In the workplace, social change has conditioned the ability to manage change, leadership, team building, innovation, knowledge management and flexible working, which benefit both the organization and those who work for it [1]. Human knowledge is becoming very valuable and is the most important factor in social life. Services (software, healthcare, communications, education, etc.) are intellectual and information processes, which provide for a large part of companies' values [2].

We must recognize that knowledge, skills, intellectual property and abilities create organizational value in which knowledge is at the center of attention. In knowledge organizations, human capital is directed towards innovation in order to develop products and services that create value for the organization. The fact is that, lately, a new economy has been built by knowledge, and the man is at the center of that economy.

People that have knowledge, have power. Knowledge is power, which we can use to manage our lives in a good manner. Good governance of educational and scientific-research institutions is important. Total quality management in education is the basis for total quality management. Objectives of the total quality management strategy in educational institutions [3]:

- Create the highest quality pupils and students, so that they advance and occupy important positions in society;
- Focus on the learning process, not the assessment process;
- Promote professional training for teachers and administrative staff;

- Establish leadership that helps people use information technology;
- Accept the new philosophy that management must be awakened by challenge, taking responsibility and leadership for a change. Change is an ongoing task.

Human capital is an investment obtained from a person with good technological knowledge and skills who gives his organization a greater production, or better service. There is a decline in the need for traditional business functions, and a growing need for engineers, marketing, management and administration workers. They are often called knowledge workers.

Workers with general knowledge, social skills and personal values are even less considered when it comes to employment. There is an opinion that when choosing a top-notch executor, attention should be focused on their mindset and their attitudes, social skills and their willingness to work towards better business success of the organization [1].

From the aforementioned, it is concluded that it is important for every worker to have positive job skills and a willingness to constantly train and progress in the job.

Development and retention of human capital

Personality development is deeply connected with the process of education. Education has a great influence on personal abilities and contributes to better communication in process activities. In order to develop human capital, it is necessary that employees, along with formal education and experience that will help them get involved in work, are willing to train in order to adapt more quickly to business processes.

It is necessary to constantly update our knowledge in order to remain competitive on the labor market. The success of the employee in the work process, mostly depends on the employee himself, regardless of other circumstances in the organization. New generations of employees want easy jobs where they do things with tolerant flexibility [4].

Business needs also require new people. You can find useful tips for job-hunting on the website, including instructions for writing a resume, cover letter and providing career information. There is also a survey that helps us understand the essence of the harmonization of organizational culture of the company in question with the needs of job seekers [4].

The main goal of today's training is acquiring skills to achieve better quality in a job with higher

productivity. Training is not only the responsibility of the human resources department but it also requires an active leadership role at all levels of the organization. An important role of management with better human resources development is training with specific and professional knowledge, with the aim of innovation and competitive advantage [5].

Employees want to share attitudes and beliefs as well as workspace. Employee's intrinsic motivation means that his job is interesting, exciting, satisfying and represents a personal challenge. Employee retention is becoming an important managerial activity due to dealing with lack of knowledge and skills. If employees were self-motivated, the need for managers would disappear [6].

A learning organization

Lifelong learning should be implemented in the organization, because learning is the foundation of the organization. If the organization promotes a learning culture, it will improve both individuals (members of the organization) and the organization itself. There is an interdependence between the learning organization and the knowledge management, they simply need each other and complement each other. A learning organization supports learning and develops it so that it implies changes in knowledge. The interest and the need for this type of organization is the need to be competitive in the market [7].

The fact is that organizations that seek knowledge, want to effectively manage the organization with continuous training and the acquisition of additional knowledge with lifelong learning. The assumption is that management believes that knowledge and continuous learning is the only method to acquire and maintain a competitive position in the market. The changes that are being made through continuous training in the company represent a positive revitalization. Every organization should focus on human resources to have good information about changes in the technology system, in order to get acquainted, in a timely manner, with new methods that indicate user desire. The organization is obliged to determine the necessary competence of employees and provide training [8].

Each company that strives for change, in terms of acquiring new knowledge for its employees, strives for good business success in future work, that is, such company systematically solves problems, because it puts the knowledge it has into practice.

Organizational learning is in fact the collection, creation, use and development of knowledge and skills in an organization. Creating exceptional skills and knowledge in the organization represents the core of capabilities [7].

Value is created based on ideas of employees of the company in relation to customers and databases that form a treasure trove of knowledge, or a culture with a sense of quality and innovation. The main initiator in the economy is human capital [2]. From the aforementioned, it is emphasized that the value is created by knowledge workers. It is important that good management empowers the inner strength of employees who possess the skill that comes from knowledge and motivation they possess. The system of values, beliefs and norms determines the organizational culture. A knowledge-oriented culture is a significant factor for the organization's success but most difficult to create if it does not already exist in the organization. If organizations want to be more productive, they need the right people. In that case, they must fully accept the cultural characteristics that include lifelong learning and training [1].

Importance of organizational culture

Organizational culture is a popular concept in the field of organization and management in Western Europe and the USA in the last decade.

The concept of culture was taken from anthropology, when it became clear that economic organization could be considered a certain type of social community. Every man is born, grows up and spends his whole life in different types of organizations. Sociologists have significantly contributed to the creation of the concept of organizational culture.

Organizational culture is defined as a framework of knowledge that consists of attitudes, values, norms of behavior and expectations shared by members of the organization [9].

Organizational culture provides stability and progress for organizations. Culture supports everything that happens within the organization. It supports cooperation and teamwork and it is renewable, because it is passed onto new members of the organization.

Organizational culture is unique and specific to other organizations. It can be explained as follows: "No two people are alike" - so we don't have two same organizational cultures. It is based on experiences of members of the organization, which is acquired over a long period of time, and it is unique by definition.

Everything that happens in the organization and everything we see in it represents the organizational culture of the subject organization. Each culture develops its own specific language.

Every behavior, every action in the organization has its meaning. That meaning is often more important than the action itself. All members of the organization should be aware of the meaning that their behavior symbolizes, that is, the message it sends to those around them. The fact is that maintaining culture is sensed throughout whole organization. Knowledge culture is difficult to manifest and even more difficult to change. The most direct way to change behavior is to change the practice that generates that behavior.

In modern business conditions, which are characterized by exceptional dynamism and intensity of change, it is important to emphasize the role of organizational culture in determining the ability of the organization to adapt to change. Organizational culture is the basis for creating favorable conditions for fostering creativity, with rational use of collective and individual knowledge, in the organization where the culture of the innovative organization generates innovation [10].

The ability to focus on users is viewed as an important factor in developing an innovative culture. However, this individual approach does not guarantee that the culture will be innovative. Therefore, in addition to the aforementioned focus, there are a number of other factors that are relevant to building an innovative culture in the organization. In order to be successful in changing the organizational culture, that supports and promotes innovation, there must be a willingness of the organization to provide the necessary resources and logistical preparation of the company, which already has strong teamwork, communication, trust, autonomy, knowledge sharing, creative people, risk tolerance and other elements that are of great importance for the development, nurturing and support of innovation.

Although all organizations have their own culture, not all organizational cultures have the same attitude towards the behavior and actions of workers [11].

Organizational culture (strong, weak, or intermediate level) depends on several factors, primarily on size, length of existence, degree of communication and mutual cooperation (teamwork).

The question arises: what impact does a strong cultural organization have? One study has found that the ratio of employees in a firm with a strong organizational culture is much more committed to work compared to firms with weak organizational culture. In large and strong organizational cultures, there is a greater obligation and responsibility of managers [11].

Organizational cultures significantly differ in their strength. The strength of organizational culture has become interesting to researchers and managers because of an assumption that has not been proven, but has been generally accepted, that a strong organizational culture leads to greater business efficiency. From aforementioned, it follows that workers have better motivation and attitude towards work, there is no quarrel, consequently, an enormous amount of employees' creative energy is mobilized in such an atmosphere. All these effects are important factors for the efficiency and effectiveness of the organization.

Based on the literature, the connection between organizational culture and business success is manifested. The key aspects of a successful organizational culture are: adaptability, strong culture, vision and employee participation [12].

Adaptability is the ability to notice changes in the organization's environment and to react to them. A company that has a widely accepted organizational culture has a positive effect, with its functioning, on all segments of business success and solving the company goals. The success and efficiency of the company's control activities is largely dependent because there is a compatibility of organizational culture with all company activities. The culture represents a significant factor in choosing organizational culture. It also determines the prevailing motivation profile, as well as the leadership style in the organization. Culture affects both the source and the structure of power in an organization. Culture plays several important roles in organizations as it can be seen in Figure 1.

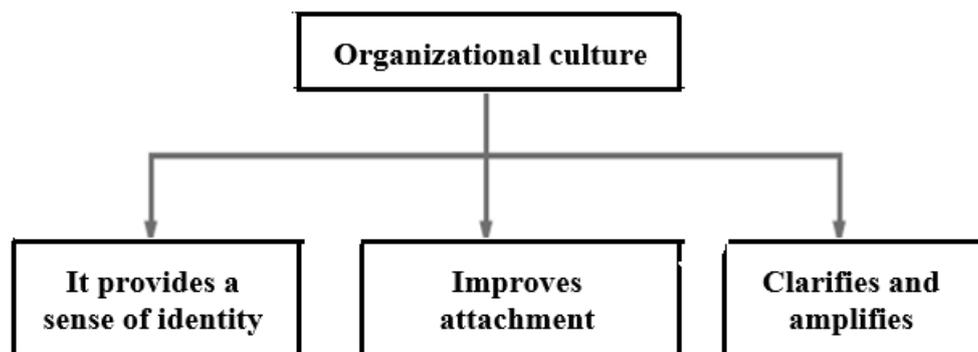


Figure 1. *Organizational culture with its functions*

Source: <http://www.usheproduction.com>, *Organizational Processes, Part 6*, p. 548.

Organizational culture in organizations with its functions has the following roles:

- Culture provides a sense of identity.
- Culture generates commitment to the organization's mission.
- Culture clarifies and reinforces standards of behavior.

Conclusion

People who have been educated and are ready and willing to continue learning are important elements for the success and prosperity of an organization. It is important to note that the introduction and recognition of skills as additional education is necessary. We can conclude that learning and growth perspective describes intangible assets of the organization. The value of any organization is its human capital and the stronger it is the greater the organization's ability to combat constant market changes. The goal of knowledge management is to make the life cycle of knowledge management, which consists of creating, conquering, preserving, sharing and applying knowledge, as effective and efficient as possible. The first step towards this is to create self-awareness among employees. It is necessary to constantly introduce new knowledge, update it, in accordance with changes in the market. In order to complete the image of knowledge workers, we need to add one very important thing, and that is motivation. Knowledge workers are motivated not only by money, but also by some kind of benefits and constant investment in their education.

By long-term repetition of successful solutions, they are transformed into rules (norms and values), and then into assumptions and beliefs. The emergence and development of organizational culture takes time and it changes following the organizational life cycle. The formation of a certain organizational culture is influenced by: management, national culture and other employees. The management of an organization should develop an organizational culture that will always associate clients with that organization.

Competitive advantage is gained by those organizations that encourage creativity, learning culture and apply competitiveness strategies based on human capital and innovation. In order to remain competitive in the market, which is daily exposed to changes, organizations in Montenegro must encourage creativity and innovation, invest in education and nurture human capital in the organization, as this is the only way to success.

Only by encouraging internal factors, such as education, and upgrading it can we encourage employee motivation in order to encourage creativity and innovation. The management of the organization should plan and develop a model of organizational culture, which will enable the professional potential and the overall intelligence of the team to be used in the best way that it can. It is important to know whether the system applied maintains the organizational culture and whether it is capable of achieving its goals, and if that is not the case, it should be changed.

Advantage of organizations that have a developed organizational culture is that they encourage creativity and innovation.

We can conclude that even if innovation is an important tool of internal organizational endeavors, it also entails great risks, because investing in innovation may not pay off. However, successfully accepted innovations can create competitive advantages and become a source of organizational growth.

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Section E-Governance and Online Education

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RAZVOJ ELEKTRONSKE HRAMBE V SLOVENIJI

Povzetek. Cilj prispevka je izpostaviti izkušnje organizacij pri izvajanju elektronske hrambe dokumentov po slovenski zakonodaji, ki je stopila v veljavo leta 2006. Za razumevanje, kako zakonske zahteve vplivajo na razvoj elektronske hrambe organizacij, je bila v letu 2011 izvedena empirična raziskava javnih in zasebnih organizacij iz Slovenije in EU. Za merjenje doseženega razvoja hrambe elektronskih zapisov je bila v letu 2020 izvedena empirična kvalitativna raziskava. V tej luči je cilj predstaviti glavne ovire in spodbude za vzpostavitev elektronske hrambe po slovenski zakonodaji v slovenskih organizacijah javnega in zasebnega sektorja. V prispevku je na podlagi študija primera Slovenije in EU in opravljene primerjave stanja v letih 2011 in 2020 nakazan trend oz. pričakovan razvoj uvedbe s predpisi usklajene elektronske hrambe dokumentov glede na zahtevnost predpisov v Sloveniji. Identificirane so ključne ovire in spodbude za implementacijo s predpisi usklajene hrambe dokumentov v elektronski obliki v Sloveniji. Podana so priporočila organizacijam za podporo razvoju hrambe dokumentov v elektronski obliki.

Ključne besede: *electronic preservation of documents, organization experience, impact of regulations, business processes*

Uvod

Hramba dokumentov v elektronski obliki je ključnega pomena za neprekinjeno poslovanje organizacije. Njena vrednost je neprecenljiva, saj se organizacija izogne težavam pri dokazovanju poslovnih transakcij [19, str. 2; 9, str. 1]. V praksi hramba dokumentov v elektronski obliki prinaša koristi, saj varuje organizacijo pred tveganji poškodbe ali izgube dokumentov in pooblaščenim uporabnikom omogoča neprekinjen dostop do dokumentov za poslovanje in dolgoročno ohranjanje kulturne dediščine [19, str. 2; 9, str. 1], neodvisno od lokacije uporabnika.

Z vpeljavo elektronskega poslovanja organizacije optimizirajo poslovne procese, znižajo stroške poslovanja ter povečajo produktivnost in konkurenčnost na domačem in svetovnem trgu [14]. K temu doprinašata tudi upravljanje in hramba dokumentov v elektronski obliki, kar pa predstavlja izziv za organizacije v smislu začetnih investicij in zagotavljanja virov za vzpostavitev [3, str. 6]. Prav slednje pa je odvisno od zakonskih zahtev, ki se razlikujejo med posameznimi državami [20, str. 431], zato se tudi dobre prakse hrambe dokumentov v elektronski obliki razlikujejo od države do države [21]. Pogosto ravno predpisi, ki zaradi svoje zahtevnosti ovirajo vzpostavitev hrambe dokumentov v elektronski obliki, ne izpolnijo pričakovanja organizacije [24, str. 2]. Kompleksne zahteve predpisov ustvarjajo dodatne stroške, organizacijam otežujejo razumevanje zahtev predpisov in z njimi povezano izpolnjevanje obveznosti [29, str. 1; 30, str. 3]. Zlasti majhne organizacije so se zaradi

omejenih virov v poslovanju prisiljene izogniti skladnosti s kompleksnimi predpisi [30, str. 3; 28, str. 14]. Torej organizacije v praksi ne morejo upoštevati zapletenih predpisov, če ne vedo in ne razumejo, kaj se od njih zahteva [28, str. 14]. Kot je zapisal OECD [28, str. 14], ustvarjalci predpisov pogosto ne izberejo ustreznih instrumentov za realizacijo ukrepov, ki jih želijo doseči s predpisi, ker čutijo pritisk, da morajo pri izdaji novih ali posodobitvi obstoječih predpisov zapolniti pravne vrzeli novih, nepredvidenih okoliščin. Učinek takšnega pritiska lahko vodi do izgube preprostosti predpisov in poglobi nezmožnost organizacije razumeti, kaj je potrebno za izpolnjevanje zahtev predpisov. Ruhl in Katz [15] menita, da bi morali ustvarjalci predpisov izmeriti njihovo kompleksnost še pred izdajo predpisa in ugotoviti, ali so preveč zapleteni ter v tem primeru prilagoditi kompleksnost. Teorija kompleksnosti zakonodaje bi morala vključevati empirično merjenje kompleksnosti predpisa (nastanek dodatnih stroškov, zaznavanje nesorazmerne kompleksnosti glede na ukrepe, obseg oz. dolžina zakonodaje) [15, 30, 26, str. 12].

Pravne, tehnične ter poslovne zahteve in zahteve za varno informacijsko infrastrukturo so predpogoj za uspešno hrambo dokumentov v elektronski obliki [31, str. 22]. Okolje organizacije, ki je usklajeno s predpisi, in celovita informatizacija poslovnih procesov, vključno s prehodom na brezpapirno poslovanje in hrambo dokumentov v elektronski obliki, pomembno vplivajo na uspešno in trajnostno naravno poslovanje organizacije [2, str. 141; 13]. Hrambo dokumentov v elektronski obliki je potrebno uvesti v skladu z veljavnimi predpisi, zato pa morajo organizacije dobro razumeti zahteve predpisov, le tako jih lahko uvedejo in izvajajo na najbolj pragmatičen način [22, str. 3].

Bolj kot so predpisi enostavni, bolj jih lahko organizacije razumejo in hitreje implementirajo v prakso. Kompleksnost predpisov vpliva na to, kako učinkovito in zavzeto bodo organizacije uvajale in izvajale predpis [27, str. 1]. Zato bi morali zakonodajalci razlikovati med obveznimi zakonskimi zahtevami predpisov in s tem povezanimi stroški ter nepotrebni administrativni obremenitvami za organizacije [26, str. 31], zlasti glede na dejstvo, da poenostavljeni in dobro oblikovani predpisi (jasno in nedvoumno) pozitivno vplivajo na poslovanje, to je na zmanjšanje stroškov in povečanje produktivnosti v poslovanju organizacije.

Ureditev hrambe dokumentov v elektronski obliki na ravni EU

EU ureja in izvaja ukrepe na ravni EU le na tistih področjih, kjer bi razlike v ureditvi posameznih držav članic povzročile težave pri prostem pretoku blaga, oseb in storitev ter kapitala [25].

Zato se predpisi med državami članicami na drugih področjih (na primer na področju hrambe dokumentov v elektronski obliki) razlikujejo in nič ne kaže, da bodo v prihodnosti standardizirani na

ravni EU. Standardizirani predpisi za hrambo dokumentov v elektronski obliki na ravni EU bi poenotili urejenost in posamezna država članica bi lahko sledila dobrim praksam vzpostavitve in vzdrževanja postopkov drugih držav članic [4].

Vzpostavitev in vzdrževanje postopka hrambe dokumentov v elektronski obliki sta odvisna tudi od zahtev predpisov. Različni standardi in zahteve predpisov so lahko v posameznih državah članicah EU zapleteni, kar vpliva na odločitev organizacij za vpeljavo in izvajanje zakonsko skladne hrambe dokumentov v elektronski obliki [23, str. 43]. Kot piše [10, str. 21], vse več predpisov omejuje delovanje organizacije, tudi na področju uvedbe hrambe dokumentov v elektronski obliki [7].

Ureditev hrambe dokumentov v elektronski obliki v Sloveniji

Slovenija je varstvo dokumentarnega in arhivskega gradiva v elektronski obliki prvič uredila leta 2006 z Zakonom o varstvu dokumentarnega in arhivskega gradiva [16, 18, str. 75] in ga leta 2014 posodobila z novelo zakona ZVDAGA-A [17]. Obstoječi pravni okvir zavezuje organizacije javnega sektorja, ki nameravajo zajemati ali hraniti dokumente v elektronski obliki, da sledijo fazam vnaprej določenega postopka uvedbe.

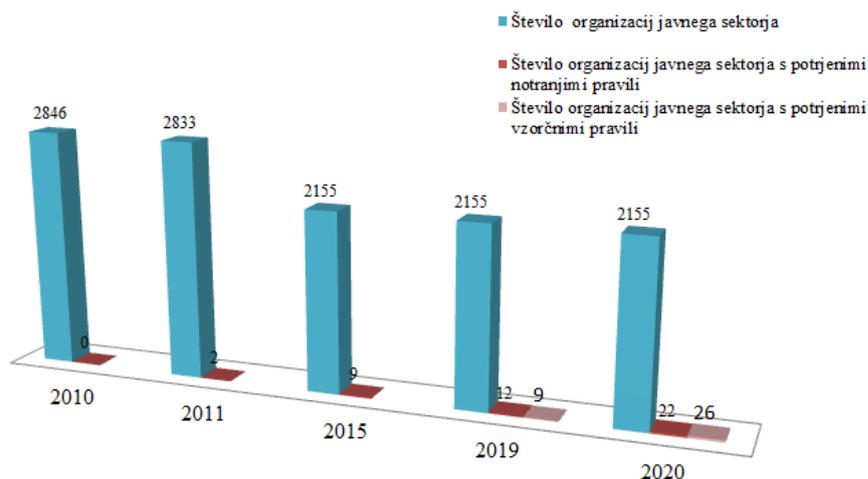
Te faze vključujejo pripravo na zajem in hrambo, pripravo in sprejemanje notranjih pravil ter hrambo dokumentov v elektronski obliki, spremljanje izvajanja notranjih pravil in ukrepanje v primeru odstopanj od notranjih pravil (notranji nadzor). Prav tako morajo spremljati, kadar pride do kakšne spremembe postopka in ustrezno posodabljati interna pravila [7], 2019).

Predpisi določajo tudi, da se v skladu s 93. členom ZVDAGA-A [17] za prekršek kaznuje organizacija, ki ne sprejme notranjih pravil ali če pri zajemanju in shranjevanju dokumentarnega ali arhivskega gradiva ne ravna v skladu s svojimi notranjimi pravili oziroma ne izpolnjuje predpisanih enotnih tehnoloških zahtev [6].

Priznavanje pravne veljavnosti hranjenih dokumentov v elektronski obliki v skladu z 31. členom ZVDAGA-A [17] temelji na obstoju in izvajanju potrjenih internih pravil.

Na podlagi podatkov Ministrstva za kulturo, Arhiva RS, 2020, predstavljamo razvoj hrambe dokumentov v elektronski obliki na osnovi javno dostopnih podatkov o stanju organizacij s potrjenimi internimi pravili v letih 2011, 2017, 2019 in 2020. Iz grafa 1 je razviden razvoj hrambe dokumentov v elektronski obliki v organizacijah javnega sektorja.

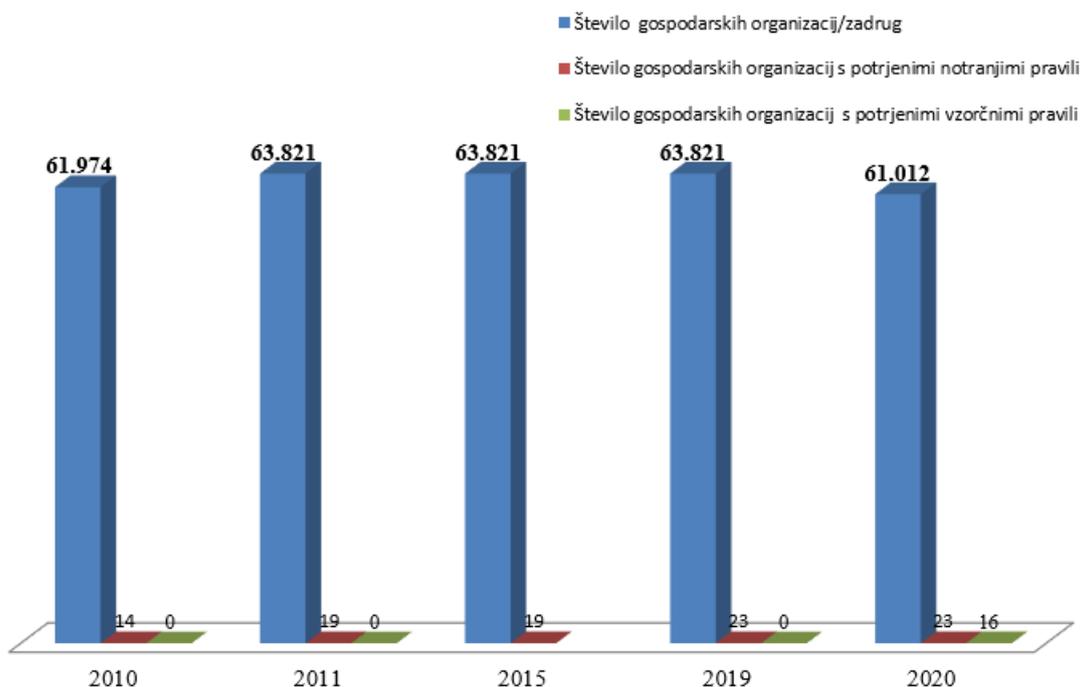
Organizacije v javnem sektorju in potrjena notranja pravila



Graf 7. Organizacije javnega sektorja – število organizacij s potrjenimi notranjimi pravili [12, 1]

Po podatkih iz grafa 1 je razvidno, da sta v letu 2011 dve od 2.833 organizacij javnega sektorja potrdili notranja pravila pri Arhivu RS. V letu 2015 je notranja pravila potrdilo 9 organizacij in leta 2019 je notranja pravila potrdilo 12 organizacij, 9 organizacij pa je potrdilo vzorčna notranja pravila. V letu 2020 je pri Arhivu RS notranja pravila potrdilo 22 organizacij javnega sektorja in 26 organizacij je potrdilo vzorčna notranja pravila.

Zasebne organizacije in potrebna notranja pravila



Graf 2. Zasebne organizacije – število organizacij s potrjenimi notranjimi pravili [12, 1]

Razvoj hrambe dokumentov v elektronski obliki je med zasebnimi organizacijami spodbudnejši (graf

2), čeprav te skladno s slovenskimi predpisi niso zavezane k implementaciji notranjih pravil in uvedbi s predpisi usklajene elektronske hrambe. Po podatkih iz grafa 2 je razvidno, da je že v letu 2010 14 zasebnih organizacij potrdilo notranja pravila, leta 2011 je bilo pri Arhivu RS 19 organizacij s potrjenimi notranjimi pravili, enako tudi leta 2019. Leta 2020 je imelo 28 zasebnih organizacij potrjena notranja pravila, medtem ko je imelo notranja pravila potrjena le 22 organizacij javnega sektorja (graf 1).

Stanje analize podatkov kaže na potrebo po ukrepanju oz. spodbudah za vpeljavo s predpisi usklajene elektronske hrambe dokumentov v javnih, pa tudi zasebnih organizacijah. Posledično uvedba s predpisi usklajene elektronske hrambe doprinaša k optimizaciji poslovnih procesov in blaži negativne vplive na okolje [5]. Pričakovati je, da bo sprememba predpisov o hrambi dokumentov v elektronski obliki ZVDAGA-A [17] pospešila uvedbo s predpisi usklajene hrambe dokumentov v elektronski obliki v javnih organizacijah. Nazadnje, javne organizacije, ki že hranijo dokumente v elektronski obliki, vendar nimajo sprejetih in potrjenih notranjih pravil, sprejmejo tveganje in posledice kršitve predpisov [17].

Kot piše Horjak [5], je hramba dokumentov v elektronski obliki v Sloveniji aktualna tema na področju trajnostnega delovanja organizacij, tako v smislu izpolnjevanja pričakovanih predpisov kot tudi njene uvedbe v poslovne procese podjetij in z njo povezanim razvojem hrambe dokumentov v elektronski obliki. Zato je potrebno sprejeti takšne predpise, ki bodo izpolnili pričakovanja organizacij in pospešili uvedbo elektronske hrambe pri javnih organizacijah, pa tudi pri zasebnih organizacijah. Horjak [8, 5] na osnovi rezultatov študije primerov javnih in zasebnih organizacij iz Slovenije in EU ugotavlja, da večina (97 % oz. trideset od enaintridesetih intervjuvancev) ocenjuje, da so predpisi za vzpostavitev in vzdrževanje s predpisi usklajene elektronske hrambe dokumentov v Sloveniji zelo kompleksni ali kompleksni.

Za zagotavljanje učinkovitega izvajanja javnih storitev in delovanja gospodarstva predlagamo, da se predpisi (regulacijski okvir) poenostavijo, kar bo dvignilo uspešnost poslovnih procesov. Ravno tako predlagamo objavo sodne prakse, ki bo utemeljeno podkrepila zahtevo po pripravi in potrditvi notranjih pravil pri Arhivu RS. Nadalje za doseganje hitrejšega razvoja digitalne transformacije organizacij predlagamo tudi prilagoditev vzorčnih notranjih pravil, tako da bodo predvsem javnopravnim osebam omogočila enostavnejšo in učinkovitejšo uvedbo s predpisi usklajene hrambe dokumentov v elektronski obliki [5].

Zaključek

Ugotovitve naše raziskave na študiju primera Slovenije in EU in opravljeni primerjavi stanja v letih 2011 in 2020 ponujajo širši vpogled v pomembno temo za zasebne organizacije in še posebej javne organizacije: vzpostavitev hrambe dokumentov v elektronski obliki, ki je v skladu s slovenskimi predpisi. Prav tako nakazujejo trend oz. pričakovan razvoj uvedbe s predpisi usklajene hrambe dokumentov v elektronski obliki.

Izkušnje organizacij pri hrambi dokumentov v elektronski obliki, usklajeni s slovenskimi predpisi ZVDAGA iz leta 2006, kažejo, da se Slovenija 14 let po sprejetju Zakona o varstvu dokumentov in arhivov ter arhivskih zavodih (ZVDAGA in njegove spremembe) sooča z izzivom, ali je zahteve predpisa sploh mogoče učinkovito realizirati in na njegovi osnovi pospešiti uvedbo s predpisi usklajene hrambe dokumentov v elektronski obliki. To je pomembno, saj pravne osebe javnega prava, ki hranijo dokumente v elektronski obliki in nimajo uveljavljenih in potrjenih notranjih pravil na Ministrstvu za kulturo, Državnem arhivu Republike Slovenije, po 5. členu kršijo veljavni predpis [17].

Sklepamo, da bo izpolnjevanje zahtev predpisov ter spodbujanje javnih, pa tudi zasebnih organizacij, da uvedejo s predpisi usklajene elektronske hrambe, zahtevalo spremembe zakonodaje. Ključni dejavniki za uspeh, ki bi lahko spodbudili razvoj hrambe dokumentov v elektronski obliki v slovenskih javnih in zasebnih organizacijah, so prilagajanje slovenskih predpisov predpisom drugih držav EU, odprava administrativnih ovir, ki izhajajo iz zahtev predpisov (priprava in potrjevanje internih pravil), ter odprava zahtev za implementacijo akreditirane strojne in programske opreme pa tudi objava sodne prakse.

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COMPETENCE OF ACCOUNTING AND ACADEMIC COMMUNITIES FOR DIGITALIZATION OF FINANCIAL REPORTING IN MONTENEGRO

Abstract: *Digital technology has become an integral part of social life and culture, and is changing the way we exchange information, do business, get to know the world around us in general. Financial reporting is also becoming digital. Although a recent achievement, digital financial reporting is increasingly used in both accounting theory and practice. Its further development will largely depend on the adequate adjustment of the accounting profession, especially in the context of education - both professional accountants and students who show affinity for the profession during their studies - in the direction of acquiring new knowledge and skills. In this sense, this paper aims to explore the readiness of the accounting and academic community in Montenegro to digitize reporting, especially in the context of the current pandemic. Also, one of the tasks of this paper is to point out the relationship between the digitization of financial reporting and the application of the latest technologies in accounting practice with the level of development and education of professional accountants, and the willingness of the accounting and academic community to acquire additional competencies, innovation and change. For the realization of such set goals, we conducted a survey which included all accountants in Montenegro. In addition, through a survey (structured Web survey) at the Faculty of Business Economics and Law Bar, we wanted to see the perception of students as future creators of the labor market, focusing on their knowledge of the latest technologies in accounting practice (XBRL, blockchain, cryptocurrencies).*

Keywords: *Blockchain, bitcoin, COVID-19, cryptocurrencies, digitization*

Introduction

At the beginning of the new millennium, financial reporting is a subtle mix of the old and the new. There are more and more questions about whether the current - conventional reporting system is adequate in the era of business digitalization and the current COVID pandemic, and whether it can meet users' expectations for timely and quality information. On the other hand, digitalization and the latest trends in the development of information and communication technologies (XBRL, blockchain, etc.) have enabled significant changes in the process of financial reporting and exchange of business information. The transition to digital financial reporting will lead to a number of very significant changes and will undoubtedly be a significant achievement in improving the quality of financial reporting.

Digitalization of financial reporting

Digital financial reporting through XBRL

Although in the very name of XBRL we find the concept of business reporting, which is undoubtedly one of the basic aspects of its operation, it is clear that it has a much wider application. If we consider reporting as a subset of business information exchange, XBRL can be defined as [3]:

- An open-source standard, independent of any software vendor - offering a whole host of benefits in data storage, manipulation and analysis;
- XML extension intended for electronic exchange of business information;
- One of the most successful formats for meta-data;
- Global agreement on the concept of exchanging business information and rules;
- A new way of distributing and modeling business information in a form understandable to computer applications, which completely displaces business reporting on the Internet.

Although it offers a number of benefits - which are reflected in all factors in the business information⁵ exchange chain, if we wanted to recommend XBRL in one sentence for implementation in a particular organization, we would point out significant benefits reflected in cost and time savings through process automation. which generate less added value and which are more susceptible to human intervention errors (data collection and re-entry, reporting), compared to high added value processes. The application of XBRL completely redefines accounting practice, where a high level of analysis and consulting services is increasingly required in order to provide adequate information support in decision-making, instead of the current approach to service fees.

At the same time, the application of XBRL is not limited to financial reporting, but this standard has a much wider application. Although today it is primarily used in financial reporting, it can equally be used in non-financial reporting and exchange of information content on the broader, social and environmental aspects of business. In fact, the XBRL standard finds its application in the latest phase of the evolution of corporate reporting - integrated reporting.⁶

Blockchain technology

In essence, a blockchain is a distributed database or public book of all transactions or digital activities that are realized and shared between the participating parties, ie. participants (see Figure 1)⁷. Each

⁵ See more about that: [5]

⁶ See more about integrated reporting: [2]

⁷ See more: [8]

transaction in the public ledger was verified by consensus of the majority of participants in the system. Namely, once entered, the information can never be deleted again. The blockchain contains a reliable and verifiable record, ie. records of every single transaction ever executed.⁸



Figure 1. Example of a blockchain transaction [4].

Blocking technology is applicable to any transaction of digital assets that are exchanged over the network, ie. on line. The distributed public book, functionally combined with the security offered by blockchain, makes it a very attractive technology that is able to solve financial as well as non-financial business problems.

However, leaving aside the issues of application and undoubted advantages of blockchain technology currently aside, we will analyze below the readiness of the accounting community to digitize financial reporting and overall operations, especially in the context of the current COVID 19 pandemic.

Research methodology and results

As pointed out in the introductory part of the paper, the emergence of blockchain, cryptocurrency, and general digitization of financial reporting, as well as the possibility of implementing the latest standards for exchanging business information include reviewing and assessing the totality of the accounting profession, especially when it comes to accountants and their organizations. Also, the state has a significant role in the development of the accounting profession, which is the basis for the quality of financial reporting, by adopting relevant and quality legislation.

Research methodology

The data collection strategy is a structured Web survey that is distributed electronically. The survey

⁸ See more: [4]

was sent to 500 e-mail addresses - accountants and auditors of the members of the Institute of Accountants and Auditors of Montenegro.

The web survey was available for four weeks, starting March 1 of the current year. Data entry was performed automatically via Google Forms, while data processing with the necessary logical controls was performed in the SPSS program (Statistical Package for Social Sciences).

A total of 212 respondents responded to the survey, which is a total response of 42%. The question is whether the sample size (N) of 212 units (respondents) is sufficient to conduct the research? To get an answer to this question, we will use a comparative analysis with similar research at the regional and international level. In support of the claim that the response exceeds international standards when it comes to the percentage of responses collected in similar Web surveys, we can cite the fact that the response rate collected in relevant surveys is 2.9% [8] or similar surveys in region - 4.4% [6], 27.8% [1], 53% [3].

In addition, through a survey (structured Web survey) of students at the Faculty of Business Economics and Law Bar, we wanted to see the perception of students as future creators of the labor market, focusing on their knowledge of the latest technologies in accounting practice (XBRL, blockchain, cryptocurrencies). The distribution of the survey was assisted by the Faculty of Business Economics and Law.⁹

Research results

A. Profile of respondents

When it comes to the position of respondents in companies, we can conclude that the most represented are accountants (41.9%) and chief accountants (24.2%).



Figure 2. *The position of the respondents*

⁹ Faculty of Business Economics and Law, Adriatic University; www.fpebar.me

More than half of the respondents have the title of certified accountant (56.6%), while 16.2% have the title of certified accountant. Certainly, this structure of respondents from the aspect of positioning and professional title is very important, precisely because of the importance of the information they provide, or the relevance of their opinion.

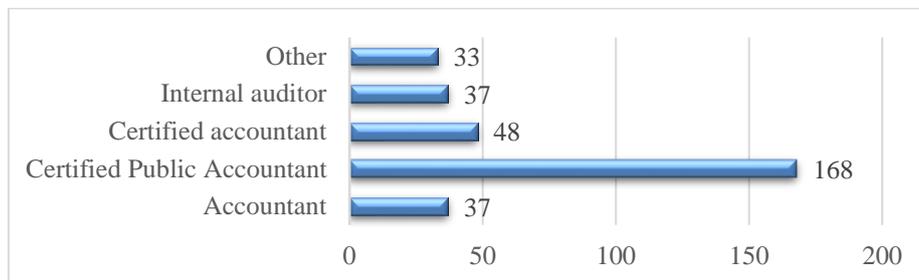


Figure 3. *The level of professional title of the respondents*

B. Manner of publishing financial statements

In most cases, financial reports are submitted to the competent authorities (87.7%), which is their legal obligation, and they are available at the company's headquarters (51.2%). Slightly less than half of the respondents (47.2%) stated that they publish financial reports on the company's website. This may be an indication that in addition to meeting the minimum legal requirements, companies strive to achieve greater transparency of their business by publishing financial statements on the Internet.

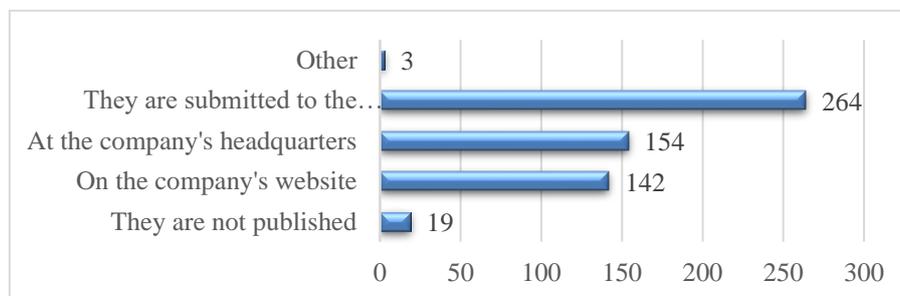


Figure 4. *Manner of publishing financial reports*

However, the analysis shows that 73% of companies own a website, while 27% do not own a website.¹⁰ This is also in line with the results of similar research. An example is the research by Lalević, A. [1], which finds that 24% do not own a website. Hence, the question arises as to how much companies are ready to successfully respond to stakeholder demands in the current COVID 19

¹⁰ These results largely correspond to the Survey conducted by the Securities Commission within the implementation of the project "Improvement of corporate governance in Montenegro", according to which 30.70% of surveyed companies do not have a website. The results of the research are available on the website of the Securities and Exchange Commission <http://www.scmn.me>.

pandemic, as more than a quarter of respondents do not understand, or at least did not understand the importance of digitizing financial reporting or understand the essential importance of transparency of financial statements.

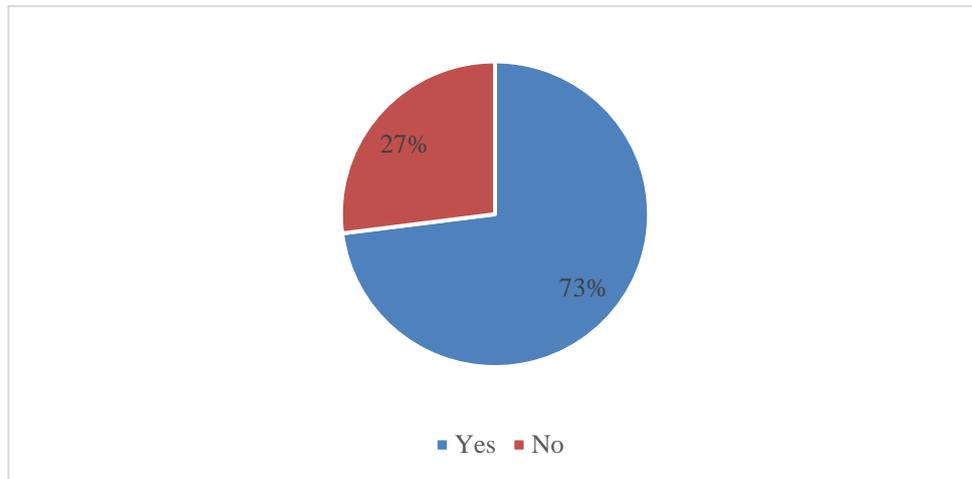
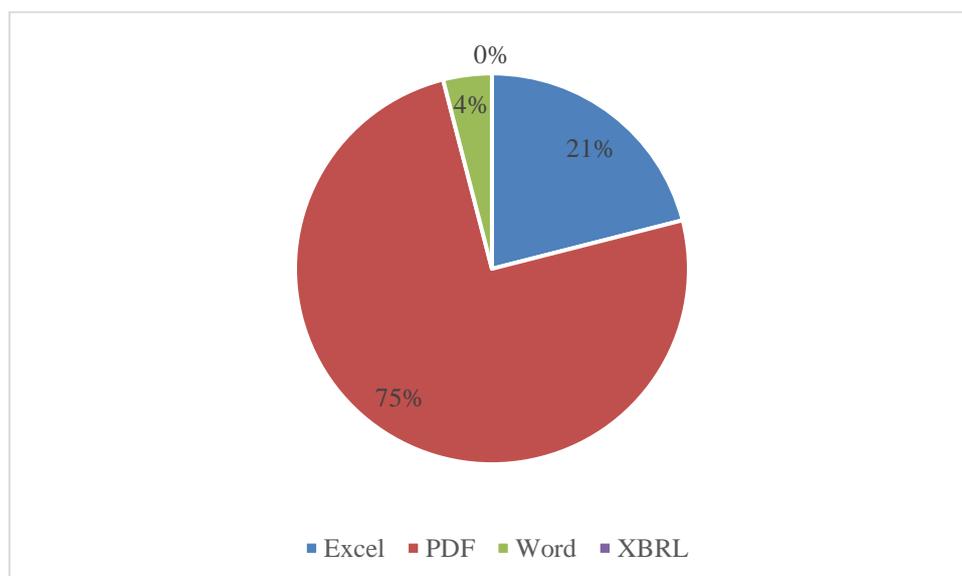


Figure 5. *Owning a Website*

However, these results have been somewhat corrected, given the fact that most companies publish financial statements in PDF format (75%), more than 20% in Excel, while the smallest number of companies (4%) publish their financial statements in Word.

On the other hand, no company prepares or publishes its financial statements in XBRL format, which today is a digital standard in the exchange of business information and reports.¹¹



¹¹ See more: [5]

Figure 6. *Formats for publishing financial statements*

C. Level of knowledge about Blockchain among accountants in Montenegro

When it comes to the general level of knowledge about blockchain technology and the benefits it provides, slightly more than 80% of respondents state that they have no knowledge, while only 17.9% have relevant knowledge (see Figure 7).

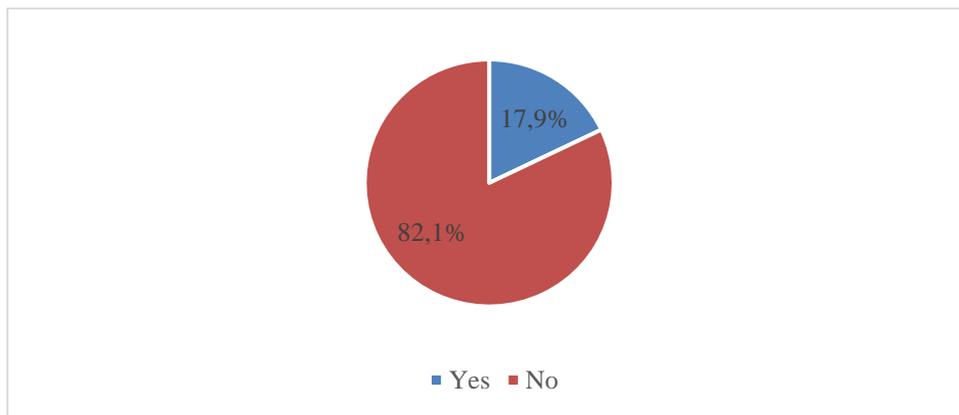


Figure 7. *Are you familiar with the essence and effects of using Blockchain?*

Furthermore, of the total number of respondents who have knowledge of Blockchain technology, only 1.7% assess their knowledge at a professional level. On the other hand, more than half of the respondents (54.2%) rate their knowledge as moderately bad or very bad.

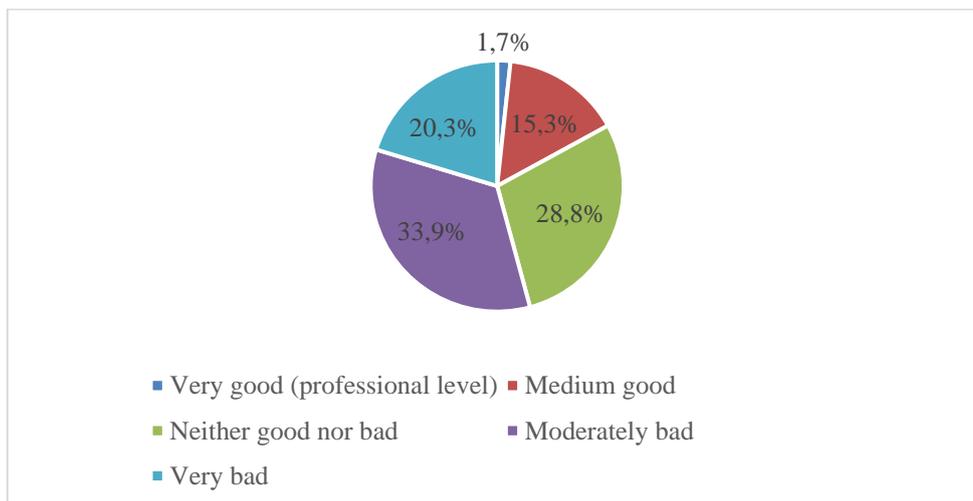


Figure 8. *Assess your level of knowledge of Blockchain*

Respondents are most often informed about innovations in financial reporting and digital standards via the Internet (71.7%), professional journals (62.3%) and by attending educational and professional seminars (59.4%). In only 17% of cases, respondents are informed by the regulator (Figure 9).

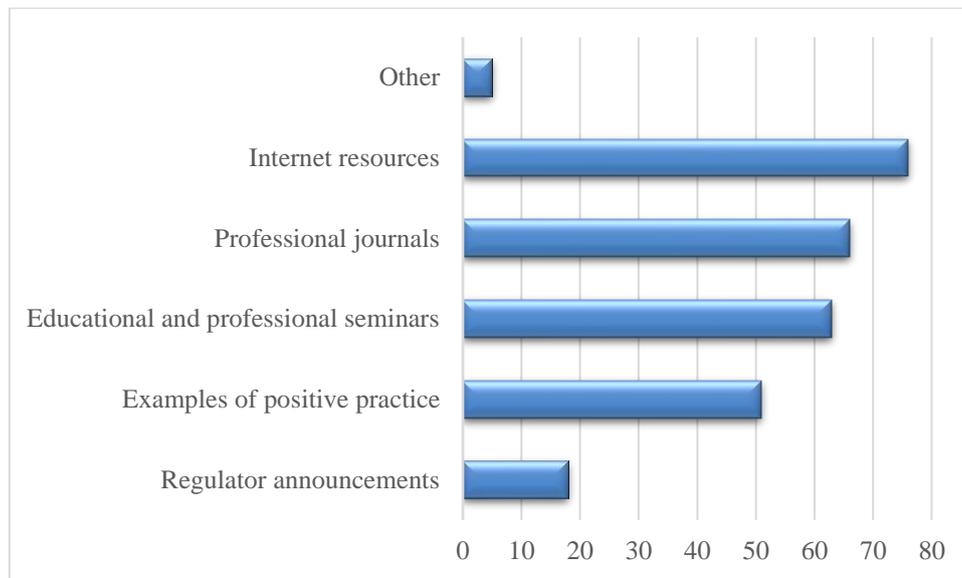


Figure 9. *How to obtain information on digital standards*

Hence, we are of the opinion that it is necessary that information on the latest digital technologies in financial reporting be transposed into our professional and practical literature. On the other hand, it is necessary for financial reporting regulators to more explicitly support the initiative, given the amount of data they process as well as the time required to process that data. This is especially true given that regulators and stock exchanges around the world are leaders in the digitization of financial reporting. That is why it is of great importance that regulators influence the quality of financial reporting of the entities they regulate and over which they act as supervisors.

D. Students' perception of digital accounting development trends

In the continuation of the research, the issue of students' perception of the Faculty of Business Economics and Law Bar was addressed, in terms of their knowledge of the latest digital technologies in accounting practice and data sources from where they get information (curricula, internet, etc.). In the first part of the analysis, we divided the respondents according to the level of studies, according to the following:

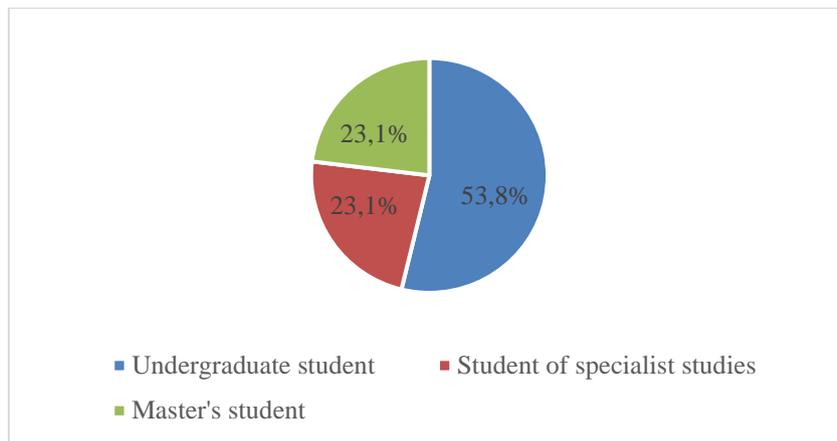


Figure 10. *Current level of study of respondents*

When it comes to the general level of knowledge about XBRL and blockchain technology and the benefits it provides, about 60% of respondents state that they have no knowledge, while slightly more than 17.9% have relevant knowledge (see Figure 11 and 12).

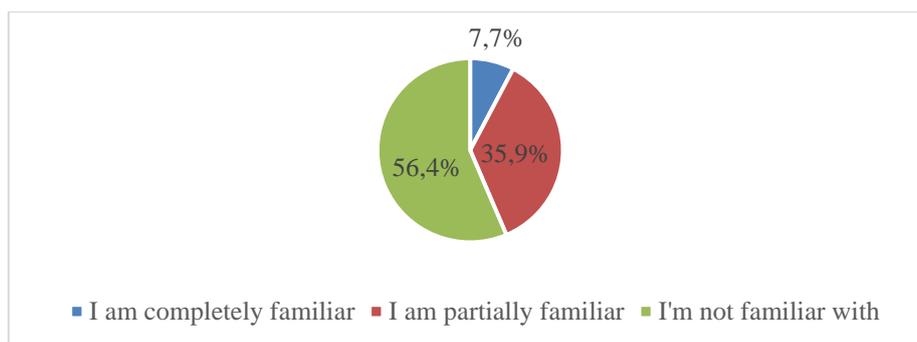


Figure 11. *Respondents' level of knowledge about XBRL*

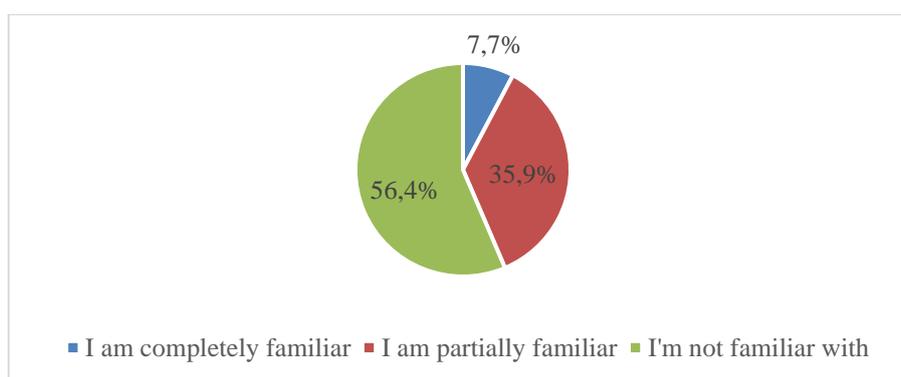


Figure 12. *Respondents' level of knowledge about blockchain technology*

Respondents are most often informed about innovations in financial reporting and digital standards via the Internet (38.5%), professional journals (5.1%) and by attending educational and professional seminars (5.1%). In only 7.7% of cases, respondents received information through curricula during

schooling.

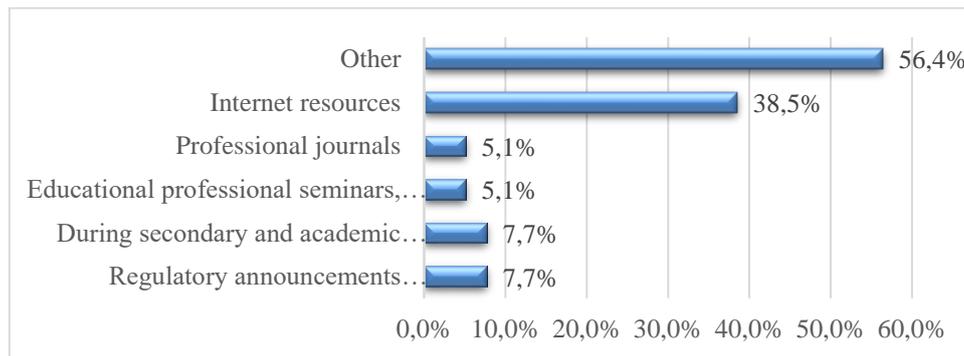


Figure no 13. *Method of obtaining data*

However, these results have been somewhat corrected, bearing in mind the fact that 12.8% of respondents stated that during their education within the curricula they had accounting subjects in which the subject innovations are studied.

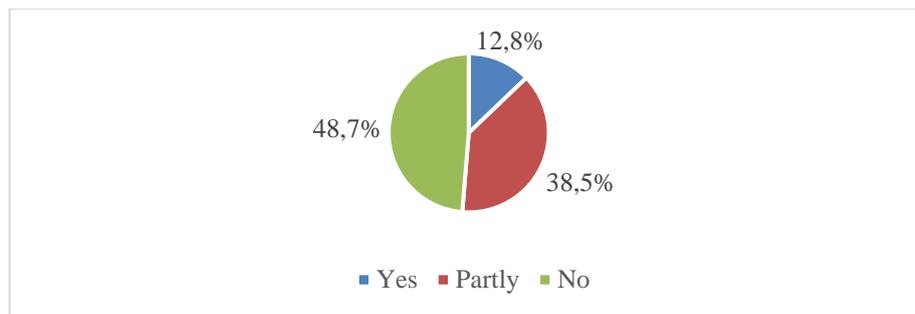


Figure no 14. *Syllabus*

All this once again confirms the above thesis that information on the latest digital technologies is still not sufficiently transposed into our accounting professional and scientific literature. In that sense, it is necessary for the creators to redesign the curricula, which is the conclusion of a significant percentage of respondents (about 90%).

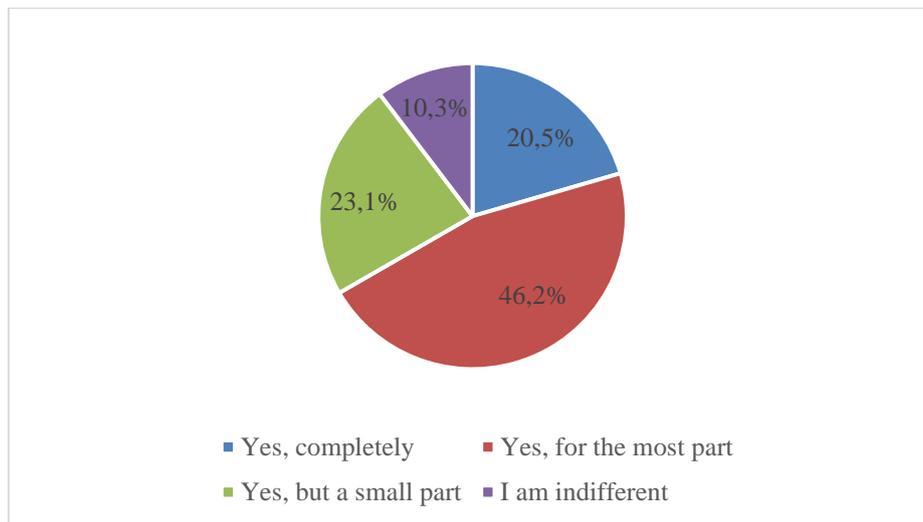


Figure 15. *Curriculum redesign*

Conclusion

Considerations and conducted analyzes and research leave the possibility to draw the following conclusions:

- The conventional system of financial reporting and education is not able to adequately respond to the challenges of the new business environment. On the other hand, the current COVID 19 pandemic is accelerating the development and application of digital information technologies that are shifting business to the Internet. In this sense, the accounting and academic community must embrace the digital revolution and look for ways to adequately respond to the challenges that the COVID 19 pandemic brings with it.
- There is no doubt that the digitalization of financial reporting brings a number of benefits to all participants in the financial reporting chain. However, practice shows that the benefits do not come by themselves - that is, there are certain risks associated with the digitalization of reporting.
- However, the risks of ignoring the digital revolution that has transformed virtually every form of business on the planet are potentially greater. In this sense, it is necessary to timely consider trends, phenomena and changes in accounting practice. Murphy's Law states: "The amount of energy needed to correct a wrong direction increases geometrically with time." That is why it is necessary to choose the right direction immediately, and that is how far-sighted and vision-oriented organizations and individuals are.
- On the other hand, our theoretical and professional literature in the field of accounting was not significantly occupied with the issue and application of the latest digital technologies. Relevant world accounting literature has been dealing with the affirmation of the digitalization

of the accounting profession for almost ten years and points to examples of positive practice at the global level.

In addition to the above, in order to more fully understand the perspective of digitalization of the accounting profession in our country, it is necessary to focus attention on several other issues, such as:

- inertia of the accounting profession in terms of accepting positive innovations in accounting, outside the official "main" accounting;
- readiness of national standard setters to accept the need to digitize financial reporting;
- issues of general level of required specialist, accounting and broader knowledge in the field of information technologies;
- insufficiently developed management in our companies and the like.

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INTERCULTURAL AND TRANSVERSAL COMPETENCE DEVELOPMENT AMONG ERASMUS STUDENTS

***Abstract.** In today's globalized world, competition is fierce among economies and individuals, who see education as an investment for the improvement of an individual's personality and protection from unemployment. International, intercultural, and other soft and employability skills are essential among future graduates so that they can compete successfully in the internationally intertwined labor market and everyday life. International academic mobility can improve previously mentioned skills and perspectives. In this context, academic mobility refers to students and teachers in higher education who move to another institution within or outside of their home country for a brief period to study or teach [1]. One of such mobility programs has been established by the European Union termed Erasmus. The primary objective of this paper is to find out how the Erasmus mobility program impacts the development of a selected list of intercultural and transversal competence, and personal development among the Erasmus students. By conducting an online questionnaire and interviews among Erasmus students from different countries, it was found that Erasmus mobility helps in the improvement of a selected list of skills (intercultural and transversal skills) among students, it enhances and helps understand each individual Erasmus student's characteristics development, international mobility improves students' ability for coping with academic activity, as well as it helps in gaining opportunities and hikes self-belief among students.*

Keywords: *intercultural competence, transversal skills, Erasmus mobility, international mobility*

Introduction

In today's globalized world, where improved transversal skills and knowledge are required, competition is fierce among economies and individuals, who see education as an investment that would, on the one hand, improve their individual's personality and, on the other, protect them from

unemployment. International, intercultural, and other soft and employability skills are essential among future graduates so that they can compete successfully in the internationally intertwined labor market and everyday life. The development of intercultural skills (that are important for successful functioning of students/future graduates) is closely connected with ones' international the experience, thus promoting mobility processes should be an important part of universities missions and strategic goals.

Education, in contrast to a few decades before, must be distinguished by internationally recognized high academic standards [2]. A graduate's skills and knowledge gained in one country must be recognized worldwide as equal. Governments trying to safeguard their nations' long-term economic and social growth are promoting the adoption of internationally recognized high academic standards and encouraging student interchange and mobility. Academic mobility refers to students and teachers in higher education who move to another institution within or outside of their home country for a brief period to study or teach [1]. There has been significant growth of student mobility un recent years.

One of such mobility programs has been established by the European Union termed as Erasmus. The primary motive of the program is to promote and facilitate mobility in higher education as well as in other level of education.

Brief details about Erasmus mobility

Since its inception in 1987, the Erasmus program has given students the chance to experience student life in one of the 33 program countries. Erasmus is the European Union's program to assist education, training, youth, and sport throughout Europe. It is anticipated to have a budget of €26.2 billion out of which 70% will be used for international mobility. The Program's overarching goal is to assist the educational, professional, and personal development of persons in education, training, youth, and sport in Europe and beyond, therefore contributing to long-term growth, quality employment, and social cohesion, driving innovation and building international competence [3].

Each year more than 300,000 students are study under the umbrella of Erasmus. These students study abroad in face to face mode or virtually [3]. Thus, such students especially those that are physically mobile are obliged to move away from comfort zones and adapt to the culture of the host nations during the time of the mobility. This period is very essential as they get to interact with someone who is not part of their culture or race. Therefore, enhancing one's ability to interact in a foreign cultural and develop intercultural competence.

Developing Intercultural Competence with international mobility

University graduates are required to possess intercultural competence in addition to strong academic skills in today's globalized world. Intercultural competence is defined as the capacity to operate successfully across cultures, to think and behave correctly, and to interact and collaborate with individuals from various cultural backgrounds - whether at home or abroad [4]. According to Deardorff intercultural competence is the ability to develop targeted knowledge, skills and attitudes that lead to visible growth in behavior and communication that are both effective and appropriate in intercultural interactions [5]. Intercultural competence is a significant skill in today's more globalized society, as we are more likely to engage with individuals from other cultures and nations, each with their own set of values, beliefs, and experiences

Global competence, graduate qualities, employability skills, global citizenship, communication skills, education for sustainable development, and global employability are all notions that fall under the umbrella of intercultural competence [6]. Furthermore, as aforementioned studying under Erasmus umbrella mean you not only must have the ability to interact in intercultural environment but also possess the ability to work along and comply with the foreign culture. Thus, it can be stated that international mobility can impact the growth of transversal skills of the mobility students.

Developing transversal skills through international mobility

UNESCO defines transversal skills as the skills that are typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge and that can be used in a wide variety of situations and work settings (for example, organizational skills). UNESCO also list skills such as critical and innovative thinking, interpersonal skills, intrapersonal skills, media and information literacy, global citizenship and communication skills under transversal skills [7].

Mobility is widely considered an important contributor to the enhancement of youth employability through the acquisition of knowledge, skills and attitudes that are not purely occupational but fundamental to success in life [3]. Now, more than ever, new ways of working and more frequent changes in jobs call for a broader set of skills. Transversal skills are those not only relevant to finding jobs but also assist one to tackle daily challenges he/she faces.

Purpose of this research

In the context of previously presented theoretical background, the primary objective of this assignment is to find out how the Erasmus mobility program impacts the development of a selected list of intercultural and transversal competence, and personal development among the Erasmus students. Various researches like Erasmus Impact Study [8] claim or the surveys show that

international mobility encourages the development of international and transversal skills, personal development. A research conducted by Sheli Rampoid and Robert [9] concluded that short-term mobility programs helped to generate intercultural competence among undergraduate students. In this light, the following research questions serves as the guide for this study.

1. Does Erasmus mobility help in improvement of intercultural and transversal skills among the Erasmus students?
2. Does Erasmus mobility help in enhancement of characteristic development of Erasmus students?
3. How has Erasmus mobility helped in gaining future opportunities for Erasmus students?

Methodology

Research Method

This section describes the essential aspects of the study design and methodology. Following an outline of the study design, key information on data collection tools and analysis part is presented.

Questionnaire development

Online questionnaires were designed for above-mentioned target research questions. The questionnaire was based on the Erasmus+ questionnaire, which Erasmus students need to answer during their time of entry and/or exit from the mobility. However, the authors have made substantial changes to the questionnaire.

Furthermore, to get more insightful research data, the authors also conducted a semi-structured interview both online and face to face. In total 6 students were interviewed and they were asked the following questions:

1. What was the reason for applying for the Erasmus mobility?
2. What was your academic accomplishment from the mobility, and do you think it would add on to the career opportunities that you are seeking for?
3. Having an opportunity to be part of the Erasmus mobility, what changes have you felt in terms of your personality?
4. How has your perception of cross-cultural communication changed and how would you describe your role in a team since participating in the Erasmus mobility?
5. Do you think the course you did as part of the Erasmus mobility is relevant to the current market in your country?
6. How would you describe the Erasmus program if you have to describe it?

Population and sample

For this particular research the authors decided to collect data and information from the Erasmus students within our contacts from Slovenia, Ukraine, Bhutan, Germany, Bulgaria, Spain, Bosnia and Herzegovina, Albania, and Montenegro. There were 31 respondents to the survey questionnaire. The average age of the respondents was 21 year and majority of the respondents were female (61.8%).

Data collection tools

As aforementioned, the questionnaire and interview were conducted to collect the data and information. The questionnaires were distributed online via Google forms for a period of 25 days from mid of April till 10th of May 2022. Semi structured Interview was conducted through both face-to-face mode and Microsoft teams at the beginning of May 2022. 5 Erasmus students were interviewed face-to-face, and 1 student was interviewed virtually. The recording and transcripts are properly retained by the authors.

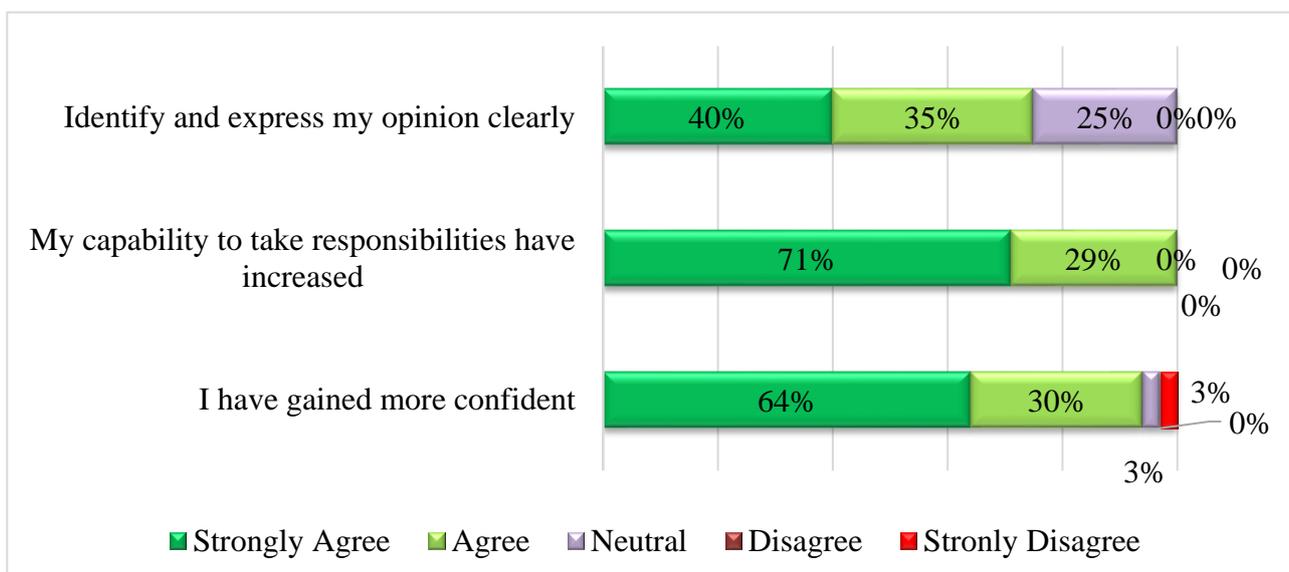
From the above discussions it can be noticed that students who are under virtual mobility do not agree to our research question especially in aspect of intercultural adaptability. Virtual mobility refers to students and teachers in higher education using another institution outside their own country to study or teach for a limited period of time, without physically leaving their home, whereas as in physical mobility students or the teachers leave their home country to study or teach abroad. As aforementioned, from our findings it could be seen that students who are on virtual mobility claim that they have not developed intercultural competence as much as those students who moved physically. The authors of this article are also included in virtual mobility, and also agree with this statement. This is because the students who are on virtual mobility do not get real time experience with their colleagues aboard and they do not get chance to have a taste of the foreign culture. In the research “Will virtual mobility replace physical mobility” done by Jauneikaite and Misiunas [10], it is stated that though virtual mobility is cheaper than physical mobility, it is not as efficient as physical mobility.

Beside several insightful findings of this small-scale survey, quite some improvements can be pointed out to make the research more accurate. This particular paper emphasizes on determining whether Erasmus mobility impacts the growth of various skills like transversal, intercultural skills and personality development. It does not emphasize on determining how or in which way the impacts are caused and what correlations exist between various dependent and independent variables (e.g., virtual and physical mobility). Furthermore, the sample size for the research was very small; this increases the risk of producing inaccurate result. Consequently, qualitative results gained from interviews were

included in the paper to overcome some of these shortcomings. The study would have been more accurate if the data was collected from large number of samples. Furthermore, the data collection period was short, since it lasted for only 25 days. In addition, majority of the respondents are centralized from few countries. The findings would have been more accurate if the data was collected from diverse country.

Results

In this section, the quantitative and qualitative results of the survey will be presented with the aim to find the responses to the research questions stated in the introductory part of the paper. No specific quantitative statistical analyses were conducted due to the small number of respondents included in the online survey. Consequently, the latter quantitative data are supplemented by quotes from the interviews to obtained more detailed survey results.



Graph 1. *Students' perceptions about their personal development as a result of Erasmus mobility.*

Graph 1 represents how students who participated in the Erasmus mobility program improved their personal growth. It incorporates self-evaluation in terms of opinion expression, responsibility, and consciousness. We can see from the graph above that the majority of students firmly agree that their personalities have developed as a result of their Erasmus mobility.

Students have developed a strong sense of responsibility as a result of the mobility, as we can see from the observation that 71% of students believe their capacity to hold responsibility has increased. Similarly, 64% of students think that their self-assurance has strengthened. Furthermore, 40% of students participating in mobility said that the Erasmus program's learning environment allows them

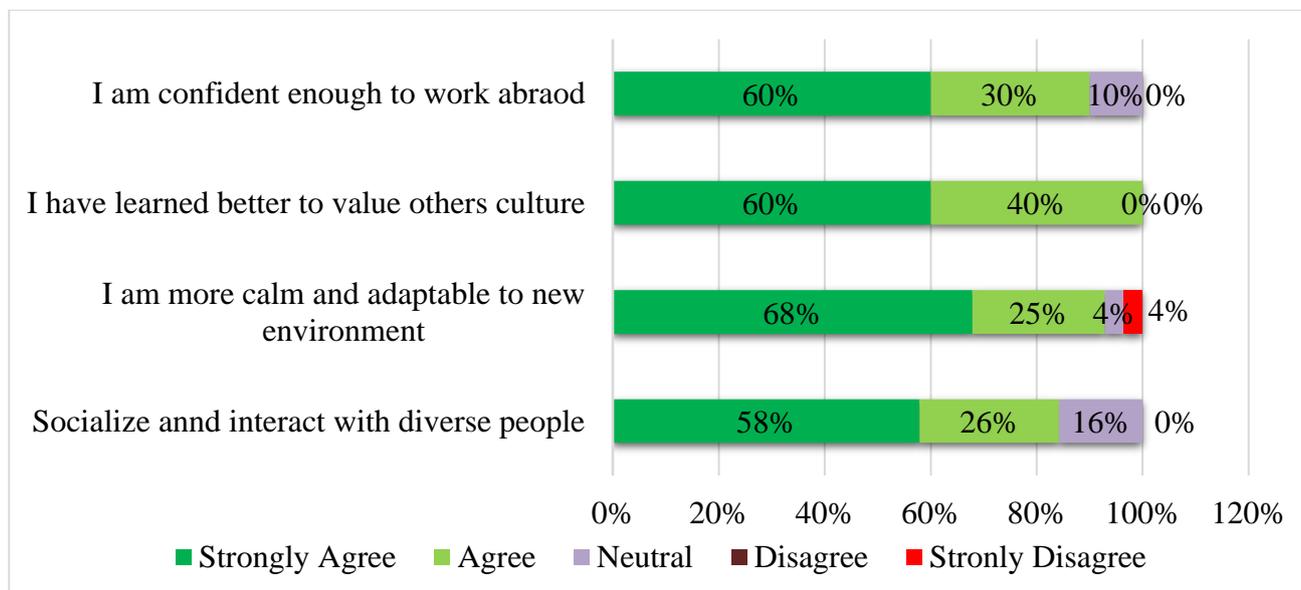
to conduct self-analysis and share their opinions.

In this context, one of the Erasmus students who were part of this mobility and was included in the interviews stated:

“I became more independent as in past. I used to depend on my friends and other people around to do any sort of daily task.” Further, she explained: “my sense of responsibility has improved as I had to do visa processing all by myself which was the beginning of my confidence building” (Interview 1).

Another Erasmus student pointed out:

“Firstly, I became a step closer to managing myself starting from personal matters to things that require a considerable amount of attention. Secondly, I acquired the skill of adaptability to new environment and customs which became an additional asset to my personal strength” (Interview 2).



Graph 2. students’ perception of intercultural adaptability as a result of Erasmus Mobility.

The graph above explains about how the cross culture communications have spread over the students due to the Erasmus mobility. We have analyzed from the data that more than 50% of the participant have developed cross-culture communication which they believe can help them in adapting, socializing and seeking opportunities in diverse cultural environment. Moreover, students were also able to appreciate and respect others’ perceptions and cultural values.

Interviewee 3 pointed out:

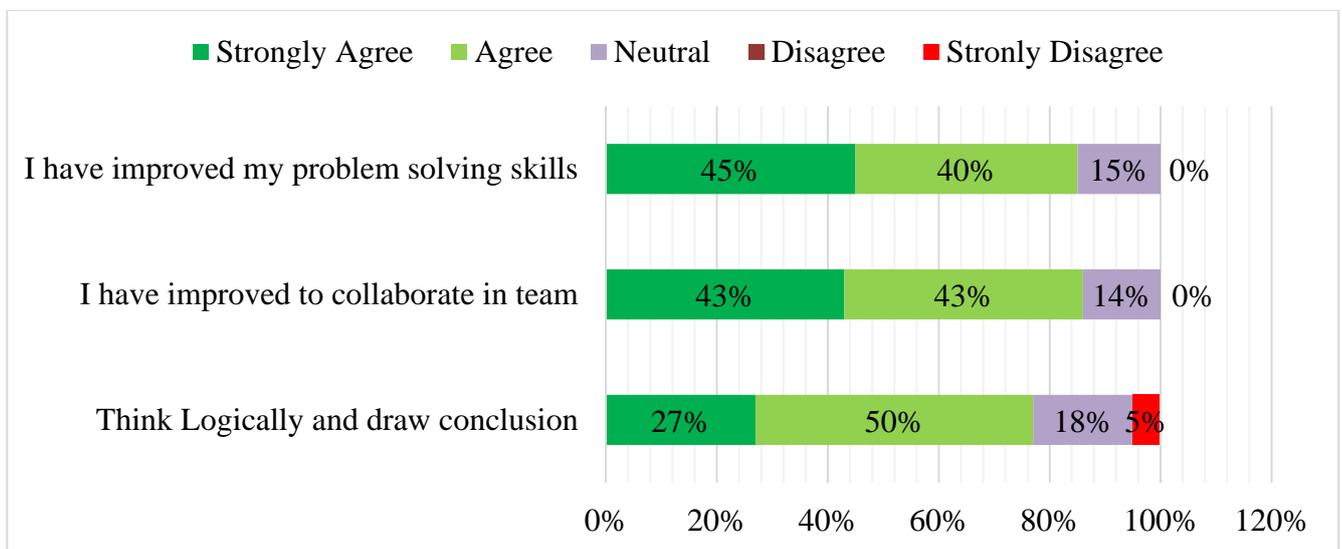
“I believe that the confidence that one gains going abroad and experiencing different cultures is fundamental to life in a way of working life. I also found that different culture has different values while in Bhutan I believed that people were

very conservative and avoided sharing opinion in case it hurt the other person which seems absurd. However, I also learned that Bhutanese respect others feeling which made me accept and learn more about cultural values of other people”.

Though there is a huge positive response about the cultural adaption, few have also had very less experience which shows that there are 4% and 16% students responding neutral in terms of socializing and adaption to new environment. This was mainly due to the lack of interaction as certain number of students had to join virtually which gave them lesser time to know and understand the culture of others. One of the interviewees explained:

“I was not able to interpret the cultural adaption changes I had and my perception was still constant as before the Erasmus mobility as I was studying virtually and did not join the institute face to face (Interview 4)”.

Only in case of the student that was virtually included in the mobility the latter skill has not changed significantly, because they did not have the opportunity to meet other students in person and to experience differences in cultures, values, habits first hand.

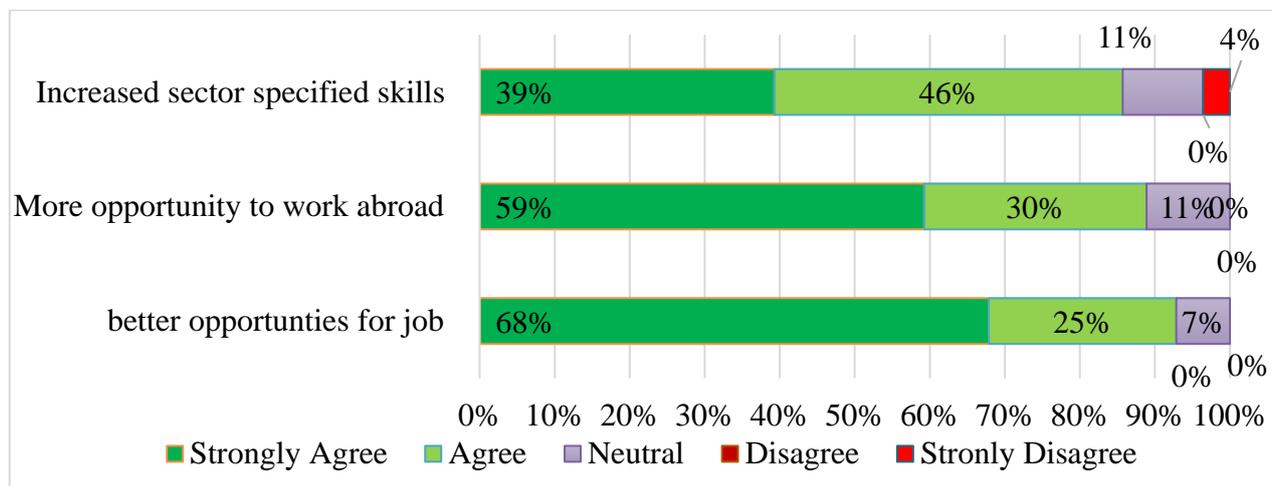


Graph 3. *Participants’ view on transversal skills after Erasmus Mobility*

The data in the Graph 3 displays about the ways Erasmus mobility have refined the transversal skills among the students. Skills like problem solving, logical thinking and collaborating in team is seen to have drastic improvement. The data show that 45% students strongly agree that problem solving have improved for them. Additionally, 40% other students also have agreed on improving of their problem solving skills.

One of the interviewee mentioned:

“I he had many opportunities to actively participate in events held in my receiving institution. Back when I was in Bhutan I faced problems in team collaboration but as my mobility started I found collectiveness among students there, which helped me improve his team skills. Further, being independent in a foreign country, I also build skills such as communication, problem solving and decision making skills”.



Graph 4. Future expectations and opportunities students seek from Erasmus Mobility.

The Graph 4 depicts the likelihood of future chances for Erasmus students. 39 % of survey participants strongly agreed that their sector-specific skills had improved, while 46 % agreed. Only a few participants disagreed, while 11 % were having a neutral opinion. Similarly, 59 % of participants strongly agreed that their prospects for working overseas have expanded, and 30 % agreed with this assertion. Only a few students disagreed, while the rest were on the fence. Likewise, the majority of participants (68 %) strongly agreed that their work chances have improved, while 25% agreed and only a few students disagreed.

While interviewing one of the Erasmus students, the interviewee pointed out that:

“Even if this mobility program doesn’t give immediate opportunities to me, it will be beneficial for my future job” (Interview 5).

Further, another student mentioned that:

“The courses that I took were very relevant to the present job market of my home country, and because of that, I have very high expectations to get better opportunities due to Erasmus being a renowned program around the globe”(Interview 6).

Discussion

Intercultural communication is the study of what happens when people from various cultures communicate with each other and it overlaps with many different disciplines, including sociology, psychology, anthropology, biology, political science, economics, and public policy, in addition to being its own study [12]. The primary goal of this research, in light of the previously stated theoretical framework, is to determine how the Erasmus mobility program influences the development of a selected list of intercultural and transversal competence, as well as personal development, among Erasmus students.

Intercultural Communication can be seen of as an attempt to teach us about ourselves as people and as a species by analyzing how we construct meaning and convey it with other civilizations utilizing the concept of "culture." Intercultural competence is ability to adapt and show variety of behavioral skill that helps people to interact with different people from different culture and understand and respect them. The gained results from the questionnaire and interviews shows, that intercultural competence is ability to adapt and show variety of behavioral skill that helps people to interact with different people from different culture and understand and respect them, which is also highlighted in the survey [13].

The another study also focus on the evaluation of the transversal skills because they are defined as essential skills needed in school or job market to have successful and competent work environment. Some of the commonly known transversal skills are creative and logical thinking, team building, knowing of different languages and being more entrepreneurial [14].

From the study to date, it was expected that there will be an improvement in the transversal and intercultural skills among the students due to their participation in Erasmus mobility, which is also highlighted in the research on Erasmus+ Higher Education Impact study [8], where it was found that the participants agreed on the improvement of different skills according to their impact dimensions. With this paper, the authors found that a strong number of students agreed that their transversal skills such as problem-solving skills, team collaboration, and logical thinking were improved from participating in mobility.

Additionally, the Erasmus+ Higher Education Impact study survey correlation analysis also revealed that participants with high social engagement also showed higher improvement in their intercultural openness whereby the correlation was about 0.7 between the social engagement and intercultural

openness. As authors expected from the current study, on average more than 60% of Erasmus participants confirmed that their intercultural openness showed growth. Thus, the research question 1 on the improvement of the transversal skills and intercultural communication from the mobility was achieved as expected with a very strong positive affirmation.

Personal and personality development can be understood as a life-long process. It helps people analyze and assess their skills and quality. Additionally, personality development helps in setting instrumental and terminal goals and aims of ones' life [15].

As expected, more than half of survey respondents strongly agreed, and more than a quarter of students stated that the Erasmus mobility program has helped them develop their personalities. As a result, the answer to the second research question about personality development can be confirmed. We can support our findings with those gained with the Erasmus+ Higher Education Impact Study [8], where 77.29 % of participants from low GDP, 77% from high Mid-Low GDP, 68% from Mid-High GDP, and another 68 % from High GDP report that their personalities have developed as a result of Erasmus mobility.

As per the Erasmus+ Higher Education effect study, 73.77 % from low GDP, 73 % from high mid-low GDP, 64 % from mid-high GDP, and 60 % students from high GDP claim that their employability skills have enhanced [8]. In our study, more than 35 % strongly agreed, and more than 25 % agreed that Erasmus mobility has improved their future chances, this is why our team also anticipates a positive response to this question, given the Erasmus+ mobility program is a well-known program worldwide. As a result, the third study question about future expectations is likewise answered.

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INTERNACIONALIZACIJA IN DIGITALIZACIJA VISOKOŠOLSKEGA IZOBRAŽEVANJA

Povzetek. *Pojav epidemije Covida-19 je vplival na pogostejšo implementacijo spletnih in hibridnih oblik dela v izobraževanem procesu. Vpetost v mednarodno, medkulturno, globalno izobraževalno okolje je preko virtualnih oblik izobraževanja postala dostopnejša in intenzivnejša, kar je še posebej izrazito v visokem šolstvu. Slednje omogoča lažjo in bolj učinkovito doseganje ciljev internacionaliziranega kurikuluma v domačem učnem okolju. Prispevek predstavlja stične točke med digitalizacijo in internacionalizacijo izobraževanja s poudarkom na implementaciji izbranih elementov internacionaliziranega kurikuluma v domačem učnem okolju. Na osnovi raziskave (izvedene tik pred pojavom epidemije Covida-19), v katero je bilo vključenih 1.367 predstavnikov akademskega osebja oz. 19,7 odstotkov celotne populacije, ugotavljamo, da je bila tedaj le dobra tretjina učnega osebja vključena v različne oblike spletnih sodelovanj s tujimi institucijami, v katere so bili vključeni tudi študenti. Večina se je posluževala sinhronih oblik spletnih sodelovanj preko različnih platform ali orodij. Preko 63 % respondentov je navedlo, da študente spodbujajo k skupnemu učenju v mednarodno mešanih skupinah tudi preko virtualnih učno-poučevalnih aktivnosti. V zaključnem delu članek predstavi možna izhodišča nadaljnjih bolj poglobljenih statističnih analiz.*

Ključne besede: *digitalizacija izobraževanja, internacionalizacija izobraževanja, internacionalizacija doma, internacionalizacija kurikuluma*

Uvod

S pojavom epidemije Covida-19 je izvedba spletnih in hibridnih oblik izobraževanja postala vsakdanja realnost na celotni izobraževalni vertikali. Vpetost v mednarodno izobraževalno okolje je preko virtualnih oblik izobraževanja postala dostopnejša in intenzivnejša, kar je še posebej izrazit pojav v visokem šolstvu. Vključevanje mednarodnih, medkulturnih in globalnih vsebin in razsežnosti v visokošolsko izobraževanje v domačem učnem okolju je tesno povezano z digitalizacijo univerzitetnega učenja in poučevanja. V tem kontekstu je smiselno izpostaviti koncepta internacionalizacije doma in internacionalizacije kurikuluma, oz. pomen uspešne implementacije internacionaliziranega kurikuluma v domačem učnem okolju, tj. brez fizičnega premika v tuje izobraževalno okolje. Namen prispevka je predstaviti ključne značilnosti spletnega izobraževanja v povezavi z internacionaliziranim kurikulumom, s ključnim poudarkom na implementaciji koncepta internacionalizacije doma.

Digitalizacija izobraževanja

Digitalizacijo izobraževanja je mogoče opredeliti na različne načine in iz različnih perspektiv, zato se pojavljajo različna poimenovanja istih ali primerljivih pojmov oz. konceptov, kot npr. e-izobraževanje, spletno izobraževanje, izobraževanje na daljavo ali študij na daljavo, e-študij ipd. Kakršnokoli uporabo informacijsko-komunikacijske tehnologije v izobraževalnem procesu lahko opredelimo kot e-izobraževanje; termin torej ne vključuje le izobraževanja, pri katerem sta učeči se in učitelj fizično na različnih lokacijah, temveč pomeni vsesplošni način uporabe tovrstne tehnologije v izobraževalne namene, vključno z izvedbo izobraževanja v klasičnih predavalnicah [1]. Kljub temu pa e-izobraževanje najpogosteje enačimo s študijem na daljavo v smislu prostorske in časovne oddaljenosti učečega in učitelja [2, p. 140; 3, p. 44].

V zadnjem dvajsetletnem obdobju sta opazna dva trenda, ki vplivata na izobraževalni proces: povečana uporaba informacijsko-komunikacijske tehnologije, ter hitrost in obseg sprememb, s katerimi smo soočeni v sodobnem (izobraževalnem) okolju. Učenje na daljavo postaja intenzivnejše, prav tako je pogosta uporaba kombinacij poučevanja na daljavo in tradicionalnega pristopa k izobraževanju [4]. Slednje je postalo še posebej izrazito s pojavom epidemije. Po navedbah Abdelhafeza [5] so se med epidemije Covida-19 štiri strategije izkazale za učinkovite pri zagotavljanju poučevanja na daljavo, in sicer: (i) *virtualno strokovno učenje* z osredotočenostjo na ustrezno pedagogiko, ki podpira virtualno učenje, ter podporno tehnologijo; (ii) *videokonferenca*, ki učiteljem omogočajo sinhrono interakcijo z učečimi, in uporabo ločenih sob za delo v skupinah; (iii) pomen *globalnih spletnih seminarjev oz. webinarjev* je postal izrazitejši z objavami v obliki blogov, preko družbenih medijev; in (iv) *varno pošiljanje sporočil*, ki se nanaša na uporabo varnih platform za pošiljanje sporočil. Izrednega pomena je tudi nudenje ustrezne strokovne podpore osebju pri implementaciji spletnih oblik izobraževanja tako v obliki izobraževalnih seminarjev kot tudi v smislu nudenja ustrezne IKT podpore.

S pojavom pandemije je prišlo do intenzivnejše ponudbe orodij in platform, ki omogočajo raznovrstne načine in pristope k izvajanju izobraževanja na daljavo. Učinkovitost slednjih je različna, prav tako se razlikujejo percepcije akademikov in študentov glede uporabnosti orodij oz. rešitev, ki jih ponujajo različni ponudniki. Opazen je porast *množičnih odprtih spletnih tečajev* (ang. Massive Open Online Courses – MOOCs), ki javnosti omogočajo dostopnost znanja, ki ga razvijajo predvsem univerze. Še bolj intenziven premik je razviden v uporabi raznovrstnih platform, ki omogočajo podporo univerzitetnemu e-izobraževanju, npr. Moodle in Microsoft Teams. Florjančič in Wiechetek [6] v primerjalni študiji poljskega in slovenskega visokošolskega okolja predstavita primere spletnih tečajev z uporabo omenjenih platform, pri čemer ugotavljata, da je Moodle uporabno, a kompleksno

orodje, medtem ko je sodobnejše Microsoft Teams orodje manj kompleksno za uporabo, obe platformi pa je mogoče tudi učinkovito kombinirati v izobraževalne namene. Raziskava na eni izmed tehniško usmerjenih kitajskih univerz je pokazala, da je smiselno uporabljati kombinirane modele učenja, kar pomeni predvsem uporabo kombiniranega spletnega izobraževanja s t.i. obrnjenim učenjem in drugimi tradicionalnimi modeli [7]. Študenti so namreč izražali nezadovoljstvo v primeru spletnega učenja in poučevanja, medtem ko je kombiniran model spletnega poučevanja z vključevanjem obrnjenega učenja vplival na boljšo učinkovitost njihovega učenja, povečala se je pozornost študentov, tovrstne pristope k izobraževanju pa so študenti ovrednotili tudi z boljšimi ocenami.

E-izobraževanje ponuja povsem novo paleto priložnosti za vključevanje mednarodnih, medkulturnih in globalnih razsežnosti v študij, virtualni stik z drugimi kulturami, sinhrono komunikacijo s predstavniki iz drugih regij itd., brez potrebe po premiku preko nacionalnih meja. Tovrstne priložnosti so še posebej izrazite z ustrezno implementacijo koncepta internacionalizacije doma.

Internacionalizacija doma

Internacionalizacija doma se nanaša na aktivnosti v domačem učnem okolju, ki spodbujajo vključevanje mednarodnih, medkulturnih in globalnih razsežnosti v študijski proces ali obštudijske dejavnosti za vse študente, torej tudi tiste, ki nimajo izkušnje z mobilnostjo v tujino. Internacionalizacija doma sicer ni didaktični koncept, temveč predstavlja niz namensko oblikovanih aktivnosti in instrumentov, ki omogočajo razvoj medkulturne zmožnosti in mednarodnih, globalnih perspektiv študentov v domačem učnem okolju v sklopu formalnega in neformalnega kurikulumu [8, p. 69]. Njej bližnji koncept se imenuje internacionalizacija kurikulumu, ki pa za razliko od internacionalizacije doma dopušča fizično mobilnost v tujino, saj se ne omejuje le na domače učno okolje; koncept je usmerjen predvsem v implementacijo vseh faz formalnega internacionaliziranega kurikulumu (v skladu z modelom konstruktivne poravnave kurikulumu [za podrobnosti gl. [9]), kot tudi podpornih storitev študijskega programa [10].

Vključevanje mednarodnih elementov v študijski proces je možno z različnimi pristopi in mehanizmi; obstajajo povsem nesistematični *ad hoc* načini implementacije kot tudi napredne oblike izvedbe, kar obravnavajo različni avtorji, npr. [11, 12, 13, 14, 15, 16]. Dejstvo je, da je v primeru prisotnosti tujih študentov v predavalnici doseganje ciljev internacionaliziranega kurikulumu, ki predstavlja produkt obeh omenjenih konceptov, ki sta sicer procesno usmerjena [10], lažja in bolj učinkovita. Hkrati smo v slovenskem visokošolskem okolju soočeni z dejstvom, da se študijski proces v največji meri izvaja v slovenskem jeziku (8. člen ZViS) [17, 18], kar ima zaviralni učinek na izvajanje

internacionaliziranega kurikuluma, saj so v predavalnicah redko prisotni tuji študenti skupaj s slovenskimi. Študijski programi ali njihovi deli se v slovenskem visokošolskem okolju namreč lahko izvajajo v tujem jeziku le v izjemnih primerih, kot npr. v primeru sodelovanja gostujočih visokošolskih učiteljev iz tujine v študijskem procesu, v primeru vpisa večjega števila tujih študentov ali v primeru vzporednega izvajanja študijskega programa tudi v slovenskem jeziku (ibid.).

Kot odgovor na omenjeno situacijo lahko predstavljajo učinkovit mehanizem za vključevanje mednarodnih in medkulturnih razsežnosti v slovenski visokošolski učni proces spletne oblike sodelovanj s tujimi visokošolskimi okolji.

Povezave med spletnim izobraževanjem in internacionalizacijo doma

Obstaja vrsta pristopov k implementaciji internacionaliziranega kurikuluma v praksi. Namen vseh je spodbujanje aktivne vloge študenta v študijskem procesu na način, ki na dolgi rok omogoča razvoj medkulturne zmožnosti ter mednarodnih, medkulturnih in globalnih perspektiv študentov, s tem pa se spodbuja posameznikova opolnomočenost in kompetentnost za delovanje v vsakdanjem globalno orientiranem svetu, kot tudi posameznikova konkurenčnost na trgu dela.

Udejanjanje internacionaliziranega kurikuluma je mogoče s/z [19, 8]: (i) oblikovanjem poučevalno-učnih aktivnosti na način, ki omogoča aktivno prepletanje in neizogibno medsebojno sodelovanje domačih in tujih študentov (v virtualnem ali fizičnem okolju), (ii) vključevanjem primerjalnih študij/primerov in raziskav v učni proces ob upoštevanju različnih nacionalnih in kulturnih kontekstov, (iii) uporabo literature oz. učnih gradiv iz različnih kulturnih in nacionalnih okolij, (iv) (virtualnim ali fizičnim) vključevanjem gostujočih predavateljev iz tujine, kot tudi z vključevanjem predavateljev iz prakse, ki delujejo v mednarodnem okolju oz. v mednarodnih podjetjih/organizacijah, itd. (v) V današnjem (post)Covid obdobju predstavljajo učinkovit mehanizem za implementacijo internacionaliziranega kurikuluma tudi *virtualne izmenjave* ali *virtualne mobilnosti* oz. različne oblike e-izobraževanja oz. študija na daljavo, kjer v študijskem procesu na daljavo sodelujejo študenti različnih visokošolskih oz. kulturnih okolij, ne da bi ob tem zapustili domače učno okolje. V tem kontekstu prepoznavno in vedno bolj pogosto obliko mednarodnega spletnega sodelovanja predstavlja t.i. *sodelovalno spletno mednarodno učenje* (ang. Collaborative Online International Learning – COIL).

COIL kot oblika pedagoškega pristopa spodbuja razvoj medkulturne zmožnosti študentov preko uporabe informacijsko-komunikacijske tehnologije v učnem oz. študijskem procesu, v katerega so vključeni učenci oz. študenti iz medsebojno geografsko oddaljenih lokacij in z različnim jezikovnim

ozadjem [20, 21, 22, 23, 24]. Struktura delovanja COIL temelji na medsebojnem akademskem sodelovanju učnega osebja, ki poučuje isti (primerljiv) predmet na različnih visokošolskih institucijah, predvidoma iz različnih kulturnih okolij oz. regij ali držav. Izvajalci predmeta so oblikujejo skupne učne izide, so-ustvarijo skupni kurikulum ali učni načrt, učno gradivo ter skupno učno orodje oz. pristop za delo. Poučevalno-učne aktivnosti temeljijo na aktivnem delu študentov, izkušnjskem učenju, ki lahko izhaja iz projektne oblike dela, obrnjenega učenja ipd., ki se odvija nekaj tednov ali cel semester, lahko tudi celotno študijsko leto. Odgovornost za doseganje ciljev in učnih izidov tako zastavljenega predmeta ali modula je razdeljena med vse vključene deležnike, predvsem pa vsi nosilci predmeta/modula nosijo mentorsko vlogo vsem študentom, vključenim v COIL. Z omenjenim pristopom se spodbuja implementacija koncepta internacionalizacije doma, katerega ključni cilj je razvoj medkulturne zmožnosti študentov, njihovih globalnih in mednarodnih perspektiv, globalnega državljanstva, kot tudi drugih mehkih, prenosljivih in zaposlitvenih zmožnosti, ne da bi zapustili domače učno okolje. Slednje predstavlja še posebej dodano vrednost za študente, ki zaradi različnih objektivnih ali subjektivnih razlogov nimajo možnosti vključitve v fizične oblike mednarodne akademske mobilnosti.

Glede na predstavljeno teoretično osnovo so cilji pričujočega prispevka naslednji:

Cilj 1: Ugotoviti, v kakšnem deležu in s kakšnimi spletnimi oblikami dela (v katere so vključeni tudi študenti) se akademsko osebje vključuje v sodelovanje s tujimi institucijami.

Cilj 2: Preveriti, v kolikšni meri akademsko osebje spodbuja študente k učenju v mednarodno mešanih timih (z upoštevanjem virtualnih aktivnosti).

Cilj 3: Predstaviti poučevalno-učne aktivnosti, ki se jih v spletnih oblikah sodelovanj s tujino poslužuje akademsko osebje.

Cilj 4: Preveriti mnenja akademskega osebja o ustrezni informacijsko-komunikacijski tehnologiji, nudeni s strani visokošolskih institucij, za vključevanje mednarodne razsežnosti v študijski proces.

Metoda

Instrument in zbiranje podatkov

V začetku leta 2020 smo zaključili z zbiranjem podatkov med akademskim osebjem, sodelujočim na slovenskih visokošolskih zavodih, v sklopu kvantitativne empirične raziskave, ki je preverjala vključevanje mednarodnih in medkulturnih razsežnosti v študijski proces. Temeljila je na spletnem vprašalniku (prirejenem predvsem po vprašalniku QIC [25]), pripravljenim v sistemu Ika, v katerem so prevladovala vprašanja ali trditve s 5-stopenjsko Likertovo lestvico. Del vprašanj je bilo odprtega tipa – odgovore nanje smo analizirali s kvalitativno metodo.

Za namen raziskave smo podatke o e-poštnih naslovih akademskega osebja zbrali iz spletnih strani

vseh javnih in zasebnih visokošolskih zavodov v Sloveniji. Začetnemu pošiljanju je sledil opomnik po tednu dni zbiranja podatkov.

Populacija in vzorec

V raziskavo je bilo vključeno visokošolsko osebje s poudarkom na visokošolskem učnem/akademske osebju – odgovori slednjih so predmet analize v zadevnem članku. Spletna povezava do vprašalnika je bila poslana na vse zbrane e-naslove (9.335), zato vzorčenja ni bilo izvedeno. Končni vzorec v celoti ustreznih respondentov je vključeval 1.367 predstavnikov akademskega osebja. Ob ustreznem čiščenju podatkovne baze je zaključni vzorec izračunan na 19,7 odstotkov [26], kar predstavlja solidno raven odzivnosti glede na celotno populacijo akademskega osebja v Sloveniji [27].

Rezultati

V nadaljevanju predstavljamo nekaj temeljnih prikazov in odgovarjamo na zastavljene cilje zadevnega članka. Med drugim je bilo z raziskavo ugotovljeno, da spletne oblike izobraževanj s tujino, v katere akademiki aktivno vključujejo tudi študente, izvaja 31,9 odstotka akademskega osebja, torej slaba tretjina celotne populacije. 68,1 odstotek jih je na zadevno vprašanje odgovorilo negativno (gl. tudi [9]). Ob tem je treba poudariti, da je bila raziskava izvedena tik pred pričetkom epidemije Covida-19, zato bi ponovitev raziskave v časi (post)Covidne situacije najverjetneje prinesla drugačne rezultate.

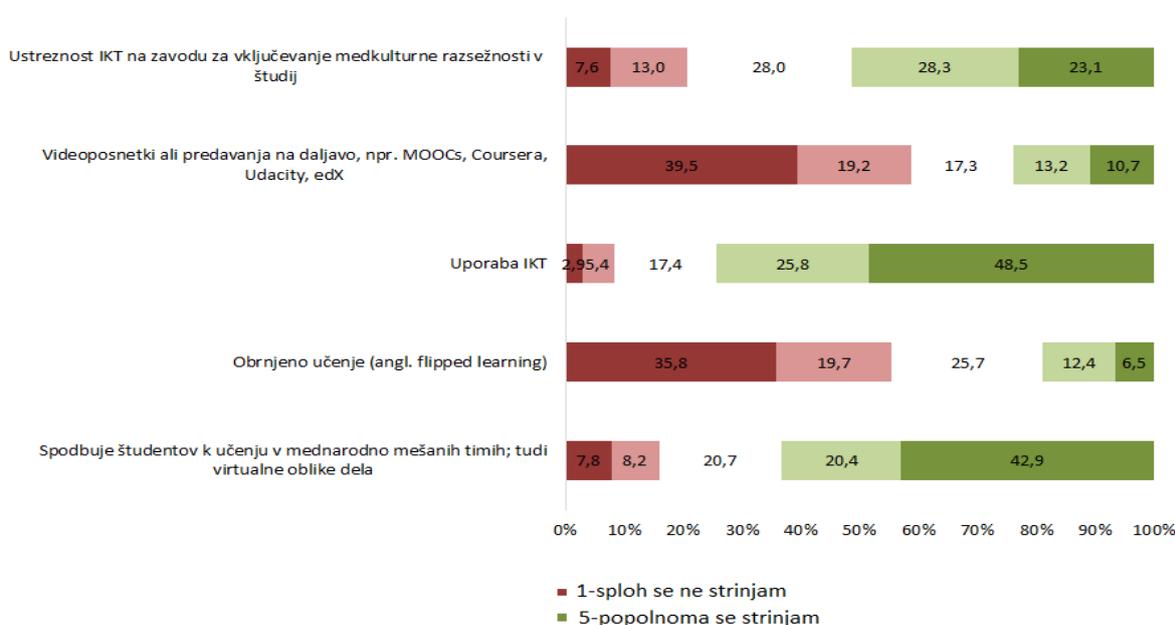
Nadalje so visokošolski učitelji, ki so (bili) vključeni v spletne oblike sodelovanja s tujino, navedli, kakšnih oblik spletnih sodelovanj, v katere so vključeni tudi študenti, se ob tem poslužujejo (Tabela 1). Dobrih 28 odstotkov učnega osebja je kot najpogostejši spletni pristop dela izbrala platforme/orodja, kot so Zoom, Microsoft Teams, Skype in druge oblike interaktivnih/sinhronih video predavanj. Pogosti odgovori so se nanašali na e-korespondenco (e-pošta in izmenjava različnih učnih materialov; tj. 16,4 odstotke), kot tudi na vključevanje študentov v mednarodne projekte in raziskovalne aktivnosti (skoraj 14 odstotkov) in na pristope dela z uporabo spletnih učilnic, npr. Moodle (gl. tudi [9]).

Tabela 3. *Prikaz deleža različnih oblik spletnih sodelovanj akademskega osebja z visokošolskimi institucijami iz tujine, v katere so vključeni tudi študenti.*

Oblike spletnih sodelovanj akademskega osebja z visokošolskimi institucijami iz tujine, v katere so vključeni tudi študenti	Delež
Sinhrona video predavanja, npr. Zoom, MS Teams, Skype, različne platforme/orodja, itd.	28.4%
E-korespondenca, npr. e-pošta, učnih izmenjava gradiv	16.4%

Mednarodni projekti in raziskovalne aktivnosti z vključenostjo študentov	13.8%
Uporaba spletnih učilnic, npr. Moodle in druge platforme/orodja	9.5%
Spletno mentorstvo	2.3%
MOOCs	1.8%
Obrnjeno učenje	1.3%
Drugo	6.1%
Irelevantni odgovori	20.5%
Skupaj	100.0%

Kot je razvidno iz Grafa 1, je večina akademskega osebja mnenja, da jim je na njihovem visokošolskem zavodu nudena ustrezna informacijsko-komunikacijska tehnologija za uspešno vključevanje mednarodne in medkulturne razsežnosti v študij – več kot 50 odstotkov učnega osebja se strinja ali popolnoma strinja s to trditvijo, medtem ko se jih le nekaj več kot 20 odstotkov s to trditvijo (popolnoma) ne strinja. Glede na slednje ni presenetljivo, da kar 74,3 odstotke učnega osebja navaja, da v študijskem procesu uporablja informacijsko-komunikacijsko tehnologijo, le nekaj več kot 8 odstotkov respondentov je odgovorilo, da se s to trditvijo ne strinja ali sploh ne strinja. Glede na slednji trditvi ja hkrati zanimivo, da se le slabih 24 odstotkov vprašanih strinja ali popolnoma strinja s trditvijo, da v študijski proces vključujejo videoposnetke ali predavanja, kot npr. MOOCs, Coursera, Udacity, edX, ipd. Tudi obrnjeno učenje preko spletnih oblik dela je redko v uporabi, saj je kar 55,5 odstotkov respondentov na zadevno trditev odgovorilo negativno. Kljub temu pa kar 63,3 odstotkov visokošolskih učiteljev ali sodelavcev navaja, da študente spodbujajo k skupnemu učenju v mednarodno mešanih timih ali skupinah z upoštevanjem (tudi) virtualnih učno-poučevalnih aktivnosti. Z zadevno trditev se le 16 odstotkov vprašanih (sploh) ni strinjalo.



Graf 8. Prikaza percepcij akademskega osebja glede na izbrane trditve v odstotkih.

Diskusija

Digitalizacija izobraževanja je v visokošolskem izobraževanju (in tudi na drugih stopnjah izobraževanja) vedno bolj pogosta. Ob dejstvu, da v tovrstne poučevano-učne aktivnosti sodijo kakršnekoli oblike uporabe informacijsko-komunikacijske tehnologije bi pravzaprav pričakovali 100-odstotni delež izvajanja digitaliziranih oblik, metod in pristopov pedagoškega dela. Ker je bila raziskava izvedena pred pojavom epidemije Covida-19, so odgovori respondentov zagotovo izražali manjšo naklonjenost spletnim oblikam izobraževanj, kot bi jo v času (post)Covid situacije. Zaradi pogostejše uporabe spletnih oblik dela v izobraževalne namene je tudi vključevanje mednarodne in medkulturne razsežnosti v študijski proces v domačem učnem okolju postal manjši izziv. V zadevnem prispevku smo osredotočeni v nekatere stične točke med digitalizacijo izobraževanja in priložnostmi za vključevanje mednarodne razsežnosti v študijski proces v okviru zastavljenih ciljev raziskave. Vsi navedeni cilji so bili realizirani; odgovore nanje smo podali v predhodni sekciji, v zaključni diskusiji pa jih postavljamo v nekoliko širši kontekst.

Le slabih 30 odstotkov respondentov je navedlo, da so vključeni v spletne oblike sodelovanj s tujimi visokošolskimi institucijami, v katere vključujejo tudi študente; v skladu s pričakovanji je bila kot najpogostejši način sodelovanj navedena uporaba platform, kot so Zoom, Microsoft Teams, Skype in druge primerljive platforme, ki omogočajo sinhrona video predavanja. Florjančič in Wiechetek [6] v tem kontekstu ugotavljata, da je Microsoft Teams manj kompleksno orodje za uporabo, ki hkrati omogoča tudi uspešno dopolnjevanje z drugimi primerljivimi orodji ali platformami. Čeprav tovrstno kombiniranje, s poudarkom na obrnjenem učenju, omogoča tudi bolj učinkovito študijsko izkušnjo študentov [7], je v zadevnem prispevku le slabih 19 odstotkov respondentov navedlo, da tovrstni pristop prakticira pri svojem pedagoškem delu. Ob tem je potrebno poudariti, da predstavlja članek le uvodno izhodišče s predstavitvijo temeljnih praks akademskega osebja, ki povezujejo digitalizacijo in internacionalizacijo izobraževanja. V naslednjem koraku bo vsekakor smiselno statistično podrobneje preveriti, ali obstajajo vzročno posledične povezave med vključevanjem spletnih oblik dela v študijski proces in implementacijo izbranih elementov internacionaliziranega kurikulumu v praksi.

Dejstvo je, da je z razširjeno implementacijo digitalizacije izobraževanja lažje vključevanje elementov internacionaliziranega kurikulumu v študijski proces v domačem učnem okolju. Obstajajo raznovrstni načini za doseganje ciljev internacionaliziranega kurikulumu (gl. Beelen in Jonesova [8], [19]), pri čemer je smiselno izpostaviti, da se le 16 odstotkov respondentov iz slovenskega visokošolskega okolja (sploh) ni strinjalo s trditvijo, ki je naslavljala spodbujanje študentov k učenju

v mednarodnih timih z upoštevanjem virtualnih oblik sodelovanj. V tej luči je smiselno izpostaviti v zadnjem času vse bolj aktualni pristop dela, ki spodbuja implementacijo internacionaliziranega kurikuluma, tj. COIL. Slednji zahteva kompleksne priprave, dolgoročno in vzajemno načrtovanje več deležnikov iz različnih držav oz. kulturnih ozadij. Zaradi izzivov, povezanih z implementacijo COIL so na eni izmed nizozemskih institucij k sodelovanju povabili študentko, ki je bila večkrat deležna izvedbe predmeta ali modula, ki je sledil principu COIL, naposled pa je dobila tudi priliko za aktivno vključenost v priprave modula po zadevnem pristopu in torej aktivnega sodelovanja z akademskim osebjem, odgovornim za izvedbo takšnega modula [28]. V intervjuju je izpostavljen predvsem obsežen časovni in vsebinski vložek, ki ga zahteva takšen pristop dela, da se zgradi logična struktura predmeta in prenese osnovna COIL ideja v atraktivne in smiselne naloge za študente. Nekdo, ki nima izkušnje z aktivnim načrtovanjem in izvedbo po principu COIL, si le s težavo predstavlja, kako obsežen zalogaj predstavlja.

Omenjeni pristop vsekakor predstavlja izziv, a hkrati enega najbolj učinkovitih načinov za vključevanje mednarodne in medkulturne razsežnosti v študijski proces v domačem učnem okolju. Potrebno je izpostaviti, da je pomembna osredotočenost na mednarodne in medkulturne elemente v vseh fazah načrtovanja internacionaliziranega kurikuluma, torej ne le v sklopu poučevalno-učnih aktivnosti, temveč morajo biti najprej vsebinsko smiselno formulirani internacionalizirani učni izidi, katerim pritiče ustrezno načrtovano delo študentov (in učitelja) s pripadajočim izborom učnih vsebin in materialov z mednarodno razsežnostjo, nenazadnje pa mora biti slednje tudi ustrezno evalvirano in ocenjeno. Omenjeni princip sledi modelu konstruktivne poravnave kurikuluma [9, prirejeno po 29], pri katerem je potrebno izpostaviti pomen dolgoročnega učinka, ki rezultira v razvoju medkulturne zmožnosti študentov, mednarodnih in globalnih perspektiv, mehkih, zaposlitvenih in prenosljivih kompetenc, ki so bistvene za uspešno osebno in profesionalno delovanje in rast v sodobnem globalnem okolju.

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***Section Globalisation as a Powerful Force for Growth and
Development***

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KAKO UBEŽATI MOTNJAM V GLOBALNIH OSKRBOVALNIH VERIGAH?

Povzetek. *Od začetka pandemije covid-19 so se globalne oskrbovalne verige znašle pod izjemnim pritiskom. Omejitveni ukrepi, pomanjkanje ladijskih kontejnerjev, spreminjajoče se povpraševanje, omejene proizvodne kapacitete in ostale težave so povzročile velike motnje, ki jih podjetja in kupci občutijo v višjih cenah in daljših dobavnih rokih. Močno so narasle tudi cene mednarodnega ladijskega transporta. Podjetja so tako vse bolj prisiljena iskati partnerje v bližnji okolici, če si želijo zagotoviti dobave po sprejemljivih pogojih. Zdi se, da je celoten proces globalizacije postavljen pred velik izziv, kar tlakuje pot bolj regionalnim pristopom. Namen članka je analizirati vzroke motenj v globalnih oskrbovalnih verigah in poiskati možne rešitve.*

Ključne besede: *Globalizacija, oskrbovalne verige, motnje, odpornost, robustnost*

Uvod

Od 90. let 20. stoletja dalje so podjetja iz ZDA in Evrope začela seliti proizvodnjo v azijske države in graditi čezmejne več-nivojske vrednostne verige, da bi izkoristila prednosti nižji stroškov, bližino naravnih virov, naraščajoči potencial globalnih logističnih ponudnikov in predvsem velik bazen dobro usposobljene, a poceni delovne sile [1]. To je vzpodbudilo razvoj dveh osnovnih modelov verig, od katerih je prvi slonel na izgradnji okrog ključnih proizvodnih podjetij v tehnološko in kapitalno intenzivnih panogah, kot npr. avtomobilska, farmacevtska in računalniška industrija, pri drugem pa se je veriga oblikovala okrog trgovskih podjetij kot npr. Walmart, Carrefour ali Tesco. Kompleksnost teh verig je zahtevala veliko vloženih naporov v njihovo upravljanje, še posebej v povezavi s koordinacijo aktivnosti med vodilnimi podjetji in njihovimi dobavitelji [2].

Globalne oskrbovalne verige morajo vseskozi iskati ravnotežje med učinkovitostjo in ranljivostjo [3]. Njihova vitkost, vzpodbujena z globalizacijo trgov sloni na učinkovitih procesih, visoki stopnji odzivnosti, nizkih nivojih zalog ter dobavah ravno ob pravem času. Pritiski v smeri zniževanja stroškov so kljub dolgim verigam vzpodbujali večjo logistično učinkovitost z nižjimi zalogami. S tem pa je hkrati naraščala kompleksnost in visoka stopnja medsebojne odvisnosti podjetij ter s tem ranljivost verig v primeru večjih motenj. Predpogoj za dobro delovanja tega modela je temeljil na stabilnem okolju in nemotenem poteku blagovnih tokov [4].

Relativna stabilnost ponudbe in povpraševanja je oblikovala mentaliteto brezskrbnosti, kratka prepričanja, da so tveganja dobro kontrolirana. Vitke strukture in nizek obseg zalog so bili pogosto vodilo pri upravljanju podjetij [5]. Z nastopom pandemije covid-19 ter z ukrepi za zaježitev širjenja virusa se je sorazmerno stabilno poslovno okolje precej zamajalo. Že v njeni zgodnji fazi je bilo zaradi zapiranja podjetij in omejitev pri prevozu blaga in potnikov kot tudi omejitev pri izvozu kritičnega blaga (zaščitne maske, ventilatorji) zaznati veliko prizadevanj tako podjetij, kot držav v smeri zagotavljanja višje stopnje lokalne oskrbe. Globalni blagovni tokovi so postali močno ovirani in kar naenkrat so se pod velikim vprašajem znašle številne pridobitve globalizacije, ki so se akumulirale skozi desetletja gospodarskega povezovanja [6].

Naraščajoča tveganja in motnje tokov v globalnih oskrbovalnih verigah

Podjetja, ki so vpeta v globalne oskrbovalne verige se soočajo z naslednjimi tveganji [7]:

- tveganje na strani povpraševanja, ki je povezano z negotovostjo da bodo kupci plasirali naročila,
- tveganje na strani ponudbe izhaja iz nezmožnosti pridobitve naročenega blaga s strani dobaviteljev,
- logistično tveganje je povezano z možnostjo motenj v transportnem ali skladiščnem procesu, ki onemogoča predvidene blagovne tokove,
- politično tveganje je povezano s spremembo zakonodaje, z ekonomskimi politikami in pristopi različnih držav k mednarodnim odnosom,
- proizvodno tveganje nastopi zaradi stavk, prepovedi delovanja določenih dejavnosti, ali drugih omejitev, ki onemogočajo proizvodnjo,
- finančno tveganje je povezano s finančno nezmožnostjo poravnavanja obveznosti na strani partnerjev v oskrbovalni verigi,
- informacijsko tveganje izhaja iz motenj informacijskih tokov v verigi,
- valutno tveganje, ki obstaja zaradi sprememb v valutnih tečajih.

Motnje v oskrbovalni verigah so nenačrtovani dogodki, ki imajo pomemben vpliv na materialne tokove [8]. Lahko nastanejo zaradi naravnih razlogov, ali pa so povezane s človeškim faktorjem in vodijo v nenadno prekinitve proizvodnje, do pomanjkanja blaga in nesposobnosti izpolnitve naročil [9]. Potekajo lahko po verigi navzgor zaradi težav na strani dobaviteljev (nezmožnost proizvodnje, težave s kakovostjo, omejeni viri) ali navzdol zaradi sprememb povpraševanja ter zakonskih ali ekonomskih sprememb na trgu. Primer prve skupine motenj bi bil dobava neustreznih komponent s škodljivimi lastnostmi na ljudi ali okolje višjemu členu v verigi, kar vodi do preklica oz. vračila naročila in posledično do zamud pri dobavi končnega proizvoda [10].

V hujših primerih lahko motnje vodijo v nezmožnost dobave končnih proizvodov kupcem, zaradi česar trpi dobro ime podjetja in pripelje do nižje prodaje ter padca tržnega deleža, prav tako lahko povzročajo višje stroške zaradi uporabe alternativnih vrst transporta, višjih administrativnih stroškov, nabave pri dražjih dobaviteljih, zamika ali ustavitve proizvodnje ter nižje stopnje izkoriščenosti kapacitet [11]. Številna podjetja si ob takšnih dogodkih nikoli ne opomorejo.

Oskrbovalne verige se vseskozi nahajajo pod določenimi pritiski in nekateri dogodki v preteklosti so že povzročili velike motnje v oskrbi v širšem globalnem okolju. Šlo je predvsem za naravne nesreče kot npr. potres na Japonskem v letu 2011, ki je močno pretresel oskrbovalne verige v avtomobilski industriji. Pretrganje ekonomskih zavezništev ter trgovinske omejitve posameznih držav, ki so bile sprejete zaradi političnih ali ekonomskih razlogov za zaščito domače industrije so prav tako pustile določene posledice.

Motnje v oskrbi so do določene mere predvidljive in podjetja se skušajo nanje prilagajati ter jih obvladovati z uporabo različnih strategij za obvladovanje tveganj. Nepredvidljive motnje lahko imajo lahko katastrofalne posledice za celotne verige z vplivom na širšo družbo. Prilagajanje je v takih primerih težje in prinaša manj koristi, zato morajo podjetja začeti bolj razmišljati v smeri izboljšanja odpornosti in robustnosti svojih verig. Pandemija covid-19 je sprožila serijo dogodkov, ki so postavili na preizkus odpornost globalnih oskrbovalnih verig. Izbruh koronavirusa v začetku leta 2020 je povzročil velik šok širom po svetu. Potekal je nepredvidljivo v več valovih na različnih geografskih lokacijah. Epidemični izbruhi so predstavljali posebno vrsto tveganj in so vodili do hkratnih motenj tako na dobavni kot prodajni strani ter tudi do omejitev logističnih tokov [12].

Zaradi večplastnih posledic pandemije na oskrbovalne verige predstavlja njen razdiralni učinek izziv tudi za raziskovalce. V preteklosti izjemne motnje v verigah postajajo tako vse bolj stalnica. Globoka negotovost pa sama po sebi vodi v kaos oz. nezmožnost njihovega uspešnega upravljanja [13].

Vpliv pandemije covid-19

Pandemije so se v preteklosti že dogajale in raziskovalci so na to nevarnost tudi opozarjali. Kljub temu je bilo zelo težko napovedati takšen dogodek in oceniti z njim povezana tveganja. Pretekle študije vezane na temo obvladovanja tveganj v oskrbovalnih verigah so bile osredotočene predvsem na naravne nesreče, vojne, terorizem, politično okolje, ekonomsko nestabilnost in socialne premike v državah [14]. Pandemija covid-19 pa predstavlja nekakšno točko preloma, saj se dogaja v valovih, katerih trajanje in intenzivnost ter posledično vpliv na širše poslovno okolje je zelo težko v naprej predvideti. Potrdila je medsebojno odvisnost gospodarstev in njen vpliv na rast in razvoj.

Motnje v proizvodnji zaradi pandemije so prizadele številne tovarne po svetu. Proizvodnja je bila najprej ustavljena na Kitajskem, nedolgo zatem pa se je val zapiranja razširil na večino preostalega sveta. Težave v proizvodnih procesih niso nastale zgolj zaradi pomanjkanja komponent in prisilnih ustavitvev proizvodnje izhajajočih iz omejitvenih ukrepov držav, temveč tudi zaradi obolelosti in karanten zaposlenih, ki so bili lahko tudi več tednov umaknjeni iz delovnih procesov. Omejena mobilnost delovne sile je prav tako imela svoj vpliv [15].

Težave pri dobavah so se najprej odrazile pri podjetjih, ki so močno odvisna od uvoza blaga iz Kitajske. Raziskava ISM je pokazala, da je kar 62% podjetij iz ZDA občutilo občutne zamude pri uvozu blaga iz te države. Prizadete so bile gospodarske panoge kot so: proizvodnja zdravil, elektronike, strojogradnja in avtomobilska industrija. Za slednjo je bil učinek še posebej močan, saj sloni na več-nivojski strukturi verige, ki jo sestavlja velika množica neodvisnih globalnih dobaviteljev ter pogosto sloni na dobavah po sistemu ravno ob pravem času. Po ponovnem zagonu proizvodnje na Kitajskem v marcu 2020 so se proizvajalci tam soočili s težavo pri dobavi sestavnih delov zaradi zaprtij podjetij v Evropi in ZDA. Ponudbeni šoki so ste tako selili skupaj z epidemičnimi izbruhi s kontinenta na kontinent. Posebno težavo so predstavljala ozka grla v proizvodnji zaščitne medicinske opreme, ki v začetni fazi nikakor ni uspela slediti večkratnemu povečanju povpraševanja. Države so se začele zavedati visoke odvisnosti od kitajske proizvodnje in začele vzpodbujati domače proizvajalce, da zagotovijo lokalno oskrbo. Zaradi vse večjih težav v oskrbi s številnimi izdelki in sestavnimi deli so podobna razmišljanja pridobivala na teži tudi v drugih industrijskih vejah [16].

Na strani povpraševanja je bil učinek precej različen od panoge do panoge. Težava je predvsem v nezadostnih informacijah s strani kupcev o bodočih potrebah, saj so se nakupovalni vzorci marsikje spremenili, kar je povečalo napake v planiranju [7]. Pri nekaterih nujnih potrošnih dobrinah je prišlo do velikega skoka povpraševanja (vitamini, zaščitne maske, dezinfekcijska sredstva), pri določenih proizvodih je prihajalo celo do paničnih nakupov (kvas, toaletni papir). Zaznana je bila tudi sprememba v nakupovalnih navadah potrošnikov, ki so začeli kupovati izdelke v vse večjih količinah zaradi zmanjšanja frekvenc nakupov, narasla je tudi spletna prodaja [17]. Pri hrani in pijači je zaradi omejitev na strani distribucije (zaprti hoteli, restavracije in bari) prišlo do zmanjšanja povpraševanja po izdelkih namenjenih prodaji skozi gostinsko in turistično dejavnost, ter naraščanja po tistih, ki so jih kupci uživali doma. Zapore v določenih distribucijskih kanalih so po drugi strani vodile v večjo obremenjenost drugih še delujočih. Nove navade potrošnikov, ki so več časa preživali doma, so imele za posledico spremenjeno strukturo povpraševanja po proizvodih, ki se mu je ponudba šele z zamikom skušala prilagoditi.

Nezadostne informacije o bodočem povpraševanju lahko sprožijo tudi t.i. učinek biča. Spremenljive kupne navade potrošnikov povečujejo negotovost in silijo podjetja k oblikovanju dodatnih zalog blaga in plasiranju višjih količin naročil. Spremembe v povpraševanju kupcev izhajajo iz njihovih pričakovanj, dohodkov, spremenjenih navad, itd. Pandemija covid-19 je sprožila spremembo preferenc pri kupcih tudi zaradi negotovosti glede njihovega bodočega finančnega stanja. Slabša kupna moč potrošnikov zaradi nastale brezposelnosti ali finančne negotovosti lahko pomembno zniža povpraševanje, še posebej pri manj nujnih potrošnih dobrinah. Ta pritisk je bil še posebej opazen pri delavcih z nižjimi dohodki [7].

Izzivi globalne logistike

Ena od najbolj prevladujočih motenj v času pandemije se nanaša na delovanje mednarodnega trgovskega omrežja. Presekane transportne povezave so onemogočale premike blaga med dobavitelji, proizvajalci in kupci tudi kadar v primerih, ko je bilo blago pripravljeno za odpremo [18]. Poostrene mejne kontrole, zahtevnejša pravila v pristaniščih ter nove carinske procedure so močno upočasnile blagovne tokove. Zaradi zmanjšanja obsega letalskega potniškega transporta ob začetku krize so hkrati upadle kapacitete za prevoz tovora, saj se polovica letalskega tovarnega prometa opravi s potniškimi letali. Cene so posledično močno poskočile, njihov dvig pa je zaradi višjih stroškov energentov in drugih dejavnikov kasneje zajel še ostale transportne panoge. Nenaden skok spletnih naročil je predstavljal velik izziv za spletne trgovce, saj so se ti soočali bodisi s premajhnimi zalogami določenih artiklov, ali pa z nezadostnimi dostavnimi kapacitetami, kar je vodilo v pogoste zamude pri dobavah in zaradi preteka roka uporabe tudi v veliko zavržene hrane [15].

Začetno zmanjšanje povpraševanja po prevozu določenega blaga je vodilo v slabšo izkoriščenost kapacitet in posledično k višjim transportnim stroškom. Nekatera manjša transportna so zaradi tega celo propadla, kar je vodilo k zmanjšanim transportnim kapacitetam [19]. Sledilo je nenadno močno povečanje povpraševanja po določenih izdelkih (mali gospodinjski aparati, zabavna elektronika). Številne zapore pristanišč so povzročale velike zamude pri nakladanju blaga na ladje in razkladanju z njih. Mnogi ladjarji so začasno prenehali pluti v določena pristanišča in preusmerjali ladje drugam, ali so celo odpovedovali določene načrtovane prevoze. To je vplivalo na vse s pristanišči povezane logistične dejavnosti, kot so cestni in železniški prevozi [20]. Potrebe po ladijskem prevozu blaga iz Azije v ZDA in Evropo so hitro narasle in prevozniki jim niso več uspeli slediti. Pojavile so se težave zaradi pomanjkanja kontejnerjev, saj so ti v času zaprtja trgovin služili kot nekakšna manjša skladišča za določeno blago in se posledično niso vračali v azijske države.

Zastoj v Sueškem prekopu, ki ga je povzročila zagozdena ladja Evergreen v marcu 2021 in je trajal

skoraj teden dni, je težave samo še povečal. Kot vse večja težava se kaže pomanjkanje delavcev v pristaniščih in še bolj pri prevoznih podjetjih. Gre za velik kadrovski problem, ki postaja vsako leto večji, saj se zaradi nepriljubljenosti teh poklicev mladi zanje vse težje odločajo, medtem ko se starejše generacije množično upokojujejo.

Podjetja so postavljena pred nove izzive tudi ko gre za njihov pristop k oblikovanju zalog. V 70. letih 20. stoletja je Toyota razvila sistem ravno ob pravem času, ki so ga kasneje prevzeli mnogi konkurenti in tudi podjetja v drugih dejavnostih. Njegova učinkovitost se izraža v nižjih stroških zalog, krajših časih dobav ter višji stopnji kakovosti. Zaradi višje negotovosti na nabavnem trgu in daljših rokov dobave so nekatera podjetja strategijo »just in time« zamenjala za t.i. »just in case«, ki pomeni oblikovanje večjih zalog kritičnih komponent [6]. Na ta način se tveganja sicer znižajo, vendar se pojavi vprašanje, če to odtehta zmanjšanje učinkovitosti in nastanek morebitnih nekurantnih zalog zaradi nepredvidljivega povpraševanja. Ozka grla pri dobavi nekaterih ključnih komponent (kot so npr. polprevodniki) po drugi strani niti ne omogočajo oblikovanja varnostnih zalog.

Krepitev odpornosti

Prilagajanje na novo normalnost, ki odstopa od stabilnosti in dolgoročnega planiranja je postalo izziv tudi za dobro organizirane oskrbovalne verige, saj je upadlo zaupanje v sposobnost predvidevanja razvoja dogodkov in upravljanja tveganj. Številne verige, ki so bile v preteklosti že deležne motenj, so se zdaj soočile z neprecedenčnimi šoki nastalimi skozi dolgotrajno pandemično krizo. Zaradi novo nastalega negotovega okolja se vse bolj v ospredje postavlja potreba po reinoviranju upravljanja oskrbovalnih verig [5].

Krhkost globalnih oskrbovalnih verig se je pokazala kot velika težava v času pandemije. Vsled tega so podjetja začela razmišljati kako izgraditi bolj robustne verige, ki ne bodo tako zlahka podlegle vsem mogočim motnjam. Za okrepitev trajnosti delovanja je pomembno, da se aktivnosti usklajujejo s ključnimi členi verige [21]. Paradigmo vitkosti ponekod zamenjala paradigma agilne proizvodnje, kjer je glavni poudarek na sposobnosti hitrega reagiranja na spremembe v okolju.

Odpornost v oskrbovalnih verigah predstavlja njihovo sposobnost da si opomorejo v primeru motenj. Gre torej za vrnitev v prejšnje normalno stanje [22]. Krepitev odpornosti v globalnih verigah vrednosti je zelo zahtevna, saj imamo opravka s podjetji na različnih trgih, ki okrevajo v različnih časovnih terminih. Proizvodnja končnih dobrin lahko nemoteno steče šele ko se sprostijo omejitve proizvodnje in distribucije sestavnih delov na nižjih stopnjah verige. Vplivi pandemije na gospodarstva so postali tako veliki, da so nekatere države aktivno pristopile k vzpodbujanju

proizvodnje kritičnih komponent kot so polprevodniki, baterije visokih kapacitet, cepiva in drugi farmacevtski izdelki na lokalni ravni [23].

Z namenom doseči večjo odpornost oskrbovalnih verig nekateri avtorji predlagajo, da naj se te skrajšajo, lokalizirajo in še bolj diverzificirajo. Ta pristop je tudi v skladu z novimi politikami tako posameznih podjetij, kot tudi držav, ki si želijo večje neodvisnosti od globalnih virov. Postavi se torej vprašanje: je to prava pot, razvijati verige na bolj lokalni oz. regionalni osnovi, kar pomeni zmanjšati stopnjo globaliziranosti? Miroudot (2020) nasprotno meni, da tovrstno prestrukturiranje ne izboljšuje odpornosti in predlaga večje napore v smeri agilnosti, fleksibilnosti in transparentnosti verig. Zaradi medsebojne povezanosti trgov pa seveda ni mogoče preprosto odmisлити zahtevnosti vrnitve v predhodno stanje ob različnih stopnjah okrevanja posameznih trgov [6].

Zaradi vojne v Ukrajini so postali izzivi še toliko večji, saj so se težave razširile še na področje oskrbe s surovinami (energenti, pšenica, koruza, les, jeklo, itd.), kot tudi številnih drugih sestavnih delov, ki jih v zahodnih gospodarstvih ne bo mogoče tako kmalu nadomestiti. Državne intervencije postajajo vse bolj pogoste ko gre za reguliranje cen pri omejitvi cenovnih šokov zaradi visokih cen energentov. Od pandemije že tako načete oskrbovalne verige bodo brez državnih ukrepov v marsikateri dejavnosti težko kos dodatnim ozkim grlom, omejitvam in negotovosti.

Morebitne rešitve

Izkušnja pandemije covid-19 je pokazala, da je potrebno stroškovno učinkovite strategije kot so vitka proizvodnja, dobave ravno ob pravem času in iskanje virov na globalnem trgu uravnotežiti z odzivnostjo ter višjo stopnjo pripravljenosti in odpornosti. Preko uvajanja različnih strategij povečanja odpornosti se skušajo podjetja zaščititi pred naraščajočo negotovostjo. To lahko vključuje občutno reorganizacijo in implementacijo upravljanja tveganj skozi celotno organizacijo [24].

Podjetja bodo morala sprejeti krizo kot nekaj normalnega in ne kot izredni dogodek, kar pomeni, da bodo morala biti stalno pripravljena na motnje v oskrbi in se hitro odzivati na spremembe v okolju. Dolgoročno planiranje se je pokazalo kot precej nezanesljivo, zato je pričakovati večji poudarek na kratkoročnih planih [5]. Povečanje fleksibilnosti v oskrbovalnih verigah postaja tako vse bolj pomembno. Vendar pa je doseganje večje stopnje fleksibilnosti verige možno doseči le z večjo proizvodno fleksibilnostjo, kot tudi fleksibilnostjo zaposlenih da prilagodijo svoje delo [19]. Z vključevanjem dodatnih dobaviteljev je do neke mere možno zmanjšati ranljivost pri oskrbi. Krepitev nabavnih virov ter proizvodnih in logističnih kapacitet pa mora sloneti predvsem na sposobnosti reagiranja glede na nastalo situacijo in ne pretežno na preventivnih ukrepih [25], ki povečujejo

stroške.

Višja stopnja sodelovanja med člani oskrbovalne verige lahko izboljša monitoring stanja na trgu in pospeši odziv na nastale spremembe [26]. Odpornost oskrbovalnih verig pomeni njihovo sposobnost da si opomorejo v primeru izrednih dogodkov. Podjetja bodo morala postati vse bolj sposobna v kratkem času obnavljati, kakor tudi občutno spreminjati svoje procese in skupaj z drugimi člani verige iskati rešitve pri graditvi bolj robustnih sistemov.

V strokovni literaturi je dobro poznan in raziskan učinek biča, ki izvira iz negotovosti povpraševanja in nezadostne delitve informacij med člani v verigi. Boljša delitev informacij lahko v takšnih primerih precej pripomore k blaženju posledic in k večji odzivnosti [9]. Vodi lahko tudi do bolj koordiniranih strategij, ki bodo omogočale hitrejše okrevanje. To pa zahteva prehod iz transakcijsko pogojenih razmerij v gradnjo partnerstev, kar je možno doseči preko povezovanja, krepitve zaupanja ter delitve stroškov in koristi [27]. Zagotavljanje večje preglednosti je pomembno tudi pri preprečevanju učinka biča, kar še posebej velja za boljše obvladovanje tveganj na strani povpraševanja.

Sklep

Desetletja naraščanja svetovne trgovine s poglobljanjem vezi med partnerji na globalnem trgu so prinašala gospodarski razvoj in povečanje blagostanja državljanom širom po svetu. Večje motnje v blagovnih tokovih so bile redek dogodek, vladalo je zaupanje v sposobnost podjetij da uspešno obvladujejo poslovna tveganja. Z nastankom pandemije covid-19 se je ta percepcija močno spremenila. Zaradi nastalih motenj v blagovnih tokovih se vse bolj pojavljajo težnje po preureditvi globalnih oskrbovalnih verig. V prizadevanju za povečanje odpornosti se podjetja zatekajo k njihovemu krajšanju. Nepremišljen umik z globalnih trgov s premikom na lokalne lahko povzroči dodatne stroške, podvajanje kapacitet in povečevanje zalog pa zmanjšujeta učinkovitost.

Podjetja se prav tako soočajo z ozkimi grli pri dobavi nekaterih ključnih materialov ter s povečanimi stroški logistike. Zaradi posledic pandemije covid-19 ter vojne v Ukrajini so se močno dvignile cene surovin. Inflacijski pritiski so močni in neučinkovite oskrbovalne verige jih lahko samo še povečujejo. Eden od načinov kako se temu zoperstaviti je izboljšanje odzivnosti vseh členov v verigi skozi višjo stopnjo delitve informacij. Večja stopnja digitalizacije in integracije informacijskih sistemov je pri tem lahko v veliko pomoč.

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URAVNOTEŽENJE GLOBALIZACIJE - BALANCING GLOBALIZATION

Povzetek. Globalizacija je proces, dokončan v dvajsetem stoletju, ki kapitalizem uveljavi kot prevladujoč svetovni sistem in ga razširi po svetu. Tako kot v vsakem novem sistemu imajo največ od tega tisti, ki so pobudniki in pospeševalci. Vendar vsak sistem ima svoje omejitve, še posebej, če se le ta realizira v realnem svetu. Globalizacija je z vidika ekonometristov še ena uspešna linearna zgodba, ki pa ima eksponentialno negativno rast/padec z globalno boleznijo Covid-19, napadom Rusije na Ukrajino ter napetostmi na Balkanu, s premikom interesnih gospodarskih in političnih centrov v smeri jugovzhodne Azije in Kitajske, s slabenjem Evropske unije in ZDA ter demografskim skokom Afrike. Podnebne spremembe so dejstvo, nevarnost- dvig temperatur, dvig nivoja morij in sprememba pomembnih tokov, nevarnost poplav za velik delež svetovne populacije, hkrati pa priložnost - možnost gospodarskega izkoriščanja nekaterih območij-Grenlandija, Sibirija, Arktika in Antarktika. Odpiranje novih morskih poti npr. Severna morska pot. Nove tehnologije - energija na podlagi jedrske fuzije, samo vozeča vozila, ipd., kar je povezano tudi z osvajanjem vesolja, odkritjem tekoče vode na Marsu, iskanjem sekundarnih okolij za gospodarsko izkoriščanje in »turističnimi« poleti v vesolje. Zaton nekaterih velesil, verjetno tudi skorajšnja menjava svetovne valute in zaton kapitalizma. Potrebujemo uravnoteženje in nov svetovni red!

Ključne besede: globalizacija, velesile, podnebne spremembe, nove tehnologije, zaton kapitalizma, uravnoteženje, nov svetovni red

Uvod

Konec novembra lanskega leta sem prejel poziv za prijavo prispevka na 4. EECME konferenco, kar nekaj časa sem razmišljal in potem januarja 2022 oddal prijavo s temo, ki se dotika nekaterih neravnovesij, celo nasprotovanj znotraj globalizacijskih procesov, za katere sem predvideval, da se dajo rešiti z institucionalnimi oziroma mirnimi spremembami. Več kot očitno je, da so geopolitična, geoeekonomska in vrednostna nasprotja tako velika, da je prišlo 24. februarja 2022 do vojne oziroma napada Rusije na Ukrajino. 20. februarja 2022 so se zaključile zimske olimpijske igre na Kitajskem. 4. februarja 2020 ob otvoritvi olimpijskih iger se je ruski predsednik Vladimir Putin v Pekingu srečal s kitajskim voditeljem Xi Jinpingom. Mnogi zahodni voditelji so napovedali diplomatski bojkot zimskih olimpijskih iger in se slovesnosti ob odprtju iger niso udeležili. Za bojkot so se odločili zaradi kršitev človekovih pravic na Kitajskem. Visoko moralna poteza, vsebinsko gledano, pa se ZDA in EU odrekajo Aziji, ki je zadnje desetletje najbolj propulzivna regija, pravzaprav potiskajo Rusijo iz

¹² Prispevek je mnenje avtorja in ga predstavlja izključno v svojem lastnem imenu, in ne izraža nujno stališča organizacije v kateri je zaposlen, oziroma s katerimi sodeluje.

Evrope v Azijo in jo prisiljujejo k navezi s Kitajsko in morda celo z Indijo. S tem se krepí novi gospodarski, politični in vojaški center v Aziji, kar se ob slabljenju ZDA in EU, ki nikakor ne more preskoka iz gospodarske v politično povezavo, samo pospešuje.

V svojem prispevku sem želel opozoriti na nekatere pomembne pokazatelje, na osnovi katerih je potrebno realizirati oziroma ponovno uravnotežiti globalizacijo kot svetovni proces, da nam »para v pregretem loncu ne bi odnesla pokrovke«. Na žalost se je z vojno v Ukrajini, pokazalo, da para že uhaja iz lonca in da se bo potrebno z vso resnostjo in odgovornostjo lotiti problemov, ki zadevajo cel planet Zemljo. Na nekatere bom skušal opozoriti in predlagati posamezne rešitve, upajoč, da se bo v tem času do objave prispevka vse skupaj »ohladilo« in da bomo lahko začeli ponovno trezno razmišljati o skupnem reševanju problemov.

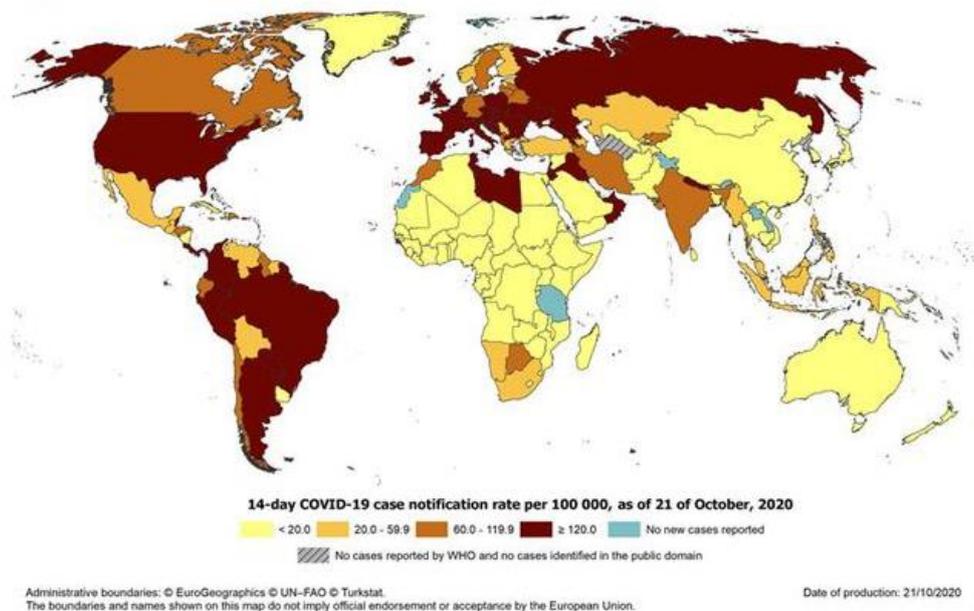
Epidemija Covid-19

Pandemija koronavirusne bolezni (COVID-19), ki je izbruhnila decembra 2019 na Kitajskem¹³, se je v Slovenijo prvič potrjeno razširila 4. marca 2020, ko je bil odkrit prvi okuženi.

Svetovna zdravstvena organizacija je zaradi širjenja 30. januarja 2020 razglasila javnozdravstveno krizo mednarodnih razsežnosti, 11. marca 2020 pa ga je označila za pandemijo. Konec februarja 2022 je bilo potrjenih več kot 500 milijonov primerov bolezni COVID-19 v več kot 200 državah in ozemljih, umrlo je več kot 6 milijonov ljudi [8], po dotlej zbranih podatkih je 77,2 milijonov ljudi ozdravelo.

Pandemija je povzročila hude socialno-ekonomske motnje po vsem svetu, prestavitev ali odpoved pomembnih športnih, verskih in kulturnih dogodkov ter strah pred pomanjkanjem, ki je ponekod sprožil panično nakupovanje. V več kot 160 državah so zaprli šole in univerze, bodisi na lokalni, bodisi na državni ravni, kar je oviralo šolanje skoraj 90 odstotkov učencev na svetu. Hkrati so se začele po svetovnem spletu širiti številne dezinformacije in teorije zarote o virusu, zabeleženi pa so bili tudi posamezni ksenofobni izpadi, usmerjeni proti Kitajcem oz. ljudem z vzhodnoazijskim izgledom, kot tudi tujcem iz drugih žarišč bolezni po svetu [2].https://sl.wikipedia.org/wiki/Pandemija_koronavirusne_bolezni_2019_-_cite_note-NYT_Racism-43

¹³ Wuhan je glavno mesto province Hubej v Ljudski republiki Kitajski in s približno 11 milijoni prebivalcev (po podatkih iz leta 2018 [3]) največje mesto v Osrednji Kitajski. Po oceni je širše metropolitansko območje že leta 2010 doseglo 19 milijonov prebivalcev in je eno najpomembnejših prometnih ter industrijskih središč v notranjosti Kitajske [7].



Slika 1. Razporeditev okuženih na 100.000 prebivalcev v svetu [9]

Pandemija koronavirusne bolezni (COVID-19), je zajela celoten planet Zemlja z sorazmerno veliko hitrostjo in se z zadnjimi različicami umirja šele v prvi polovici leta 2022, torej več kot dve leti so imeli skoraj vse države in prebivalci po svetu negativne socialne in ekonomske učinke. Drastično se je zmanjšal letalski promet in turizem, čeprav so ga posamezne države z različnimi instrumenti poizkušale spodbujati vsaj v nacionalnem okolju.¹⁴



Slika 2. Število smrtnih žrtev posamezne epidemije v primerjavi s celotnim svetovnim prebivalstvom [10].

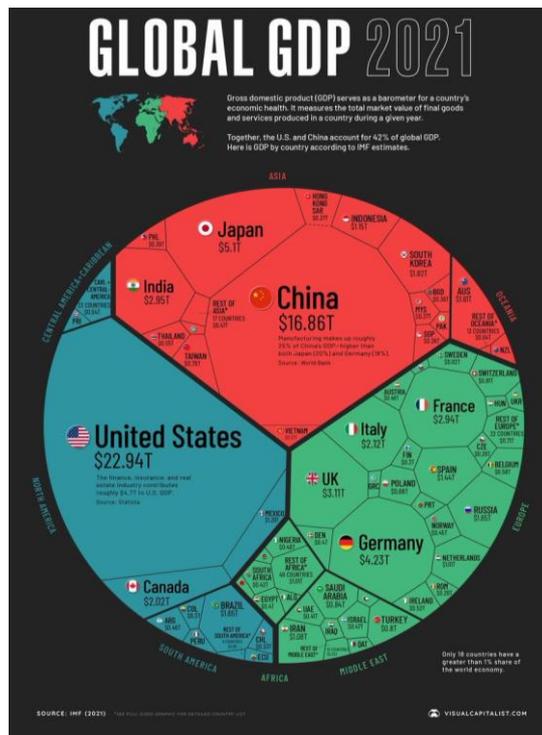
¹⁴ V Sloveniji: TB: za nastanitev ali za nastanitev z zajtrkom in BON21: za plačilo storitve s področja* (gostinstva, turizma, športa in kulture)

Vsekakor koronavirusna bolezen ni prva bolezen svetovne razsežnosti in glede na število žrtev v primerjavi s svetovnim prebivalstvom ni niti največja, je pa pomembno, da je tokratna epidemija potekla zelo hitro in da je kljub sodobnim znanstvenim dognanji potrebovala sorazmerno dolgi čas za izdelavo cepiva. Pri čemer ni bilo npr. enotnega nastopa EU, temveč so se v reševanje nastale problematike vključile posamezne države, kar je dajalo veliko prostora za korupcijo in »vojno« dobičkarstvo, kot tudi nenavadno vedenje mednarodnih korporacij¹⁵, ki proizvajajo cepiva [3].

Premik gospodarskih in političnih centrov

Kot posledica II. Svetovne vojne sta se politično prepričanje ter družbena struktura močno spremenila. Medtem ko je bila ustanovljena Organizacija združenih narodov (OZN) za krepitev mednarodnega sodelovanja ter preprečevanje nadaljnjih spopadov, se je zaradi ideoloških razlik med takratnima supersilama, tj. med ZDA in Sovjetsko zvezo, začelo obdobje hladne vojne. V tem času je OZN-ovo zagovarjanje pravice narodov do samoodločbe pospešilo dekolonizacijska gibanja v Aziji in Afriki, v Zahodni Evropi pa sta se gospodarstvo ter proces evropska integracije okrepila, najprej v okviru EGS, ki je kasneje prerasla v EU. Prav tako so ZDA skupaj z državami Zahodne Evrope na podlagi Severnoatlantske pogodbene organizacije oz. Organizacija severnoatlantske pogodbe, organizirale v zvezo NATO ali pakt NATO (angleško North Atlantic Treaty Organisation, kratica Nato ali NATO), ki je mednarodna vojaško-politična organizacija držav za sodelovanje na področju obrambe, ki je bila ustanovljena 4. aprila 1949 z Washingtonsko pogodbo. Države članice NATA lahko v okviru izvajanja samoobrambe ravnajo tudi mimo Varnostnega sveta OZN, kot temeljnega organa zagotavljanja mednarodnega miru in varnosti, vendar ga morajo o tem takoj obvestiti. Varnostni svet ZN šteje 15 članic, od katerih je 5 stalnih (ZDA, Združeno kraljestvo, Francija, Ljudska republika Kitajska in Rusija), ki imajo pravico veta. Njegova naloga je ohranjanje miru in varnosti v svetu. In prav te članice, še posebej ZDA in Rusija so povzročile veliko vojn. ZDA v Vietnamu, Koreji, Iraku, Afganistanu, Libiji in Rusija v Čečeniji, Gruziji, Afganistanu, na Krimu in sedaj v Ukrajini. Vojne so odraz nakopičenih političnih napetosti in geoekonomskih interesov. Ob tem moramo opozoriti, da se svetovna ekonomska moč premika proti vzhodu oziroma jugovzhodu, kjer je tudi največ prebivalstva, torej Kitajska, Indija, Indonezija, itd., kar povzroča določene napetosti v regiji predvsem zaradi znanega stališča Kitajske do Tajvana pa tudi do Japonske. Kitajska bo po ocenah kot azijski gospodarski gigant v letu 2027 ali 2028 preseгла ZDA kot največje svetovno gospodarstvo, saj kot je vidno iz spodnje slike se ji je že v letu 2021 pomembno približala.

¹⁵ EU zaradi težav z dobavo cepiva proti covidu-19 od britansko-švedske farmacevtske družbe AstraZeneca razmišlja o tožbi proti temu podjetju.



Slika 3. Globalni GDP v letu 2021 [11].

Slabljenje ekonomske moči ZDA, odhod Velike Britanije iz EU in oblikovanje »vzhodne povezave« držav članic EU, ob nezmožnosti preoblikovanja EU v ne zgolj gospodarsko povezavo, temveč politično unijo, slabi Evropo. Vojna v Ukrajini bo več kot dodatno oslabilo Evropo in potisnila Rusijo v interesno okolje Kitajske in Indije, ki bodo potem, ko bodo uredile svoja medsebojna razmerja zahtevale razpravo in eventualne spremembe svetovne ureditve in zamenjavo svetovne valute. Pri čemer bo pomembno prispevala tudi demografsko naraščajoča Afrika z svojimi rudnimi bogastvi.

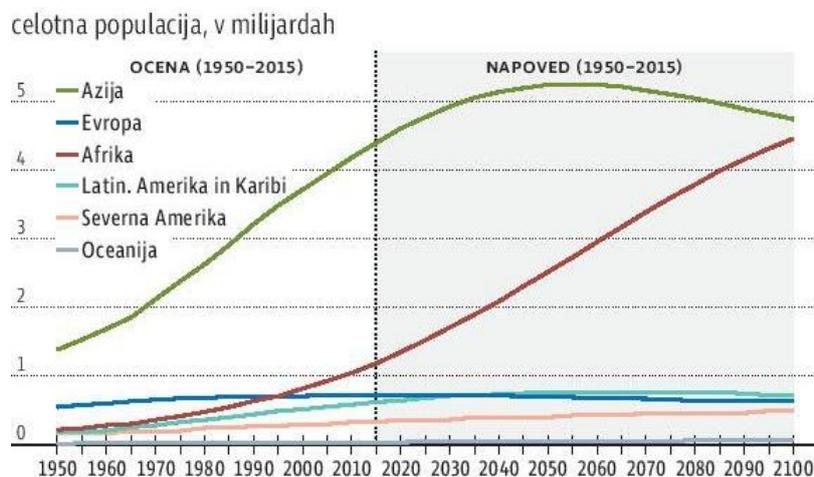
Vojna v Ukrajini bo povzročila, da se bo Evropa »zmanjšala« za Rusijo, da se bo še bolj povezala v NATO in da se bo ob ekonomsko-političnem slabljenju ZDA in negativni demografskim trendom morala bolj povezati tudi politično in bolj demokratizirati svoje delovanje, saj Svet Evrope in Evropski parlament skupaj z Komisijo EU nezadostno vključujeta državljanke v ključne odločitve¹⁶. Prav tako bo imela probleme v energetiki in preskrbi hrane, še posebej, če se bo oblikoval tako imenovani »žitni OPEC«.¹⁷

¹⁶ V svetovni prostor bo morala vstopiti kot samostojna sila, ki se ne bo mogla več zanašati na "sestrčno" onstran Atlantskega oceana, prav tako bo morala zahtevati spremembo svetovne ureditve, saj v Varnostnem svetu OZN nima niti stalnega sedeža.

¹⁷ Rusija izvozi za okoli 35 milijonov ton pšenice letno in je na prvem mestu na svetu. Na drugi strani so pred izbruhom vojne na svetovnem trgu pričakovali za okoli 24 milijonov ton pšenice iz Ukrajine. To naj bi Ukrajino uvrstilo na četrto mesto med izvoznici pšenice na svetu. Približno 400 milijonov ljudi po vsem svetu je neposredno odvisnih od ukrajinskega izvoza. Velik izvoznik pšenice je tudi Kazahstan, ki na leto požanje od deset do 20 milijonov ton pšenice.

Demografske spremembe

Delež prebivalstva Evrope v svetu se krči in do leta 2070 ne bo znašal več niti 4 % svetovnega prebivalstva. *Demografske spremembe* lahko vplivajo tudi na položaj Evrope v *svetu*. Njen delež prebivalstva in BDP-ja v svetu se bosta temu primerno zmanjšala [6]. Povečal se bo delež starejšega prebivalstva in zmanjšal delež delovno aktivnih prebivalcev, za ohranitev pridobljenega življenjskega standarda bo poleg aktivne (skoraj agresivne) demografske politike, nujna tudi selektivna migracijska politika, kar pa bo težko doseči brez predhodne politične stabilizacije Evrope. Podobni trendi se pojavljajo po skoraj »celotnem« zahodnem svetu, tako ZDA, Kanadi, Avstraliji, ipd..¹⁸



Slika 4. Ocena in projekcije prebivalstva po regijah [12].

V Aziji bo rast prebivalstva nekje do leta 2050 še zmerna (Slika 4.), potem pa sledi stagnacija in padec števila prebivalcev predvsem zaradi politike »enega otroka« s strani Kitajske. Pri tem se nekako pozablja na Indijo, ki bo po številu prebivalcev kmalu preseгла Kitajsko, postaja pa moderna država z dokaj izobraženim prebivalstvom, navedeno pa povečuje napetosti s Pakistanom.

Demografski vzpon pa bo doživela Afrika, nekatere države bodo postale demografske velesile (predvsem v Nigeriji, DR Kongo, Tanzaniji, Etiopiji in Ugandi se bo število prebivalcev precej povečalo), kar bo ob neustrezni infrastrukturi povečalo notranje napetosti, hkrati pa grozilo z večjimi emigracijskimi premiki proti severu.

Kazahstan, ki je na devetem mestu izvoznikov pšenice na svetu, nima neposrednega dostopa na svetovni trg, ampak mora pšenico čez Rusijo po železnici prevažati do črnomoških pristanišč.

¹⁸ Nič nenavadnega se nam v perspektivi ne zdi, da bodo ZDA porušile varovalne ograje ob meji z Mehiko in postale velik zaposlovalec južno-američanov.

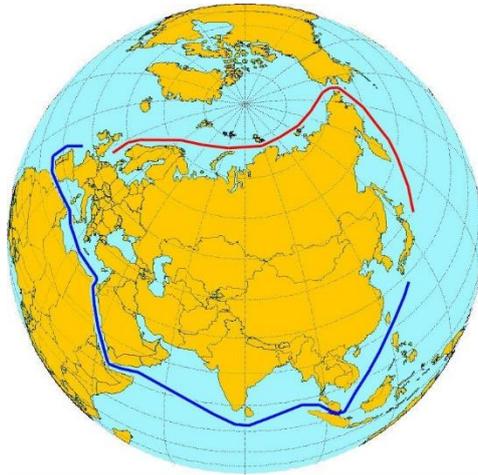
Podnebne spremembe

Človekove dejavnosti postopoma vplivajo na Zemljino podnebje, saj se v ozračje sproščajo ogromne količine toplogrednih plinov (poleg tistih, ki so tam že naravno prisotni). Tvrstni toplogredni plini nastajajo predvsem zaradi zgorevanja fosilnih goriv za proizvodnjo energije ter drugih človekovih dejavnosti, kot so krčenje deževnih gozdov, kmetijstvo, živinoreja in proizvodnja kemikalij. Ogljikov dioksid (CO₂) je toplogredni plin, ki največkrat nastaja zaradi človekovih dejavnosti. Dodatna količina plinov povečuje „toplogredni učinek“ v ozračju, zaradi česar se temperatura Zemlje izjemno hitro zvišuje in povzroča obsežne podnebne spremembe. Podnebne spremembe že občutimo po vsem svetu, po napovedih naj bi učinki sprememb v prihodnjih desetletjih postali še pogostejši in intenzivnejši. Brez ukrepanja v zvezi s podnebnimi spremembami bo EU v času življenja naših otrok doživela:

- 400 tisoč prezgodnjih smrti na leto zaradi onesnaženosti zraka,
- 90 tisoč smrtnih žrtev letno zaradi vročinskih valov,
- v južnih regijah EU bo na voljo 40 % manj vode,
- 2,2 milijona ljudi bo vsako leto izpostavljenih poplavam obalnih območij,
- 190 milijard evrov letne gospodarske izgube.

Podnebne spremembe lahko preoblikujejo naš planet in vplivajo na preskrbo s hrano in vodo ter zdravje ljudi. Tveganju smo izpostavljeni vsi, vendar pa učinki bolj prizadenejo revne in ranljivejše. Večje kot bodo težave, težje in dražje jih bo rešiti, zato je zgodnje ukrepanje za boj proti podnebnim spremembam najboljša možnost. Prehod na podnebno nevtralno družbo je pereč izziv in obenem tudi priložnost za ustvarjanje boljše prihodnosti za vse. Koristi za družbo vključujejo:

- nova, zelena delovna mesta.
- večjo konkurenčnost.
- gospodarsko rast.
- čistejši zrak in učinkovitejši javni potniški promet v mestih.
- nove tehnologije, kot so električni in hibridni avtomobili, energijsko varčne hiše in stavbe z inteligentnimi sistemi ogrevanja in hlajenja.
- zanesljivo oskrbo z energijo in drugimi viri, zaradi česar bo Evropa manj odvisna od uvoza [4].



Slika 5. Primerjava severne poti in poti skozi Sueški prekop [13].

Podnebne spremembe pa bodo poleg neposrednih negativnih učinkov prinesle tudi neposredne pozitivne učinke, kot je vzpostavitev severne morske poti (Slika 5.) pri čemer bi se pot iz Šanghaja do Hamburga skozi Suez skrajšala iz 40 dni na 30 do 25 dni, kar ima pomemben vpliv na transportne stroške kot tudi zmanjšanje vplivov na okolje [5]. Prav tako bo led izginil iz Grenlandije je večjega dela Antarktike, ki skrivata izjemne rudninske zaloge.

Novе tehnologije in osvajanje vesolja

Poleg alternativnih virov energije- sončna, vetrna, plimovanje, ipd. je pomembna tudi oblika izkoriščanja radioaktivne energije, ki namesto fizijske tehnologije uporablja fuzijsko tehnologijo.¹⁹Z novimi oblikami povezav preko satelitov se omogoča dostopnost do telekomunikacijskih povezav po vsem svetu.²⁰Razvoj in uvedba umetne inteligence na posamezna področja dela in življenja je pomemben [1].

Poleg tega, da nam nove tehnologije izboljšujejo življenje in omogočajo razvoj na planetu Zemlja, nam omogočajo smelejše korake pri raziskovanju in osvajanju vesolja, v kar so se vključili tudi zasebniki,²¹ kar ne pomeni le turističnih užitkov, temveč pomeni, da se zasebni kapital zanima za sodelovanje pri osvajanju vesolja. Konkurenčnosti, ki jo je poganjal odnos med ZDA in Sovjetsko

¹⁹ Kitajska je uspešno zaključila prvo preizkušnjo svojega nuklearnega fuzijskega reaktorja, ki je znan tudi pod imenom 'umetno sonce', ker posnema enak proces ustvarjanja energije kot naravno sonce. Nuklearna fuzija je obetajoča tehnologija, ki lahko proizvede ogromne količine čiste energije z zelo malo stranskih produktov [14].

²⁰ Elon Musk je uvedel Starlink, ki zagotavlja hiter širokopasovni internet z nizko zamudo po vsem svetu.

²¹ Podjetju Virgin Galactic je uspel polet s polno posadko v vesolje s posebnim letalom. Na njem je bil tudi Richard Branson. Ameriški milijarder Jeff Bezos je skupaj z bratom Markom, 18-letnim Oliverjem Daemenom in 82-letno ameriško pilotko Wally Funk poletel v vesolje. Vesoljsko podjetje Space X, ki je v lasti Elona Muska, je pred kratkim v vesolje poslalo raketo s popolnoma amatersko ekipo. Gre za prvi turistični polet v zgodovini vesoljskih poletov brez poklicnih astronautov.

zvezo (Rusijo) je vedno manj, tudi kot posledica političnih in geostrateških premikov. Se pa v osvajanju vesolja podaja nova svetovna ekonomska velesila Kitajska.²²

Zadnja odkritja v vesolju, še posebej potrditev, da je na planetu Mars prisotna voda, nam daje izzive za prihodnost v razvoju tehnologij in osvajanju vesolja.

Zaton kapitalizma

Različni filozofi in teoretiki so razpravljali o oblikah vladanja (upravljanja) družbe v posameznih razvojnih fazah le te ter poizkušali z argumenti določiti najboljšo. Platon²³ je zavrgel tako oligarhijo, demokracijo in tiranijo. Idealna država, je zanj oblast najboljših (tj. aristokracija), naj bi bila zasnovana na razredni delitvi družbe ter podreditvi interesov posameznika v splošno korist skupnosti (države). Marx in Engels sta predvidela to vlogo proletariatu, ki je po eksperimentu Lenina v tedanji Rusiji in sledenju nekaterih manj razvitih držav v obliki socialističnih držav, ki stremijo k komunizmu s padcem Berlinskega zidu, doživel svoj konec. Kot predhodni in konkurenčni model je z mnogokaterimi modifikacijami preživel kapitalizem. Kitajska je kot po številu največja država šla skozi več samosvojih razvojnih faz socializma in deluje na principu socialističnega državnega kapitalizma. Obema modeloma je pomembna gospodarska rast, v kapitalističnem sistemu zaradi dobička in t. i. kitajskem sistemu zaradi dviga standarda življenja in politične stabilnosti. Oba sistema vnašata v širše okolje negativne učinke, ki vplivajo na podnebne spremembe ter delo in življenje ljudi, kar povečuje stroške delovanja in na dolgi rok rezultira v anoniziranju sistema ali v uničenju okolja. Nov prevladujoči družbeno-ekonomski sistem še nima jasnih obrisov, ugotovimo lahko le, da mu osnovno gibalno ne more biti gospodarska rast, temveč varovanje okolja in spoštovanje človekovih pravic.

Zaključek

Globalizacija je dosegla pomembne rezultate pri gospodarskem razvoju v svetu, hkrati je omogočila dostop do pomembnih surovin kljub večjim transportnim razdaljam, hitrejšega prenosa tehnologij,

²² Kitajsko ministrstvo za znanost in tehnologijo je objavilo razpis za idejno in tehnološko pripravo načrta gradnje vesoljske ladje, ki bi bila glede na zahteve dolga dober kilometer. Izraba rudnin in drugih virov na asteroidih in drugih planetih ter raziskovanje vesolja.

²³ V svoji kritiki do obstoječih oblik vladavine je Platon zavrgel oligarhijo, demokracijo in tiranijo. Idealna država, oblast najboljših (tj. aristokracija), naj bi bila zasnovana na razredni delitvi družbe ter podreditvi interesov posameznika v splošno korist skupnosti (države). Platon razlikuje tri razrede glede na dolžnost do skupnosti: trgovce in obrtnike, vojake ali čuvaje ter vladajoče (modreci, filozofi). V procesu državne vzgoje in izbora naj bi duhovno najsposobnejše vzgajali za naloge, ki jih čakajo v teoriji in praksi. Voditeljski položaj kot »kralji filozofov« bi dosegli šele po vsestranskih preizkušnjah in po petdesetem letu starosti. Pri opravljanju dolžnosti za skupnost jih ne bi smela ovirati niti družina niti zasebna lastnina.

ekonomija obsega je zajela ves svet, prav tako pa družba potrošništva pljuska v najbolj odročne dele.²⁴ Svetovne blagovne znamke se ne pojavljajo več samo v zahodni polovici Zemlje, temveč se npr. Nike, Coca Cola, ipd. najde skoraj kjerkoli. Globalizacija je podobno kot piramidalna igra najbolj donosna za tiste, ki so igro začeli oziroma so se ji priključili v zgodnji fazi razvoja, torej za države kapitalizma z močnimi multinacionalkami.

Globalizacija pa ima tudi negativne učinke in na nekatere od teh smo v prispevku opozorili, na globalne bolezni, še posebej na COVID-19, ki nas je globalno ohromil več kot dve leti. Prav tako je za nadaljnji razvoj in spodbudo potrebno akceptirati spremembe v spremembi oziroma premiku gospodarskih in političnih centrov. Ne nazadnje nam vojna o Ukrajini kaže, da se uveljavljene interesov lahko sprevrže v spopad in agresijo. Na kar pa pritiskajo poleg gospodarskega razvoja tudi velike demografske in podnebne spremembe. Nekaj upanja in poživitev elana dajejo nove tehnologije in posamezniki, ki se skupaj z državami poizkušajo v osvajanju vesolja in primernih planetov za naselitev. Vendar dokler tega ne bomo realizirali smo obsojeni na življenje na planetu Zemlja, ki pa po propadu socializma in počasnemu zatonu kapitalizma nujno potrebuje alternativni družbeno-ekonomski sistem, ki sicer še nima jasnih obrisov, ugotovimo lahko le, da mu osnovno gibalno ne more biti gospodarska rast, temveč varovanje okolja in spoštovanje človekovih pravic.

Na osnovi navedenega je potrebno uravnotežiti globalni razvoj, kar pa zahteva nov svetovni dogovor in red, čemur mora slediti prenova OZN, Varnostnega sveta, IMF in ostalih pomembnih institucij, kot tudi odpreti razpravo o svetovni valuti.

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²⁴ "Na življenju je nekaj več, kot samo pospeševanje njegove hitrosti." - Mahatma Gandhi

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HETERODOX IN GLOBAL KNOWLEDGE ECONOMIC PERSPECTIVES

Abstract. *The world has invented the growth tool in the form of globalisation. Economics is a pillar of civilisation, and heterodoxian economics is a causal effect on contemporary culture. All economies have been the backbone of the evolution of human society and have seen changes more than any other field of development. Science, Technology and expansion changes have taken the economy in stride. Mainstream economics has been at the centre of learning in all academic institutes, and alternate methods have received scant attention. As a result, post-Neoclassical and post-Keynesian economic models surfaced. The observation that heterodoxian economic theories are part of micro and macroeconomics, and are self-sustaining cycles, has seen divergent views with contemporary economic thoughts. Financial education and the practised economy in the real world have given rise to new thought processes in the economics world, leading to new approaches and studies. The changes in current times have impacted all spheres of life and economics and money matters have changed. However, the required up-gradation and alterations have not seen that theories have changed or modified simultaneously. This paper attempts to gaze into the global economic knowledge base and discuss contemporary economic thoughts through a Heterodox prism.*

Keywords: *Global economy, Neoclassical, Mainstream economics, Heterodox economy*

Introduction

The economic world has identified with globalisation for growth and prosperity. Economics is civilisation and heterodoxian economics is contemporary civilisation. All economies have paved the way for human society's economic and resource-based progress and have seen changes more than any other development field. Science, Technology and expansion changes have taken the economy in stride. Mainstream economics has been at the centre of learning in all academic institutes, and alternate methods have received scant attention. As a result, post-Neoclassical and post-Keynesian economic models surfaced alongside industrialisation. The observation that heterodoxian economic theories are part of micro and macroeconomics, and are self-sustaining cycles, has seen divergent views with traditional economic thoughts. Financial education and the practised economy in the real world have given rise to new thought processes in the economics world, leading to new approaches and studies. The changes in current times have impacted all spheres of life and economics and money matters have been transformed. However, the required up-gradation and alterations have not been included in the mainstream theories and as a result, these theories have got alienated from the social-economic threads.

Humanity has seen the growth of economic thoughts alongside the social structures and forms of governance. The struggle to survive also led to the constant effort to procure crucial commodities for survival. The basic fundamental concept of survival of the fittest and ten avatars from ancient Indian sciences is the primary platform for human skills. [1] Mainstream economics also termed Neoclassical, old, orthodox, Keynesian etc., is based on the evolution of thoughts and means to provide sustenance and growth. [2] The circumstances in which the economy existed in societies in the past helped develop ideas and practices. The Barter system has been the fundamental pillar that has given rise to all other forms of economic thoughts and practices involving a kind of ‘give and take’. [3] The competitive human nature resulted in the concept of “*Me more, better, higher, brighter than others*”. Nations fought each other for the better pie of the shared pool of resources available in nature. The exploitation of resources has been the norm ever since and has been depleting by the day. Mainstream economics is the basis of the study of economics in the academic institutes the world over and is part of the business world. The business world and the need for human sustenance led the industries to provide the products.

Furthermore, industries relied on human resources and efforts from society to manufacture and supply the products. The cycle of industry, workforce and production continued to be the basis of mainstream thoughts, with the ruling governments regulating the entire process. [4]

The growth of technology in the twenty-first century has also impacted economic thoughts. The physical form of manufacturing, processing and delivery processing is changing to technology-based systems. The involvement of physical human efforts has also been on the decline and machine-based tools are replacing them. Technology has added new dimensions to economic thoughts and all forms of human actions are converting into global knowledge-based systems.

Problem Statement

The economy in vogue in the contemporary world has a good combination of traditional and modern thoughts. Keynesian economy forms part of the mainstream businesses and the majority of the world has been following the conventional economic principles and procedures. However, new facets like divergent thinking of social aspects of the economy and the crypto and NFT have taken firm roots in the system. [5] The mainstream economy has to evolve to the need of the contemporary economic environment gradually. [6] The acceptability and changing over to the new patterns are finding difficulty in the governance systems. However hard the traditional economic thinkers apply themselves, the change is inevitable and will impact society and the planet. The research focuses on

understanding the challenges to the existing economic norms and identifying new ways of managing the challenges. Thought processes have started impacting the financial forms of different countries. A parallel economy is already in the pipeline with the new generation of the 21st century. Schools of Heterodox Economy have already taken shape in the US and the EU. It is appropriate to gradually bring the new concepts into practice to better govern economic activities in the current world order. The paper analyses the impact of a heterodox economy and international relations. An attempt to create a contemporary model of the Heterodox economy will be part of the research.

Research Questions

The economies have never been static and efficient with one set of rules. The economic patterns change with every season and every trade. The entire process depends on the two sides operating the economy. The regulations set by the economists and followed by countries rely on the traditions, concepts, forms and methods. The world order for strategic, diplomatic, and economic order has changed with technology-aided economic relations modes since the early 19th and 20th centuries. These new trends force the thinkers to re-think and revise the existing patterns and give rise to many questions. Research questions for the paper are as shown below:

1. Is mainstream economics adequate in the contemporary world?
2. Is there a need to evolve new economic standards?
3. Why are Heterodox schools of economics prospering in the Western world?
4. How will technology impact the heterodox economy?
5. Identify the relevance of a new economic model and code of economy for the new world order?

Purpose of the Study

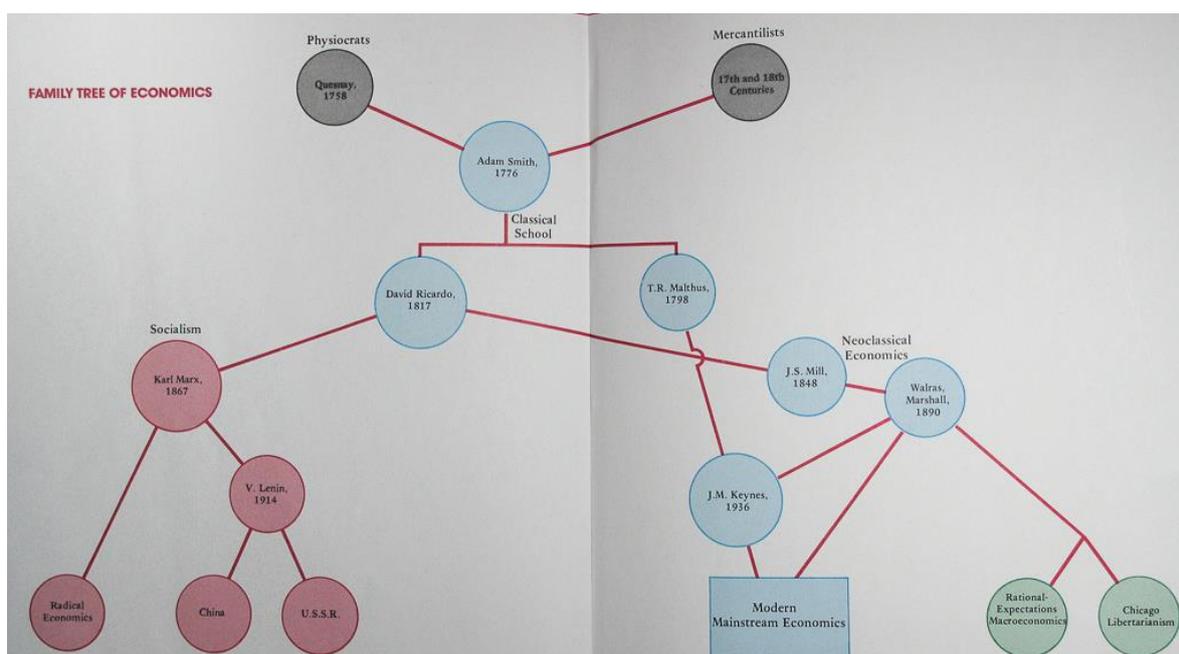
The economy has been ever-growing and adapting to the need of society. After all, it is the society for which any economy is designed. If there is a change in society, the corresponding changes in the economy are bound to occur. The same applies to the existing nation-states wherein the changes in the nation-states and their interstate relations have been dynamic; the difference in the economic ties and the trade are natural outcomes. There is thus a need for all national-level political leaders to understand the glaring change and the need to apply those changes to their respective state-level trade relations and economic standards. There is a need to create infrastructure to adapt to the changing market of society. The safety of the environment and the planet's safety have to be dovetailed into the economic system. However, the mainstream economy is either unaware of the changing patterns of the states or is not concerned about the universe's environment and existence and prosperity. The study aims to reflect on the emerging heterodox economy and bring out relevant lessons for humanity to understand the changes and new economic order. The Heterodox economy is here to stay and

adaptation is possibly the way forward.

Growth of Mainstream Economic Theories towards Heterodox Thoughts

The orthodox or neoclassical tradition of economics, in which markets are driven by an invisible hand and all stakeholders are rational, is defined as mainstream economics. Adam Smith is one of the pioneers in mainstream economics known as the father of modern economics. Emergent disciplines of study are progressively superseding mainstream economics theories because they do not account for the precise, irrational nature of markets and individuals' behaviours. Many mainstream economies find the underlying ideas and assumptions in notions such as economic scarcity and the importance of government regulation. Other factors that influence consumers' decisions are the utility of the concept of traditional economics and the assumption that people are rational and would make judgments based solely on available knowledge and not emotions.

Mainstream economics employs statistics and mathematical models to demonstrate theories and analyse various economic developments based on the rational choice theory, which argues that people make decisions to maximise their utility. The importance of social interaction phenomenon in a more scientific manner may be the common-sense view of the subject. [7] The supply and chain demand have been constant ever since but what has changed is the technology, types of resources and needs of the consumers. Constant research-based changes have also been incorporated and new principles adopted. However, the changes in the system and the need to be responsive have been at risk. The model of mainstream economics took shape in the 1930s and can be traced back as per the below-given figure: -



Source: <https://www.ineteconomics.org/perspectives/blog/how-the-term-mainstream-economics-became-mainstream-a-speculation>

The mainstream concept takes care of the majority of the masses, which gave rise to social activism in evolving the economic thoughts. The state of a nation owns the responsibility to feed the entire country most satisfyingly. The move from gatherers and hunters to the modern-day mainstream users of the economic models has involved the government of the day in setting governance rules. Economic activities are the primary focus of providing the best services to people. The very fact that society decides what is best for its growth. The thinkers have been practising a form of economics with a fair share of the population, nation-states, and appropriate environment. Central stream economics has been the backbone of the society all these years. It has changed form from one set of 20th century to another based on the need of the environment, availability of resources and the experts deciding the economic models to match the two. The Western countries identified economic theories as open and closed economies. The market was regulated, and the nations thrived.

However, the downfall of economies could not explain the meltdown of economies and the world market. The Global Financial Crisis in 2008 has had a disastrous impact on life and society across the world. It appeared that all policies and understanding of mainstream economics came down crashing. There are mathematical and financial answers to the crisis by social, behavioural, emotional and many other facets that are yet to find logical solutions. [8] The sub-prime crisis possibly is inadequate to explain the economic suffering of people and losing faith in the economic and social systems. Why should the mismanagement of a system in the US negatively impact the rest of the world? The plausible answer appears to be the role of influential individuals, institutions and some nations wanting to dominate the world resources. US, UK and Europe had dominated the industrial revolution with a singular aim of gathering more for their governments even at the cost of depriving others.

The 19th century saw the advent of “neoclassical economics” in the United Kingdom by William Whewell based on the mathematical exposition of some doctrines of political economy. M. Longfield, in his lectures on political economy, W.F Lloyd in his studies on population, values, poor laws and rent, JS Mill on principles of political economy and D. Lardner in his analysis of railroad pricing established the mainstream economic model as the most desired models during industrialisation. Similarly, Hufeland, Menger Rao and Hermann explained economy propounded theories h demand-supply framework and marginal utility analysis in Germany. [9] Marshall connected with some of his learnings from Hermann and reflected in his Principles of Economics. Both argue that the human side is essential for the economy; however, the numbers and profits are necessary for the economy’s

growth. [10]

Neoclassical theorists opine that consumers' primary concern is to enhance personal satisfaction. As a result, people base their purchasing decisions on their assessments of a product's or service's utility. A comparison between the neoclassical theory and rational behaviour theory provides insights into how people make decisions regarding money. John Peters et al. stated in their paper on Economic Transition, "*Much of the neoclassical general equilibrium vision is that it is regarded as providing the theoretical basis for Smith's classic insight that tended consequences of economic agents acting in their own best interests will lead to social coherence rather than chaos.*" [11] The hegemony of neoclassical economics within the economics profession is the first challenge. The effect of neoclassical ideas on other social sciences and law reflects this hegemony. The hegemony is visible in the leading research journals on objectives, procedures and measures of economic thoughts with a bias toward benefitting a specific economy. Since the late 19th century, the financial safety net, when the development of mathematical general equilibrium theory in the 1950s and 1960s came into prominence, neoclassical economics has been the dominant paradigm in economics. The illusion of society and the growth of the common masses remained a significant challenge. The need-based growth of the economy gave rise to new thoughts on the financial effectiveness of nations and, with better alternatives, was termed as Heterodox Economy.

Heterodox Economy

The primary reason for a different way of looking at the economy was the imbalance in people's social and economic well-being. At first glance, one might think of heterodox economics as the opposite of orthodox economics, and many people have also used the term to refer to mainstream economics. Applying the terms unorthodox in mainstream economics in interchangeable roles will make the definition of heterodox economics more explicit. *The heterodox economy* is a broader spectrum term that can refer to either non-orthodox or non-mainstream economics. The economists and non-status quo observers have seen the changes in the financial world depending on academic research and the influence of the orthodox economy over a broad spectrum of time and locations. In the United States, mainstream economics has incorporated changes to neoclassical economics, but that has been inadequate as the reasons and logic of mathematics and rational based economy have yielded gross illogical economic means to match the social and emotional needs of the populace. The need for change has resulted in the form of a novel concept called Heterodox Economy. A few other approaches throughout the last three or four decades have surfaced and all of them reflect on the economy in one or the other form. While the underlying factor of economics is shared, the processes and objectives are different from the mainstream. Ideally and initially, the evolution of the economy

was based welfare of each and everyone in society. Still, gradually, the financial-focused approach removed the human aspect from the practical world of money matters. Another part of social interactions, which permits active stakeholders to influence cumulative features, is typified by ideas like Schumpeter's entrepreneur. [12] and Keynes' animal spirit. [13]

Both the laureates emphasise that some individual decisions have a significant impact on future developments of the economy and these decisions may not have been rational or logical. In light of this, it is probable to witness critical players take on new and unconventional approaches to economic cooperation and trust and institutional design, path construction, and route dependency. (Hirschman, 1970) Mark Granovetter emphasised that the dual character of social interactions allows for top-down and bottom-up effects and identified that individual actors and social systems are mutually interconnected. [14] Granovetter distinguished between an over-socialised and an under-socialised conception of individuals. The latter is attributed to neoclassical and new institutional economics, while the former can be found in immaculately comprehensive social and economic analysis approaches. [15]

Heterodox Economic Models

There is no single definition of a Heterodox economy. There is a common observation by many economists about the changes needed in the overall system and how economic affairs will change. [16] He says, "Over the last 50 years, and particularly since the financial crash in 2008, the community of heterodox economists has expanded, and its publications have proliferated. Nevertheless, its power in departments of economics has waned." Addressing this paradox, Hodgson argues that heterodox economists are defined more by a left ideology than by a shared understanding of orthodox economics' nature. Heterodox economists may disagree on what heterodoxy means. Mainstream economics continues to dominate world economics. The ideas of new and alternative forms of economics are not readily accepted by those in the commanding positions in world trade and economics.

The discussion is on the research question, 'Is the existing mainstream economics adequate in the contemporary world?' The answer can never be always 'yes' and a 'No' is a problematic option for mainstream economists. The creative economists with new concepts of economics worldwide want the inclusion of society in the formation of economic policies. They are against the capitalists' colonisation of the poor economies and races. Economists, sociologists, behavioural scientists, politicians and others think that a change is needed. Change is the next best option for the world in case equity and care for all are inclusive. The challenge is to identify convenient definitions, and

institutions and governments must take on the institutionalisation of the modern economy to seek plausible solutions. The thought process asks, 'Is there a need to evolve new economic standards?' The upheaval and the way economic patterns are changing. The way the economy impacts the social behaviour of the masses is humongous. Elon Musk has recently purchased "Twitter" for US\$44 billion. [17] People use Twitter and continue to use it, but the deal is likely to change with the new owner and the new rules. Calculations and mathematics around the agreement make good economic sense. It may be argued that the poor economies are least concerned about the billion-dollar deal; they are concerned with Maslow's basic physiological needs and the survival of their citizens in a post-Covid scenario. Does this find a place in the traditional mainstream economic system? Nevertheless, socialist and behavioural scientists would maintain the quality and impact on society. The need to evolve the financial strategies may help the community in an overall context of contentment.

The studies have shown a variant thinking style about economics in the 21st century. This divergent thinking, commonly termed Heterodox economy, can be reflected in two models, as explained in the succeeding paragraphs. Figure 1 reflects contemporary thinking based on mainstream thinking and Figure 2 is a solo attempt to identify the heterodox global knowledge economic system.

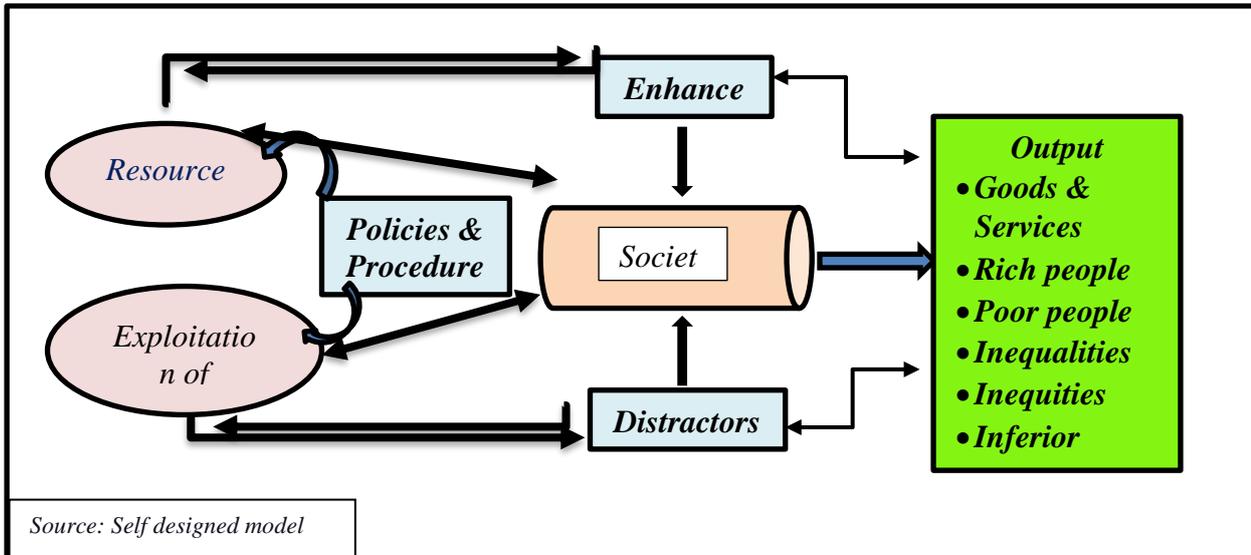


Figure 1. *Impact of Mainstream Economy in the 21st century*

Discussion and Recommendations

Impact of Mainstream Economy in the 21st century (Figure 1)

Whenever a system is working, be it social or economic, there are tasks, structures, policies, and people as part of the system. All of them work in unison to achieve the objectives of the organisation's design. Economic models work developed in the US, UK and Europe were most likely suitable in those countries and their citizens would enjoy the outcome of the economic policies. The same economic principles are unlikely to be effective in Africa or any other continent. Mainstream economic ways and means have been integrated into the existing economic models to continue the system's efficient functioning. There is a vast set of resources available as a case in point. They are in the form of Panchmahabhutas, i.e., space, air, water, fire and earth. [18] They are God gifted resources to humanity alongside the rest of the living and non-living beings. The resources have been used vide specific policies organised by the leaders of society. In the process of utilisation of resources, many anomalies have crept in. As a result, instead of humankind enjoying nature's inequitable terms, part of humanity has suffered due to the lust and greed of some self-oriented organisations, industries and industries. The ultimate result is a non-equitable distribution to all the countries and continents. The entire ecosystem in the environment has, therefore, suffered. The divide between haves and have-nots has increased and people have become rich or inferior. The new thoughts of Heterodoxian versions have started coming out. Economies have to be reoriented based on the needs of the society and managing the environment well.

Heterodoxian View of Contemporary Economic World

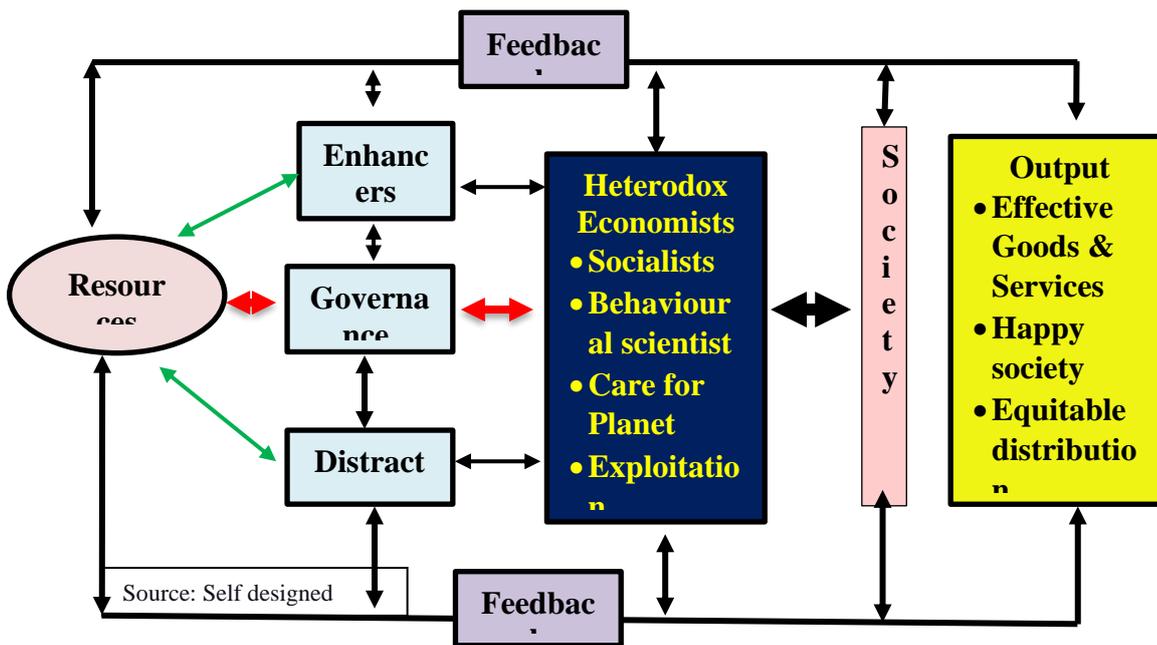


Figure 2. *Heterodox Economic Perspective*

Heterodox Economic Perspective (Figure 2)

Humanity has continuously used the environment and its resources, and individuals and organisations promote and exploit them. Governments have established legal organisations to organise their respective economy. Over time, these resources have been unevenly used and exploited ostentatiously, resulting in mismanagement of the demand and supply curve. Most organisations wanting to control nature for their selfish motives have thrown the mainstream economic theories out of the window. The model in Figure 2 explains that there is competition for the resources and employment of the workforce to gain max profits. Inflation has soared higher, economies have shrunk over time, and there is a visible deterioration of nature. People have suffered the most, and inequalities have forced them to adapt to economic situations that are most unsuitable to their countries and culture.

There are enhancers of the environment and the economy as well. These are the experts and commoners in equal measure who wish to contribute to the welfare of society. They support the national and international economic and social causes in maintaining a good balance between the nature of industrialisation and inflation. Riches and poverty are shared based on respective society and their financial resources. They are the agencies that connect the governments and the community. They make everyone aware of the situation and rise against the negative factors. The ultimate aim of these organisations is to assist in maintaining excellent supply chain management, reduce the gap between haves and have-nots, organise equitable distribution, reduce the negative impact of feminism

and ensure good behavioural growth in the society. They can undertake many more similar actions to help manage a healthy environment and a happy community.

The model is a humble attempt to envision an intelligent global heterodox knowledge system. This knowledge system will assist in setting the pace for a heterodox economy. The model has a feedback loop that connects all the stakeholders to interact continuously to maintain efficacy in the system. The model is on a conceptual plane as of now and requires validation.

Findings

The research has analysed the existing system of mainstream economics and its implications in present-day society. The technological world of contemporary times makes the economy very transparent. At the same time, it enables the world economic leaders to play dominant roles in intrastate and interstate strategic relations. These relations also impact economic ties. The Russia-Ukraine war is a live example. One set of countries considers the war unethical and has banned and blocked economic ties with Russia. Other countries support Russian and have threatened it with dire strategic consequences. Domination of the US dollar and significant world currency has been threatened. Irrespective of the war's outcome, masses have suffered, environment, health, and the ecosystem have been impacted. [19] Economists have opinions that support both mainstream and heterodox views. However, the negative impact of mainstream economics has developed cracks and there is a substantial view to review the entire financial structure.

A model has been attempted to overview how a heterodox economy is likely to emerge. There has to be a holistic synchronisation of the entire universe to bring about equitability in all spheres of human society.

Conclusion

The heterodox economy refers to a general term to express the economic view of the holistic ecosystem of humans living in sync with nature. It attempts to identify alternative means to the ongoing mainstream economics. The irrelevance and redundancies in the financial world must be removed and effectiveness and changes to suit the modern needs have to be included. The inclusivity of the pluralistic approach towards the newness is the day's call. Positive aspects of the mainstream theories must continue and multi-levels of heterodox economics of the 21st century must become part of the overall system. A model toward that has been attempted. The model is required to be validated and is a move forward for more studies on the subject.

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IMPACT OF THE LABEL ON THE PURCHASING DECISION PROCESS OF CHINESE WINE CONSUMERS

CASE: SELECTED SLOVENIAN WINE LABEL

***Abstract.** Wine packaging usually provides the most important information for our consumers while they are choosing the wines from the shelf. In this paper, we were aimed to determine the preferences of Chinese consumers on various styles of Slovenian wine labels and tried to determine if there are any differences between female and male Chinese customers. Slovenian wine is still a niche offer in China. Therefore, our research work could help Slovenian wine cellars to gain more knowledge of the Chinese market, and this could give them an opportunity to be more prepared and aware of what to expect on the Chinese market with a completely different cultural background and drinking habits. We have conducted two online surveys with a total of 110 female respondents and 105 male respondents. Within the questionnaire we have used 5 wine labels from different Slovenian wine cellars with completely diversified designs and styles, to compare customers' preferences.*

Keywords: *wine label, Slovenian wine label, Chinese wine market, female, male wine consumers*

Introduction

Knowledge of the purchasing or drinking habits that characterize a particular market is essential for vine growers and winemakers, as they effectively respond to the needs of the market based on strategic decisions that consider the needs and wants of the consumer. Wine consumers decide to buy based on a subjective perception of the quality, taste, manner, and opportunity of consuming wine, as well as many other important factors that influence individual purchasing decisions [1]. It is not enough that the wine is enjoyed only by its exporter and producer, but also by its consumer. A successful business story is based on knowing the behavior of customers through sales channels to the end customer or consumer. [12]

Therefore, according to the theory [1], it is always necessary to keep in mind the competitive advantage and the characteristics of the buyer on the market we want to enter, while being aware that

the buyer or consumer is ultimately the one who values competitive advantages.

On the international markets, the offer and the choice are even more diverse, in terms of quality, price, origin and, finally, the shape or visual image. Since the sale of wine is also significantly influenced by the way we offer the product, the packaging is even more important and includes not only the functionality of the bottle, but also the message on the bottle or label. [12]

Background

Advertising of wine is far more regulated than other products on the shelves of stores, supermarkets, or specialty stores. Thus, the wine label is one of the first things a buyer would notice and analyze while looking for a bottle of wine to buy. Therefore, a quick and relevant overview should be enabled on the label to make a buying decision easier. This is especially important for non-experts [2]. In case, an experienced salesperson is present at the point of sales, he or she can influence the decision decisively.

Especially in supermarkets, where self-service is the usual way of buying, the label affects the attention to the product or brand and brand choice. [3]. If your wine is one of dozens of wines on shelves, it must really stand out to attract buyer's attention and start the process of consideration.

History of wine labels

During the Roman times, amphorae were used for wine to be transported and sold, and sometimes they were equipped with a clay seal, that listed the region, vintage date, and producer of wine. Wooden barrels were the shipping vessel for wine after Romans conquered Britain and during the Middle Ages and the Renaissance. Wine was later decanted into bottles for making wine servicing easier. Corks were firstly used in the 1600s [4]. With a common use of glass bottles, labels began to be a part of the package design.

Wine labels today

Despite “a whole new world of wine packaging has come into play, from screwcap bottles, aluminum cans, to bag-in-the-box containers” ... “the package must serve as a shipping container for the wine as well as a serving container” [4, p. 125], a label nowadays should help sales with being attractive and presentable.

Wine packaging, including labels design is very complex. It is impossible to say what kind of a label would end to be a successful one. [5]

If millennials are to be our primary target, we should consider that “this is a demographic which overwhelmingly decide to buy based on how pretty the packaging is. In fact, 71% of millennial wine drinkers are influenced by the label (vs. 41% of all wine consumers)– and they are looking for "eye-catching, unique, stylish, creative, clever, and colorful" labels”. [6]

In their research in Bangladesh, Abdullah, Kalam and Akterujjaman “considered seven key factors as independent variables and consumer buying decision as a dependent variable for the study. These factors have massive correlation to the consumer purchase decision.

- Color of packaging and
- front style of packaging has perfect positive correlation to the consumer buying decision.
- Nice background of packaging,
- handling and transport facility of packaging and
- available information on packaging has the high degree of positive correlation with the consumer buying decision.
- Attractiveness of packaging and
- printed information on packaging has the low degree of positive correlation with the consumer buying decision”. [7, p. 285]

The wine industry has seen a “substantial increase in consumption from the Millennial generation (in the US) over the past decade, even though Millennials are extremely uninformed about the wine industry” and lack of experience in drinking wine. Therefore, for them the label is the main source of information (and not journals or industry reports). The label (as a part of packaging) should be eye-catching and attractive. [8]

Consumer preferences for a product are influenced by the presentation of the product – the label in our case – where consumers don’t know the product and are unable to test it before the purchase. Usually, wine consumers choose wine based on the information they received from the label. [9]

Chinese wine consumers are lacking the knowledge about wine also due to short tradition of enjoying wine, so for the information from them the label is extremely important. As stated in the research conducted by Tang, Tchetchik and Cohen in Shanghai in 2015, for younger segment origin of wine, grape variety, wine pairing and elegant contemporary design are preferred. [10]

Materials and methods

Different steps were used to conduct our research: Creating questionnaire and translating into

Chinese, defining the needed audience and distribution of the questionnaire, data processing, and analyzing and interpreting data. [12]

A lot of social media in China is restricted, banned or with a limited access to the audience. Therefore, Wechat was used as the means to spread the questionnaire among the targeted audience. It is a Chinese social media platform with more than a billion active users a month, used on daily basis. The Tencent website [11] was used to prepare and design the quantitative questionnaire.

The survey

The data was collected through a survey conducted among Chinese residents who enjoy the wine. Both surveys were conducted in 2021 with a difference of few months in between. By the end of data collection, we got in total of 110 respondents for survey of female part, without the 5 deleted answers from people that were not considered as our right audience. For the male survey we got in total of 105 respondents, without 7 deleted answers.

The questionnaire contained closed and half-open type questions, which offered pre-prepared options and an additional option where respondents could answer in writing if they didn't decide on any of the offered answers. The closed questions were mostly demographic, while the questions where the organoleptic evaluation was discussed, or the wines and packaging, were half open and allowed personal answer. [12]

34 questions were divided into three parts – to determine wine preferences of respondents, to gather information on selected labels and to get demographic data. For the purpose of this paper, we were focused on the results, connected primarily to the label and its impact on purchasing decision.

Labels in the survey

Five different wines from five Slovenian wineries – from different regions - were chosen, with differences in design, traditionality or illustration.



Figure 1. *Puklavec Family Wines, Jeruzalem Ormož, Muskat ottonel* [12]



Figure 2. *Radgonske Gorice, Traminec [12]*



Figure 3. *Fedora, Zelen [12]*



Figure 4. *Vinakoper, Capris Malvazija [12]*



Figure 5. *Ščurek, Rumena rebula [12]*

Demographic data

Female respondents

By the end of data collection, there was a total of 110 respondents for our survey. Respondents were 100% consisted of female consumers and Chinese residents. Over half of the respondent's age range was from 18 to 24 (64.3%) and the second group was from 25 to 34 (33.9%). Most of them were the residents of the first-tier cities, such as Beijing and Shanghai (77%).

Male respondents

At the end of the survey, we got a total of 104 respondents. Respondents were 100% consisted of only male consumers and Chinese residents. Over 57.1% of the male respondents were from the age range 25 to 34, followed by 37.1% of the age from 18 to 24. Most of the residents were coming from Shanghai, Beijing and Guangdong (69%).

Measurements

A simple method was used to analyze results from the survey. Frequencies were only needed to calculate the average percentage that described the willingness to buy a proposed bottle (label) or not.

Results and discussion

Drinking habits

In this section, we were aiming to determine drinking habits such as which type of wines they prefer and their wine consumption frequency.

Female

In our research, we could see that the preferences of our respondents were whites (33.9%) over reds (32.1%), with a big percentage in rose wines (25.9%). Evidently, there was not a large per cent difference between both reds and whites, but we could still note that white wines dominated in preferences for our female consumers [12].

Most of our female consumers are occasional drinkers, referred to as drinking once a month (44.6%). Due to the different drinking culture in China compared to other countries, wine consumption here is still not quite high. Although, with the social development, the younger generation learned and adapted to the western culture and habits which eventually lead to a higher wine consumption among

those who travelled, lived or studied abroad. Nonetheless, we could capture that the percentage of infrequent drinkers is fairly high as well, which was referred to as drinking once a year (30.4%).

Male

Our research showed that the main wine preference of male respondents were red wines (45.7%) over whites (39%) and these two types of wine has gained almost 85% of the total.

Surprisingly, more than half of our male consumers are drinking occasionally, once a month (52.4%). This could also be explained with the male consumers to be more of beer or other alcohol beverage drinkers than wine drinkers and wine could be referred to as more of a fancy drink which is drunken on more important occasions for them. The number of infrequent drinkers also exceeded our expectations, reaching 30.5%, which is the same percentage as the female group. Other than that, we should mention that with frequent drinkers, drinking once a week our female consumers had gained 19.6% and male consumers only 12.4%.

Wine label texture preference

An external factor such as wine label texture could also be a beneficial detail for the winemakers to know and have in mind before they make up their choice to decide, which texture they would be using for their wine labels. [12]

Therefore, in our research we could see that natural paper label has gained 25% from female respondents, followed by glossy and matte texture (20.5%).

The results for male respondents showed that labels using natural paper (29.5%) was the most chosen, followed by matte texture (23.8%), embossed, or raised (13.3) and unique shape (12.4%).

Willingness to buy a selected wine

Last part of our research work was mainly focused on understanding whether our customers were willing to purchase the 5 wines listed in our survey or not willing to purchase.

To illustrate more precise the table of results, we made calculation of an average position of which wine label our customers were willing or not willing to buy.

Female

In Table 1, we could clearly see that wine #5 has gained an average of the most votes for willing to buy while being elected the least on not willing to buy section. This shows us that the chic and stylish

packaging of the wine was the best beloved by our female respondents. We should also point out that the most feminine packaging of wine #1, label with pink colors and flowers, was highly chosen as willing to buy as well as not willing to buy. This could express that these days women are more open to trying new things other than what the market is defining for them. Wine #3 with a sharp and brutal label, was picked a lot like a bottle of wine for business gatherings. Finally, wine #2 holds the last position as willing to buy and elected as the first wine of not willing to buy, which could illustrate that a traditional-looking wine label isn't very well accepted by our female audience and there should be some adjustments made in this wine label in order to increase the sales on the Chinese market for female customers.

Table 1: Result with calculated average order, position of which wine label example a female customer is willing or not willing to purchase [12]

Wine examples	Willing to buy	Not willing to buy
#5 Ščurek, Rumena rebula	29.8%	7.3%
#1 Puklavac Family Wines, Jeruzalem Ormož, Muškat ottonel	38.5%	21.9%
#3 Fedora, Zelen	13.5%	16.7%
#4 Vinakoper, Capris Malvazija	9.6%	15.6%
#2 Radgonske Gorice, Traminec	8.6%	38.5%

Male

As the result, table 2 shows that wine #5 was the first choice for both genders for willing to buy as well as being the one that is least on not willing to buy. Wine #3 had almost same percentage on willing and not willing to buy, which means that this wine could be controversial for our customers. Wine #1, with most feminine features held a high position on willing to buy, but at the same time was greatly chosen as not willing to buy, because of its loud wine label showing that the wine was most probably suited for female consumers. Finally, wine #2 should be mentioned as it was selected as least willing to buy and picked out as most not willing to buy wine. Which can give an idea of the Slovenian traditional kind of wine label is not very well accepted by male consumers as well as female consumers.

Table 2: Result with calculated average order, position of which wine label example a male customer is willing or not willing to purchase

Wine examples	Willing to buy	Not willing to buy
#5 Ščurek, Rumena rebula	32.9%	7.06%
#3 Fedora, Zelen	18.09%	18.8%
#4 Vinakoper, Capris Malvazija	12.7%	14.1%
#1 Puklavec Family Wines, Jeruzalem Ormož, Muškat ottonel	27.6%	29.4%
#2 Radgonske Gorice, Traminec	8.5%	30.6%

Difference in preferences between female and male on wine labels

As can be seen, wine #5 is best beloved by both genders, a wine that has both chic and stylish look, where color of the capsule and the label itself fits well to the glass bottle and the color theme. But the difference can be seen from top 2 wines.

Female consumers chose label #1 that would be defined as a wine for female audience, the wine label with soft pink color and flowers on it. The top 2 wine for male consumers appeared to be the wine label #3, which has more brutal figure, colors that are colder and the glass bottle with the shoulders down, which makes the bottle to feel heavier.

The 3rd most picked wine label was also different for both genders, where female chose the wine label #3 for their willing to buy as a business occasion wine or a bottle as a gift. Male respondents chose wine label #4, a classic looking wine label that you can find on shelf of different stores.

Top 4th wine for female respondents was the classic wine label #4 and for male was the more feminine wine label #1.

Conclusions

As the research work was done on a less common topic – number of studies on wine labels in China are very limited (10) - and there were certain limitations, such as a small number of survey respondents, and the sample retrieved from Wechat, the research work might not be considered the

most precise, but we could still make some assumptions with data collected from the questionnaire and we came to some conclusions and proposals [12].

Wine labels would always be noticed as the first external factor that will lead a customer to a decision on purchasing a bottle of wine. In the case that the given bottle of wine is not something, they have tried or known before it will be challenging for a seller to persuade a customer to purchase our wine if there are no significant differences between them. Therefore, it is crucial to have as many elements that will attract a specific target group as possible. In our research, we were concentrating on both Chinese female and male consumers and their perceptions about selected Slovenian wine labels.

Based on our survey results, we could notice that the whole packaging was the key element for both female and male consumers. The elements on the wine bottle cannot be divided into parts, the wine capsule, wine label and illustration also the color should be balanced and fit the whole style of the packaging. As for wine #5, the stylish and elegant white label combined with the capsule in the same color and the transparent bottle were chosen as the favorite for both genders with the least negative feedback. On the other hand, wine #1 with its' glamorous pink as its' major color held a high ranking among both sides of willing and not willing to buy. Therefore, both genders had mixed feelings towards loud color and labels that are showing too specifically which gender they are targeting. Wine #4, with the traditional wine label, held a lower position, while wine #3 with the darkest shades was selected as the least favorite for both groups.

Although the color was one of the points that have driven consumers to purchase the wine, an illustration on the label also has specific effects on customers' purchasing decisions. For example, wine #3 with the darkest colors remained in the third position for females and the second position for males on willing to buy. Therefore, the wine shows us that it has the potential to be sold to the certain target group. Wine label #3 had the murkiest and the most vicious illustration out of all 5 wines, nevertheless, both gender respondents have picked out wine #3 as a perfect gift for business occasions and liked its' exclusive illustration.

Given the above, it is crucial for Slovenian winemakers to combine all the criteria stated in this work for their wine label in order to increase sales in the Chinese market. The combination of color of the label and the capsule, illustration on the label up to wine label texture can have a huge impact on the purchasing decision of both genders. However, we can see that more modern looking, fashionable label has gained more popularity among our young respondents and traditional looking labels were

the least favorite for them. Further, the natural paper label texture was the most chosen by both genders.

To summarize, when a customer is driven by an external visual factor or elements on a wine bottle, it is important to have as many advantageous or preferable aspects as possible to attract a consumer as to increase the chance of selling a bottle of wine.

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