

Varazdin Development and Entrepreneurship Agency and University North  
in cooperation with  
Faculty of Management University of Warsaw  
Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat  
Polytechnic of Medimurje in Cakovec



# Economic and Social Development

73<sup>rd</sup> International Scientific Conference on Economic and Social Development –  
"Sustainable Tourism in Post-pandemic World"

## Book of Proceedings

Editors:

Zoltan Baracscai, Dijana Vukovic, Jelena Janjusevic



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Dubrovnik, 21-22 October, 2021

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# COMPETENCE OF EMPLOYEES IN TOURISM IN THE TRANSITION FROM THE ECONOMY OF SERVICE TO THE ECONOMY OF EXPERIENCE

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## **ABSTRACT**

*Experiences in tourism have a high value for consumers and demands for them are on the rise. Consumers in tourism are therefore willing to pay a high price for experiences. However, competition in the tourism market is also on the rise which requires innovation in new tourism experience products in order for the destination to remain competitive. That is why it is crucial for destinations to build and offer experiences in the right way. A tourist destination that recognizes the potentials of the experience economy will gain a competitive advantage and profit as opposed to those that do not offer the experience. An experience is the creation of a story, theme, or anything that can represent an experience, and it often varies from person to person. This paper lists some forms of influence on the tourist experience in the selected tourist destination, such as: arrangement and presentation of the destination, size and choice of tourist products, prices, product brands, staff employed in tourism, atmosphere within the destination, rituals, population and their legends and events. The economy of experience is the search for unique experiences that change life, experience and feelings beyond the ordinary, everyday ones.*

**Keywords:** *experience, economics of experience, impact on experience, retail, sales result*

## **1. INTRODUCTION**

The concept of the economy of experience, formed as an economic instrument for maximizing benefits, profits and increasing competitiveness, is based on experience. Thus, the experience is completely dependent on the perception of the same event by an individual, group or several persons. The experience evokes action and reaction in relation to the degree of involvement. The economics of experience in some form is associated with the character and work of the British philosopher and economist Jeremy Bentham (1748-1832). A modern approach to the application of the concept of the economy of experience was set by George Katona. Furthermore, Holbrook and Hirschmann in 1982 associate experience as an emotional category with products and services. Somewhat later, in 1992, Gerhard Schulze introduced the term society of experience. Nevertheless, definition of the economics of experience that is used today, was given by B. Joseph Pine and James H. Gilmore in 1999, which was adopted in tourism, and their interpretation is taken as a starting point for the application of the concept in practice. One of the significant theories was defined by Richard Florida, as a theory based on economic and regional development including elements that contribute to the synergy of development. In his work *The Rise of the Creative Class* (2002), Florida sets out a theory based on three decisive factors, better known by the acronym 3T, and the theory encompasses the

synergy of technology, talent, and tolerance. The main focus is on accumulating and attracting human resources, ie a workforce that is educated and motivated. In this way, it is ensured that human resources with their knowledge and skills, along with innovation, achieve a positive trend of economic growth. Furthermore, it is important to highlight the theory put forward by B. Joseph Pine and James H. Gilmore in *The Experience Economy* (1999). They found that society as a whole at this stage of development is no longer satisfied with the manifestation of goods, products and services as the ultimate form of measure of individual satisfaction. Such a situation arises from the appearance of structural changes in the elements of demand and changes in expectations, motives and perceptions of satisfaction. Pine and Gilmore explained how economic evolution began with the agrarian economy and cited the celebration of a child's birthday and the preparation of a birthday cake as examples. At the very beginning, in the agrarian economy, mothers made birthday cakes starting from scratch. They went to buy agricultural products, such as flour, sugar, butter, and eggs, and used them to make cakes. Furthermore, in an industrial economy, mothers would buy pre-mixed ingredients and pay a dollar or two for them. Later, with the development of the service economy, parents were overworked and did not have time to prepare cakes, so they ordered cakes from a bakery or grocery store for \$ 10 or \$ 15, meaning they cost ten times more than ready-mixed ingredients. Since the 1990s, parents no longer throw parties or buy cakes. Instead, they spend \$ 100 or more to host the whole event at a designated venue such as children's playrooms, restaurants, etc., which often include a free birthday cake as part of the package. Thus, history traces the development of an agrarian economy in which almost nothing was spent, through an industrial and service economy with which consumption grows to reach an economy of experience where costs reach the highest level, but also offer not only material goods like cake, but many more activities and opportunities to gain unique experiences. Economists have historically equated experience with service, which of course is not true. Experience and service are just as different as service is different from goods. Today, there is no doubt that consumers want many more experiences and more and more companies are responding by explicitly designing and promoting them<sup>1</sup>. The economics of experience is the creation of new value (economic and social) where experience is an integral and starting point of a product or service, not just an upgrade or added value. If the socio-economic trends are analyzed today, ie recorded changes in the form of the demographic picture of society, better education and higher living standards, a change in the structure of demand for tourism products and services can be noticed. There is a transition from the economy of services to the economy of experience, and the increasingly frequent purchase of things and services is replaced by the purchase of experience. Such a purchase represents a specific exchange of value for money that is characteristic of traditional understandings of the economy of experience. In today's service economy, and this applies primarily to tourism product manufacturers and tourism service providers who strive to incorporate experiences into their core tourism products in order to better place them in the global tourism market. Experiences create strong emotional connections that serve as a powerful tool for creating destination recognition and differentiating the destination and the experience it offers in the tourism market. The complexity of the concept of the economy of experience and its elements requires a closer determination and it has already been mentioned that the economy of experience represents the fourth level in the development of the economy.

## **2. EXPERIENCE AND ELEMENTS OF THE ECONOMY OF EXPERIENCE IN TOURISM**

The experience in tourism is extremely difficult and demanding to define because the term itself is complex and quite abstract. Today we live in a period marked by the economy of experience,

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<sup>1</sup> Banić, B. (2019.): Turizam i ekonomija doživljaja, <https://repositorij.efst.unist.hr/islandora/object/efst%3A2718/datastream/PDF/view> (accessed: 22.09.2020.)

and a real tourist experience delights and amazes, which means that it creates a more lasting memory, that differs from its competition, encompasses innovation and is unique. The definition that a tourist experience is a set of interconnected and intertwined emotional components linked to an appropriate destination tourist arrangement in a way that gives the consumer/tourist an unusual experience is often used (Vranešević, 2016: 9, url, accessed 22.09.2021). The basic components of every tourist experience include (ibid): transport to the destination, landscape, climate, population in the destination, accommodation, food and drink, and entertainment. The concept of a tourist experience in its broadest sense encompasses everything that happens before, during and after the trip, and a very important part is even the preparatory phase, in which the future tourist is practically and psychologically preparing for the upcoming trip. During the trip itself, the following experiences are most common (Dujmović, 2014: 90-91):

- experiences generated by the means of transport, ie just moving through space
- experiences related to landscape observation
- experiences related to social contacts, ie meetings, acquaintances and conversations.

Tourists must not be observers but participants in the tourist experience. Modern tourists are more experienced and demanding than ever. The most important item in the offer of a tourist destination today is the quality and scope of tourist content and the education of cultural and tourist workers. Destinations with great potential for event development use events as a means of encouraging travel in areas outside major tourist centers. In this way, the development of tourism in underdeveloped areas is encouraged. Events can attract and retain visitors for a longer period of time in the destination, but also improve the experience of staying in the destination. They also provide a significant incentive for public and private investment in a tourist destination and serve as a generator of development and attractiveness of the tourist destination.

### **3. REMEMBERED VALUE OF A TOURIST DESTINATION**

The economy of experience in tourism is actually a remembered value of tourists about a tourist destination that begins with the consumer's knowledge, and which the consumer recognizes when arriving into the life, culture and history of the tourist destination. By arriving and staying in a tourist destination, the consumer in tourism adopts basic knowledge about the way and lifestyle of the domicile population and historical and cultural values of the tourist destination. The stored value of a tourist destination directly depends on the delivered integrated tourist product. The performance of a tourist destination depends on the functional, aesthetic and other features of the integrated tourist product and its quality. The natural, cultural, historical and traditional values of a tourist destination are the basis of the remembered values of the tourist destination. A tourist destination can offer its consumers in tourism a unique experience of natural beauty, cultural tangible and intangible heritage and history. Natural and cultural heritage sites are key resources of sustainability at the level of a tourist destination and their value in the delivery of experiences is irreplaceable (Vuković, 2017: 146). The unique quality of the locality and its values form a large part of the tourist attractiveness, remembered values by consumers in tourism, but also the foundation of the future development of the tourist destination. However, tourist destinations also have less tangible features such as cultural, social, recreational and economic aspects of the use of destination space that the consumer perceives and accepts as the basic structure of the destination. Stories and legends based on the values of the destination heritage are especially interesting to consumers in tourism, especially if they are transmitted by the domicile population of the destination. These stories are what consumers in tourism take home with them and continue to retell in their environment.

Memorable value for the consumer in tourism is a complex category and one of the fundamental value of sustainable marketing at the destination level, but also a mean to achieve profit, the degree of consumer satisfaction in tourism and the degree of loyalty. The conspicuous competition and high demands of modern tourists have imposed the need for continuous improvement of the quality of the integrated tourist product and protection of destination values in order to achieve the remembered value of the tourist destination. The remembered value of a tourist destination is achieved through the process of creating and delivering value to consumers in tourism and the systematic protection of destination values. Upon returning to the place of residence, the consumer in tourism sorts out the impressions, compares what is seen and experienced with what he expected before departure. This balance between what is expected and what is experienced can be more or less positive or negative, which affects the degree of consumer satisfaction in tourism. Individual positive or negative experiences can be remembered for a long time, even throughout their lives. Returning from the trip is accompanied by a number of different activities such as retelling travel experiences, giving souvenirs and telling stories and legends learned in the destination, viewing pictures and/or watching videos, preparing personal dishes from the visited destination act post festum. It can be concluded that understanding the nature of consumer experience in tourism as it provides the potential to create high quality for tourism consumers and a memorable experience which is the essence of successful tourism experience delivery management, is of great value for tourism destination management and all tourism stakeholders (Ritchie et al., 2011: 419). However, experientially valuable memory cannot be the result of mechanical animation of consumers in tourism, but the unveiling of desires and fantasies and the fulfillment of needs for entertainment, education, escapism and aesthetics (Buhalis, 2006: 45). Memories of travel experiences are built into the tourist experience frame and become pieces of the mosaic that are integral parts of the puzzle of overall life satisfaction. Unforgettable events are remembered precisely because they are unforeseen and unencumbered by experiences (Abraham, 1986, according to Kozak and Andre, 2006: 269) which is partly contrary to the theory of disconfirmation. The potential of modern tourist destinations lies in the fact that stakeholders are looking for ways to incorporate an unexpected experience into an integrated tourism product.

#### **4. RESEARCH METHODOLOGY**

The scientific method used for the purpose of collecting primary data was a survey and the respondents gave their answers anonymously. The research was conducted on an intentional sample by random selection during the summer season at selected destinations in Istria: Brijuni, Rovinj and Poreč, Labin, Brtonigla, Svetvinčenat, Motovun and Hum. According to the authors of this paper, the selected destinations are successful cultural and tourist destinations created on the basis of history, culture, forgotten legends and myths, a true event. The survey involved 554 respondents who spent their vacation in these destinations. The survey questionnaire consists of 30 questions, open and closed, which include three parts:

- general data/socio-demographic variables (gender, age, employment status, marital status, monthly income, level of education, etc.);
- questions related to the topic of experience economics and
- issues related to the topic of cultural tourism itself.

The goals of this research are to determine and establish the main motive for going on a trip to Istria, to define the role and importance of acquiring a new personalized experience through a unique experience that the tourist will experience, which is the economy of experience. Additional goals of this research are to try to understand the value of the economy of experience and the opportunities that are provided with it for the development of the entire tourism of the Istrian County, but also the country.

Furthermore, the goal is to realize the value of cultural tourism and cultural and historical heritage in providing a unique experience to tourists, expanding the tourist offer and in the development of tourism at the national level. This is a realization that many countries have already recognized and greatly strengthened their cultural offer and cultural tourism. In accordance with the above, the hypotheses are defined:

- H1: In modern tourism, the main motive for going on a trip has become the acquisition of a new experience, and therefore it is necessary to offer tourists "something different", or a unique and personalized experience.
- H2: The remembered value of a tourist destination is the result of a fulfilled need for entertainment, education and escapism.

*Table 1: Socio-demographic variables/general data*

SOCIODEMOGRAPHIC VARIABLES OF THE RESPONDENTS	NUMBER	PERCENTAGE (%)
<b>1 GENDER</b>		
Female	383	69 %
Male	171	31 %
<b>2. AGE</b>		
Respondents are 37 years of age in average.		
<b>3. WORKING STATUS</b>		
Employed	435	78,6 %
Unemployed	36	6,6 %
Student	38	7 %
Secondary pupil	12	2,2 %
Retired	21	5,7 %
<b>4. MARRIAGE SATUS</b>		
Single	118	21,4 %
In relationship	174	31,4 %
Married	262	47,2 %
<b>5. MONTHLY INCOME</b>		
less than 4.000,00 kn	94	17 %
from 4.001,00 to 6.000,00 kn	157	28,4 %
from 6.001,00 to 8.000,00 kn	170	30,6 %
over 8.001,00 kn	133	24 %
<b>6. Are there children under 18 in the family?</b>		
yes	205	37,1 %
no	349	62,9 %
<b>7. EDUCATIONAL LEVEL</b>		
secondary school	227	41%
undergraduate study programme	131	23,6 %
graduate study programme	196	35,4 %
<b>8. How do you prefer to travel?</b>		
by car	448	81,7 %
by plane	71	12,7 %
by ship	0	0
by train	12	2,2 %
Alternatives (bicycle, walking)	23	3,5 %
<b>9. When do you mostly go on trip?</b>		
Spring	44	7,9 %
Summer	460	83 %
Autumn	27	4,8 %
Winter	23	4,4 %
<b>10. What kind of accomodation do you prefer?</b>		
Hotels	176	31,9 %
Hostels	14	2,6 %
Private accomodation	302	54,6%
Camping	45	8,3 %
other	17	2,6 %

*(Source: Author)*

From the total of 554 respondents participated in the research, 383 or 69% of them were female. The average age of the respondents is 27 years of age. When it comes to employment status, 435 respondents or 78.6% are employed. There are 47.2% of married respondents and total of 30.6% of respondents have a monthly income between HRK 6,001.00 - 8,000.00. From the total amount of the respondents there are 31,9% of them who while on holidays, mostly choose accomodation in a hotel. There are 35.4% of respondents with university degree.

*Table 2: Motive for the trip is to gain new experience*

	N	Arithmetic mean	SD	Minimum – maximum	Cronbach Alpha
Assessment of gaining new experience					
Adoption of basic knowledge about the way and style of life of the domicile population	554	4,91	1,2	1 – 5	
Heritage sites	554	3,95	1,3	1 – 5	0,902
Stories and legends	554	4,22	1,3	1 – 5	
Retelling the experience	554	3,87	1,2	1 – 5	
Memories through pictures and videos	554	4,08	1,3	1 – 5	

*Note: assessments are given by 1 - 5 (1 – completely uninteresting, 5 – very interesting) Likert scale*

*SD – standard deviation*

The internal reliability coefficient Cronbach's alpha for the assessment scale of the way of gaining new experiences is 0.907. This means that it is a good assessment tool, where the adoption of basic knowledge about the way of life of the domicile population is rated by arithmetic mean 4.91 (standard deviations 1.2), heritage sites, which include natural beauty, cultural tangible and intangible heritage was rated with an average score of 3.95 (ST 1.3). Stories and legends, according to respondents, were rated with an average score of 4.22 (standard deviations of 1.3), which indicates the fact that tourists and stories attract the attention of consumers in tourism. Istria was one of the first destinations in Croatia to offer its tourists an experience with lighted candles, sea views, the sounds of crackling fire in the fireplace, healthy, homemade breakfast, morning tea in beautiful porcelain cups, a romantic dinner or relaxation in a fragrant bath with a glass of wine. These are all rituals that are retold upon return from vacation and are rated with an average rating of 3.87, or a reminder of videos and images with an average rating of 4.08. This speaks in favor of the fact that the tourist product is actually a unique emotional experience delivered to the modern tourist. The experience must be able to generate striking impressions through positive features. Positive characteristics are those that create an experience in the minds of the participants. Impressions are conclusions about experience that support the topic and are remembered.

*Table following on the next page*

*Table 3: Measures of arithmetic mean and dispersion, and the coefficient of internal reliability (Cronbach Alpha) of the scale of expectations regarding the elements of the tourist offer and their role in creating the economy of experience*

	N	Arithmetic mean	SD	Minimum – maximum	Cronbach Alpha
Beauty of the landscape	554	4,61	0,9	1 – 5	0,974
Kindness of employees in tourism	554	4,30	0,9	1 – 5	
Historical and cultural heritage	554	4,53	1	1 – 5	
Kindness of population	554	4,11	1	1 – 5	
Local gastronomy	554	4,10	1	1 – 5	
Traffic availability	554	4,07	1	1 – 5	
Value for money	554	4,06	1	1 – 5	
Manifestations	554	4,05	1	1 – 5	
Tourist information before arrival	554	4,01	1	1 – 5	
Cultural contents	554	4,78	1	1 – 5	
Parking	554	3,96	1	1 – 5	
Tourist signalization in the destination	554	3,94	1	1 – 5	
Events	554	4,91	1,1	1 – 5	
Facilities for children	554	3,87	1,1	1 – 5	
Offers of excursion	554	4,82	1,1	1 – 5	
Accommodation	554	3,82	1,1	1 – 5	
Climate	554	3,65	1,1	1 – 5	
Sport facilities	554	3,62	1,2	1 – 5	

*Note: assessments are given by 1 - 5 (1 – extremely low expectations, 5 – extremely high expectations) Likert scale  
SD – standard deviation  
(Source: author's research)*

The creators of the experience must remove anything that diminishes, opposes, or distracts from the theme of the experience. Inconsistent, unplanned visual and other features can leave a customer confused or lost. Such characteristics create unpleasant experiences that should be noticed and removed as soon as possible, and replaced by these characteristics with positive ones that will create a pleasant experience. According to the above, experiences can be defined as an event that engages each tourist in an individual, personal way. While elements of the tourist offer are external factors for the tourist, the experience on the other hand is in personal nature. It exists in the minds of tourists that is stimulated on an emotional, physical intellectual level and the elements of the tourist offer that tourists rate with a high value are: the beauty of the landscape - arithmetic mean 4.61; historical and cultural heritage - 4.53; excursion offers - 4.82, kindness of tourism employees - 4.30; courtesy of the population - 4.11; and events and manifestations - 4.05. The internal reliability coefficient of Cronbach alpha for the assessment scale of the way of gaining new experiences is 0.974, which means that it is a acceptable assessment tool and can reliably determine the role and importance of elements in building a tourist destination experience. The results of the research differentiate different motives and expectations related to the tourist destination, and the consequence is different perceptions of experiences related to the destination. The experience arises from the interaction between the individual tourist and the set event, i.e. it depends on the state of consciousness of the consumer.

## 5. CONCLUSION

Every tourist destination can provide unforgettable tourist experiences if its history, customs and way of life of the local population are translated into stories. Thus, the economy of experience is actually the creation of a new economic and social value whose fundamental part of a tourist product or service is experience. Today, the main motive for travel is the desire to acquire a unique, unforgettable experience that encourages the consumer to plan the trip again in the future. When developing their own offer, tourist destinations follow socio-economic trends and changes of tourist demand, and increasingly in their tourist offer they are moving from the economy of services to the economy of experience. Tourism is impossible today if tourists do not experience, enjoy something new and actively participate in the events of the destination.

## LITERATURE:

1. Čavlek, N., et al., (2011): *Turizam: Ekonomske osnove i organizacijski sustav*, Zagreb, Školska knjiga d.d.
2. Čorak, S., et al., (2006): *Hrvatski turizam plavo bijelo zeleno*, Zagreb, Institut za turizam
3. Dulčić, A., Petrić, L., (2001): *Upravljanjem razvojem turizma*, Zagreb, Mate d.o.o.,
4. Getz, D., (2008): *Event Studies – Theory, Reserach and Policy for Planned Events*, Butterworth-Heinemann, Elsevier Ltd., Oxford, 2008.
5. Jadrešić, V., (2010): *Janusovo lice turizma, Od masovnog do selektivno-održivog turizma*, Zagreb, Plejada.
6. Pine, B. J., Gilmore, J. H., (1998) *The Experience Economy – Updated edition -*, Boston, Library of Congress Cataloging-in-Publication-Data. URL: [https://books.google.hr/books?hl=hr&lr=&id=edtOyzyKgXUC&oi=fnd&pg=PR7&dq=pine+gilmore+the+experience+economy&ots=2nkFDEStsK&sig=6awTv7O2Pmwxdn1WHgv9Fhgja0&redir\\_esc=y#v=onepage&q=pine%20gilmore%20the%20experience%20economy&f=false](https://books.google.hr/books?hl=hr&lr=&id=edtOyzyKgXUC&oi=fnd&pg=PR7&dq=pine+gilmore+the+experience+economy&ots=2nkFDEStsK&sig=6awTv7O2Pmwxdn1WHgv9Fhgja0&redir_esc=y#v=onepage&q=pine%20gilmore%20the%20experience%20economy&f=false) (Pristupljeno: 21.09.2021.)
7. Pirjavec, B., (1998) *Ekonomska obilježja turizma*, Zagreb, Udžbenici Sveučilišta u Zagrebu
8. Revang, M., (2007) *User experience project: The User Experience Wheel*. URL: <http://userexperienceproject.blogspot.com/2007/04/user-experience-wheel.html>
9. Sundbo, J., Sorensen, F., (2013) *Handbook on the Experience Economy*, Cheltenham, Edward Elgar Publishing Limited. URL: <https://hillstrategies.com/2005/10/17/creative-class-a-short-summary-of-the-theory/> (Pristupljeno: 20.09.2021)
10. Sudarić, T., Zmaić, K., Lončarić, R., (2013) *Ekonomija doživljaja u ruralnom turizmu, Agroekonomika i ruralna sociologija*, str. 215-219. URL: [http://sa.agr.hr/pdf/2013/sa2013\\_p0222.pdf](http://sa.agr.hr/pdf/2013/sa2013_p0222.pdf) (Pristupljeno: 05.09.2021.)
11. Van Der Wagen, L., Carlos, B., (2008): *Event Management-Upravljanje događanjima, Za turistička, kulturna, poslovna i sportska događanja*, Mate d.o.o, Zagreb.
12. Vuković, D. (2017) *Percipirana vrijednost održive turističke destinacije s aspekta kvalitete: doktorska disertacija : Sveučilište u Rijeci, Fakultet za menadžment u turizmu i ugostiteljstvu*, 2017. URL: <https://urn.nsk.hr/urn:nbn:hr:191:829794>; datum pristupa: 16.09.2021.
13. Tomljenović, R., Boranić Živoder, S., (2015) *Akcijski plan razvoja kulturnog turizma*. URL: [https://mint.gov.hr/UserDocsImages/arhiva/001\\_160128-AP\\_kulturni.pdf](https://mint.gov.hr/UserDocsImages/arhiva/001_160128-AP_kulturni.pdf) (Pristupljeno: 09.09.2021.)

## DIFFERENCE BETWEEN THE REAL ESTATE OFFER AND SALE PRICES IN THE CZECH REPUBLIC

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### **ABSTRACT**

*The paper deals with the issue of the difference between the real estate offer and sale prices in the Czech Republic. More precisely, the research focuses on real estate in the city of Brno. The city of Brno is the second largest city in the Czech Republic. It is divided into 29 city districts. The research is based on data collection. Data related to offer prices was collected from an Internet source [www.sreality.cz](http://www.sreality.cz), data related to sale prices was retrieved from a database run by the Czech Chamber of Appraisers using data from the 2018-2020 period (always the period from July to October). A survey was carried out based on 1,295 samples of real estate on offer and 67 samples of real estate actually sold were collected. Flats of various categories were monitored within the real estate market (1-room flat, 2-room flat, 3-room flat, 4-room flat), the distance from the Brno city centre was monitored as well. The condition of the flat (new building, very good condition, good condition, after reconstruction) and the type of building material (brick, panel) was also taken into account. Only 5 city districts were included into the research due to the difficulties with data collection dealing with the difference between the real estate offer and sale price. The presented research aims to quantify the difference between the real estate offer price and sale price, where various parameters were monitored (distance from the centre, flat category, type of material, technical condition of the flat). Mathematical methods of a simple arithmetic average were used for the calculation.*

**Keywords:** *Czech Republic, Real Estate, Offer Price, Sale Price*

### **1. INTRODUCTION**

Real estate prices are rising continuously. This growth results from many factors, the most important of which are the growth in gross wages of the population, the unemployment decrease and the reduction in interest rates on bank loans. According to Forbes [www.forbes.cz](http://www.forbes.cz) (2021), the Czech Republic is placed in fourth place in Europe in real estate price growth. The Czech Statistical Office [www.czso.cz](http://www.czso.cz) (2021) has kept statistical data on real estate offer prices since 1998. Data shows that the first peak in the price growth was reached in 1998, the second peak occurred in 2003 in relation to the Czech Republic joining the European Union, and then there was further growth between 2006 and 2008, which was soon ended by the global financial crisis, followed by a rapid fall in real estate prices and their subsequent stagnation until 2011. Since 2012, the real estate market has accelerated again and continues to grow up now. At the beginning of the Covid-19 pandemic, everyone predicted a steep fall in real estate prices, which similarly occurred in 2008. However, the coronavirus crisis hardly affected real estate prices, quite the contrary. People who hold more cash have nowhere to invest their funds as the inflation rate is higher than the interest rate provided by investment funds, while at the same time the interest rate on bank loans is set low. All this leads to a greater demand for real estate. However, the question remains what is the actual price the real estate is being sold for. In most cases, web servers, including the Czech Statistical Office, provide real estate price development, however from the offer prices, which, among others, for the researched city of

Brno, the second largest in the country, exceeded the price threshold of 100,000 CZK/m<sup>2</sup> for new buildings (1 EUR = CZK 25,50). The audit Deloitte company [www.2deloitte.cz](http://www.2deloitte.cz) (2021), which describes the changes in sale prices in the Czech Republic monthly and quarterly uses the actual sale price (purchase price). As these surveys are not targeted locally, the research focused on the city of Brno and its city districts. The research took place during the 2018-2020 period, i.e. in the period before the Covid-9 pandemic and during the 1<sup>st</sup> Covid-19 pandemic wave.

## 2. LITERATURE REVIEW

Kulil (2012) in his article deals with issues related to special influences on the real estate price. This paper sets a system of valuations related to the design, historic value and layout quality, availability and more influences. Tsai, Chen and Quek (2012) in their paper evaluate the difference in real estate prices in selected two cities, which depends on factors such as distance from the shopping district to 500 m, 500 m-1,000 m and 1,000 m-1,500 m. Zbyrowski (2018) deals with a similar issue concerning the change in the average flat price in selected cities in eastern Poland due to changes in their production costs, i.e. that this author sought a relationship between production costs and the average real estate offer price. Gwin and Maxam (2002) examined in their article whether the value of the real estate is determined on the basis of principles (methods) or the expected offer price. The relationship between the real estate appraiser and the creditor is described. The insight into the real estate sale price described in the paper by Egozcue, García and Zitikis (2013), who propose a model and derive an optimal strategy for maximizing the expected real estate sale price when one of the two remaining buyers has already made an offer, however, the other has not yet made an offer. In his research, Kholodilin (2012) created an Internet dataset for flats in 48 major European cities from 24 countries. The aim of the research was to identify places where the price is overestimated and where it is underestimated. Population income, population density, unemployment rate and the Gini index were considered as important factors. Simanavičiene (2021) deals with the real estate market in Lithuania. The objective of this article was to evaluate the situation of the residential sector on the real estate market, to analyse features that indicate the real estate bubble and to point out what conditions cause that the situation of real estate price bubble appears. Hudec (2021) in his article discusses the method and creation of a database of the actual real estate sale and lease prices in the Czech Republic. The database was created and used by a group of experts and appraisers working in the domain of valuation of immovable properties in various spheres, especially for banks, courts, executor offices, tax offices, and so on. This database is used as a tool for determining common prices and rents of valued properties in a comparative manner. D'Arcy and Keogh (1999) examined in their paper the role of the property market in determining urban competitiveness. Potgieter and Cloete (2010) researched in their study investigate the impact of a view on values of vacant residential lots. The study included vacant lots (erven) of six townships. The average purchase price and average price per square meter were calculated for each township. Gawron (2011) described to depict the situation on the housing market in Poznan during and after the crisis that hit the market in 2007. The author showed price tendencies for flats both on primary and secondary markets. The study carried out showed that housing structure and sales offer differed in particular city districts in certain crisis phases. Simply put, the real estate offer price can be understood as the price at which the seller wants to sell his real estate. On the other hand, there is a buyer who wants to buy the real estate at a price that is affordable for him. Upon agreement of both parties, the market price is set which can be described as the usual market price at which the seller is willing to sell the real estate and the buyer is willing to buy the real estate at the usual place and time.

### 3. CASE STUDY

#### 3.1. Input data

Data for the research was collected on two levels. The research worked on two real estate prices, namely:

- Offer price, which was monitored on the available webserver [www.sreality.cz](http://www.sreality.cz), which is one of the largest real estate servers in the Czech Republic,
- Sale (purchase) price, which was monitored in the database, into which the information is entered by appraisers and experts of the Czech Republic and is charged.

Data was collected during 3 years, 2018, 2019 and 2020, always in the period from July to October. Solely flats were taken into account as a type of real estate. The following factors were monitored:

- Place (city district)
- Flat category (1-room flat, 2-room flat, 3-room flat, 4-room flat)
- Type of building (panel or brick building)
- Technical condition of the flat (new building, very good condition, good condition, after reconstruction).

1,295 samples were collected for real estate where the offer price was monitored. 67 samples were collected for the real estate, where the sale (purchase) price was monitored. It was necessary to find the same locations (city districts) and the same factors to be able to evaluate the differences between the real estate offer and sale (purchase) price. For this reason, the outputs were limited to only 5 city districts. Brno is the second largest city in the Czech Republic and has 29 city districts. The total population to 31 December 2018 was around 400,000 inhabitants according to the Czech Statistical Office. If the adjacent surroundings of Brno-Country are taken into account, the number of inhabitants increases to over 600,000. The Brno city districts are of various sizes, with a given transport service, public service and housing. The research was limited to only 5 city districts according to the real estate market mechanism, namely: Brno-Centre, Brno-Židenice, Brno-Líšeň, Brno-North and Brno-Bystrc.

*Figure following on the next page*



Figure 1: Brno city districts  
(Source: www.czso.cz, source: author's own)

Tables 1 and 2 below show the number of samples for flats sold and flats on offer. The representation in individual years and at the same time year-on-year differences are shown.

	2018	2019	2020	2018-2019	2019-2020
<b>Brno-Centre</b>	13 flats	11 flats	7 flats	- 2 flats	- 4 flats
<b>Brno-Židenice</b>	4 flats	1 flat	7 flats	- 3 flats	+ 6 flats
<b>Brno-Líšeň</b>	4 flats	2 flats	4 flats	- 2 flats	+ 2 flats
<b>Brno-North</b>	6 flats	0 flats	2 flats	- 6 flats	+ 2 flats
<b>Brno-Bystrc</b>	4 flats	0 flats	2 flats	- 4 flats	+ 2 flats

Table 1: Comparison of the number of flats actually sold in the Brno city districts in the 2018-2020 period  
(Source: author's own)

	2018	2019	2020	2018-2019	2019-2020
<b>Brno-Centre</b>	186 flats	167 flats	137 flats	- 19 flats	- 30 flats
<b>Brno-Židenice</b>	58 flats	49 flats	49 flats	- 9 flats	0 flats
<b>Brno-Líšeň</b>	57 flats	36 flats	13 flats	- 21 flats	- 23 flats
<b>Brno-North</b>	145 flats	74 flats	88 flats	- 71 flats	+ 14 flats
<b>Brno-Bystrc</b>	55 flats	30 flats	22 flats	- 25 flats	- 8 flats

Table 2: Comparison of the number of flats on offer in the Brno city districts in the 2018-2020 period  
(Source: author's own)

Tables 3, 4 and 5 below show the number of flats in individual city districts in the monitored 2018-2020 period according to the category of flat on offer in the real estate advertising.

It is clear from the values given in the tables that the largest number of flats on offer occurred in the category of 2-room flats and, conversely, the smallest number occurred in 4-room flats.

	Brno-Centre	Brno-Líšeň	Brno-Bystrc	Brno-Židenice	Brno-North
<b>1-room flat</b>	35	9	14	10	25
<b>2-room flat</b>	75	17	22	22	46
<b>3-room flat</b>	56	25	10	17	62
<b>4-room flat</b>	21	6	9	9	12

Table 3: Summary of the number of the flats on offer by type in the selected Brno city districts in 2018  
(Source: author's own)

	Brno-Centre	Brno-Líšeň	Brno-Bystrc	Brno-Židenice	Brno-North
<b>1-room flat</b>	22	4	4	9	15
<b>2-room flat</b>	59	6	9	18	22
<b>3-room flat</b>	54	14	12	13	29
<b>4-room flat</b>	32	12	5	9	8

Table 4: Summary of the number of the flats on offer by type in the selected Brno city districts in 2019  
(Source: author's own)

	Brno-Centre	Brno-Líšeň	Brno-Bystrc	Brno-Židenice	Brno-North
<b>1-room flat</b>	23	1	2	10	16
<b>2-room flat</b>	53	5	10	21	45
<b>3-room flat</b>	41	5	7	11	23
<b>4-room flat</b>	20	2	3	7	4

Table 5: Summary of the number of the flats on offer by type in the selected Brno city districts in 2020  
(Source: author's own)

### 3.2. Methodology

In the case study, a simple arithmetic average was used to determine the average real estate offer or sale (purchase) price.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \text{ (CZK/m}^2\text{)}$$

Where,

$x_i$  – Real estate price (CZK/m<sup>2</sup>)

$n$  – Number of flats in the given location

### 3.3. Results

Based on the above-stated samples of flats taken into analysis, the following conclusions were drawn. First, the conclusions of the flat offer prices were interpreted according to individual city districts and various factors: flat category, type of building material and technical condition of the flat. Year-on-year changes in the flat offer prices are also shown.

		2018	2019	2020	2019-2018	2020-2019
1-room flats	Brno-Centre	CZK 72.830	CZK 80.188	CZK 87.250	+ 10,10%	+ 8,81%
2-room flats		CZK 64.355	CZK 72.579	CZK 81.531	+ 12,78%	+ 12,33%
3-room flats		CZK 61.651	CZK 68.080	CZK 80.692	+ 10,43%	+ 18,53%
4-room flats		CZK 60.220	CZK 75.490	CZK 87.225	+ 25,36%	+ 15,55%
1-room flats	Brno-Židenice	CZK 63.611	CZK 68.689	CZK 89.239	+ 7,98%	+ 29,92%
2-room flats		CZK 52.965	CZK 64.153	CZK 76.858	+ 21,12%	+ 19,80%
3-room flats		CZK 53.653	CZK 58.883	CZK 76.935	+ 9,75%	+ 30,66%
4-room flats		CZK 46.811	CZK 53.256	CZK 68.119	+ 13,77%	+ 27,91%
1-room flats	Brno-Líšeň	CZK 59.315	CZK 57.684	Not determined	- 2,75%	---
2-room flats		CZK 58.398	CZK 56.859	CZK 72.819	- 2,64%	+ 28,07%
3-room flats		CZK 56.131	CZK 61.900	CZK 67.174	+ 10,28%	+ 8,52%
4-room flats		CZK 51.964	CZK 57.098	Not determined	+ 9,88%	---
1-room flats	Brno-North	CZK 64.295	CZK 70.473	CZK 84.588	+ 9,61%	+ 20,03%
2-room flats		CZK 57.756	CZK 63.688	CZK 76.602	+ 10,27%	+ 20,28%
3-room flats		CZK 58.294	CZK 60.067	CZK 79.496	+ 3,04%	+ 32,35%
4-room flats		CZK 58,413	CZK 59,331	CZK 74,972	+ 1.57 %	+ 26.36 %
1-room flats	Brno-Bystřec	CZK 62,190	CZK 63,824	Not determined	+ 2.63 %	---
2-room flats		CZK 57,871	CZK 63,787	CZK 67,526	+ 10.22 %	+ 5.86 %
3-room flats		CZK 58,109	CZK 62,986	CZK 73,849	+ 8.39 %	+ 17.25 %
4-room flats		CZK 56,401	CZK 57,196	CZK 64,461	+ 1.41 %	+ 12.70 %

(1 EUR = CZK 25.50)

Table 6: Comparison of the average prices of flats on offer in the Brno city districts according to the type related to square meters in the 2018-2020 period  
(Source: author's own)

	2018	2019	2020	2019-2018	2020-2019
<b>Brno-Centre</b>					
Brick building	CZK 64,559	CZK 73,315	CZK 83,095	+ 13.56%	+ 13.34%
Panel building	CZK 67,857	CZK 60,148	CZK 82,641	- 11.36%	+ 37.40%
<b>Brno-Židenice</b>					
Brick building	CZK 56,657	CZK 66,014	CZK 80,726	+ 16.52%	+ 22.29%
Panel building	CZK 48,740	CZK 53,962	CZK 66,721	+ 10.71%	+ 23.64%
<b>Brno-Líšeň</b>					
Brick building	CZK 62,445	CZK 63,209	CZK 76,469	+ 1.22%	+ 20.98%
Panel building	CZK 52,197	CZK 54,276	CZK 65,016	+ 3.98%	+ 19.79%
<b>Brno-North</b>					
Brick building	CZK 58,886	CZK 63,475	CZK 79,076	+ 7.79%	+ 24.58%
Panel building	CZK 61,608	CZK 61,756	CZK 73,088	+ 0.24%	+ 18.35%
<b>Brno-Bystřec</b>					
Brick building	CZK 63,989	CZK 65,464	CZK 73,634	+ 2.31%	+ 12.48%
Panel building	CZK 52,956	CZK 58,840	CZK 63,816	+ 11.11%	+ 8.46%

(1 EUR = CZK 25.50)

Table 7: Comparison of the average prices of flats on offer in the Brno city districts according to the building material related to square meters in the 2018-2020 period  
(Source: author's own)

		2018	2019	2020	2019-2018	2020-2019
New building	Brno- Centre	CZK 68,940	CZK 86,689	CZK 88,386	+ 25.75%	+ 1.96%
After reconstruction		CZK 68,989	CZK 79,127	CZK 89,181	+ 14.70%	+ 12.71%
Very good condition		CZK 61,597	CZK 63,508	CZK 79,582	+ 3.10%	+ 25.31%
Good condition		CZK 57,229	CZK 59,902	CZK 75,168	+ 4.67%	+ 25.48%
New building	Brno- Židenice	CZK 60,437	CZK 59,501	CZK 82,983	- 1.55%	+ 39.46%
After reconstruction		CZK 53,011	CZK 61,148	CZK 77,813	+ 15.35%	+ 27.25%
Very good condition		CZK 53,617	CZK 65,014	CZK 77,970	+ 21.26%	+ 19.93%
Good condition		CZK 49,680	CZK 56,521	CZK 71,664	+ 13.77%	+ 26.79%
New building	Brno-Líšeň	CZK 62,212	CZK 70,502	CZK 84,283	+ 13.33%	+ 19.55%
After reconstruction		CZK 52,799	CZK 65,790	CZK 64,451	+ 24.60%	- 2.04%
Very good condition		CZK 56,701	CZK 52,446	CZK 69,116	- 7.50%	+ 31.79%
Good condition		CZK 54,184	CZK 54,114	Not determined	- 0.13%	---
New building	Brno-North	CZK 63,566	CZK 69,836	CZK 86,049	+ 9.86%	+ 23.22%
After reconstruction		CZK 56,184	CZK 63,764	CZK 81,661	+ 13.49%	+ 28.07%
Very good condition		CZK 58,961	CZK 60,471	CZK 71,761	+ 2.56%	+ 18.67%
Good condition		CZK 52,701	CZK 54,025	CZK 66,519	+ 2.51%	+ 23.13%
New building	Brno-Bystřec	CZK 61,097	CZK 69,437	CZK 69,875	+ 13.65%	+ 0.63%
After reconstruction		CZK 56,638	CZK 61,197	CZK 65,242	+ 8.05%	+ 6.61%
Very good condition		CZK 61,278	CZK 60,029	CZK 75,116	- 2.04%	+ 25.13%
Good condition		CZK 51,313	CZK 54,105	Not determined	+ 5.44%	---

(1 EUR = CZK 25.50)

*Table 8: Comparison of the average prices of flats on offer in the Brno city districts according to the technical condition related to meters in the 2018-2020 period (Source: author's own)*

Table 9 below shows the average flat offer prices by factors. It is obvious that the offer price of flats increases over time. The largest year-on-year changes in the 2018-2019 period occurred in the category of flats, namely 4-room flats and in the technical condition of flats: flats after reconstruction and new buildings, where the offer price increased by 16.50% on average. In the 2019-2020 period, year-on-year changes were identified in flats according to the technical condition, namely, the flats in good and very good condition and in the flat category: 3-room flats, where the average change was 24.50%.

	2018	2019	2020
1-room flats	66,635 CZK/m <sup>2</sup>	72,694 CZK/m <sup>2</sup>	86,825 CZK/m <sup>2</sup>
2-room flats	60,062 CZK/m <sup>2</sup>	68,011 CZK/m <sup>2</sup>	77,773 CZK/m <sup>2</sup>
3-room flats	58,589 CZK/m <sup>2</sup>	63,985 CZK/m <sup>2</sup>	78,574 CZK/m <sup>2</sup>
4-room flats	56,250 CZK/m <sup>2</sup>	65,770 CZK/m <sup>2</sup>	79,026 CZK/m <sup>2</sup>
Brick building	61,762 CZK/m <sup>2</sup>	69,314 CZK/m <sup>2</sup>	80,863 CZK/m <sup>2</sup>
Panel building	54,403 CZK/m <sup>2</sup>	57,168 CZK/m <sup>2</sup>	70,001 CZK/m <sup>2</sup>
New building	64,610 CZK/m <sup>2</sup>	74,573 CZK/m <sup>2</sup>	84,640 CZK/m <sup>2</sup>
After reconstruction	61,584 CZK/m <sup>2</sup>	72,465 CZK/m <sup>2</sup>	82,561 CZK/m <sup>2</sup>
Very good condition	59,004 CZK/m <sup>2</sup>	61,377 CZK/m <sup>2</sup>	76,303 CZK/m <sup>2</sup>
Good condition	54,219 CZK/m <sup>2</sup>	57,232 CZK/m <sup>2</sup>	72,117 CZK/m <sup>2</sup>

(1 EUR = CZK 25.50)

*Table 9: Development of average flat offer prices in the monitored 2018-2020 period in 5 Brno city districts (Source: author's own)*

Table 10 below shows the average flat sale (purchase) prices by factors. It is obvious that there is a price increase over time as well. The largest year-on-year changes in the years 2018-2019 occurred only in the flat category, namely in 4-room flats, where on average there was a 17.80% increase in the sale (purchase) price. In the 2019-2020 period, year-on-year changes were identified in the flat category, namely in 1-room flats, in technical condition, namely flats in good condition, and in building material type, namely in brick buildings, where the average change was 20.50 %.

	2018	2019	2020
<b>1-room flats</b>	63,289 CZK/m <sup>2</sup>	66,655 CZK/m <sup>2</sup>	85,039 CZK/m <sup>2</sup>
<b>2-room flats</b>	54,026 CZK/m <sup>2</sup>	63,465 CZK/m <sup>2</sup>	72,079 CZK/m <sup>2</sup>
<b>3-room flats</b>	52,425 CZK/m <sup>2</sup>	61,849 CZK/m <sup>2</sup>	70,085 CZK/m <sup>2</sup>
<b>4-room flats</b>	43,919 CZK/m <sup>2</sup>	51,764 CZK/m <sup>2</sup>	59,301 CZK/m <sup>2</sup>
<b>Brick building</b>	55,141 CZK/m <sup>2</sup>	63,304 CZK/m <sup>2</sup>	75,181 CZK/m <sup>2</sup>
<b>Panel building</b>	55,682 CZK/m <sup>2</sup>	58,851 CZK/m <sup>2</sup>	63,828 CZK/m <sup>2</sup>
<b>New building</b>	Not determined	Not determined	86,350 CZK/m <sup>2</sup>
<b>After reconstruction</b>	57,157 CZK/m <sup>2</sup>	Not determined	78,584 CZK/m <sup>2</sup>
<b>Very good condition</b>	58,091 CZK/m <sup>2</sup>	65,011 CZK/m <sup>2</sup>	71,039 CZK/m <sup>2</sup>
<b>Good condition</b>	50,662 CZK/m <sup>2</sup>	54,112 CZK/m <sup>2</sup>	62,306 CZK/m <sup>2</sup>

(1 EUR = CZK 25.50)

*Table 10: Development of average flat sale prices in the monitored 2018-2020 period in 5 Brno city districts  
(Source: author's own)*

The tables below show the average sale (purchase) and offer prices. The differences between them are stated in CZK/m<sup>2</sup> and as the percentage rate.

Item	Actual sale price	Offer price	Difference in CZK/m <sup>2</sup>	Difference in %
<b>2018</b>	55,534 CZK/m <sup>2</sup>	60,352 CZK/m <sup>2</sup>	4,818 CZK/m <sup>2</sup>	- 7.98%
<b>2019</b>	62,246 CZK/m <sup>2</sup>	66,926 CZK/m <sup>2</sup>	4,680 CZK/m <sup>2</sup>	- 6.99%
<b>2020</b>	71,568 CZK/m <sup>2</sup>	79,668 CZK/m <sup>2</sup>	8,100 CZK/m <sup>2</sup>	- 10.17%

(1 EUR = CZK 25.50)

*Table 11: Development of average actual flat sale prices and average flat offer prices in the monitored 2018-2020 period in 5 Brno city districts  
(Source: author's own)*

The above-stated table shows that the average percentage difference between the offer and sale (purchase) price of all analysed flats in the monitored 2018-2020 period was - 8.40%. That means that the flat offer price, which was given in real estate advertising, was by 10% higher than the actual price, i.e. the sale (purchase) price agreed at the final sale. It is clear from the Table 12 below that the offer price of a 1-room flat was almost identical to the sale (purchase) price, i.e. there was no significant increase or decrease in price. However, in the case of 4-room flats, there was almost a 23% price change, when the flat offer price stated in real estate advertising, was by 23% higher than the actual price, i.e. the sale (purchase) price agreed at the final sale.

*Table following on the next page*

	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>1-room flats</b>	- 5.02%	- 8.31%	- 2.06%
<b>2-room flats</b>	- 10.05%	- 6.68%	- 7.32%
<b>3-room flats</b>	- 10.52%	- 3.34%	- 10.80%
<b>4-room flats</b>	- 21.92%	- 21.30%	- 24.96%

*Table 12: Price difference between the average flat offer prices and average flat actual sale prices by flat type in the monitored 2018-2020 period in 5 Brno city districts  
(Source: author's own)*

Table 13 below shows that there was an increase in the sale (purchase) price due to the type of material: namely, panel building compared to the flat offer price in real estate advertising in 2018 and 2019. Overall, however, there was a reduction, averaging around 8.80%.

	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Brick building</b>	- 10.72%	- 8.67%	- 7.03%
<b>Panel building</b>	+ 2.35%	+ 2.94%	- 8.82%

*Table 13: Price difference between average flat prices from real estate advertising and average actual flat sale prices by type of building in the monitored 2018-2020 period in 5 Brno city districts  
(Source: author's own)*

It was not possible to evaluate the performed analysis corresponding to the flat technical condition in some years. It can only be concluded that for a very good condition and good condition of flats, there was a reduction by 6.60% in the offer price compared to the actual sale (purchase) price. However, the trend was reversed in 2019.

	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>New building</b>	Not determined	Not determined	+ 2.02%
<b>After reconstruction</b>	- 7.19%	Not determined	- 4.82%
<b>Very good condition</b>	- 1.55%	+ 5.92%	- 6.90%
<b>Good condition</b>	- 6.56%	- 5.45%	- 13.60%

*Table 14: Price difference between average flat prices from real estate advertising and average actual flat sale prices according to the technical condition in the monitored 2018-2020 period in 5 Brno city districts  
(Source: author's own)*

#### 4. CONCLUSIONS

The price analysis of flats was carried out in the 2018-2020 period. Data from real estate advertisements in the city of Brno was gradually collected reaching the sample of more than 1,000 flats. Thanks to the high number of samples, it was possible to divide these flats into individual categories (factors), which could be further monitored. The number of samples was not so high in the case of actually completed purchase transactions; as it depended on the database to which sale (purchase) prices are entered by individual appraisers and experts who come into contact with the flats during the valuation itself, respectively it depended on the actual marketability. The above carried out analysis of flat prices in the 2018-2020 period has shown that the prices of flats on offer grows over time. On average, this increase was almost by 20% per year. Moreover, it is clear from the analyses that the sale (purchase) price agreed at the final transaction was lower than the price of real estate on offer in advertisements.

The average percentage reduction amounts to 10% each year. It should be noted that everything depends on supply and demand, when the analysis showed that the largest marketability of flats was for 2- room flats and, conversely, the lowest marketability was for large flats, namely 4-room flats. Of course, it also depends on further factors, the type of Brno city district location towards the centre of Brno, civic amenities, transport accessibility, etc. The predictions related to the coronavirus crisis expected, as described in the introduction chapter, the decrease in the flat prices. However, the reality itself proved to be the exact opposite.

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## LITERATURE:

1. <https://forbes.cz/zastavi-se-nejdelsi-rust-cen-bytu-v-dejinach-neni-pro-to-duvod-rikaji-odbornici/>.
2. [https://www.czso.cz/csu/czso/ceny\\_bytu](https://www.czso.cz/csu/czso/ceny_bytu)
3. <https://www2.deloitte.com/cz/cs/pages/real-estate/articles/cze-real-index.html>.
4. KULIL. Vladimír. Special Influences Affecting the Price of Real Estate / Zvláštní Vlivy Působící Na Cenu Nemovitostí. Transactions of the VŠB – Technical University of Ostrava. Civil Engineering Series [online]. 2012. 12(2). 86-94 [cit. 2021-03-11]. ISSN 1213-1962. Available at: doi:10.2478/v10160-012-0021-7.
5. TSAI. Daniel Chan-Wei. Tsung-hao CHEN a Chian Ler QUEK. Analysis on the real estate prices: A perspective of spatial correlation with shopping district. Journal of statistics & management systems [online]. Taylor & Francis Group. 2012. 15(2-3). 219-240 [cit. 2021-03-11]. ISSN 0972-0510. Available at: doi:10.1080/09720510.2012.10701622.
6. ZBYROWSKI. Rafał. LONG-TERM DEPENDENCE OF HOUSING PRICES AND CONSTRUCTION COSTS IN EASTERN POLAND. Metody Ilościowe w Badaniach Ekonomicznych = Quantitative Methods in Economics [online]. Warsaw: Warsaw University of Life Sciences Press. 2018. 19(1). 92-103 [cit. 2021-03-11]. ISSN 2082792X. Available at: doi:10.22630/MIBE.2018.19.1.9.
7. GWIN. Carl R a Clark L MAXAM. Why do real estate appraisals nearly always equal offer price? Journal of Real estate Investment & Finance [online]. MCB UP. 2002. 20(3). 242-253 [cit. 2021-03-11]. ISSN 1463-578X. Available at: doi:10.1108/14635780210433481
8. EGOZCUE. Martín. Luis Fuentes GARCÍA a Ričardas ZITIKIS. An Optimal Strategy for Maximizing the Expected Real-Estate Selling Price: Accept or Reject an Offer? Journal of statistical theory and practice [online]. Taylor & Francis. 2013. 7(3). 596-609 [cit. 2021-03-11]. ISSN 1559-8608. Available at: doi:10.1080/15598608.2012.737297.
9. KHOLODILIN. Konstantin. Internet Offer Prices for Flats and Their Determinants: A Cross Section of Large European Cities. IDEAS Working Paper Series from RePEc [online]. St. Louis: Federal Reserve Bank of St Louis. 2012 [cit. 2021-03-11].
10. SIMANAVIČIENE. Žaneta. Features of price bubble in real estate market in Lithuania. Trendy ekonomiky a managementu [online]. Brno University of Technology. Faculty of Business and Management. I(1). 98-102 [cit. 2021-03-11]. ISSN 1802-8527.
11. HUDEC. Tomáš. Databáze realizovaných kupních cen nemovitých věcí. Soudní inženýrství [online]. Akademické nakladatelství CERM. 29(3). 49-53 [cit. 2021-03-11]. ISSN 1211-443X. Available at: doi:10.13164/SI.2018.3.49.
12. D'ARCY, Eamonn a Geoffrey KEOGH. The Property Market and Urban Competitiveness: A Review. Urban Studies [online]. Sage Publications, 1999, , 917 [cit. 2021-03-11]. ISSN 0042-0980.

13. POTGIETER, R a C CLOETE. The Impact of a View on the Value of Vacant Residential Lots. *The Appraisal Journal* [online]. Chicago: Appraisal Institute, 2010, 78(4), 333-348 [cit. 2021-03-11]. ISSN 00037087. Dostupné z: <http://search.proquest.com/docview/817559446/>.
14. GAWRON, Henryk. HOUSING MARKET IN CRISIS PERIOD - THE EXAMPLE OF POZNAN. *Journal of International Studies* [online]. Szczecin: Centre of Sociological Research/Tsentr Sotsiologichnykh Doslidzhen, 2011, 4(1) [cit. 2021-03-11]. ISSN 20718330. Dostupné z: doi:10.14254/2071-8330.2011/4-1/4.

## **FUTURE-PROOFNESS IN THE POST-COVID TOURISM SECTOR**

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### **ABSTRACT**

*It is increasingly justified by conscious thinking about the future why it is a good agreement to use the character of a competitive athlete in tourism branding as well as in tourism-related branding. Prospective researchers bluntly say that future-proof businesses should be designed like sports organizations. The analogy is good because a successful athlete's character is built on three defining pillars: speed, awareness and action. This trio of values will be useful for those who work in the areas of tourism services, tourism management or tourism development. The present study, referring to the results of recent global studies as well as Hungarian researches at a number of points, provides marketing and management responses for each of the challenges described in the sub-paragraphs.*

**Keywords:** *Future-proofness, Tourism, Sustainable Success, Preferable Future, The 5-O Model*

### **1. INTRODUCTION**

Still very much experiencing the vibrations of the coronavirus crisis, we can conclude that not only tourism businesses and attractions, accommodation and catering establishments, but also tourism sites and destinations need to operate in an environment that changes frequently and intensely. However, this conclusion is not the end of the COVID lesson, because as Tom Cheesewright (Cheesewright, 2020) suggests, we must also adapt our activities. The starting point for this change is that the optimised operation of destinations – which has been our goal in the past – must be reoriented towards adaptive operation. Presence and campaigns in the sending markets, as well as unrestricted access for all to airline travel, have provided our guests with comfortable travel, also resulting in ever increasing numbers in diagrams representing the number of visitors and guest nights (UNWTO, 2015). We have learned the strategy and tactics needed to achieve them, and the branding principles we need to follow. The study highlights the concept of sustainable success and the need for creative thinking (WEF, 2020), and its main objective is to define what we should talk about as 'new' in the tourism sector following the COVID pandemic. Using a portfolio analysis of tourism in Hungary as a research method, the authors formulate five new pillars for future-proof tourism. The research focuses on the field of cultural tourism, as heritage tourism management has the potential to create interactions between the destination's stake-holders with the highest value, the most content and meaning (Bassa & Bódis, 2020). The current study aims to compare the 5-O model (as a model of future-proofness in tourism) with the analysis of cities with cultural tourism potential in Hungary and to conclude whether the strategies and services of the selected destinations are well-founded for the post-COVID-19 re-launch in the light of changing consumer patterns.

#### **1.1. Immediate success vs. sustainable success**

“2020 has been a year for transformation, from offline to online. But one thing hasn't changed, humans need to feel connected and still desire to network. So, if that means for the time being we need to do it virtually, fine.

But the minute we can meet in person again, you'll see how keen everyone is to get back to work again," says Olivier Ponti (Ponti, 2020), Vice President of Insights. The data shows that the rebuilding of the tourism sector and the leisure segment as a whole is imminent, and even flares up from time to time, but for the time being there is no permanent change. This phenomenon was noticeable during the summer of 2020 on Lake Balaton in Hungary (NTAK, 2020) and in southern European holiday destinations in Portugal, Spain and Greece, as well as in the USA, where sales of airline tickets to Mexico showed double-digit growth (Tomaselli, 2020). The time for harmonisation and rebalancing is still to come. Making our services viable, on the other hand, is an opportunity we can take advantage of. The solution does not require huge financial resources and investment, nor is the time investment too great. Consistency and success in branding can be guaranteed through a unified, constant and coordinated presence, speed, awareness and the ability to act. It does not happen immediately, of course, and it is better to forget the practice of 'immediate success' and introduce the phrase 'sustainable success' instead. There is one more thing that tourism and marketing professionals working in their offices need to realise. Whereas the ideal, comfortable, well-oiled, pre-Covid era was best characterised by working on tourism, it is now necessary to do the same in tourism. The idea is also expressed at master plan level in the Austrian tourism development concept, which states that "The goal is a sustainable tourism involving all enterprises, employees, the local people and guests" (Plan T, 2019).

## 2. BACKGROUND

Looking at the product palette of tourism, there will certainly be areas that will change a lot. The area with the most dramatic prospect is perhaps business tourism, which was booming before the pandemic. Thanks to technology and innovation, conferences took the form of virtual events and webinars in 2020, using platforms such as Hoppin, Zoom or even GoToWebinar, with a sharp decline in demand for traditional face-to-face meetings and MICE events (ETTravelWorld, 2020). So, is everything going to be very different now? – you might ask.

### 2.1. What if?

Viability or future-proofness is a short way of saying that we are ready. Ready for action, which in many cases involves organisational and structural changes. Take the well-known example of LEGO (Grienitz, 2013). Buying your child a model car means that the child gets the most optimal toy, the one that is most similar to the original. When, after three days, the child is no longer so bound by the gift, we know immediately that the one thing that is missing is the possibility of the "What if?" question and situation (Figure 1). By not providing a perfectly faithful or congruent copy, i.e. an optimised solution, but one that can be dismantled at any time after the first assembly and redesigned and rebuilt at will, the Scandinavian toy manufacturer is also creating something new: the possibility of learning, understanding, development and, not least, the possibility of adapting and working out new models.

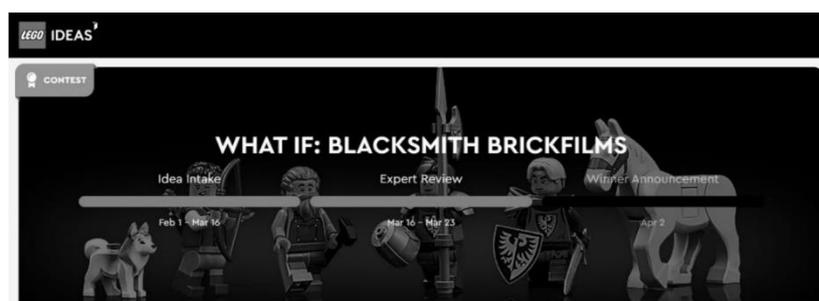


Figure 1: What if Contest  
(Source: LEGO, 2021)

According to the analyst team of ForwardKeys, the waves of COVID-19 will continue, and may even intensify, as the world continues to open and close country borders again. "These are volatile times and, as such, businesses and travel operators will need to keep adapting to new models which allow them the agility to seize new opportunities," says Olivier Jager, CEO (Jager, 2020). As early as autumn 2020, European professionals were also gearing up: 140 tourism information centre professionals representing 42 leading European cities joined the Digital ECM TIC experts' conference to share best knowledge and best practices on adaptation and innovation. The event focused on the key theme "adaptation and innovation in times of crisis", with inspiring speakers Patrick Chen from Shanghai and Jordi López from Sant Carles de la Ràpita presenting best practices from the member cities of the marketing association (ETTravelWorld, 2020). The decision is in our hands from 2021. Either we want to secure ourselves in the most optimal situation, or we adapt, empowering our services and destinations to be viable and future-proof.

## 2.2. The 5-O Model

Almost all of the goals in the UN (UN, 2015) SDG (Sustainable Development Goals) framework can be linked to tourism, simply because the tourism sector interacts intensively with all aspects of life (T4SDG, 2016). Based on the Futures Consciousness Model (Ahvenharju, Minkinen & Lalot, 2018), we can distinguish 5 dimensions: Time perspective, Agency beliefs, Openness to alternatives, Systems perception, Concern for others. These five pillars have been translated by the Hungarian next-generation tourism development community Hungary NEXT (Hungary NEXT, 2021) into words that gain relevance in tourism (Table 1).

FUTURES CONSCIUOSNESS models	
Five Dimensions of the Futures Consciousness Model	5-O Model of Future-Proofness
Time perspective	<b>Ongoing</b>
Agency beliefs	<b>Offstage</b>
Openness to alternatives	<b>Openness</b>
Systems perception	<b>Order</b>
Concern for others	<b>Others</b>

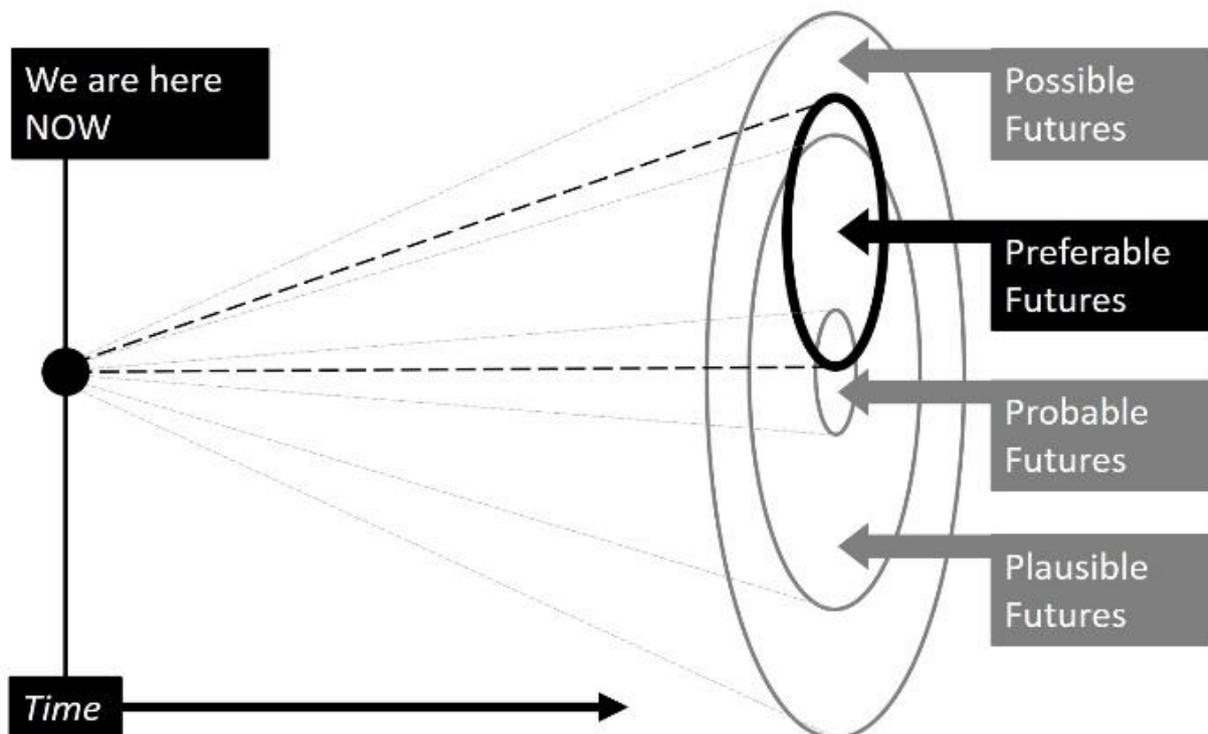
*Table 1: An explanation of the 5-O Model  
(Source: Hungary NEXT, 2020)*

So here are five points to highlight that will provide a basis for immediate actionable responses for any tourism business or destination preparing for a future-proof position. Firstly, the guarantee of success and growth (SDG 8: Decent work and economic growth) is to work continuously ahead (ongoing), not to dismiss employees and then rehire them, or perhaps hire some less experienced and less skilled workforce. The definition of a pathway also implies an order, innovation (SDG 9: Industry, innovation and infrastructure), in which we can find many good practices in Hungary. Diversity, excellence and the presentation of one's own values are, of course, the domain of marketing work, but a region, a destination or a catering unit with a strong network of partners is less vulnerable. The responsibility of tourism is now even more in the spotlight, because superficial messages and superficial results are not enough. By creating value communities, we can achieve responsible production and consumption (SDG 12: Responsible consumption and production) in our sector too, based on the concept of meaningful tourism, as formulated earlier, i.e. a deeper (offstage) presentation of people and cultures, which is an attractive offer even in quarantine mode. In the long term, the interests of the community (others) will be pursued rather than individual interests, and we will also move towards the preservation of the living environment (SDG 15: Life on land).

It is true that partnership is numbered 17 in the system (SDG 17: Partnerships for the goals), but openness is of primary importance.

### 3. MAIN FOCUS OF THE ARTICLE

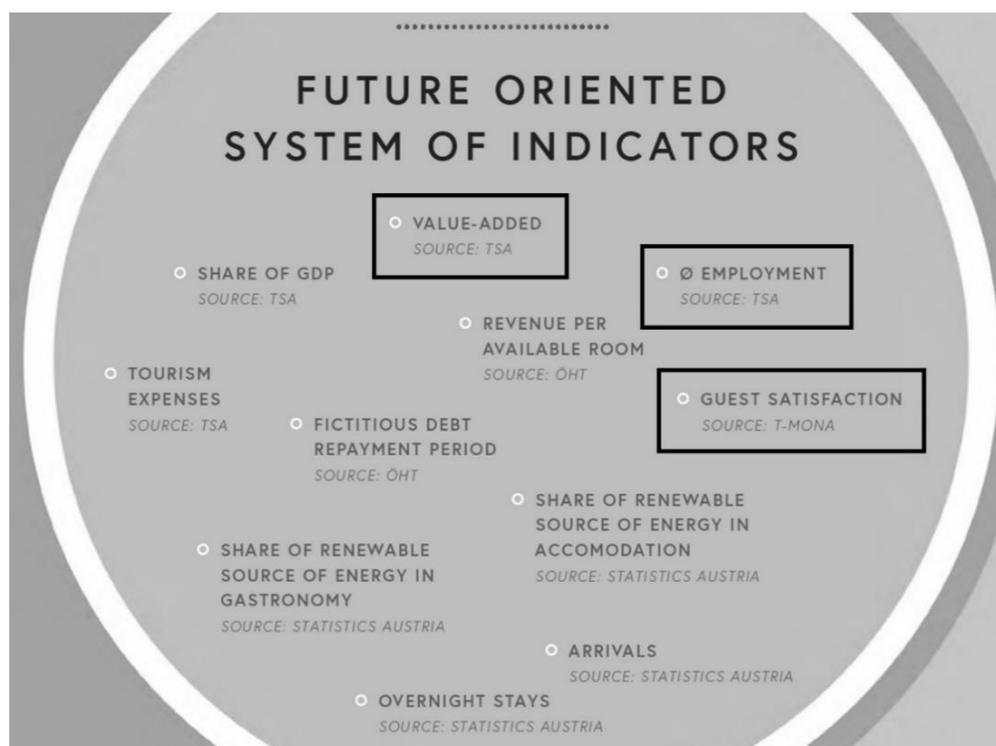
The future could theoretically be of any shape (Figure 2). If we want to define the broadest future, it is none other than "possible future". If we were to work only within this broad spectrum, it would hardly be possible to shape, form or influence the future. "Plausible future" is a narrower range of interpretation, because there are signs, phenomena and trends that narrow down the set of theoretically possible events. 'Probable future' is perhaps the narrowest range, but even here we have little freedom. We need to pick favourable points from the possible future, supported by a range of obvious, available research and data, while also following trends and likely outcomes. In this way we can build up our own picture of a 'preferable future' (Hencey, 1978).



*Figure 2: The Futures*  
(Source: Hancock & Bezold, 1994)

#### 3.1. Is everything new now?

Almost. We have a new market situation, a new approach, new needs, we must refocus and, last but not least, we set up new goals. The new situation is that the competition is already on, not only to survive, but also to win starting positions when the markets open up partially or fully. According to the latest trend analyses, the days of planning a holiday a year in advance are gone. In China, people have become accustomed to pandemic conditions and tighter travel restrictions, to the point where they are comfortable booking 3-4 days before flying domestically. "And we don't see how this attitude will change even post-crisis," says Nan Dai (Dai, 2020), a Chinese tourism market expert. A recent report by Kalibri Labs confirmed that the last-minute booking trend is also true for hotel bookings in the United States: since the pandemic broke out, the time taken to pre-book has fallen from 2-3 weeks to just 5 days.



*Figure 3: Future oriented system of indicators  
(Source: Plan T, 2019)*

Our approach is new, in that it has moved from a more self-centred, closed approach to destination (exploiting its own natural and human resources), to a more open approach (building on the competitive strength of relationships) (Pearce, 1995). Our focus is shifting from tourism 'measured' in economic and econometric data, investments and profits, to tourism 'understood' in the sense that people and their environment must determine our every move, considering a range of global earth-destroying phenomena (Figure 3). Demands, trends and patterns of consumer behaviour are also new: we have to want to change our ingrained, comfortable "it's been good, it will be good again" or "beat the horse that pulls" attitudes (Echo TV, 2018), and we have to change ourselves. The paradigm shift in tourism that has been implemented since 2016 and officially celebrated since then (MTÜ, 2016) cannot continue, it will not be enough, and much more is needed. To survive, we also need new goals: putting viability or future-proofness into practice. We shall now look at the above innovations based on the Hungary NEXT 5-O model (ongoing-openness-offstage-order-others).

#### **4. PORTFOLIO RESEARCH**

In 2020, researchers from Hungary NEXT and the Hungarian magazine Art is Business conducted a comprehensive case study analysis, mainly focusing on cultural tourism areas in Hungary, in order to get an idea of which destinations among the major cities are viable in terms of the developments and strategies that have been implemented in the last 5 years (Bódis, 2020). The approach of the research was based on the need to set up a system of comparison between destinations. The study looked at the supply and distribution of cultural services in the selected cities. The research is based on secondary data from various statistical databases and self-collected data. Significant and peripheral cities can be identified according to the specific groups of cities defined by the cluster analysis. In addition to these groups of cities, there are cities that exploit their cultural assets in different ways, with an emphasis on museums and festivals, and cities where creative communities and public cultural institutions play the most important cultural role.

The first step was to identify the range which classifies Hungarian cities by their size (Területi Statisztika, 2016).

CITY SIZES by population	
Type of city	Number of cities
City with over 100 thousand inhabitants	7
Medium-sized city with between 50 000 and 100 000 inhabitants	11
Medium-sized city with between 30 000 and 50 000 inhabitants	17
Medium-sized city with between 20 000 and 30 000 inhabitants	24
Small town with between 10 000 and 20 000 inhabitants	82
Total:	<b>141</b>

*Table 2: Primary categorisation of cities for portfolio analysis  
(Source: Hungary NEXT, 2020)*

Towns/cities with a population of over 10 000 were therefore the priority for the researchers (Table 2). Smaller towns are not included in the sample because they usually have a single cultural institution with limited opening hours, one or two employees and (limited) multi-functionality. In these towns – with the exception of those on the shores of Lake Balaton – there are generally no cultural events that attract large audiences, and municipalities on the shores of Lake Balaton with fewer than 10,000 inhabitants tend to organise such events to increase their tourism appeal. The limited length of the research period and the ultimate aim of the research made it essential to further narrow down the number of towns. Thus, the second of the four city clusters in the aforementioned system was selected, which included 23 cities. Budapest, the capital city, was excluded from the analysis because it has a much larger cultural offer and a much larger volume of development (Table 3).

CITY CLUSTERS by function	
City cluster	Explanation
1. cluster	Cities of cultural centres and creative communities
2. cluster	<b>Multifunctional cultural cities (23 cities, 16%)</b>
3. cluster	Functionally deficient, culturally active cities
4. cluster	Culturally deprived cities

*Table 3: Further categorization of cities for portfolio analysis  
(Source: Hungary NEXT, 2020)*

The cluster with the second smallest number of elements (23 cities), includes all but 3 county seats, 2 cities with county rights (Sopron and Dunaújváros) and Budaörs and Budakeszi, which are almost part of Budapest. In addition, there are a few towns with a smaller population that either have a unique cultural life due to their urban characteristics (Szentendre) or have a sub-central function between two major county seats (Békés, Szarvas, Celldömölk). Most of the towns in this cluster perform all the cultural functions, with the offer of theatre and cinema being the most prominent compared to the other clusters. Even if not all cities have a theatre building, they do have a theatre. In the only city that did not have a museum in the year under review, three museums have since opened their doors to the public. The 23 cities were further narrowed down by the research team, taking into account their geographical locations. As a result, five cities were identified and presented in the form of articles (one on each city), which is summarised in a table in this study (Figure 4, Table 4).



Figure 4: Presenting viable cities on the map of Hungary  
(Source: Hungary NEXT, 2020)

PORTFOLIO OF MULTIFUNCTIONAL CULTURAL CITIES selected for the analysis					
Elements of the 5-O model	Győr North-Western Hungary	Miskolc North-Eastern Hungary	Szeged Southern Hungary	Szentendre Central Hungary	Szombathely Western Hungary
<b>ONGOING</b>	Synergic development of business and leisure tourism	Continuous development of the Lillafüred climatic health resort	Bird migration station, blooming of the Tisza: Nature-friendly developments	Constant renewal: organising the Éjjel-Nappal Nyitva (Open Day and Night) festival	Constant renewal: See, Hear, Touch, Feel campaign and events
<b>OFFSTAGE</b>	Development of the AUDI Hungária Visitor Centre	300-400 year old cellars and wineries, gastronomic tours	House of Mysteries: detective stories, discovery trails	Interactive development of the Open-Air Ethnographic Museum (Skanzen)	Historical insight: historic walking trail project and visitor centre
<b>OPENNESS</b>	'Gateway to the Western world' tourism positioning	Cooperation with the European Capital of Culture, Kosice	Regional Art Centre: thematising Art Nouveau	Serb, Dalmatian, Slovak, German and Greek nationalities: inclusion	Strong cross-border activity: host and organiser of several Interreg projects
<b>ORDER</b>	Consistent campaign strategy: 'one city, a thousand experiences'	Introduction of the Miskolc Pass city and regional tourist card	17 twin cities in strong partnership	New, insight-based segmentation tourism package offers	Involvement in the development and implementation of the main narrative of the Danube
<b>OTHERS</b>	Hometown of Spritzer (Fröccs), support from the Rotary Club	The University of Miskolc T-Model CSR Competence project	Interactive presentation of the inventor of vitamin C for children	A city of painters, a place for contemporary artists: incubation	Taking responsibility for dogs and dog owners: 'Doggy Good Day' programmes
References	(Art is Business, 2020)				

Table 4: Selection of cities according to the 5-O Model, with examples for each case  
(Design: Hungary NEXT, 2020)

## 5. SOLUTIONS AND RECOMMENDATIONS

### 5.1. New situation: let us be known, let us be characteristic (ongoing)

In an increasingly fierce competition, the research of future offers us a time perspective. Time is even shorter in the new world. In marketing terms, this means that we need to present our services and places in a consistent way, so that we can build the brand image earlier and raise brand awareness. A good way to do this is to unify all our offline and online communication platforms, the so-called touchpoints, so that we can create a Service Interface, an imaginary plane, a homogeneous interface with all the touchpoints between the visitor and the service provider (Moritz, 2005). Another interpretation of time is that we must not only be present, but also be able to compare and be comparable. It should be more of a tool for overall management. European champion rower Péter Galambos, the face of the Hungary NEXT country brand community, is the best choice (Career Sport, 2021) precisely because his human and likeable character allows stories to be told and recalled much faster (speed was the first element of the initial value triad). This is due to the fact that the athlete is dynamic, representative, competitive, inspirational, motivates movement, can be followed, and serves as a role model (Figure 5). Moreover, as he is most often seen in Vác and on the Danube, he can be linked geographically to the Danube Bend, as was done by the experts in the case of Danube Bend tourism packages (VEKOP, 2020). These are the characteristics of a successful tourist destination – perhaps already.



Figure 5: Péter Galambos has got future-proof destination values  
(Source: Hungary NEXT, 2020)

As a result of the quicker reactivation of the domestic travel market and inter-regional tourism, the latest data show that consumers want to travel despite travel restrictions and other existing barriers. Although long-haul travel is taking a back seat, domestic travel will be particularly popular in Russia, China and South Korea in 2021 (ETTravelWorld, 2020). **Let us promise them something familiar.**

### 5.2. New approach: utilize your relationships (openness)

The direction of tourism development must certainly change. The current, largely inward-looking tourism management organisations and attractions, which are constantly looking for new markets and manage their existing product range, are no longer sustainable due to the limits and constraints of intensive local growth, thus suffering the phenomenon of overtourism experienced in the past.

The so-called single-destination approach is being replaced by a more promising, adventurous, varied multi-destination approach, which is full of contrasts and surprises. It is a human trait that if something is on the other side of the river, you cross it, but if something is on the other side of the mountain, you go around it or climb it. This is not a new pattern of behaviour, but if we consciously (the second element of the initial value trinity) open up tourism destinations, in cooperation with the neighbourhood, be it a district, a regional competitor, a city or even a cross-border attraction, we have already picked up the thread of cross-border offers so popular in more developed countries (Tosun, Timothy, Parpairis & Macdonald, 2005). In parallel with local opportunities, the focus should now be on more ambitious, open and cooperative – but also sufficiently concrete – partnerships. The Danube, for example, is a natural link, first of all in the Budapest-Pozsony-Vienna relation (Kovács & Thurzó 2020). Cooperation between cities could lay the foundations for the cross-border development of the region. The infrastructure of this axis is virtually complete, and a complex offer of cycling, boating, cultural, wellness and business products could satisfy a wide range of needs. For such a package to be successful, it requires the support of the government, the acceptance of cooperation or even merging of actors, preparation for this and the promotion of new types of experience spaces. The marketing suggestion here is to develop and promote together, and the management response to this challenge is to engage colleagues, partners and suppliers to ensure that new products are created alongside our existing markets as a result of this outward turn. In the future, we will hear the word inclusive more often than exclusive. **Let us promise them trust.**

### **5.3. New demand: let us change and make a change (offstage)**

Let us act as the last element of our sportsmen's value triad suggests. The unique, the authentic is already much more interesting than the mass, the mainstream. It would not be good in the future to promote and look for bucket lists (Perkins, 2020) or TOP-10 attractions: we want to introduce visitors to smaller and more local values that have not yet been discovered but can be linked. This thinking has already been implemented in some areas during the Covid pandemic, looking behind the scenes when the stage was closed. It is local values, identities and promises that really build the brand of a place. The role of marketing is to find the idea to make the invitation competitive and create the experience space, to which management can add reinforcement through design thinking. Often used call words such as "happiness", "joy" and "capital" of something have become empty and diluted just like the word "quality" (Bódis, 2020). **Let us promise them proximity.**

*Figure following on the next page*





*Figure 7: Driving styles of the new Fiat 500 La Prima  
(Source: Fiat, 2021)*

A primary challenge is the use of information design, which is still underdeveloped in our country, and which goes far beyond the need to have a name plate with runic script for one's settlement (Király, 2011). The management of useful and up-to-date information by planning visitor routes also contributes to the desirable practice of capacity management, i.e. the spreading and balancing of visitors over time and space, so that they take home a truly clean, well-kept, orderly, organised view, content and an unforgettable experience of identification with the place, which we now call #newtourist. **Let us promise them safety.**

##### **5.5. New goal: future-proofness or viability, responsible development (others)**

The management question often arises as to what is more forward, the ego or the multitude, the individual or the community. If we are talking about environmental and social sustainability, it is obviously the latter. From a work organisation and job retention point of view, however, we can only rely in the long term on employees who can find their own personal development and growth in the company or organisation, who can make independent decisions and whose knowledge, skills and attitude promise tangible benefits for themselves and for the well-being of the community. In our marketing analyses, we come across the term 'selfness' with increasing frequency, which underlines the importance for everyone to feel a sense of responsibility towards themselves (Rocha, Seabra, Silva & Abrantes, 2016). Tourism can create a balance between these two through increasingly personalised offers, while the involvement of local communities and local producers can provide a number of marketing benefits. Reference point training is one such example, which could be a portfolio of own/local products linked to a city, such as "Krakowski Kredens" (Local Guide, 2018). Appreciated individuals are able to engage in community marketing work at their own level, and even in social responsibility programmes. A Japanese study (Maikoya, 2020) asked experienced travellers how they thought their travel behaviour would differ in the future. Around half of them said that if the pandemic ended, their attitude to travel would remain unchanged. Many travellers confirmed that they would be more attentive to hygiene and safety. Around a fifth of respondents mentioned the possibility of travelling less but for longer, and the support of local experience providers and local businesses. The fact that these responses were spontaneously formulated in this way reflects the continuing shift towards sustainability. **Let us promise the harmony of the individual and the community and its sustainability.**

## 6. CONCLUSION

In summary, we need to adapt in order to achieve sustainable success, which also depends on us – it is based on how ready we are now, how much we want to change and what future we would prefer. Re-interpreting the role of tourism destinations and businesses can provide us with one of the best positions near the starting line, if we truly embed the quick, conscious and proactive qualities of a characteristic sportsman in our thinking, strategy, relationships and organisational and communication systems.

## LITERATURE:

1. Ahvenharju, S., Minkkinen, M. & Lalot, F. (2018). The five dimensions of Futures Consciousness. *Futures*, 104, 1–13.
2. Art is Business (2020): *Győr: Miért megy mindenki?* ("Győr: Why is everyone going?") KortársPROs Kft., Retrieved from [www.artisbusiness.hu](http://www.artisbusiness.hu)
3. Art is Business (2020): *Miskolc: Élet a városban.* ("Miskolc: Life in the city.") KortársPROs Kft., Retrieved from [www.artisbusiness.hu](http://www.artisbusiness.hu)
4. Art is Business (2020): Szeged: A megnézemtől a megélelemig. ("From looking to experiencing") KortársPROs Kft., *Art is Business*. 1(10), 22–23.
5. Art is Business (2020): Szentendre: Mediterrán kavalkád. ("Szentendre: Mediterranean cavalcade.") KortársPROs Kft., *Art is Business*. 1(11), 22–23.
6. Art is Business (2020): *Szombathely: modern tartalom antik kosztümben.* ("Szombathely: modern content in an antique costume.") KortársPROs Kft., Retrieved from [www.artisbusiness.hu](http://www.artisbusiness.hu)
7. Bassa, L. & Bódis, G. (2020). *How to establish appropriate tourism after 2020? Over Tourism and "Tourism Over". Recovery from COVID19 Tourism Crisis in Regions with Over and Under Tourism.* World Scientific Serie Publication Book. Edited by Trono, Duda & Schmude.
8. Bódis, G. (2020). 2021: Jövőképesség a turizmusban. ("Viability in tourism.") *Vállalkozói Értesítő. Menedzser Praxis* 3. 16–19.
9. Bódis, G. (2020). A jövő kulturális turizmusa. ("Cultural tourism of the future.") KortársPROs Kft., *Art is Business*. 1(9), 24.
10. Career Sport (2021). *Együtt szárnyal Galambos Péter és a Hungary NEXT.* ("Péter Galambos and Hungary NEXT soar together.") Career Sport. Retrieved from <http://careersport.hu/egyutt-szarnyal-galambos-peter-es-a-hungary-next/>
11. Cheesewright, T. (2020). *Future-proof Your Business.* Penguin Books. 3–7.
12. Dai, N. (2020). *Trend 2: Shorter lead-booking times are the New Normal.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>
13. Echo TV (2018). *Guller Zoltán: Magyarország a csodák forrása.* ("Zoltán Guller: Hungary is a source of wonders.") ECHO Hungária TV Zrt. Retrieved from <https://www.echotv.hu/hirek/2018/10/17/guller-zoltan-magyarorszag-a-csodak-soha-nem-elapado-forrasa>
14. ETTravelWorld (2020). *Four travel trends to watch out in 2021.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>
15. ETTravelWorld (2020). *Trend 3: The desire to travel exists, despite Covid-19.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>
16. ETTravelWorld (2020). *Trend 4: Leisure travellers, the new affluent market.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>

17. Hancock, T. & Bezold, C. (1994). Possible futures, preferable futures. *Healthcare Forum Journal*, vol. 37(2), 23–29
18. Hency, N. (1978). Making Sense of Future Studies. *Alternatives*, 7, 24–29.
19. Hungary NEXT (2020). *Az 5-O modell SDG-kapcsolata. ("The SDG connection of the 5-O model.")* Márkamonitor. 2-3, 71.
20. Hungary NEXT (2021). *We are different in the way how we look at the tourism sector in Hungary.* Mission Statement. Hungary NEXT. Retrieved from <https://hungarynext.com/en/>
21. Grienitz, V. (2013). Vision statement development with LEGO® SERIOUS PLAY®. *Journal of IIE Annual Conference and Expo 2013*. 1(1), 791–798.
22. Jager, O. (2020). *Trend 1: The World of tourism on tenterhooks.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>
23. Király, A. (2011). *Terjednek a rovásírásos helynévtáblák. ("Place-name signs in runic script are spreading.")* Index.hu Zrt. Retrieved from [https://index.hu/belfold/2011/07/31/nincs\\_menekves\\_a\\_rovasirasos\\_helynevtablaktol/](https://index.hu/belfold/2011/07/31/nincs_menekves_a_rovasirasos_helynevtablaktol/)
24. Kovács, B. & Thurzó, K. (2020): *A turizmusban régiós mintát mutathatunk a világnak. ("In tourism, we can show the world a regional model.")* Magyar Nemzet. Retrieved from <https://magyarnemzet.hu/gazdasag/regios-turizmusmintat-mutathatunk-a-vilagnak-9053603/>
25. LEGO (2021). *What if: Blacksmith Brickfilms.* LEGO System A/S. Retrieved from <https://ideas.lego.com/challenges/8bd43da4-eb65-4161-a213-905b5a8aa804?query=&sort=top>
26. Local Guide (2018). *Traditional Galician Foods and Souvenirs.* Krakowski Kredens. Local Guide Ltd. Retrieved from <https://www.likealocalguide.com/krakow/krakowski-kredens>
27. Maikoya, T. C. K. (2020). *Future Travel and Sustainable Tourism after COVID-19.* Source Cision Ltd. Retrieved from <https://www.prnewswire.com/news-releases/future-travel-and-sustainable-tourism-after-covid-19-study-by-tea-ceremony-kyoto-maikoya-301187271.html>
28. Moritz, S. (2005). *Service Interface. Model 5.* Service Design. A practical access to an evolving field. KISD. 41–42.
29. MTÜ (2016). *Nemzeti Turizmusfejlesztési Stratégia 2030. Vezetői összefoglaló. ("National Tourism Development Strategy 2030. Executive Summary.")* Magyar Turisztikai Ügynökség Zrt. 6.
30. NTAK (2020). *MTÜ havi jelentés: 2020. szeptemberben is a Balaton volt a legnépszerűbb. ("MTÜ monthly report: in September 2020, Lake Balaton was again the most popular destination.")* Nemzeti Turisztikai Adatszolgáltató Központ. Magyar Turisztikai Ügynökség Zrt. Retrieved from <https://info.ntak.hu/hirek/mtu-havi-jelentes-2020-szeptemberben-is-a-balaton-volt-a-legnepszerubb>
31. Pearce, D. (1995). Tourism today. A geographical analysis. *Geography of Tourism*, (34)2. Longman, Harlow, 75
32. Perkins, B. (2020). *Forget the bucket list: Use 'time buckets' to plan a meaningful life.* Business Insider. Retrieved from <https://www.businessinsider.com/forget-bucket-list-use-time-buckets-to-plan-meaningful-life-2020-7>
33. Ponti, O. (2020). *Trend 4: Leisure travellers, the new affluent market.* Times Internet Limited. Retrieved from <https://travel.economictimes.indiatimes.com/news/research-and-statistics/figures/four-travel-trends-to-watch-out-in-2021/79967052>
34. Plan T (2019). *Plan T - Master Plan for Tourism.* Federal Ministry of Agriculture, Regions and Tourism. Retrieved from <https://www.bmlrt.gv.at/english/tourism/plan-t-master-plan-for-tourism/plan-t-master-plan-for-tourism.html>

35. Rocha, G., Seabra C., Silva C. & Abrantes, J. L. (2016). Holistic Tourism: Motivations, Self-Image and Satisfaction. *J Tourism Res Hospitality* S2-004.
36. Simpson, P. M. & Siguaw, J. A. (2008). Destination Word of Mouth. The Role of Traveler Type, Residents, and Identity Salience. *Journal of Travel Research*, 47(2), 167–182
37. Stellantis (2020). *The New 500 is coming: it's time to take action to create a better future*. FCA Italy S.p.A. Retrieved from <https://www.media.stellantis.com/em-en/flat/press/the-new-500-is-coming-it-s-time-to-take-action-to-create-a-better-future>
38. Területi Statisztika (2016). *Területi statisztika 56(5) ("Regional statistics 56(5)")*, 565–587.
39. Tomaselli, R. (2020). *Airline Ticket Sales on the Rise*. Northstar Travel Media, LLC. Retrieved from <https://www.travelpulse.com/news/airlines/airline-ticket-sales-on-the-rise.html>
40. Tosun, C., Timothy, D., Parpairis, A. & Macdonald, D. (2005). Cross-Border Cooperation in Tourism Marketing. *Growth Strategies Journal of Travel & Tourism Marketing* (18), 5.
41. T4SDG (2016). *The T4SDG Platform*. UNWTO. Tourism for the SDGS. Retrieved from <https://tourism4sdgs.org/>
42. UN (2015). *Sustainable Development Goals*. United Nations. Retrieved from <https://sdgs.un.org/goals>
43. UNWTO (2015). *Tourism Highlights edition*. World Tourism Organization. Data as collected by UNWTO. 4.
44. VEKOP (2020). *A Dunakanyar kiemelt turisztikai térség fejlesztése és pozicionálása. Térségi egyedi csomagajánlatok. ("Development and positioning of the Danube Bend as a priority tourist region. Individual package offers of the region.")* VEKOP-1.3.2-17-2019-00002
45. WEF (2020). *Top 15 skills for 2025*. Future of Jobs Survey 2020. The World Economic Forum LLC. Retrieved from <https://www.weforum.org/reports/the-future-of-jobs-report-2020>

## CITY BRANDING: CURRENT TRENDS AND FUTURE PROSPECTS

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### **ABSTRACT**

*City branding, place branding, destination branding and the like are various notions under which the art and science of developing brands for various geographically and administratively defined units, have been discussed and researched during past 20 years. City branding as a concept is defined as the application of the philosophy and methods of branding to the development of cities. Research on city branding gained momentum during past five years. Number of publications (journal articles, books and monograph chapters, conference proceedings etc.) in the field of city branding is steadily increasing, reflecting both relevance of this topic as well steady increase in academic interest in this area. However, what seems to be interesting is a lack of conceptual articles with majority of these publications being case studies of branding practices in individual cities or urban agglomerations. While such approach is worthwhile in terms of identifying practices applied in city branding efforts worldwide, the lack of a coherent and universal basis for analysing and comparing city branding practices remains an issue which will require further research. Therefore, a systematic overview of the city branding discipline is important for generating new insights and building a common ground for the future research. The main aim of this study is to concisely review the city branding research studies since 2012, in order to identify major themes and approaches employed by researcher in the field of city branding. By means of an iterative search in multiple literature database, most relevant studies in the field of city branding were examined and analysed. This study indicates that researchers mainly use qualitative approach, while majority of the publications are still case studies of the individual city branding practices.*  
**Keywords:** *City branding, Marketing, Practices, Cities*

### **1. INTRODUCTION**

Whereas the interest in differentiating one place from the other is nothing novel as places (cities, towns, regions, countries) always had to compete for various resources (investments, human capital, tourist demand), recent period saw the rise of systematic application of marketing-based brand management knowledge to context of place management and development. As pointed by Hospers (2010), cities all over the world nowadays use city marketing as a method to attract new residents and firms and to stay competitive and relevant on the global market. The heightened competitive environment, according to Oguztimur and Akturan (2016), makes it important for cities, no matter their size or composition, to differentiate themselves and to convey their value. In that light, the new context for usage of marketing has given rise to place marketing as a discipline which can be seen as an instrument of place management, used in achieving goals related to the management of the place(s) as whole (Ashworth and Voogd, 1990). According to Kavaratzis and Ashworth (2010), the practice of place marketing has developed through three stages - place promotion or “boosterism” stage, place marketing as a planning instrument stage and place branding stage as a distinct focus of place marketing.

This final stage arose as a result of an alignment of city planning efforts and developments in the field of marketing, where marketing concepts and approach to developing products are being implemented in thinking about place planning in various contexts (tourism, business, social services etc.). According to Lucarelli and Berg (2011), place branding is an evolving multi-disciplinary research field, which covers a large variety of topics and disciplines, including urban planning, marketing, public policy, and sociology. The very notion of branding comes from the field of marketing. According to American Marketing Association, brand can be defined as a “name, term, design, symbol, or any other feature that identifies one seller’s good or service as distinct from those of other sellers” (2015). Another view of brand relates brands to distinctive ‘personalities’ - a unique combination of functional attributes and symbolic values of a product or service which contribute to distinctive positioning of those products and services relative to their competition (Hankinson and Cowling, 1993: 10). However, such views of branding have been deemed too narrow and simplistic to be applicable to complex “products” such as cities. Hence, in an effort to find a better fit between branding as defined in consumer marketing literature and requirements of brand building in context of place, Zenker and Braun (2010) have defined place brands as network of associations built and perceived by various audiences targeted by place branding efforts. That means that for the purposes of branding the place - whether by place one considers a country, a region, a city or a neighbourhood, brand is understood and treated as a multidimensional construct, consisting of functional, emotional, relational and strategic elements that collectively generate a unique set of associations with the place in the public mind (Kavaratzis and Ashworth, 2015). An important trend seen in past ten years has been incorporation of corporate branding ideas and practices into place branding domain. Corporate branding efforts are in many ways similar to efforts which need to be undertaken in branding places.

In his work, Hankinson (2010) provides a systematisation of challenges of corporate branding which include:

- Need for a brand supportive corporate culture
- Clear vision, aligned with corporate culture and (proposed) brand image
- Established procedures and processes for coordinated response to customer needs
- Dealing with a multitude of audiences and external stakeholders – from business partners (suppliers, distributors, etc.) to wider public
- Need for a wider appeal due to wider range of relationships being maintained at organisational levels

All of these challenges require different approach to promotion in comparison to classic product promotion, including a much wider spectrum of promotional activities employed. Branding efforts in the services sector face similar challenges. Apart from the focus on multiple stakeholders, service branding efforts focus on processes and experiences (which can be branded) and include elements which are visible and “invisible” to service users but are still significant contributors to overall experience. In a way, all of these challenges are applicable to place branding, hence - when looking at theoretical underpinnings to serve as a foundation for place branding practices - corporate and service branding practices seem to be logical choices. Place branding is considered to be the application of the philosophy and methods of branding to the development of cities (Kavaratzis, 2019); the implementation of appropriate marketing strategies that allow places/cities to differentiate themselves from the competition through appropriate positioning of their resources/competencies of an economic, social, political, or cultural nature (Kaplan et al., 2010). In simple terms, place branding is a practice of local government (Glińska and Rudolf, 2019), a component of managerial approach to city development (Florek, Hereźniak and Augustyn, 2021).

On a practical note, although place branding and city branding are not synonyms - place branding is a wider term that includes city branding - very often in the literature those terms are used interchangeably, reflecting the “urban-centricity” in the field of place branding, i.e., the focus on urban areas as “places” subject to branding.

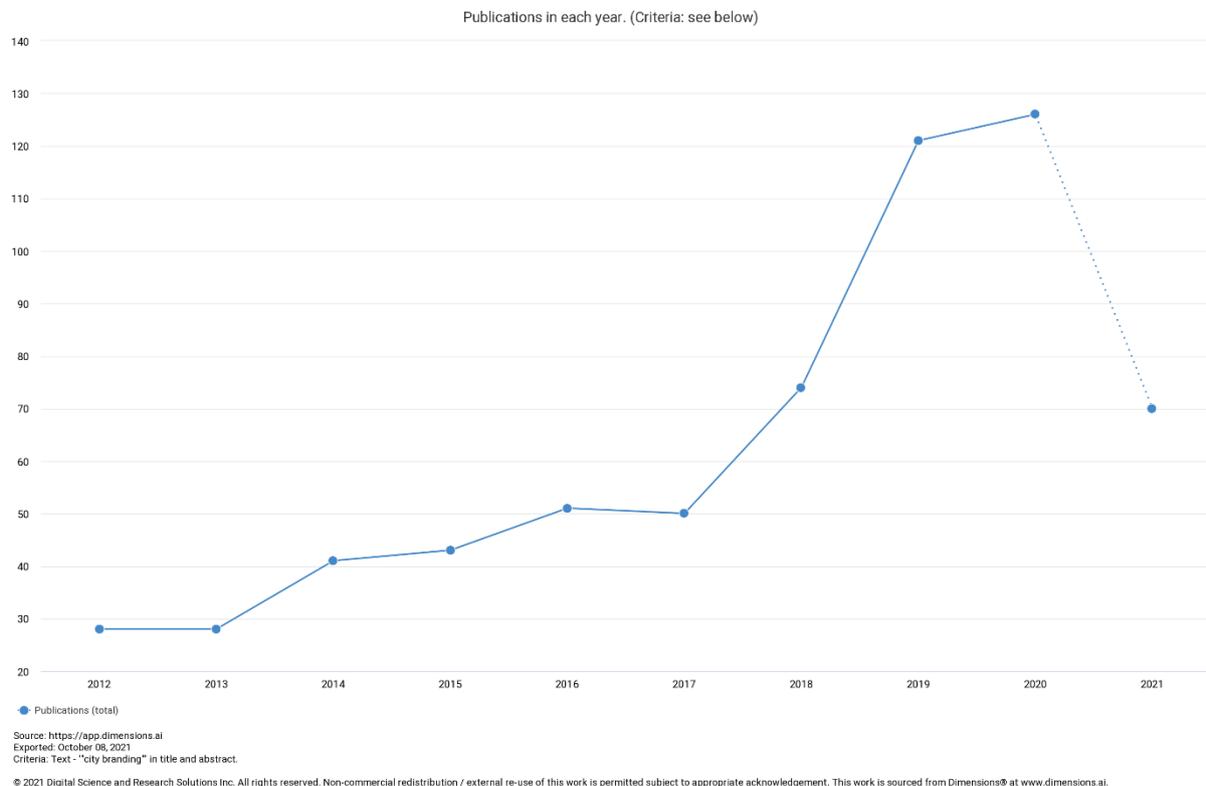
### **1.1. City branding effectiveness**

Specific characteristics inherent to place branding (when compared to branding of commercial products and services) result in additional challenges facing place branding, namely - challenges related to setting brand objectives, managing the process of place branding and measuring brand performance (Hankinson, 2015). When talking about objectives - instead of maximising shareholder value - in place branding focus is on maximisation of social welfare and economic value of local population. Management of place brands is more complex due to the nature of the environment and actors involved in the branding process. Whereas in commercial setting, management of a brand is usually clearly assigned to responsible managers/departments with ability to implement their ideas through the management processes, when talking about place brands everything becomes more complex. Due to previously indicated multitude of relationships between actors involved in place branding activities (e.g. public institutions, various commercial entities included in activities impacting local experience and services etc.), place brand management tends to be more of a process of mediation between involved actors rather than direct management process. This leads to the danger of brands focusing on “lowest common denominator” (Hankinson, 2015: 25), that is, elements of the brand which are fairly easy to coordinate (such as graphical logos, slogans etc.) rather than working on true building of value through place branding efforts. Focus of various involved actors in term of measurement of branding efforts can vary, depending on their own interests and can include delivery of public services, tourist visits and investments attracted. Basically, these indicators include both financial results for the commercial entities as well as personal wellbeing for population. Obviously, there is clear need to include all aspects of performance if there is to be a balanced approach to brand building in place settings. The measurement of place brand performance, in particular from the point of view of city authorities, city managers and citizens requires an integrated, universal and systematic approach to evaluate the outputs of city branding efforts. So far, the literature does not offer such approach, and the attempts to measure city branding performance remain rather isolated and city-specific. Based on the city branding practices of 66 Polish cities, Hereźniak, Florek and Augustyn (2018) try to categorize the existing indicators and identify potential gaps in measurement of brand effectiveness. Not surprisingly, their content analysis reveals that the employed city-branding-related effectiveness indicators are insufficient, fragmented and very often irrelevant to the objectives articulated in strategic documents, proving that there is no systematic approach to the measurement of city brand strategy effectiveness. Employing a semi-structured interview with 12 international academic experts from 8 countries, Florek, Hereźniak and Augustyn (2019) point out that measurement of effectiveness of city branding should be treated as a strategic endeavour. They detect major barriers to the development of an appropriate measurement system: too narrow understanding of what brand is, lack of knowledge or culture of measurement, conflicting political interests, reluctance to involve internal stakeholders, insufficient funding and complexity of the brand itself. In their subsequent research, Florek, Hereźniak and Augustyn (2021) expand the initial investigation of the city brand effectiveness measurement by interviewing the municipal representatives of the entire population of 66 Polish district cities. Finally, by employing the process-oriented approach to effectiveness measurement, Florek, Hereźniak and Augustyn (2021) design a system of city brand effectiveness measurement that takes into account not only the branding outcomes, but also stages and the structure of the city branding process and strategy documents.

The proposed measurement system enables the evaluation of multiple types of brand-related activities and comprises a comprehensive list of indicators that city managers can apply to measure the effectiveness of their branding efforts.

## 2. PREVIOUS REVIEWS AND STUDIES

Research on city branding gained momentum, particularly during the past five years. Number of publications (journal articles, book and monograph chapters, conference proceedings etc.) in the field of city branding is steadily increasing, reflecting both relevance of this topic as well steady increase in academic interest in this area. The relevant studies in the field of city branding published before 2014 are systematically reviewed by Lucarelli and Berg (2011), Acharya and Rahman (2016) and Oguztimur and Akturan (2016). In particular, Lucarelli and Berg (2011) review research studies on city branding published in academic journals in the period 1988-2009, and conclude that “city branding is emerging as an internationally recognized research domain characterized by a high degree of multi-disciplinary, rapid proliferation in and between disciplines, and a somewhat fragmented theoretical foundation” (Lucarelli and Berg, 2011: 9). Acharya and Rahman (2016) review articles on place branding, identified from three major global databases and published during the period 2004-2014 in scholarly or academic journals. Their review reveals that place brand identity emerged as a major research theme in all studies and that most of the articles are based on conceptual, case, and qualitative studies. Oguztimur and Akturan (2016) systematically review the city branding literature in the period 1988-2014. In line with Lucarelli and Berg (2011) and Acharya and Rahman (2016), they also conclude that majority of the reviewed studies use the qualitative methods and are research based. In addition, they point out that the knowledge in this field seems to be idiographic as there is a general tendency to describe the data but not to interpret the relations between the concepts and theories.



*Figure 1: Number of publications in the field of city branding, by year (2012-2021)*

Using *dimensions.ai*, tool for finding and visualising number of appearances of certain keywords, in our case “city branding”, as depicted in Figure 1, we discover 464 research articles/studies published in scientific journals during the period 2012-2021. A close inspection of the numbers of studies published in the 2012-2021 period reveals that there was a structural break/increase in the series in 2017. Namely, in 2018 compared to 2017, the number of published articles increased by 46%, while in 2019, compared to 2017, the increase was even more prominent; namely, the number of the published studies increase by 142%. This increase in the researchers’ interest within the area of city branding since 2017 is not surprising. As pointed by Govers Kaefer and Ferrer-Roca (2017), the place branding community saw positive developments in 2016 which can be attributed, among others, to the International Place Branding Association and launch of The Place Brand Observer, the leading online magazine, think blog and knowledge hub for place branding practitioners and academics. In this paper, we focus on studies published in the two relevant journals; namely, Place Branding and Public Diplomacy and Journal of Place Management and Development, since those are the journals two top journal in terms of concentration of research/articles dealing with city branding. In total, 44 studies are identified; 27 in the former and 17 in the latter journal<sup>1</sup>. Building on Oguztimur and Akturan (2016) and Lucarelli and Berg (2011), we thematically analyse and concisely review the articles published in the above mentioned scientific journals. The focus was placed on the stated research aims and questions, key arguments, methodology and main conclusions. Regarding the number of the cities studied in the reviewed city branding literature, it was found that 511 different cities are considered, individually or as a part of comparative studies. Regarding methodologies that are used in the reviewed city branding researches, case study approach seems to be dominant, followed by comparative analysis and multi-case studies approach. Majority of studies are research-based and use qualitative rather than quantitative methods, or combination of the two. There are several papers which differ from the dominant case-study, qualitative approach. Daspit and Zavattaro (2014), for instance, develop a theoretical framework of the place branding process that integrates organisational capabilities, rooted in strategic management literature. Alonso and Bea (2012) aim to quantify the brand image of the 60 Spanish cities according to their visibility on the Internet, using a linear regression model. Glińska and Gorbaniuk (2015) use exploratory quantitative approach to investigate the limitations of the extensibility of the Aaker’s brand personality framework to small and medium-size cities in Poland. Regarding the general topics, majority of papers deal with individual experiences and city-specific aspects of city branding process. A particular topic, however, seems to be somewhat more represented among the reviewed studies; namely, the importance of participatory planning in the process of city (re)branding. Indeed, while there has, from the very beginning of application of marketing concepts within the context of place management, been a clear goal of incorporating local population in understanding and developing the place brand (Kvaratzis and Ashworth, 2010), that goal seems to have been set aside in favour of focusing on more pragmatic goals of promoting places as tourist destination and for the purpose of attracting investments. Such place branding practices have been long criticized for its top-down approach, meaning that a lot of branding efforts were distanced from city residents and their needs, and primarily oriented towards external actors. Another criticism directed towards city branding has dealt with its primary managerial and marketing mind-set, without any significant influx of ideas from areas such as urban planning, architecture or sustainability (Medway, Barbaby and Byrom, 2021), which will inevitably result in significant limitations in terms of ability of city branding efforts to holistically view cities and their complexities and incorporate those complexities in branding efforts.

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<sup>1</sup> Some articles were excluded due to unavailability electronically, while Andersson and Paajanen (2012) was not considered because it deals with the supra-national entities branding. Choice of articles from those journals was further refined using journal-specific search engines available through their publishers’ web-sites.

Indeed, as Hankinson (2010) notes, when discussing place branding, urban policy literature has often adopted a “selling approach” to promotion of places instead of marketing concept driven view of consumer focus. Thus, instead of serving the purpose of building a brand which will incorporate consumer, or in this case - residential population driven views of value when place branding and marketing is concerned, its role was limited to selling an image developed away from local population. Obviously, in the long term, such approach is bound to cause friction between locals and audiences which were targeted by branding efforts (tourists or investors). Hudak (2014), Insch and Walters (2017) and Hakala, Lemmetyinen and Nieminen (2020) address this issue and raise this important aspect of the city branding process. Based on a case study of Pittsburgh, Pennsylvania, Hudak (2014) explores how public discourses and narratives form, enhance and communicate key meanings of the city, and how marketers can identify and integrate such understandings in communicating the city brand. Pointing out that residents are the major contributors to and benefactors of building and reinforcing a strong place branding identity, Insch and Walters (2017) examine how residents of Dunedin in New Zealand, value and articulate their place identity and place attachment, using a visual elicitation method. Their research suggests that mechanisms which promote the uniqueness of the city and reinforce residents’ place identity are more acceptable to residents than a “one-size-fits-all” solution to urban governance and economic development. Hakala, Lemmetyinen and Nieminen (2020) start from the idea that residents “make the place” and play a major role in the process of city rebranding. By investigating and documenting the co-creative branding process over a 5-year period for the city of Pori in Finland, Hakala, Lemmetyinen and Nieminen (2020) demonstrate that the rebranding process has encourage the residents to become more like “owners” of the city brand by actively engaging them in the rebranding process and stimulating the dialog with them. In general, compared to review studies undertaken by Lucarelli and Berg (2011) and Oguztimur and Akturan (2016), our study suggests that the state of the city branding field did not change much in the past five years, despite the noticeable increase in the number of publications and researchers’ interest. Namely, what seems to be detectible is a lack of conceptual articles with majority of these publications being case studies of branding practices in individual cities or urban agglomerations. While such, predominantly qualitative approach is worthwhile in terms of identifying practices applied in city branding efforts worldwide, the lack of a coherent and universal basis for analysing and comparing city branding practices still remains an issue which will require further research.

### **3. CONCLUSION**

As one of the most prominent authors in this field, Mihalis Kavatzis notes in his 2019 contribution to the Wiley Blackwell encyclopaedia of urban and regional studies, “the processes through which city brands develop and acquire their meaning and significance remain unclear and under scrutiny” (Kavatzis, 2019, p. 1). One aspect of place branding which continually seems to be a source of perceived complexity in building place brands is its multi-faceted nature. Indeed, places will have different meanings to different audiences (e.g. a city is perceived differently and has different meanings to its inhabitants when compared to how tourist visitors perceive and even experience that same city). Hence, one of the arguments against place branding is that it will never be possible to achieve a coherent, single branding proposition for a place. However, very notion of a necessity for a single branding proposition linked to a place presents an attempt at oversimplification of the places as products, and consequently it would likely not result in satisfactory branding outcomes for any of the stakeholders or target audiences. Indeed, place branding needs to embrace multi-faceted nature and complexity which accompanies building relationships and communication with such different audiences such as locals and “outsiders” and work on coordinating the common points of brand identity, presenting them - as appropriate - to different audiences.

In addition, place branding should not be limited to a narrowly defined place promotion. In contrast, it should be seen in a broader context of sustainable urban economic, social and environmental development. Hence, all aspects of city branding which contribute to urban liveability and sustainability are worth investigating. While it is widely believed that a good brand provides the city with competitive leverage at both national and global levels by increasing its attractiveness among residents, investors, tourists, etc., however, as pointed by Hereźniak, Florek and Augustyn (2018) and Florek, Hereźniak and Augustyn (2019; 2021), it becomes evident that the measurement indicators need to be designed in a systematic manner so that they could encompass multiple perspectives on city branding outcomes and impacts. In other words, the issue of how to measure place branding's impact and what constitutes a place branding outcomes are quintessential so that better place branding policies can be evaluated and developed. As pointed by Cleave and Arku (2017), further investigation is needed from both academics and policymakers on how place branding generates returns on investment and policy efficiency. Another stream of research which will require further clarification is clearer delineation of various levels of application of branding concept to spatial and administrative entities. Whereas place and city branding have been used interchangeably during past period, several researchers have pointed out necessity for recognition of differences between these terms and their reach when talking about branding (Kavarzis 2020; Zenker and Braun 2017). Govers, Kaefer and Ferrer-Roca (2017) emphasise that more research is needed on place branding operating at the interface of the digital and the physical, the influence of social media on brands and the extent to which destinations, for instance, still have control over their brand. Our study is based on research articles published in the prominent journals in English, which, to an extent, limits the scope of the study. Nonetheless, it clearly demonstrates that more work is required in the theoretical and conceptual area, since majority of the reviewed publications are case studies of branding practices in individual cities or urban agglomerations. While such approach is worthwhile in terms of identifying practices applied in city branding efforts worldwide, the lack of a coherent and universal basis for analysing and comparing city branding practices remains an issue which will require further research.

#### **LITERATURE:**

1. Acharya, A and Rahman, Z. (2016). Place branding research: a thematic review and future research agenda. *International Review on Public and Nonprofit Marketing*, Vol. 13, 289-317.
2. Alonso, I. and Bea, E. (2012). A tentative model to measure city brands on the Internet. *Place Branding and Public Diplomacy*, Vol. 8 (4), 311-328.
3. American Marketing Association (2015). Definition of Brand. Retrieved 01.09.2021. from <https://www.ama.org/the-definition-of-marketing-what-is-marketing/>.
4. Andersson, M. and Paajanen, M. (2012). Common or competing products? Towards supra-national branding in BaltMet Promo. *Journal of Place Management and Development*, Vol. 5 (1), 56-69.
5. Ashworth, G. J. and Voogd, H. (1990). *Selling the city: marketing approaches in public sector urban planning*. London: Belhaven Press.
6. Cleave, E. and Arku, G. (2017). Putting a number on place: a systematic review of place branding influence. *Journal of Place Management and Development*, Vol. 10 (5), 425-446.
7. Daspit, J. J. and Zavattaro, S. M. (2014). Integrating innovation and absorptive capacity in the place branding process: A capability-based perspective. *Journal of Place Management and Development*, Vol. 7 (3), 206-224.
8. Florek, M., Hereźniak, M. and Augustyn, A. (2019). You can't govern if you don't measure. Experts' insights into place branding effectiveness assessment. *Journal of Place Management and Development*, Vol. 12 (4), 545-565.

9. Florek, M., Hereźniak, M. and Augustyn, A. (2021). Measuring the effectiveness of city brand strategy. In search for a universal evaluative framework. *Cities*, Vol. 110, 1-14.
10. Glińska, E. and Gorbaniuk, O. (2015). Restrictions on the use of the Aaker model in the measurement of city brand personality: The sender's perspective. *Place Branding and Public Diplomacy*, 1-13.
11. Glińska, E. and Rudolf, W. (2019). City Brand Personality Projected by Municipalities from Central and Eastern Europe Countries - A Comparison of Facebook Usage. *Sustainability*, Vol.11, 1-22.
12. Govers, R., Kaefer, F. and Ferrer-Roca, N. (2017). The state of academic place branding research according to practitioners. *Place Branding and Public Diplomacy*, Vol. 13, 1-3.
13. Hakala, U., Lemmetyinen, A. and Nieminen, L. (2020). Rebranding a "rather strange, definitively unique" city via co-creation with its residents. *Place Branding and Public Diplomacy*, 316-325.
14. Hankinson, G. (2010). Place branding research: A cross-disciplinary agenda and the views of practitioners. *Place Branding and Public Diplomacy*, Vol. 6, 300-315.
15. Hankinson, G. and Cowking, P. (1993). What do you really mean by a brand?. *Journal of Brand Management*, Vol. 3, 43-50.
16. Hankinson, G. (2015). Rethinking the Place Branding Construct. In Kavaratzis, M. (ed.): *Rethinking Place Branding*, (13-31), New York: Springer.
17. Hereźniak, M., Florek, M. and Augustyn, A. (2018). On Measuring Place Brand Effectiveness - between Theoretical Developments and Empirical Findings. *Economics and Sociology*, Vol. 11 No. 2, 36-51.
18. Hospers, G. J. (2010). Making Sense of Place: From Cold to Warm City Marketing. *Journal of Place Management and Development*, Vol. 3(3), 182-193.
19. Hudak (2014). Dahntahn discourses and neighbourhood narratives: Communicating the city brand of Pittsburg, Pennsylvania. *Place Branding and Public Diplomacy*, Vol. 11 (1), 34-50.
20. Insch, A. and Walters, T. (2017). Challenging assumptions about residents' engagement with the place branding. *Place Branding and Public Diplomacy*, 152-162.
21. Kaplan, M.D., Yurt, O., Guneri, B. and Kurtulus, K. (2010). Branding places: Applying brand personality concept to cities. *European Journal of Marketing*, Vol. 44, 1286-1304.
22. Kavaratzis, M. and Ashworth, G. (2010). *Place branding: where do we stand. Towards Effective Place Brand Management*, Cheltenham: Edward Elgar.
23. Kavaratzis, M. and Ashworth, G. (2015). Hijacking culture: the disconnection between place culture and place brands. *Town Planning Review*, 155-176.
24. Kavaratzis, M. (2019). City branding. In Orum, A.M. (ed.) *The Wiley Blackwell Encyclopedia of Urban and Regional Studies*, (1-4), New York: John Wiley & Sons Inc..
25. Kavaratzis, M. (2020). Is 'City Branding' Worth Re-Visiting?. *Tijdschrift voor economische en sociale geografie*, Vol. 111 (1), 24-27.
26. Lucarelli, A. and Berg, P. O. (2011). City branding: a state-of-the-art review of the research domain. *Journal of Place Management and Development*, Vol. 4 No. 1, 9-27.
27. Medway, D., Barbaby, G. and Byrom, J. (eds.) (2021). *A Research Agenda for Place Branding*. Cheltenham: Edward Elgar.
28. Oguztimur, S. and Akturan, U. (2016). Synthesis of City Branding Literature (1988-2014) as a Research Domain. *International Journal of Tourism Research*, Vol. 18, 357-372.
29. Zenker, S. and Braun, E. (2010). Branding a City: A Conceptual Approach for Place Branding and Place Brand Management. Paper presented at The 39th EMAC Annual Conference 2010, Frederiksberg, Denmark. Retrieved 05.09.2021. from <https://research.cbs.dk/en/publications/branding-a-city-a-conceptual-approach-for-place-branding-and-place>.

30. Zenker, S. and Braun, E. (2017). Questioning a “one size fits all” city brand: Developing a branded house strategy for place brand management. *Journal of Place Management and Development*, Vol. 10 (3), 270-287.

## SECURITY FOR THE FUTURE OF DIGITAL MONEY AND CONNECTIONS TO IOT

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### **ABSTRACT**

*In today's world, most everyday interactions happen on the Internet. Almost all devices connect to the Internet, information is constantly being shared so much that we are not aware of it. But the Internet is not always secure and reliable. It is easy to come across incorrect information, be fooled or attacked and feel insecure about it. The question is whether there is technology that ensures the credibility of the data, which is difficult to cheat or hack. Closest to that is blockchain, a relatively new technology that has gained its popularity through Bitcoin, today's most famous cryptocurrency. Blockchain is becoming more and more familiar with technology, but given that it is a novelty, it begs the question of how familiar people are with the same, what it serves and what its further potentials are. Conducting a survey consisting of several short questions will determine whether respondents believe in its safety and potential*

**Keywords:** *Blockchain, IoT, connections, digital money, security, future*

### **1. INTRODUCTION**

A blockchain is a list of records, called blocks, that grows continuously. The blocks are linked and secured using cryptography. Each block typically contains the cryptographic hash of the previous block, a timestamp, and transaction information. Due to its design, it is resistant to data change [1]. It is an "open, shared archive that effectively records transactions between two parties in an easily verifiable manner." For use as a "business ledger", blockchain is managed through a peer-to-peer network together connected to a node-to-node communication protocol that authenticates new blocks. As soon as they are recorded, the data in any block cannot be reversed without changing each subsequent block, which requires agreement by the network majority. Although at first it is no different from what is otherwise known to the world, there is a difference at a fundamental level. Wikipedia is an example. Articles are written by different people, so there is no control over information. It also uses the client-server network model. A user with permissions associated with his account can modify the contents of articles on a central server. Each time a user accesses a Wikipedia page, they receive a modified version of the master copy of that Wikipedia article. Database control remains with Wikipedia administrators who control access and permissions [2]. Wikipedia's digital structure is similar to the highly secure and centralized databases that governments, banks or insurance companies keep. Centralized database control remains with their owners, including upgrade management, access and protection against cyber attacks. A shared database made with blockchain technology has a fundamentally different digital structure. This is the most important feature of blockchain technology that is also the easiest to identify [2]. Wikipedia's master copy is edited on the server and all users see the new version. In the case of blockchain, each node in the network comes to the same conclusion, each updating the records independently, with the most popular record becoming a so-called official record instead of having a "master copy" [2]. Transactions are "broadcast" and each node creates its own up-to-date version of events. This is the difference that makes blockchain technology so useful - it represents an innovation in

information capture and distribution that eliminates the need for a credible party that facilitates digital relationships [2]. In fact, blockchain is not a new technology but a combination of multiple technologies that have already been used, applied together in a new way, such as cryptographic signatures and peer-to-peer networks [2].

## 2. THE PURPOSE AND PREDICTION OF THE FUTURE

Blockchain was created by Satoshi Nakamoto in 2008, who is also the genius founder of Bitcoin, currently the most famous and popular electronic currency. In order to serve as money, bitcoin had to be able to change ownership without being diverted to the wrong account and not be allowed to spend it twice by the same person. In order to realize Nakamoto's dream of a decentralized system, avoiding such abuse had to be realized without resorting to a third party such as banks advocating a conventional collection system [3]. In Nakamoto's original work, the words block and chain were used separately, but with the popularization of technology, the name became blockchain [3].

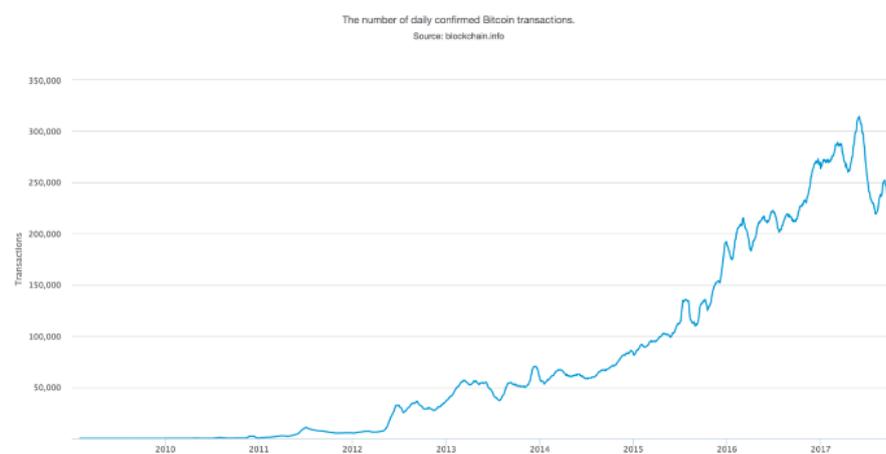


Figure 1: Number of daily Bitcoin transactions confirmed from 2010 to 2018

## 3. SECURITY OF BITCOIN TRANSACTIONS

Blockchain is considered to be one of the safest ways to secure transactions. As transaction records are created in blocks and each block is linked to the previous block through hashes, it is not easy to modify the data. Hash's are called block identifiers and hash is unique to each block. Each change on the block is recorded through a change in hash and thus the next block would not recognize the previous block it points to because the original hash of the previous block remains written on that next block, which means that changing the data in the block is no longer the same block [4]. Just using a hash does not secure the blockchain system enough. Today's computers are very fast and can calculate hundreds of thousands of hashes per second, so it is possible to change the contents of a block and recalculate all the hashes of other blocks to make the blockchain worthwhile again. In order to avoid blockchain, they have a mechanism called proof-of-work. It is a mechanism that slows down the creation of new blocks. In the example of bitcoin, it takes 10 minutes to add a new block to the block chain. With this method, blockchain is additionally secured because it takes 10 minutes for the proof of work to be calculated for each subsequent block after the data change [4]. The last method to secure the blockchain even more is to use the aforementioned peer-to-peer network technology that decentralizes the system. Anyone can join the network. When they join, they get a whole copy of the blockchain. The nodes use this to confirm that everything is OK. When someone makes a new block, it is forwarded to everyone on the network. Each node then confirms the block to make sure nothing has changed. If everything is confirmed then the node adds that block to its blockchain.

All nodes in the network create consensus because they agree on which blocks are credible and which are not. Those who are not credible will be rejected by other nodes in the network [4]. In order to successfully modify data in the blockchain, it is necessary to change the information in all blocks in the chain, re-do proof-of-work and take control of more than 50% of the peer-to-peer network. Only then will the modified block be accepted as credible, which is almost impossible to do. The question is whether smaller blockchain networks are more vulnerable than larger networks, but this claim has never been proven [4]. Also, blockchain technology is constantly advancing. The latest technology in the blockchain is the so-called "Smart Contracts". These "contracts" are simple programs stored on the blockchain and are used to automatically exchange bitcoins based on certain conditions, much like real contracts in the real world [5].

#### **4. USING THE BLOCKCHAIN DIGITAL MARKETPLACE**

Except for bitcoin, blockchain is also used for other cryptocurrencies, such as Ether, but is not strictly reserved for finance, and will increasingly be used for contract purposes. One example is the refugee crisis that began in 2014 and has had a huge impact on the world. Gavin Wood, founder of Ethereum and Datarella, a blockchain technology company, used the blockchain to help thousands of refugees to receive donations in cryptocurrencies to buy food [6] [7]. The future is seen in avoiding fraud when making choices. Many have questioned the credibility of the 2016 US election, which was not, in fact, the first time that the credibility of an election has been questioned and that of democracy. In addition, the cost of elections is very high, which would reduce the cost of maintaining them and the long queues [6]. A very interesting application of blockchain would be in self-driving vehicles. Many people believe that such technology would be perfect at the outset, and that they would be ready for the market almost immediately because it would be difficult to hack blockchain technology [8]. Digital advertising faces many problems such as bots, fraud and lack of transparency. Advertisers and publishers both think they are at a loss, so blockchain would gain the necessary transparency and trust. By reducing fraud, good companies would grow [8]. Governments around the world would increase their efficiency by using blockchain, which would impact education, health and public benefit. Government processes are often very slow, poorly understood and susceptible to corruption. Blockchain technology would increase efficiency and security [9]. Ancient healthcare technology often causes unnecessary problems for patients and their health data. Blockchain would facilitate access to data regardless of system used, collaboration, greater security and privacy, less administration, and easier sharing of test and drug testing results, which would improve the quality of healthcare and enable additional breakthroughs in the healthcare field. MedRec is one of the prototypes of using blockchain in healthcare because it targets these problematic items and reduces the waste of time, money, and duplication of procedures [9] [12]. It can even be applied in education. The need to use paper would be eliminated because everything can be stored securely, certificates would be easier to issue and lifelong learning will be facilitated. Managing digital ownership would be simplified to make it easier to keep track of first issues and quotes without the need for a supervisor. This would help the quoted person to make money automatically [10] [11].

#### **5. BLOCKCHAIN AND THE INTERNET OF THINGS**

The Internet of Things is another very popular technology that allows physical devices such as vehicles, household appliances or other devices to be connected to embedded electronics, sensors, software and connectivity to manage and exchange information over the Internet. The combination of blockchain and IoT has many advantages. As IoT increasingly affects the lives of people around the world and the industry, its quality would be further enhanced by the use of blockchain.

The number of devices is increasing every day and questions are raised over the circulation of large amounts of information as they are subject to attack. These devices often lack authentication standards that would store data. Using blockchain as a standardized security measure would provide the necessary confidence [13]. Blockchain can be used to monitor data and prevent duplication with malicious data. IoT development is very complex and a shared database would provide identification, authentication and seamless data transfer. It also eliminates the need to use a third party to secure trust as it is no longer needed in the blockchain and thus reduces costs. It also enables the use of smart contracts, individual identity, integrity and peer-to-peer communication, thus increasing effectiveness [14].

## 6. BLOCKCHAIN MARKET RESEARCH AND ANALYSIS

The study was conducted on 60 subjects, who are students at the Technical Polytechnic in Zagreb.

**Question 1:** Do you think the Internet is a safe place?

**Answers:** 60 respondents

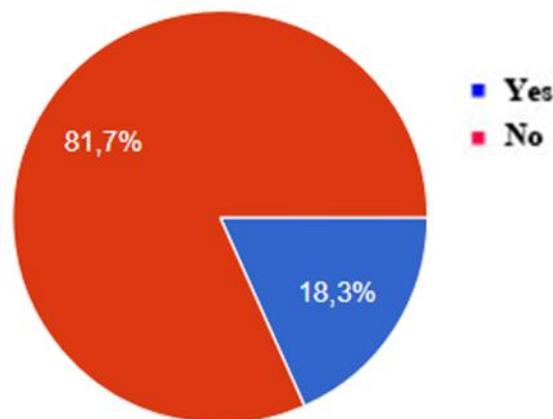


Figure 2: Do you think the Internet is a safe place?

The first question is one of the main issues of today and it is related to one of the main features of the blockchain. 81.7% said no, which means there would be a need to increase privacy and security.

**Question 2:** How often you check the credibility of the information you use?

**Answers:** 60 respondents

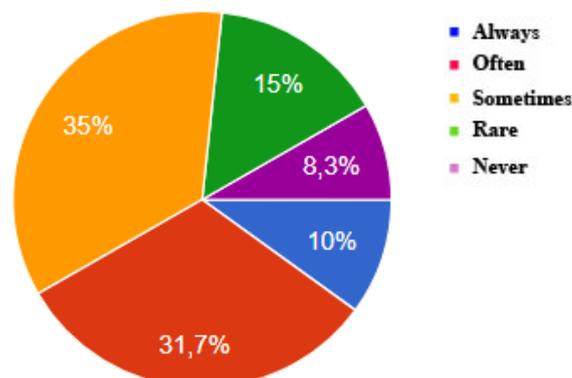
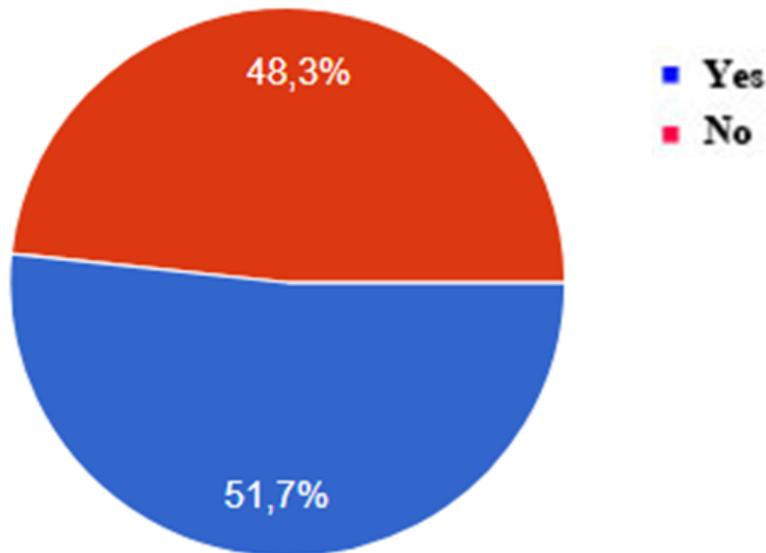


Figure 3: How often you check the credibility of the information you use?

Data credibility is also a big problem today. The attached answers show that most respondents are aware of this fact.

**Question 3:** Are you familiar with blockchain technology?

**Answers:** 60 respondents

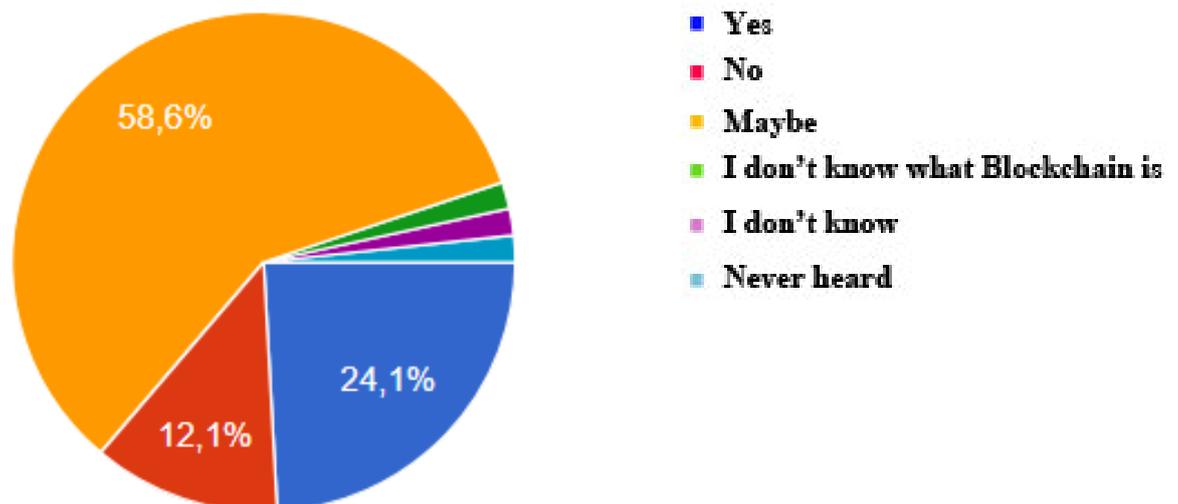


*Figure 4: Are you familiar with blockchain technology?*

The next question is one of the main questions in the research. The accompanying results show that blockchain is still a relatively unknown technology.

**Question 4:** Do you consider blockchain a secure technology?

**Answers:** 58 respondents

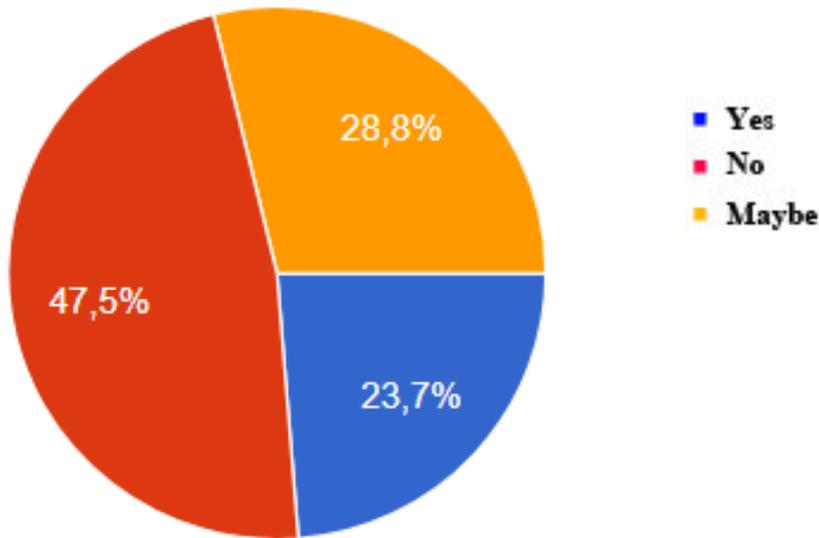


*Figure 5: Do you consider blockchain a secure technology?*

The answers to this question are divided, given that many respondents are unfamiliar with the blockchain, it is understandable that the largest percentage of respondents answered "maybe".

**Question 5:** Do you think the presidential election could be held online without fraud?

**Answers:** 59 respondents

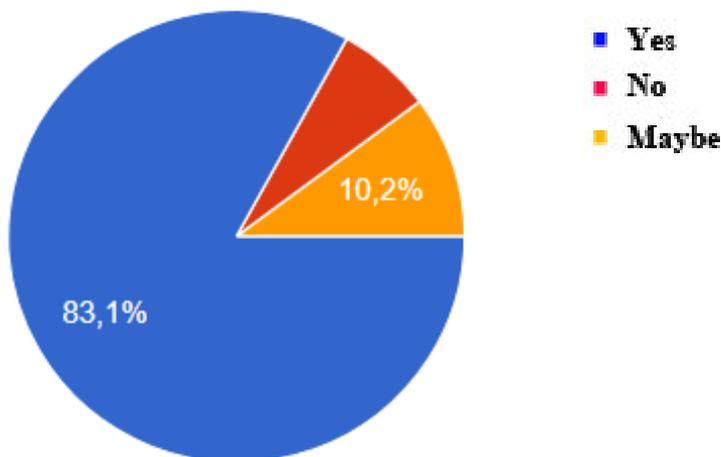


*Figure 6: Do you think the presidential election could be held online without fraud?*

One of the ideas for using blockchain is to use it for presidential elections, which is a very big and important thing, and it must function without fraud that is often suspected. The answer to this question is overwhelmingly no, which means that there is great skepticism among the respondents and that abuse could be possible.

**Question 6:** Do you think government processes could be accelerated if the technology they use is modernized?

**Answers:** 59 respondents

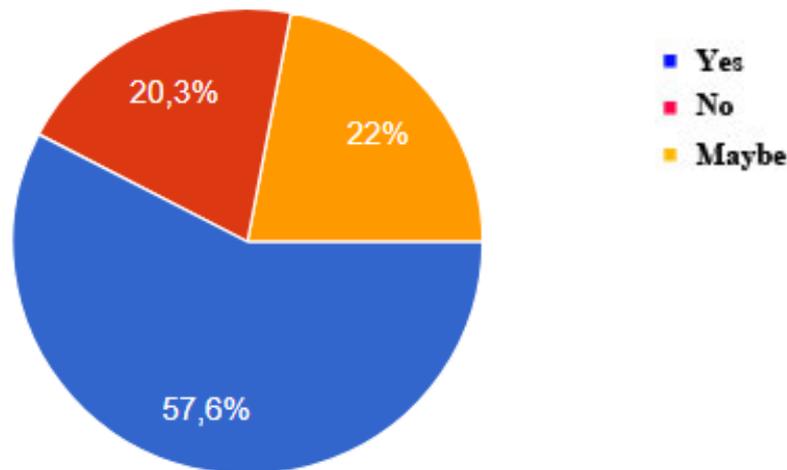


*Figure 7: Do you think government processes could be accelerated if the technology they use is modernized?*

A big problem is the government processes, which are too slow due to the multiplicity of paperwork and disconnect among the various institutions. As blockchain is a technology that could accelerate such processes theoretically, there is scope for application in this field.

**Question 7:** Do you consider self-driving vehicles a thing for the near future?

**Answers:** 59 respondents



*Figure 8: Do you consider self-driving vehicles a thing for the near future?*

One of the mentioned uses is in vehicles. Most respondents said yes, which increases the ability to apply blockchain.

## 7. CONCLUSION

The results of the research can conclude the following. Although it is still relatively new technology and the cryptocurrencies that first started using it as the main principle of working and controlling the credibility of data and securing systems against unwanted attacks, Blockchain, with many of its advantages, seems to be the technology of the future, although research shows that it is also further unknown to many, because 51.7% of respondents are not familiar with the technology and are not sufficiently familiar with its principles and capabilities, which is not surprising given that blockchain is not yet widely used. When asked about blockchain security, 58.6% of respondents said yes, which is expected given the most common answer to the previous question. The question also shows that there is a need to increase security, as 81.7% of respondents said no to answering the question about Internet security. Regarding the credibility of the data on the Internet, 31.7% of the respondents said that they frequently check the credibility of the data and 35% answered that they sometimes check the credibility of the data on the Internet which are the most common answers to the question. From this it can be concluded that the respondents are aware of the possibility that not all the information we find on the Internet is authentic. It is also evident that the elections may not be held any time soon via the Internet and that they may never come to life in this field no matter what technology is in use because 47.5% of the respondents answered "no", which is not unexpected because there is many reasons why the answer is just that. It is evident that there is a need to improve the administrative affairs of the Government, as 83.1% of the respondents answered yes to the use of modern technology in administration, which benefits the blockchain because it is one of the possibilities for its implementation, as well as is also bringing other technologies to the next level. To the last question, 57.6% said yes, which means that blockchain could be quickly popularized because self-driving vehicles are common in fiction and have long been a dream of many people and if using blockchain could ensure their functioning then and that goes in support of the blockchain. In short, regardless of the unknown technology, there is a need for it or something similar and there is a great possibility that blockchain will become something of a big deal in Internet technologies over the years.

## LITERATURE:

1. T. Laurence; Introduction to Blockchain technology; Van Haren Publishing; 2019.
2. N. Shi, Architectures and Frameworks for Developing and Applying Blockchain Technology; IGI Global; 2019
3. A. Šimec, D. Lozić; Basic PHP Implementations, Opcodes and Internal Work; 38. international convention on information and communication technology, electronics and microelectronics; 2015.
4. M. Ahmed; Blockchain in Data Analytics; Cambridge Scholars Publishing; 2020.
5. A. Šimec, O. Staničić; Internet application security; 35th International Convention on Information and Communication Technology, Electronics and Microelectronics; 2015.
6. Technology Behind Bitcoin; URL: <https://www.economist.com/news/briefing/21677228-technology-behind-bitcoin-lets-people-who-do-not-know-or-trust-each-other-build-dependable>, 09.04.2018
7. What is Blockchain Technology; URL: <https://www.coindesk.com/information/what-is-blockchain-technology/> , 09.04.2018
8. What is Blockchain technology used used besides bitcoin; URL: <https://www.forbes.com/sites/quora/2017/11/17/what-is-blockchain-used-for-besides-bitcoin/#61eb865b446e> 10.04.2018
9. UN sends aid to 10000 Syrian refugees using ethereum Blockchain; URL: <https://www.coindesk.com/united-nations-sends-aid-to-10000-syrian-refugees-using-ethereum-blockchain> 10.04.2018
10. Future of Blockchain technology applications; URL: <https://www.newgenapps.com/blog/future-of-blockchain-technology-applications> 10.04.2018
11. Blockchain adoption in government; URL: <https://medium.com/the-mission/blockchain-adoption-in-government-79c54a18c3c9> 11.04.2018
12. Blockchain technology in education; URL: <https://elearningindustry.com/blockchain-technology-in-education-latter-can-disrupted> 11.04.2018
13. 4 Ways - How Blockchain the tecnology behind bitcoin can transform education; URL: <http://bigthink.com/paul-ratner/4-ways-how-blockchain-the-technology-behind-bitcoin-can-transform-education> 11.04.2018
14. This is why Blockchains will transform healthcare; URL: <https://www.forbes.com/sites/bernardmarr/2017/11/29/this-is-why-blockchains-will-transform-healthcare/#758031f01ebe> 11.04.2018
15. Blockchain and the Internet of things - 4 important benefits; URL: <https://www.forbes.com/sites/bernardmarr/2018/01/28/blockchain-and-the-internet-of-things-4-important-benefits-of-combining-these-two-mega-trends/#91720cd19e7a> 11.04.2018
16. Why Blockchain and IoT are best friends; URL: <https://www.ibm.com/blogs/blockchain/2018/01/why-blockchain-and-iot-are-best-friends/> 11.04.201

## A MULTIPERSPECTIVE APPROACH TO THE VALUE AND IMPORTANCE OF PERSONAL DATA DURING THE PANDEMIC

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### **ABSTRACT**

*Looking from a data subject perspective, it is important to clarify the exact scope of personal data and to obtain clear information from organizations on what data will be collected, for what purposes and for how long. However, in addition to the intrinsic value, personal data also have a monetary value that data subjects should be informed about, given that if they are shown the “price” of their personal data, they can acquire higher awareness of the need to protect personal data. One way organizations can contribute to trust increase is to protect the privacy of consumer personal information, and taking into account the determinants of the General Data Protection Regulation or GDPR. Through honest privacy practices organizations retain a reputation in risky situations. Threats and dangers for organizations can be various, starting from business espionage, computer fraud, intrusions into information and communication systems and information security are essential in this regard. This article provides a narrative overview regarding the value of personal information from a data subject perspective and, vice versa, company perspective. The privacy-related complexities that data subjects and organizations face will be illustrated and analysed through the legal GDPR framework, the latest research and relevant scientific articles.*

**Keywords:** *personal data privacy, information value, GDPR, COVID-19*

### **1. INTRODUCTION**

Mobile shopping and online grocery shopping aren't the only digital trend the pandemic has started. Citizens are spending more and more time in the digital space, business meetings, conferences and job interviews are being held online, Facebook usage has soared during the pandemics as well as other social networks. Even before the pandemic, technology became an important part of the workforce but the emergence of a global coronavirus pandemic forced companies to look into creative new digital solutions. The results of the survey by UNCTAD (2020) illustrate how most respondents will continue to shop online in the post-covid period. Through collecting personal data, digital marketing techniques are personalized and more accurate. Data related to public health in the pandemic era are also collected using, for example, contact-tracing applications, which, according to research, have not been sufficiently used due to concerns over data privacy (Chan, Y. E. and Saquib U. N.2021). The question arises as to what is what is the value of personal data and which data is collected about them. In this sense, Harari N. (2018) says that "algorithms will know people better than they know themselves and this knowledge can be used by business for manipulative ends" and adds that "just as divine authority was legitimized by religious mythologies and human authority was justified by liberal story...the technological revolution might establish the authority of Big Data algorithms, while undermining the very idea of individual freedom ". In this paper, personal data concept will be defined and explained. Furthermore, exploratory research will be conducted to bring a better understanding of the topic of personal data values from the perspective of data subjects and vice versa from the perspective of the organization. Scientific articles were searched from the Web of Science database, Google Scholar and ResearchGate and relevant published surveys were analysed.

## **2. WHAT IS PERSONALLY IDENTIFIABLE INFORMATION?**

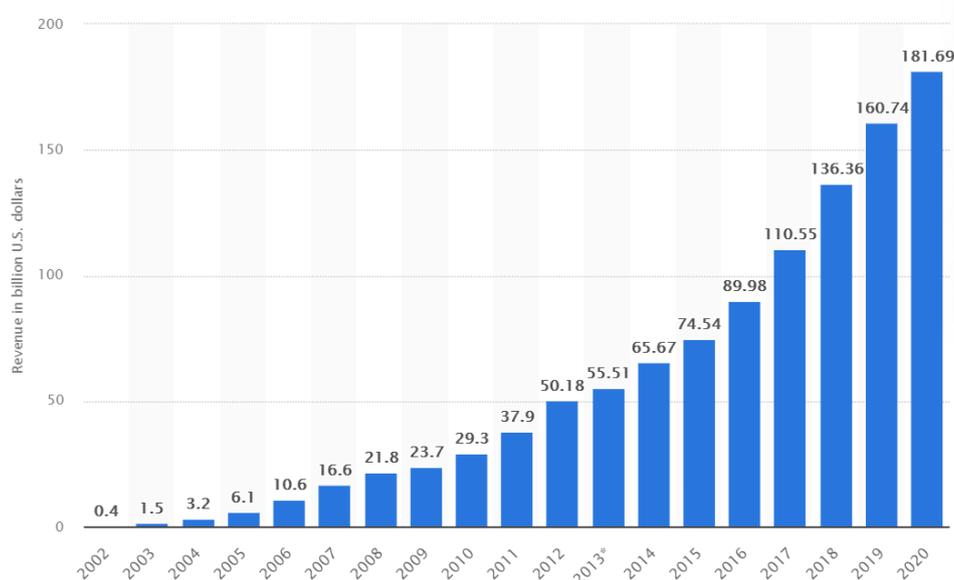
Personally identifiable information is information that, when used alone or with other relevant data, can identify an individual. The General Data Protection Regulation or GDPR defines 'personal data' as any information relating to an identified or identifiable natural person ('data subject'). Furthermore, an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, cultural or social identity of that natural person. In addition, GDPR defines sensitive personal information. Recital 51 illustrate sensitive personal data as data which are, by their nature, particularly sensitive in relation to fundamental rights and freedoms. Those personal data should include personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a person's sex life or sexual orientation. Such personal data should not be processed, unless processing is allowed in specific cases set out in the Regulation and taking into account that Member States laws. Derogations from the general prohibition for processing such special categories of personal data should be explicitly provided, inter alia, where the data subject gives his or her explicit consent or in respect of specific needs. Veinović, M. (2018) explains personal data as information that can be composed out of a wide range of personal identifiers, and thus should be taken into account all the constant changes in technology and the ways organizations collect information about people. The author adds that personal data that has been pseudonymized can fall within the reach of the GDPR depending on how difficult it is to attribute the pseudonym to a particular individual. Personal data relating to criminal convictions and offenses are not included. Obelitz Sjø et al (2021). in scientific article What is the 'personal' in 'personal information'? point out that notion of personal information appears undertheorized and the concept is somewhat unclear. According to Obelitz Sjø et al (2021), the legal definition of personal information that the GDPR relies on might imply such a wide range of situations that it may disrupt the intended distinction between personal and non-personal. Furthermore, according to the authors, it is a challenge that reflects a philosophical question concerned with when and how something is or becomes personal. Non-personal information may become personal through the very processes of datafication - i.e., the collection, linking and finding patterns in that information - and the personal information may be produced at any point in the data processing practices, state Obelitz Sjø et al (2021). In order to raise awareness of the public and consumers about their rights to personal data protection, the Croatian Agency for Personal Data Protection organized a webinar on the occasion of World Consumer Rights Day, March 15, 2021. In a lecture by the director of the Agency for Personal Data Protection, Vukić, Z. (2021.) it was emphasized that personal data are all data that can be used to determine the identity of an individual such as date of birth, home address, e-mail, identity card, health data, fingerprints, registration marks, bank contracts, IP addresses, locations, diopter, photographs, names and surnames. On the other side, personal data are not the identification number of the legal entity and the name, postal address, e-mail and financial data of the legal entity.

## **3. THE VALUE OF PERSONAL INFORMATION FROM THE DATA SUBJECT'S PERSPECTIVE**

Online platforms act as intermediaries that collect data from consumers and sell advertising slots to companies. By analysing the data from consumers, they devise personalized advertising strategies. Lack of knowledge and decision-making capabilities over personal data on the part of consumers might give rise to an uneven exchange of economic value.

In a lecture by the director of the Croatian Agency for Personal Data Protection, Vukić, Z. (2021), it was explained that personal data is a valuable asset, it can be very easily misused and every consumer needs to know who is using it and for what purpose. Vukić, Z. (2021) continued that various digital services (such as clouds, e-mail that have high storage and transmission costs) are only seemingly free and the price is personal data on which they make a profit measured in the hundreds of billions of US dollars. Privacy is increasingly important to users, and for companies such as technology conglomerates Google or Facebook, personal data is becoming increasingly important as well as they collect it for the needs of digital and personalized marketing and data processing and monetization. As shown in the graph (Figure 1.) illustrated by Statista (2021), a leading provider of market and consumer data, in the most recently reported fiscal year, Google's revenue amounted to 181.69 billion US dollars. Google's revenue is largely made up by advertising revenue, which amounted to 146.9 billion US dollars in 2020. As of June 2019, the parent company Alphabet ranked fourth among worldwide internet companies, with a market capitalization of 741 billion U.S. dollars.

*Figure 1: Google's global annual revenue 2002-2020*



*Source: Statista (2021)*

European Union Agency for Cybersecurity - ENISA (2021) implies how data is considered to be the gold of the digital age and explains how businesses operating in highly competitive markets look for data on all aspects of human life such as consumer behavior, social and political orientation, money spending habits, health, lifestyle, etc. Data has become an important commodity generating profits on its own. ENISA (2021) points out that the estimated ARPU (average revenue per user) in digital advertisement, mainly controlled by Google and Facebook, reached \$ 59 per person in 2017. Users are advised to re-evaluate their privacy settings (ENISA, 2021), to avoid subscribing or installing suspicious third-party apps, to review which services or apps are sharing personal data, to change privacy settings and to review the privacy policy before subscribing to digital applications and services. Spiekermann S. and Korunovska, J. (2016) describe personal data as the new oil of the Internet and the new currency of the digital world. The authors add that analysts, investors and entrepreneurs have recognized the value of personal data for Internet economics but emphasize that ordinary people are barely aware of this and that marketers collect personal data at minimal cost in exchange for free services. In their research article - Towards a value theory for personal data (2016) Spiekermann S. and Korunovska, J. (2016) discuss that research in behavioral economics provides evidence

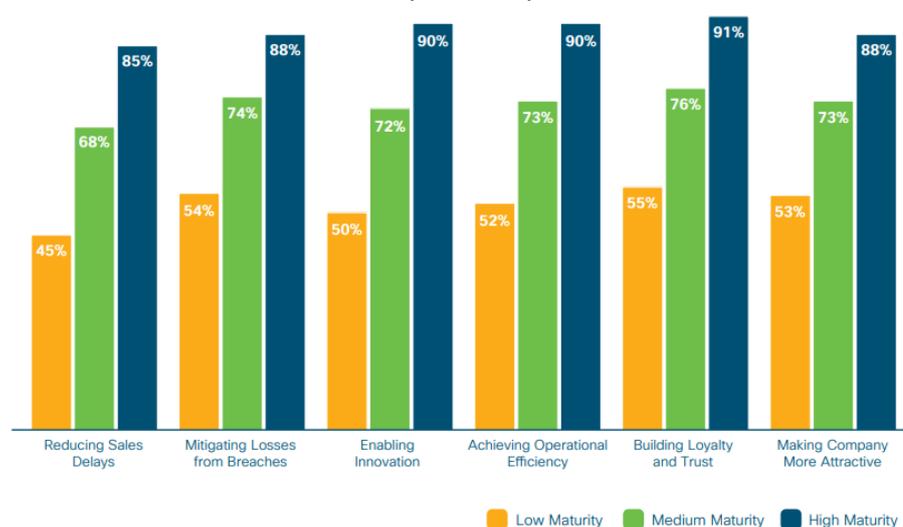
that consumers are unable to conceive of all possible outcomes and risks of data disclosures and to expecting consumers to punish firms that violate their data or to act upon the reception of breach notifications assumes a level of knowledge, expertise, alertness, and self-control. In the article Pricing Privacy: The Right to know the value of your personal data (2018) Malgieri, G. and Custers, B. state that data of individuals represent monetary value in the data-driven economy and that customer data and profiling algorithms are considered a business asset and protected through trade secrets. Malgieri, G. and Custers, B (2018) suggest that individuals do not seem to be fully aware of the monetary value of their personal data and tend to underestimate their economic power within the data-driven economy. Furthermore, if individuals are shown the “price” of their personal data, they can acquire higher awareness of the need for the protection of their information privacy. Additionally, Malgieri, G. and Custers, B. (2018) explore quantifying the value of personal data, and discuss choice models, in which users are offered the option to pay for online services, either with their personal data or with money. However, the authors emphasize these models are incompatible with EU data protection law. Parker J. H. and Flowerday S. (2021) attempted to investigate what drives the disclosure of personal information online and whether an increase in awareness of the value of personal information motivates users to safeguard their information. Fourteen university students participated in a mixed-methods experiment, where responses to Likert-type scale items were combined with responses to interview questions. The findings indicate that users are able to disregard their concerns due to a resigned and apathetic attitude towards privacy. Furthermore, subjective norms enhanced by fear of missing out have led them to overlook potential risks to their information in order to avoid social isolation and sanction. Moreover, according to Parker J. H. and Flowerday S. (2021) an increased awareness of the personal value of information and having experienced a previous privacy violation encourage the protection of information and limited disclosure. Kokkoris, M.D. and Kamleitner, B. (2020) discuss that in many situations, individuals endanger others' privacy for their self-interest (e.g., when allowing apps access to their contacts) but also vice versa, out of concern about others, individuals might endanger their own privacy, which underscore the role of social context in people's privacy-related behaviors. Furthermore, Kokkoris, M. D. and Kamleitner, B. (2020) research provides insights into the role of other variables in the pandemic. In terms of COVID-19-related variables, their research showed that perceived vulnerability in its various forms (perceived self-risk or close other-risk, age, COVID-19 impact on state) was consistently associated with both higher compliance with the measures and higher acceptance of surveillance and privacy restrictions, which shows that vulnerability increases conformity.

#### **4. THE IMPORTANCE OF PERSONAL DATA PROTECTION FROM AN ORGANIZATION'S PERSPECTIVE**

From the perspective of organizations, it is important to pay attention to data security. Sardi, A. et al (2020) state that, since the beginning of the Covid-19 pandemic, the World Health Organization has detected a dramatic increase in the number of cyber-attacks. In Italy the COVID-19 emergency has severely affected cybersecurity and from January to April 2020, the total of attacks on the privacy of companies and individuals has doubled. Furthermore, Sardi, A. et al (2020) research outlines the need to empirically investigate the cyber risk, giving a practical solution to health facilities. Data breach events have negative impacts on the organization's profitability as well, Avery, A. et al (2021) explain. In addition, cyber-attacks and data breaches are among the top threats facing any business and it is necessary that the corporate sector establishes cyber security practices regardless of the size of an organization. It is crucial in this regard that organizations comply with the General Data Protection Regulation or GDPR. Recital 95 of the GDPR states that, as soon as the controller becomes aware that a personal data breach has occurred, the controller should notify the personal data breach to the

supervisory authority without undue delay and, where feasible, not later than 72 hours after having become aware of it, unless the controller is able to demonstrate, in accordance with the accountability principle, that the personal data breach is unlikely to result in a risk to the rights and freedoms of natural persons. Where such notification cannot be achieved within 72 hours, the reasons for the delay should accompany the notification and information may be provided in phases without undue further delay. In specific situations, the controller should also notify the data subjects affected by the breach which is why it is important that the mentioned controllers have an internal breach reporting procedure in place and train their staff to understand what constitutes a data breach. Threats and dangers for organizations can be various, starting from business espionage, computer fraud, intrusions into information and communication systems, information leaks to various malicious programs, but also the lack of a clearly defined line of responsibility, undefined procedures for recognizing incidents and responding to them, according to Vidovic Ivandić et al (2011). In addition, user security awareness is critical to the security of any organization. Information security is essential because any security technique can be misused or misconstrued, thereby not benefiting from its real value, state Hughes-Lartey K. et al. (2021) Increased awareness minimizes user-related security threats and maximizes the efficiency of security techniques from the human point of view, concretize Hughes-Lartey K. et al. (2021). Personal information is an important currency. Schwartz M. P. (2004) suggest that companies view personal information as a corporate asset and that organizations have invested heavily in software that facilitates the collection of consumer information. Furthermore, the author considers the correctness of treating personal data as a form of property and imposing a ban on data trade, rather than restrictions on transferability. Steel, E. (2013) drives the focus to the surveillance of consumers that, as she explains, has developed into a multibillion-dollar industry conducted by largely unregulated companies that obtain information by scouring web searches, social networks, purchase histories and public records, among other sources. In the Cisco Data Privacy Benchmark Study (2021), it is pointed out that privacy has become an even more important priority for organizations during the pandemic. Privacy budgets have increased over the last year, organizations have more resources focused on privacy, and privacy investments contribute to business value. Additionally, as shown in the Figure 2. one of the benefits from privacy investments is the creation of customer loyalty and trust. The Cisco data privacy study implies that increased privacy investment continues to return significant value.

*Figure 2: Percentage of organizations experiencing various business benefits from privacy investments, by maturity level (N=4431)*



*Source: Cisco Data Privacy Benchmark Study – 2021*

Organizations should process personal data in accordance with Art. 5 of the GDPR on the principles of lawfulness, fairness and transparency, purpose limitation, data minimization, accuracy, storage limitation, integrity and confidentiality. Derogating from the prohibition on processing special categories of personal data is mentioned in Recitals 52, 53 and 54 of the GDPR, and the reasons given for derogation include public health and the management of healthcare services, especially in order to ensure the quality and cost-effectiveness of the procedures used for settling claims for benefits and services in the health insurance system, or for archiving purposes in the public interest, scientific or historical research or statistical purposes. It is important that in the aspect of a pandemic, organizations have harmonized conditions and proportional measures for the processing of special categories of personal data concerning health. The burden of proof, as Correia, M. et al. (2021) conclude, that proportionality does exist is on the side of the person/entity that wants to retain the data and since fundamental rights are not absolute, it is important to reassess them in the light of the noble public health argument. Union or Member State law should provide for specific and suitable measures so as to protect the fundamental rights and personal data of natural persons in that context. Jourová, V. (2021) explains that, rather than involving false trade-offs between personal data protection, and, on the other hand, public health, security, or economic well-being, privacy is a prerequisite for allowing citizens to embrace innovative solutions without fear. The European Data Protection Board or EDPB (2020) notes that data subjects should receive transparent information on the processing activities, their main features, including the retention period for collected data and the purposes of processing. EDPB (2020) emphasises that measures implemented to manage the current emergency should be appropriately documented and that it is essential to adopt adequate confidentiality policies regarding the private data being processed.

## 5. CONCLUSION

Personally identifiable information is information that, when used alone or with other relevant data, can identify an individual. Non-personal information may become personal through the very processes of datafication. In this aspect, protection of personal information is closely linked to right to privacy, recognized in the Charter of Fundamental Rights of the European Union. The right to privacy is not absolute and seeks a balance with other rights such as the right to expression and information. It is crucial to reduce the asymmetry of information between organizations and individuals regarding the personal data that organizations collect about them. In this regard data subjects need to know for what purposes and for which period the data is processed. However, given the creation of a digital world, it is necessary to provide more and more information about the monetary value of personal data to data subjects. In this aspect, it would be useful to investigate and to conduct research related to exact monetary value of certain personal data and to explore the possibility between choosing to pay by providing personal information or paying for access without providing personal data. Organizations should process personal data in accordance with Art. 5 of the GDPR on the principles of lawfulness, fairness and transparency, purpose limitation, data minimization, accuracy, storage limitation, integrity and confidentiality and it has been proven that greater investment in privacy policies by organizations leads to greater customer confidence and consequently better business results. Privacy of personal data remains a complex subject that still provides fertile ground for further investigation.

## LITERATURE:

1. Avery, A. (2021). After the disclosure: measuring the short-term and long-term impacts of data breach disclosures on the financial performance of organizations. *Information & Computer Security*. 29 (3)

2. Chan, E. Y., & Saqib, N. U. (2021). Privacy concerns can explain unwillingness to download and use contact tracing apps when COVID-19 concerns are high. *Computers in Human Behavior*, 119.
3. Cisco 2021, Forged by the Pandemic: The Age of Privacy Data Privacy Benchmark Study, Available at: [https://www.cisco.com/c/dam/en\\_us/about/doing\\_business/trust-center/docs/cisco-privacy-benchmark-study-2021.pdf](https://www.cisco.com/c/dam/en_us/about/doing_business/trust-center/docs/cisco-privacy-benchmark-study-2021.pdf), (Accessed 24.8.2021)
4. Correia, M., Rego, G., & Nunes, R. (2021). The Right to Be Forgotten and COVID-19: Privacy versus Public Interest. *Acta Bioethica*, 27(1), 59-67.
5. Croatian Data Protection Agency (2021), Webinar "Protection of personal data of consumers in the digital market" through the online platform (Accessed: 15.3.2021)
6. EDPB - The European Data Protection Board (2020), Statement on the processing of personal data in the context of the COVID-19 outbreak, The European Data Protection Board, available at: [edpb\\_statement\\_2020\\_processingpersonaldataandcovid-19\\_en.pdf](https://www.edpb.europa.eu/media/default/press_corner/detail/en/edpb_statement_2020_processing_personal_data_and_covid-19_en.pdf) (accessed 10.8.2021.)
7. ENISA – European Union Agency for Cybersecurity (2018.) The value of personal online data, Available at: <https://www.enisa.europa.eu/publications/info-notes/the-value-of-personal-online-data> (Accessed: 15.8.2021.)
8. EU General Data Protection Regulation (GDPR): Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016
9. Hughes-Lartey, K., Li, M., Botchey, F. E., & Qin, Z. (2021). Human factor, a critical weak point in the information security of an organization's Internet of things. *Heliyon*, 7(3).
10. Jourová, V., (2021), Keynote Speech on 'Data Privacy post-Covid19' at Euroactive's Virtual Conference on Data Privacy, available at: [https://ec.europa.eu/commission/presscorner/detail/en/SPEECH\\_21\\_1123](https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_1123) (accessed 23.7.2021.)
11. Ko, E. J., Kim, A. H., & Kim, S. S. (2021). Toward the understanding of the appropriation of ICT-based Smart-work and its impact on performance in organizations. *Technological Forecasting and Social Change*, 171.
12. Kokkoris, M. D., & Kamleitner, B. (2020). Would you sacrifice your privacy to protect public health? Prosocial responsibility in a pandemic paves the way for digital surveillance. *Frontiers in Psychology*, 11
13. Malgieri, G., & Custers, B. (2018). Pricing privacy—the right to know the value of your personal data. *Computer Law & Security Review*, 34(2), 289-303.
14. Parker, H. J., & Flowerday, S. (2021). Understanding the disclosure of personal data online. *Information & Computer Security*. 29 (3)
15. Sardi, A., Rizzi, A., Sorano, E., & Guerrieri, A. (2020). Cyber risk in health facilities: A systematic literature review. *Sustainability*, 12(17)
16. Schwartz, P. M. (2003). Property, privacy, and personal data. *Harvard Law Review*, 117
17. Sør, S. O., Jørgensen, R. F., & Mai, J. E. (2021). What is the 'personal' in 'personal information'? *Ethics and Information Technology*, 1-9.
18. Spiekermann, S., & Korunovska, J. (2017). Towards a value theory for personal data. *Journal of Information Technology*, 32(1), 62-84.
19. Statista (2021.), Annual revenue of Google from 2002 to 2020. Available at: <https://www.statista.com/statistics/266206/googles-annual-global-revenue/> (accessed: 10.9.2021.)
20. Steel, E. (2013.) Companies Scramble for Consumer Data. Available at: <https://www.ft.com/content/f0b6edc0-d342-11e2-b3ff-00144feab7de> (accessed: 17.8.2021.)

21. The Economist (2018), Big data is reshaping humanity, says Yuval Noah Harari, Available at: <https://www.economist.com/books-and-arts/2018/08/30/big-data-is-reshaping-humanity-says-yuval-noah-harari> (accessed: 15.8.2021)
22. United Nations Conference on Trade and Development UNCTAD (2020), COVID-19 has changed online shopping forever, survey shows, Available at: <https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows> (accessed: 5.9.2021.)
23. Veinović, M. et al. Challenges of General Data Protection Regulation (GDPR). In: *Sinteza 2018-International Scientific Conference on Information Technology and Data Related Research*. Singidunum University, 2018. p. 23-30.
24. Vidović Ivančić D., Karlović, L., Ostojić A. (2011.) *Corporate Security*. Udruga Hrvatskih menadžera sigurnosti UHMS

## **DEVELOPMENT OF R&D AND INNOVATION INFRASTRUCTURE OF CHINA AND BELARUS**

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### **ABSTRACT**

*The development of the innovation potential of countries is possible due to the improvement of R&D and innovation infrastructure that enables promising scientific research, innovative developments, their implementation and scaling in similar industry complexes (regions). Innovative products create a foundation for the export growth of products (services) and the development of national brands.*

**Keywords:** *Innovation, Development, R&D, Belarus, China*

### **1. INTRODUCTION**

Increasing global competition motivates manufacturers to stimulate their research, development and innovation activities and create new products, technologies and services. Stimulating their innovation organizations contributes to the development of scientific and technological potential of the regions, ensures the implementation of a cooperative business model comprising organizations of the scientific, education, real sector of the economy, business, state authorities and public sectors. This, in turn, helps satisfy the needs of the beneficiaries and contributes to the growth of the global competitiveness of domestic manufacturers.

### **2. DEVELOPMENT OF R&D AND INNOVATION INFRASTRUCTURE OF CHINA AND BELARUS**

The development of the innovation potential of countries is possible due to the improvement of R&D and innovation infrastructure that enables promising scientific research, innovative developments, their implementation and scaling in similar industry complexes (regions). Innovative products create a foundation for the export growth of products (services) and the development of national brands. One of the strategic partners of the Republic of Belarus is People's Republic of China. "During the visit of the President of the Republic of Belarus A.G. Lukashenko in China in September 2016, the heads of the states signed a Joint Declaration of the Republic of Belarus and the People's Republic of China on establishing the highest level of relationship in history: a trusting diverse strategic partnership and mutually beneficial cooperation" (2021a). Since August 2015 the President of the Republic of Belarus implemented a Decree No. 5 "On the development of bilateral relationships between the Republic of Belarus and the People's Republic of China", which prioritized the development of a diverse strategic partnership with China" (2021a). The dynamics of the innovation potential of countries is determined by an integral indicator – the global innovation index, which provides metrics for the development of the countries-respondents (countries that participate in the calculation of the global innovation index) in the following areas: institutions, human capital, infrastructure, market, business environment, technological (scientific) results, creative results (intangible assets).

The innovation potential of China has been increasing each year since 2014, however in 2020 the global innovation index reduced (by 1,54 points), which, in particular, is due to the pandemics that is causing the deactivation of business environment, innovation and market infrastructure. In 2016 in Belarus the global innovation index sharply decreased (from 38,23 to 30,39 points) and the innovation potential is estimated at approximately the same level until 2020 (with the same reduction in 2020 as in China). A similar situation is observed in the partner country of Russia, as well as in Bulgaria (Fig. 1) (2021b).

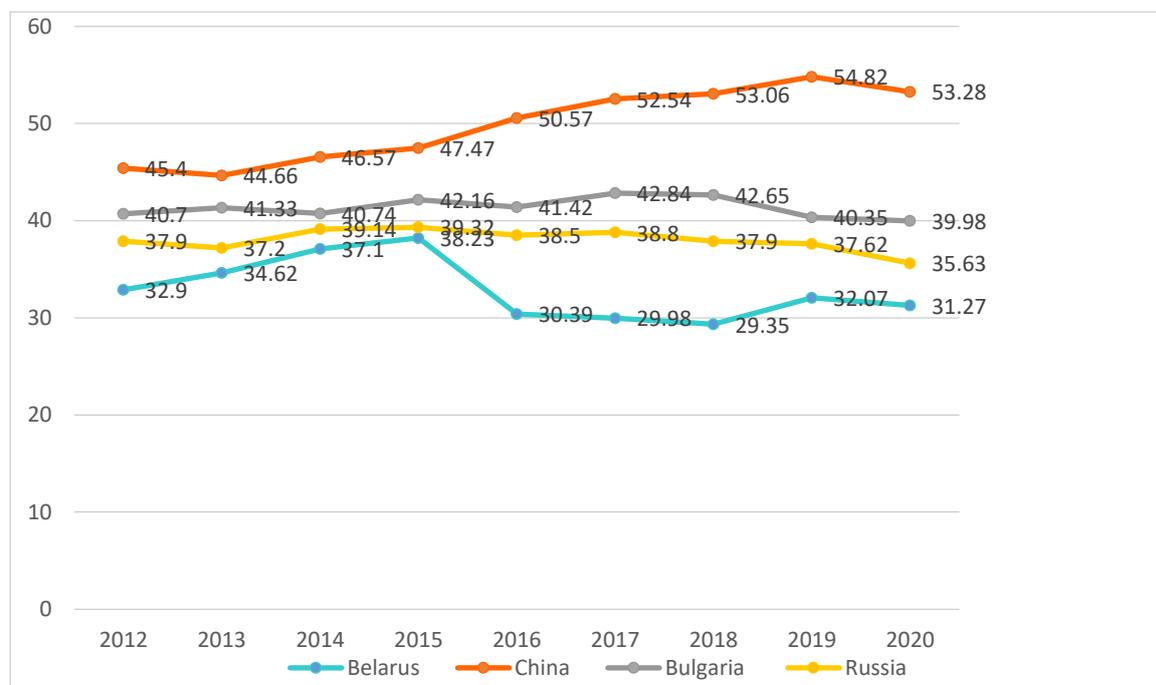


Figure 1: Dynamics of Global innovation index: Comparative tendencies of Belarus and China for 2012-2020, points

The analysis of statistical data about the development of science and technology parks in China provides indicators that assess the effectiveness of the activities of the innovation infrastructure entities (Table 1) (China Torch Statistical Yearbook, 2019).

Indicators	2013	2014	2015	2016	2017	2018	2019	Rate of change 2019-2013, %
Number of national science and technology industrial parks	114	115	146	146	156	169	169	+48,2
Number of residents per 1 technopark	191	215	214	266	314	371	471	+146,3
Operating income per 1 technopark, mln US dollars	282,78	320,97	278,96	285,19	291,51	309,59	330,67	+16,9
Production volume of 1 technopark, mln US dollars	214,40	240,55	204,57	202,98	192,56	198,99	206,06	-3,9
Net profit of 1 technopark, mln US dollars	17,62	21,30	17,70	19,11	20,33	21,12	22,38	+27,0
Export of products (services) from 1 Technopark, mln US dollars	36,25	37,83	32,41	30,06	30,64	33,32	35,48	-2,1

Table 1: Performance indicators of China`s technoparks for 2013-2019

Comparative analysis of technoparks in China (only national technoparks were used for calculations) and Belarus shows the annual positive dynamics of the main indicators characterizing the activities of innovation infrastructure entities: product export, production volume, number of residents, net profit (Fig. 2) (China Torch Statistical Yearbook, 2019).

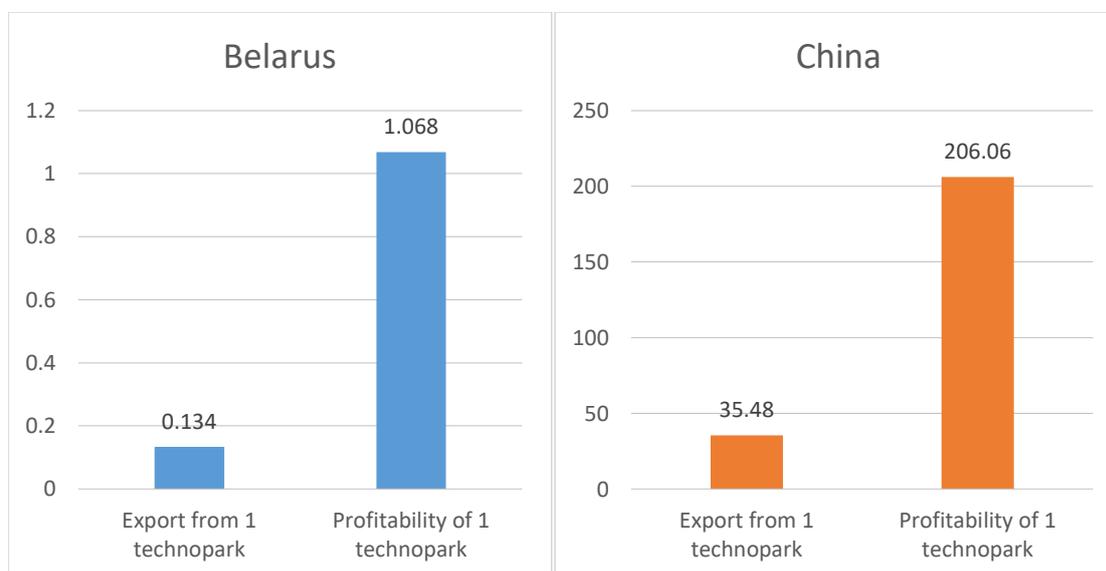


Figure 2: Performance indicators of technoparks in China and Belarus in 2019, mln US dollars

The development of the country's innovation infrastructure is determined by the pace of dynamics of research activities, building up the potential of the country's scientific and educational sector. The results of scientific activities are the object of the transfer of value propositions to end users (customers). An important direction in the development of scientific activity is the system of stimulating the scientific activity of organizations in the country, which provides for the economic and social return of the invested resources. On the basis of a statistical analysis of indicators of the development of scientific activity in China, performance indicators that characterize the dynamics of indicators of research infrastructure are calculated. It is noteworthy, that from 2013 to 2019 the number of research institutes had been growing every year, the average number of staff of one organization had become within 48-75 people and the positive balance in high-tech products had been growing (Table 2) (China Torch Statistical Yearbook, 2019).

Period	Number of research institutes	Number of staff per 1 research institute	Balance (high-tech products), mln US dollars
2013	8972	75	102137
2014	9785	72	109159
2015	11265	65	106006
2016	13741	53	80450
2017	15696	48	84082
2018	16052	53	77523
2019	17969	48	102137

Table 2: Performance indicators of the development of scientific activities in China

However, the problematic aspect in research activities is the excess of the rate of expenditure (investment) over the income part of the implementation of scientific and technological projects (Fig. 3-5).

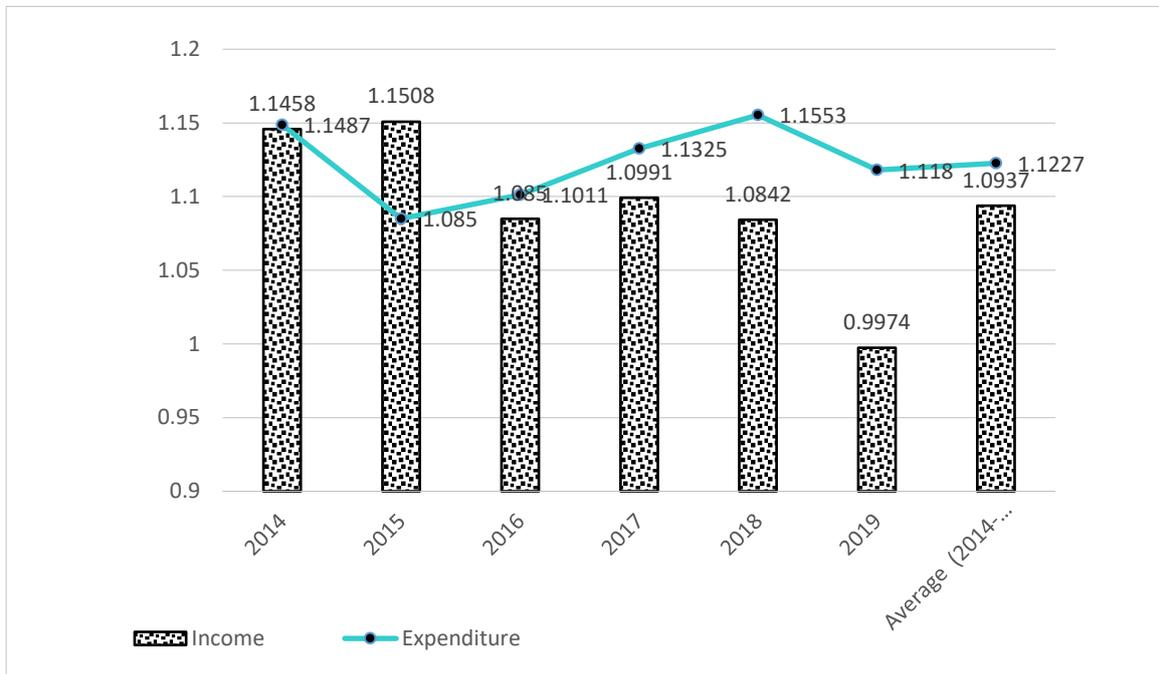


Figure 3: The rate of change in expenditures on research and developments and income from the sale of the results of these activities in the People's Republic of China for 2014-2019, coefficients

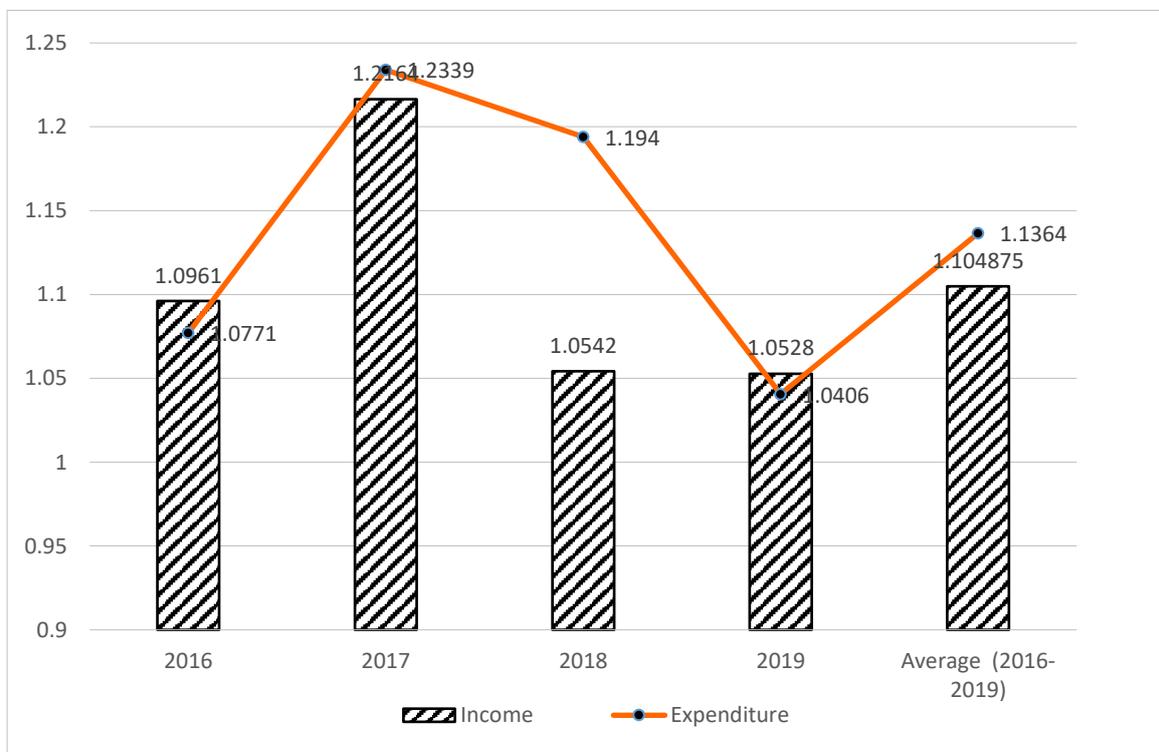
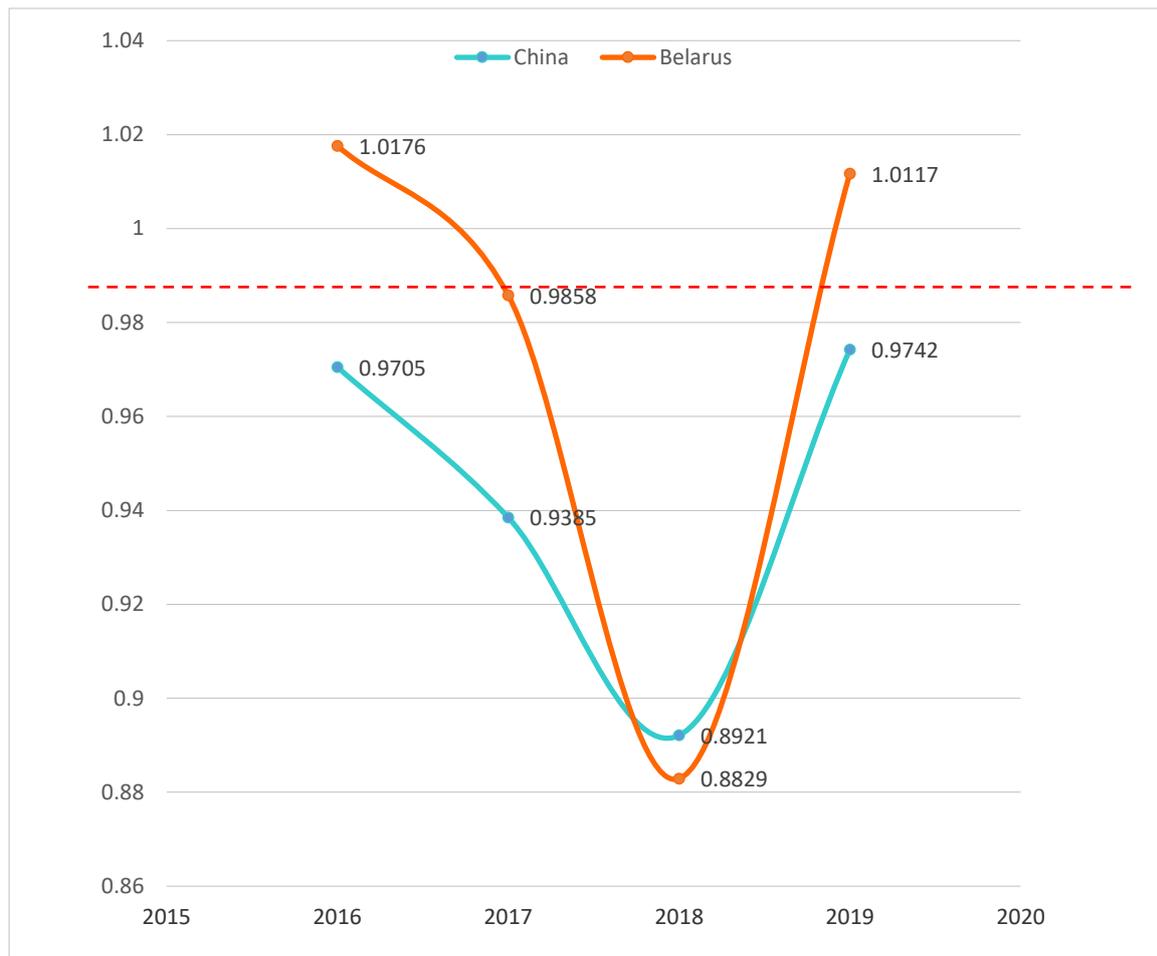


Figure 4: The rate of change in expenditures on research and developments and income from the sale of the results of these activities in the Republic of Belarus for 2016-2019, coefficients



*Figure 5: Index of the rate of change of income to the rate of change of expenditure on research and developments in China and Belarus for 2016-2019*

Another fact worth mentioning is the positive dynamics of the rate of change in income to the rate of change in expenditures on research and developments both in Belarus and in China. The return on financial investment in research and developments tends to increase (in 2019, the index in Belarus was 1.0117 and in China – 0.9742). The analysis of the performance indicators of research activities in the Republic of Belarus indicates an annual growth, during 2015-2019, by an average of 13.6% of internal costs for research and developments per organization that carries out this type of activity. The volume of scientific and technological work performed during this period is represented by an annual growth of an average of 10.5% in general by organizations that carry out research and development (Fig. 6) (R&D and innovation in the Republic of Belarus, 2020).

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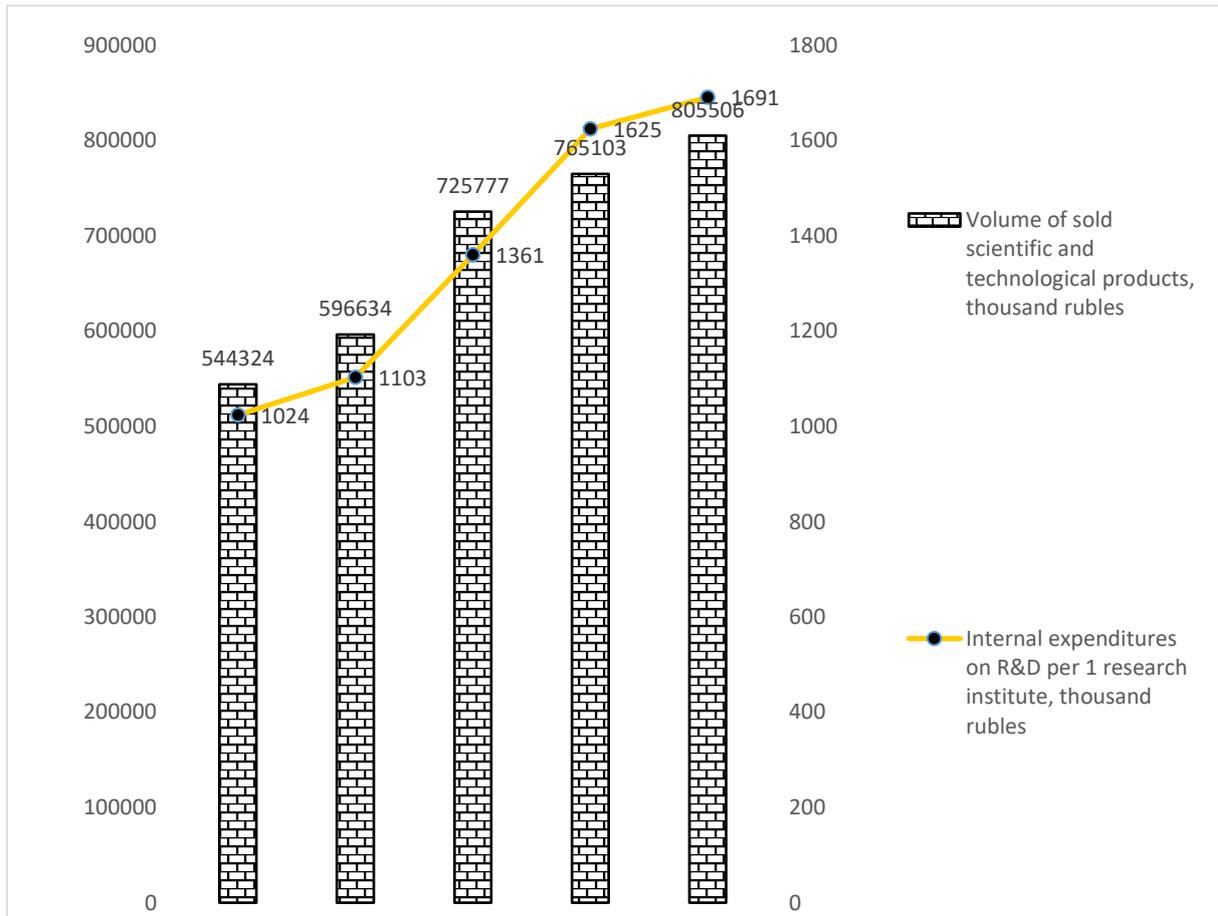


Figure 6: Index of the rate of change of income to the rate of change of expenditure on research and developments in China and Belarus for 2016-2019

Average number of researchers and scientists from 2015 to 2019 was between 58-60 people per organization carrying out this type of activity. However, the level of profitability of sold scientific and technological products has been decreasing since 2017 (from 34.6% in 2017 to 19.3% in 2019) (Fig. 7) (R&D and innovation in the Republic of Belarus, 2020). This may be due to the growth of costs for research and development over the growth rate of production of scientific and technological works.

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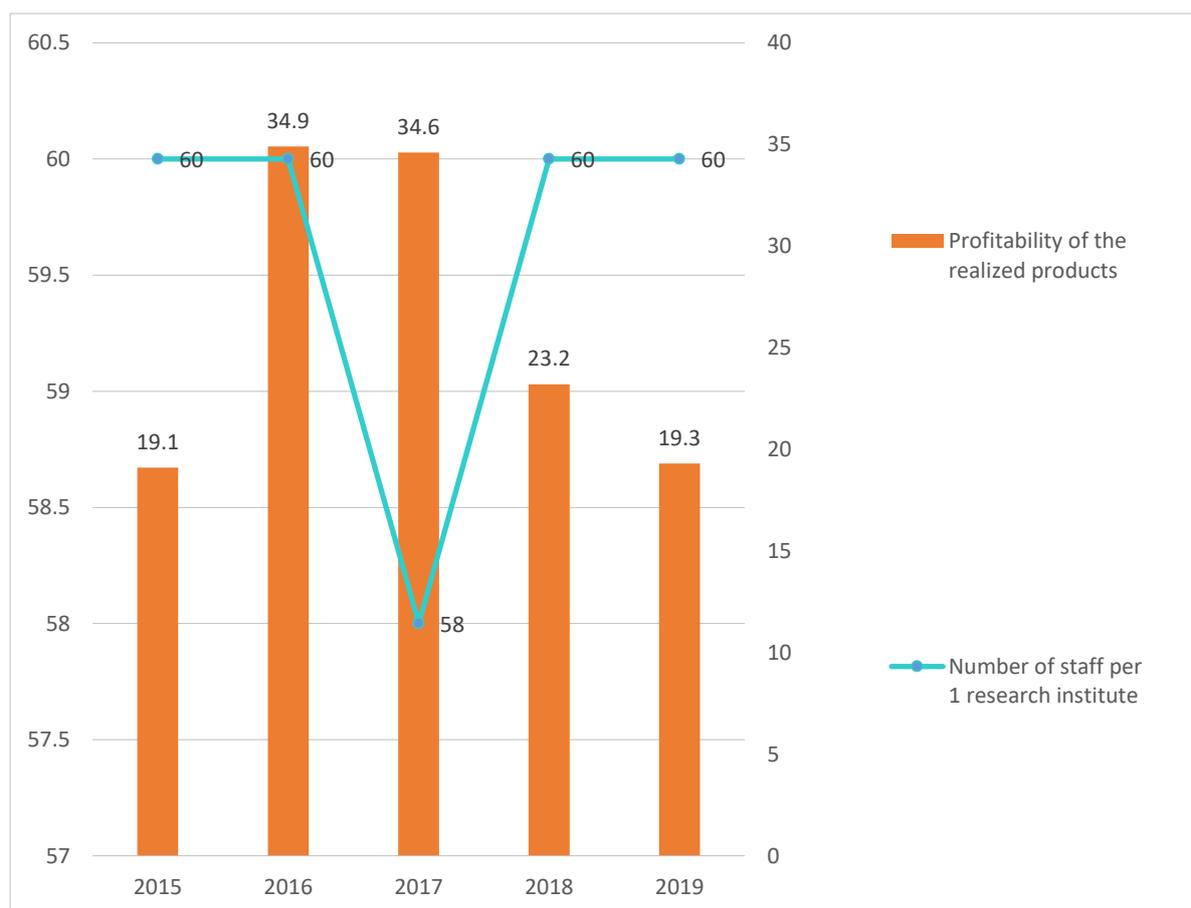


Figure 7: Performance indicators of scientific activities in the Republic of Belarus for 2015-2019

The analysis of R&D and research in Belarus and China dictates the need for the development of directions for these activities (Fig. 8).

#### Joint scientific and technological projects

- Organization and implementation of projects in promising scientific and technological areas on the basis of collaboration of international partners (on the basis of a private initiative or within the framework of state and other programmes, for example, the Silk Road programme)

#### Creation of joint R&D and innovation infrastructure

- Creation of international thematic centres, laboratories to transfer innovative technology
- Engaging young people to implement innovation projects

#### Measures to stimulate cooperation between science, education, business and real sector of the economy

- Stimulating venture capital financing, supporting startup projects, preferential terms for starting an innovative business, providing support for social entrepreneurship

Figure 8: Directions for the development of R&D and innovation infrastructure

### 3. CONCLUSION

Thus, the R&D and innovation development of the country should be determined by stimulating the interaction between the scientific and education, real sectors, business, government and public organizations in order to ensure the economic and social effect of each innovative product (technology, service) for each participant in regional (country) development (Terziev and Klimuk, 2021c; 2021d; 2021e; 2021f).

### LITERATURE:

1. Website of the Embassy of the Republic of Belarus in the People`s Republic of China, (2021a), <https://china.mfa.gov.by/ru/bilateral/political>, (05/2021).
2. World intellectual property organization, (2021b), <https://www.wipo.int/portal/ru>, (05/2021).
3. China Torch Statistical Yearbook, (2019), Published by China Statistics Press.
4. R&D and innovation in the Republic of Belarus, (2020). Statistical data collection. – Minsk, 2020. National statistical committee. – p. 125, 2020.
5. Terziev, V., Klimuk, V. (2021c). Methodological concepts for modernization of industrial enterprises in the concept of postindustrial development. // 65th International Scientific Conference on Economic and Social Development – Online Conference, 19 February, 2021, Economic and Social Development (Book of Proceedings), Cakovec, Croatia, 2021, pp.1-5, ISSN 1849-7535.
6. Terziev, V., Klimuk, V. (2021d). Strategic of models of post-industrial development of industrial enterprises in terms of the concept of national security. // 65th International Scientific Conference on Economic and Social Development – Online Conference, 19 February, 2021, Economic and Social Development (Book of Proceedings), Cakovec, Croatia, 2021, pp.180-186, ISSN 1849-7535.
7. Terziev, V., Klimuk, V. (2021e). Modelling the forms of international scientific and educational cooperation. // 20th RSEP International Economics, Finance & Business Conference – Virtual/Online 17-18 February 2021, Holiday Inn Vienna City, Vienna, Austria, Review of Socio-Economic Perspectives RSEP, Ankara, Turkey, 2021, pp. 151-156, ISBN: 978-605-06961-8-9.
8. Terziev, V., Klimuk, V. (2021f). Directions for modernization of innovative youth startup design in Belarus. // 20th RSEP International Economics, Finance & Business Conference – Virtual/Online 17-18 February 2021, Holiday Inn Vienna City, Vienna, Austria, Review of Socio-Economic Perspectives RSEP, Ankara, Turkey, 2021, pp. 157-162, ISBN: 978-605-06961-8-9.

## ECONOMETRIC MODELING OF THE INFLUENCE OF INNOVATION COSTS ON THE FINANCIAL CORPORATIONS' PROFIT

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### **ABSTRACT**

*The article is devoted to the study of econometric modeling of the impact of innovation costs on the financial corporations' profit. The article highlights the problem of organizational structures updating under the influence of financial innovation. It changes the operating conditions and causes the need for new organizational models of transnational financial business. The preconditions of formation of financial corporations and modern tendencies of their development on the example of "Metlife" are investigated. In the article were analyzed strategies of financial corporations in different countries and their impact on the financial markets of these countries. Using the comparative analysis different spheres of financial corporations were characterized. Also, key motives and risks from financial conglomeration were determined. As a result of research of financial corporation's activity practice were revealed features of their functioning. There were determined the peculiarities of the synergetic effect in the integration of the banking, insurance and investment sectors of the economy (on the example of the financial corporation "Metlife"). The obtained results made it possible to implement a fundamentally new approach to the functioning of financial corporations, which use broad autonomy. The article proposes a model of multiple linear regression, which substantiates the assessment of additional GDP growth from total reserves in the country's external debt, the ratio of imports to GDP, the GDP deflator. These summarizes the initial positions of financial corporations functioning and allows to ensure dialogue and forming solutions for all financial market participants.*

**Keywords:** *banking institutions, globalization, investment funds, integration, insurance companies, financial convergence, financial corporations*

### **1. INTRODUCTION**

The modern global economic system is characterized by the expansion of international economic relations and economic liberalization. It strengthens the interdependence and interconnectedness of national economies, leads to an increase in transnationalization and globalization. Globalization, causing significant transformation in the global economy are directly marked on such form of inter-industry competition as a corporation by foreign diversification through mergers or acquisitions. Under the influence of financial innovation, which changes the conditions of operation and determines the need for new organizational models of transnational financial business the problem of updating its organizational structures

is relevant. In our case, it will be banking, insurance and investment corporations. The scale of the presence of financial corporations reaches extremely large sizes, which makes them influential actors in the domestic financial market. In addition, they need a detailed study of the functioning of financial corporations in terms of strategy for their activities in international financial markets.

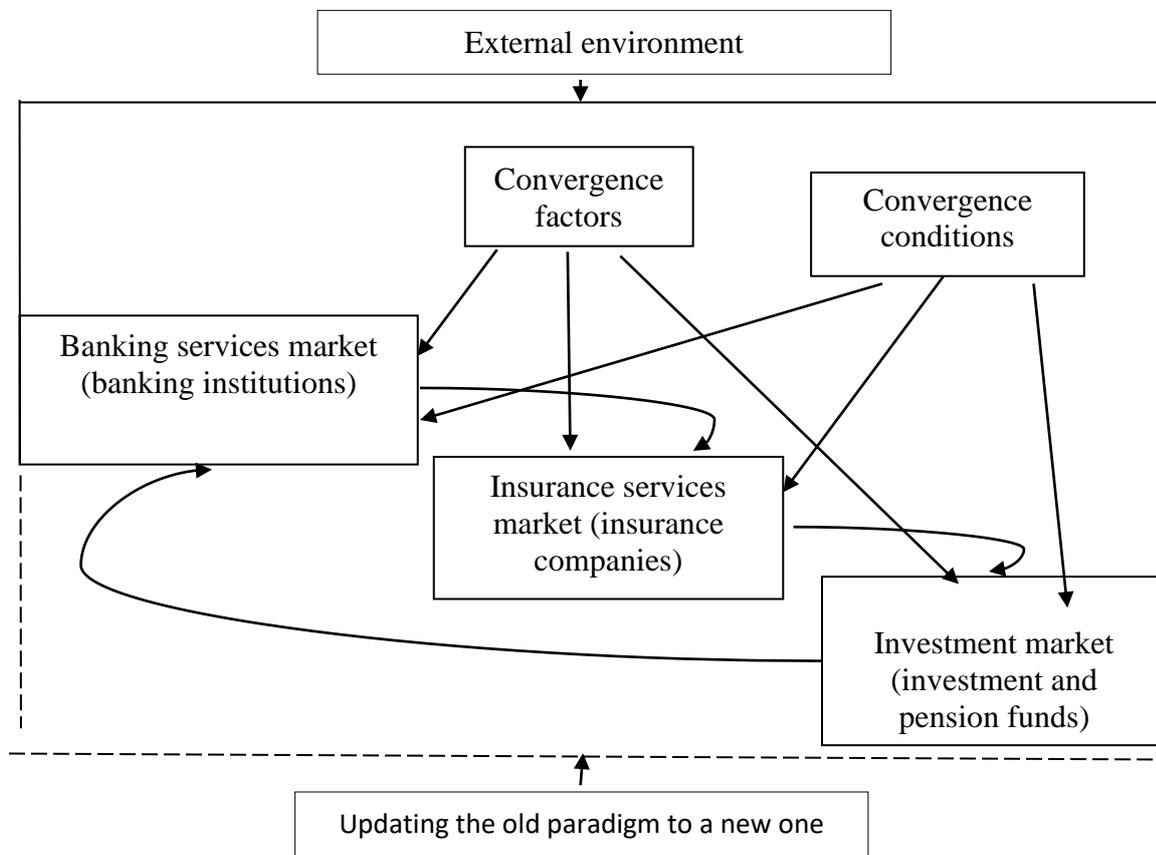
## 2. THEORETICAL FUNDAMENTALS OF FINANCIAL CORPORATIONS ACTIVITIES IN INTERNATIONAL MARKETS

Trends in international markets initiate the direction of financial institutions to universalize the full range of financial services for sale in a single corporate structure - a financial corporation. Periodic emerging financial crises slow down, but do not change the direction of existing trends. Summarizing the existing approaches to the definition of "financial corporation" in modern economic thought, it is defined that in the general sense, "financial corporation" is a combined group of companies whose main activity belongs to the financial sphere, operating in at least two areas: banking, insurance and investment. Characteristics of the financial corporation are given in Table 1. There are proposed the comparing of the criteria for functioning in the banking, insurance and investment areas (Table 1.)

Criterion	Banking institution	Insurance company	Investment company
Main assets	Customer loans, interbank assets, securities	Investment portfolio	Accounts receivable secured by securities, financial instruments
Basic liabilities	Customer deposits, interbank liabilities	Special reserves	Funds payable to customers
Typical sales channels	Department	Agents, brokers	Financial intermediaries
Financial cycle	Medium-term	Long-term (life); long- or medium-term (non-life)	Short-term
The main risks	Credit risk, liquidity risk	Underwriting risk, investment risk	Market risk, liquidity risk
The main mechanisms of risk transfer	Securitization, credit derivatives, over-the-counter derivatives	Reinsurance	OTC derivatives
The ratio of capital use and reserves	Capital as well as reserves	Reserves to a greater extent (especially in life insurance)	To a greater extent capital
The main dangers and tasks for supervisors	Systemic risk, investor protection	Protection of policyholders	Investor protection, systemic risk, transparency and market efficiency
The main tools of supervisors	Capital requirements, restrictions on eligible assets, policies and procedures aimed at ensuring stability	Capital requirements, sufficiency of special reserves, investment rules, reinsurance rules	Capital requirements, asset separation, accounting, operational control

*Table 1: Comparison of banking, insurance and investment activities  
(Source:1 )*

An analysis of the reasons that motivate organizations of various financial sectors to unite in financial corporation and risks that accompany this process has been shown the existence and importance of this connection (Figure 1).



*Figure 1: Scheme of financial convergence in the direction of creating a financial corporation (Source:5,9)*

The presented scheme allowed us to identify several general factors that are common to most financial corporations, namely:

- achieving a synergistic effect in costs and revenues;
- diversification, aimed at reducing the volatility of their cash flows;
- creation of additional benefits for the company's management bodies;
- use of spatial arbitration to avoid state regulation;
- conflict of interest and economic power abuse.

It is defined that the formation of financial corporations is a natural result of the development of insurance markets, financial services and investment on the background of integration and convergence processes. World experience shows that most financial institutions in conditions of fierce competition seek to strengthen their market position by: increasing revenues, expanding specialization, improving marketing, expanding customer base; cost reduction with saving on complementary resources; tax optimization; improving risk management processes; finding ways to expand activities in order to fully meet the needs of customers and providing them with a full range of all possible financial services, etc. It has been studied that the last 30 years the world financial markets are characterized by active processes of integration of the banking and insurance sectors both within the country and internationally.

The most widespread phenomenon of integration of entities in various areas of the financial market has become in countries such as France, United Kingdom, Spain, Portugal, Italy, Belgium and Switzerland. In 2020 in the European Union, it has been found more than 65 financial institutions that can be identified as financial corporations. Table 2 presents the TOP-5 financial corporations by country of management and location.

№	Name of the corporation	Coordinator (country of management)	Relevant competent authorities (different from the coordinator)
1.	Wüstenrot	Finanzmarktaufsichtsbehörde (Austria)	National Bank of Slovakia (Slovakia) HANFA (Croatia) Croatian National Bank (Croatia)
2.	Alm. Brand	Finanstilsynet (Denmark)	-
3.	Lægernes Pension	Finanstilsynet (Denmark)	-
4.	Danske Bank	Finanstilsynet (Denmark)	Finanstilsynet (Norway) Finansinspektionen (Sweden) Finanssivalvonta (Finland) Commission de Surveillance de Secteur Financier (Luxembourg)
5.	ABN AMRO Group N.V.	European Central Bank	De Nederlandsche Bank (Netherlands) Autorité de Contrôle Prudentiel et de Résolution (France)

*Table 2: TOP-5 international financial corporations  
(Source:12)*

According to the study of global experience of integration of entities in different areas of the financial market, there are four main models of corporate structure, each of which has certain advantages and risks: integrated model, subsidiary model, holding company model and horizontal group model.

### **3. METHODOLOGICAL APPROACH TO DETERMINATION OF COMMON OPPORTUNITIES, BENEFITS AND THREATS TO THE FUNCTIONING OF FINANCIAL CORPORATIONS**

The conducted comparative characterization of separate spheres of activity of financial corporations (banking, insurance and investment activity) allowed to define that these three spheres differ from each other considering their inherent risks and features of their supervision. This situation complicates possibility of comprehensive research of such formation as financial corporation. It is determined that in developed countries with a strong practice of supervision, not only members of the financial corporation, but also consumers of financial services will benefit from such cooperation. The benefits of a financial corporation for a bank and insurance companies are presented in Figure 2.

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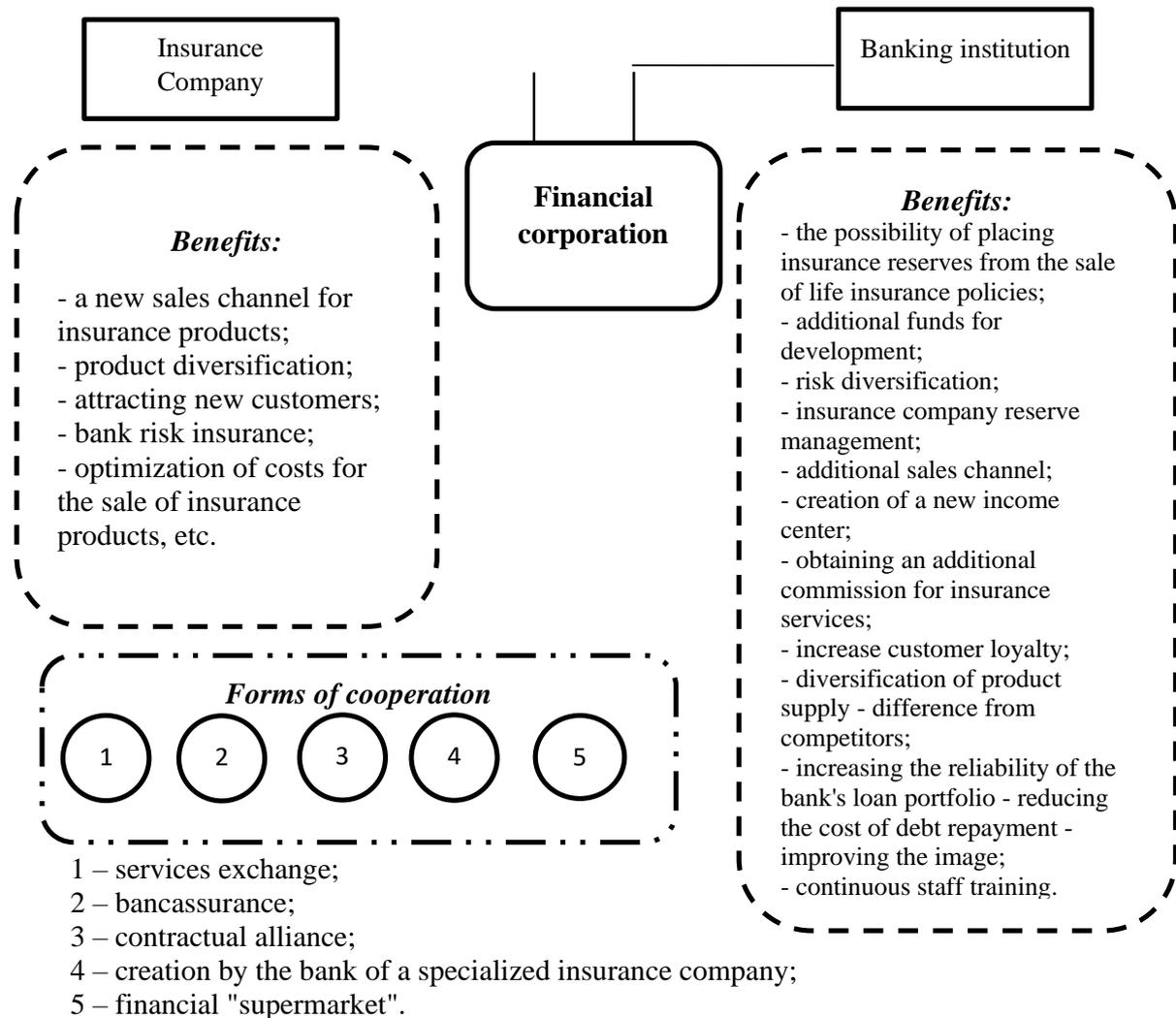


Figure 2: Forms of cooperation and benefits for banking institutions and insurance companies from a financial corporation

(Source:3,6,7,9)

Identified features of the financial corporation in the financial market made it possible to identify common opportunities, benefits and threats in the functioning of the financial corporation (Figure 3).

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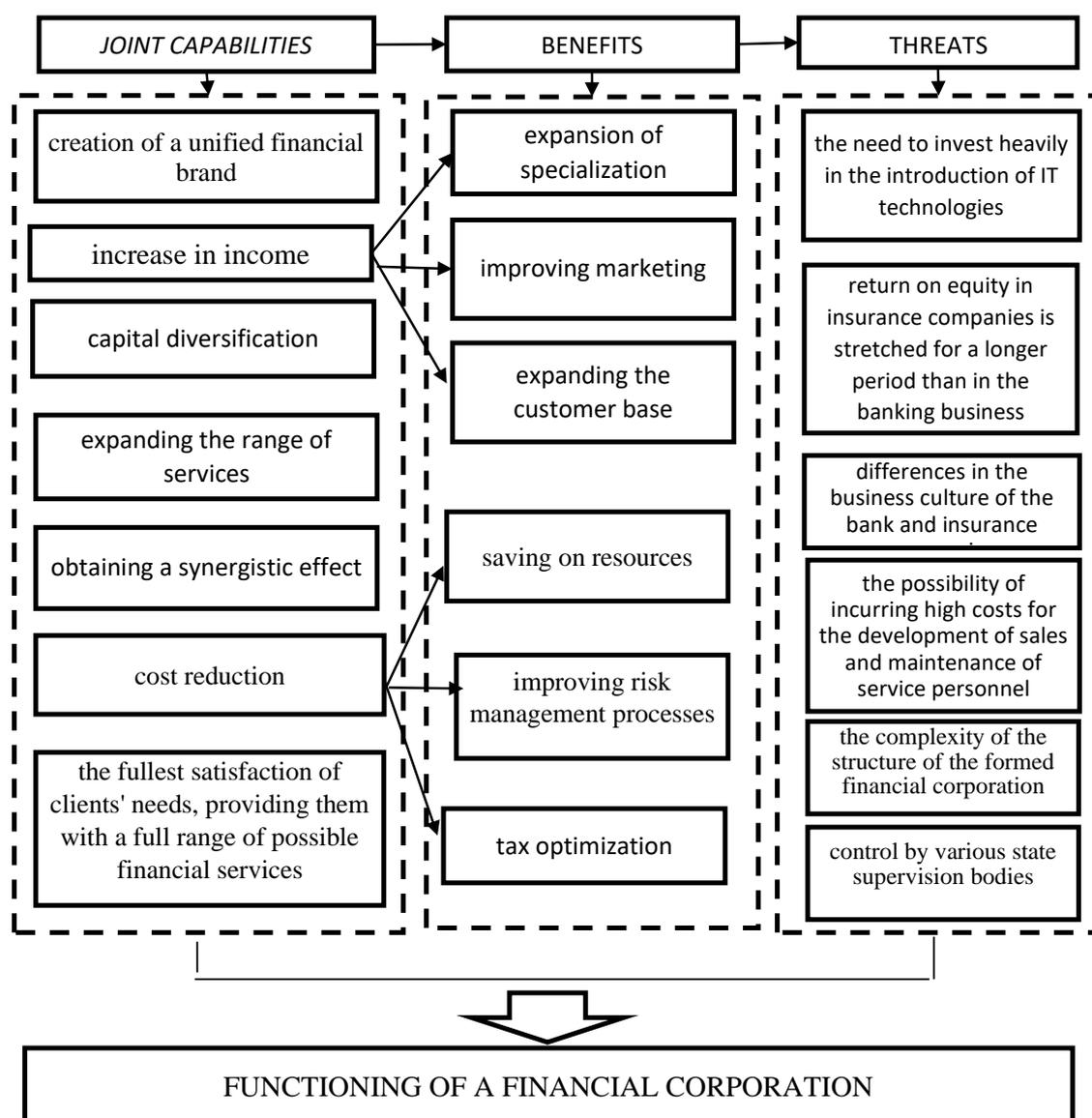


Figure 3: Joint capabilities, benefits and threats of functioning of financial corporations (Source:6,10,11)

According to the results of the analysis of joint capabilities, benefits and threats in the functioning of financial corporations, the most common forms of cooperation and convergence of insurance companies and banking institutions have been identified. The results allowed to conclude that the consolidation of financial corporations is taking place with the participation of banks and it contributes to higher concentration. In addition, there is an increase in efficiency functioning of the financial market, which manifests itself in forms of cooperation: insurance company services to bank customers (a form of agency relations), that involves the distribution of insurance services in agreement with the bank through its agency network; form of cooperation - a contractual alliance; mergers and acquisitions, "financial supermarket". This approach, based on the identification of capabilities, benefits and threats, makes it possible to develop theoretical and methodological recommendations for choosing an effective strategy for a financial corporation in the current conditions of the COVID-19 coronavirus pandemic. The activities of integrated financial services entities are based on the principles of responsibility and aim to attract as many loyal customers as possible to establish long-term relationships.

At the same time the client of a financial corporation, compared to those who receive financial services from separate insurance companies, banks or investment funds, enjoys the following benefits:

- the possibility of obtaining insurance services at lower prices than in the insurance market;
- meeting the needs, the ability to obtain a full range of financial services;
- minimization of document flow;
- diversification of product supply;
- competent service personnel;
- reduction of transaction costs, etc.

However, with regard to the peculiarities of the development of integration of banking, insurance and investment activities, the lack of appropriate regulations may lead to the abuse of large financial corporations in their market positions. For example, the creation by banking institutions of their own, not legally supported, rules for accreditation of insurers leads to a violation of the client's right to independently choose a financial institution. This practice of accreditation of insurers in banking institutions has a negative impact on the financial flexibility of the insurance company and may expose it to significant credit risk of the counterparty - the bank, as well as jeopardize its competitive position in the financial market. And all this may have a negative impact on the financial market of the country as a whole, especially during the crisis of the Covid-19 pandemic.

#### **4. STUDY OF THE FUNCTIONING OF FINANCIAL CORPORATIONS IN THE FINANCIAL MARKET AND THEIR INFLUENCE ON ITS FORMATION**

Analysis of the extent of the presence of financial corporations in the financial market showed their significant participation in the banking, insurance and investment sectors of the economy. Based on the assessment of the dynamics of the impact of financial corporations on market operation, combinations (combinations of options) of operation were identified. It allowed to create a basis for a comparative analysis of the effectiveness of financial corporation's operation in different periods. Consider a list of financial corporations from different countries that work on the model of "bancassurance":

- 1) Based on a distribution agreement or strategic alliance: La Pusle & CNP (France); Commerzbank & Gezerali (Germany); Deutsche Bank & Zurich FS (Germany); Legal & General / Barely / Alliance & Leicester (United Kingdom).
- 2) On the basis of a joint venture: Postbank & HDI Versicherungen (Germany); Delta Lloyd & ABN AMRD (Netherlands); Groupama & Societe Generale (Groupama Banque, France); Caisses d'Epargne & CNP (Eureuil Vie, France).
- 3) On the basis of mergers and acquisitions of insurance companies: ING BBL (Portugal); Lloyds Abbey life & Scottish Life (United Kingdom); Citibank Travellers Group (Citigroup, USA); AXA Banque Direcle (France); Credit Suisse Wintertheir (Switzerland).
- 4) On the basis of the bank's creation of a new insurance company (grienfield): CS Life (Credit Suisse); Suisse Life (Barclays); DB Vita (Deutsche Bank, Italy); Banque AQF (AQF, France).

Note that in times of economic crisis, subsidiaries are subordinated through a system of participation in a financial corporation, and in times of recovery - through mergers and acquisitions. The basis for a reasonable assessment of additional GDP growth is a generalization of the initial position of financial corporations to justify the parameters of which proposes the use of multiple linear regression model, which depends on the variable Y - the ratio of foreign direct investment (FDI) to GDP and independent variables.

The formula for calculating the linear multiple regression equation:

$$Y = 2.6692 + 0.1012X_1 - 0.1694X_2 + 0.104X_3 - 0.1762X_4 + 0.00184X_5 - 1.003X_6 + (1) \\ + 0.0441X_7 - 0.04818X_8 + 0.1176X_9$$

Where, X<sub>1</sub>- inflation, GDP deflator;

X<sub>2</sub>- exports to GDP;

X<sub>3</sub>- imports to GDP;

X<sub>4</sub>- exchange rate to the dollar;

X<sub>5</sub> - portfolio investments in the IBRD;

X<sub>6</sub> - IMF financing of regional banks for portfolio investments;

X<sub>7</sub>- the ratio of total debt to GDP;

X<sub>8</sub>- loans to central government in% of GDP (Index mundi);

X<sub>9</sub>- general reserves in the country's foreign debt.

The statistical significance of the equation is verified using the coefficient of determination and Fisher's test. It is established that in the studied situation 91.68% of the total variability Y is explained by the change of factors X<sub>j</sub>. The relationship between the sign of Y and factors X<sub>i</sub> is very strong. The calculation of the correlation coefficient was performed using the known values of the linear pairwise correlation coefficients and β-coefficients. The coefficient of determination R<sup>2</sup> = 0.95752. A more objective estimate is the adjusted coefficient of determination, which is equal to 0.842. The closer this coefficient is to unity, the greater the regression equation explains the behavior of Y. Let's interpret the regression coefficients. The constant estimates the aggregate influence of factors other than those taken into account in model X<sub>i</sub> on the result of Y and means that Y in the absence of X<sub>i</sub> would be 2.6692. According to the maximum coefficient β<sub>9</sub> = 0.764, we conclude that the factor Y<sub>9</sub> (total reserves in the country's external debt) has the greatest impact on the result Y, followed by factor X<sub>3</sub> (imports to GDP) and X<sub>1</sub> (GDP deflator). Thus, based on the assessment of the partial elasticity coefficients and the regression model, it is possible to draw conclusions about the significant impact of imports on the inflow of foreign investment. In order to identify the main factors influencing the functioning of financial corporations, the functioning of the four largest life insurance companies in the United States was studied: MetLife / Brighthouse Financial, Northwestern Mutual, New York Life and Prudential, which occupy 5% of the financial market. We propose to consider the results of the assessment of additional GDP growth on the example of the financial corporation "MetLife" (USA). MetLife Financial Corporation (USA) represents the life insurance market, which is massive and highly competitive. The factors (for consumers and for investors) of the degree of longevity and financial stability in the field of life insurance are shown for the calculation. To determine the characteristics of the synergetic effect in the integration of the banking and insurance sectors of the economy analyzed the financial corporation "MetLife", which in 2019 was the largest life insurance company in the US, with 90 million customers worldwide and market share in the US, Asia, Europe, Latin America and the Middle East. In the Table 3 presents the basic indicators of the multiple linear regression model of the financial corporation "MetLife", which formed the basis of the calculations.

*Table following on the next page*

Basic indicators	2015	2016	2017	2018	2019
Assets of a retired subsidiary	6,437	216,983	-	-	-
Assets of a separate account	187,152	195,578	205,001	175,556	188,445
Total assets	877,912	898,764	719,892	687,538	740,463
Liabilities of policyholders and other balances related to policy	342,047	355,151	378,810	388,107	407,408
Short-term debt	100	242	477	268	235
Long-term debt	17936	16441	15686	12829	13466
Pledge financing agreement	1342	1274	1121	1060	993
Junior subordinated debt securities	3194	3169	3144	3147	3150
Liabilities of the retired subsidiary	204,314	202707	-	-	-
Liabilities for a separate account	187,152	195,578	205,001	175,556	188,445
Accumulated other comprehensive income (loss)	4,767	5,366	7,427 \$	1,722	1,052
Total equity of MetLife shareholders	68,098	67,531	58,676	52,741	66,144
Uncontrolled interests	470	171	194	217	238

*Table 3: Basic indicators of the multiple linear regression model on the example of the financial corporation "MetLife" (million USD)  
(Source:13)*

According to the results of an additional analysis of the functioning of the financial corporation "MetLife" it was found that the drivers of the increase in adjusted income were benefits from certain tax calculations and higher net investment income due to growth of the investment portfolio, partially offset by higher interest borrowing costs; adverse underwriting and the impact of actuarial forecasts. Based on the generalization of factors influencing the functioning of the financial corporation "MetLife", multiple linear regression is considered, and the following parameters are determined: dependent variable B - the ratio of net income to total income of the financial corporation "MetLife", and independent variables:

- X1 - the ratio of innovation costs to the company's total costs;
- X2 - the ratio of insurance costs to total costs of the company;
- X3 - the ratio of other costs to total costs of the company.

The formula for calculating the linear multiple regression equation:

$$Y = 0.03888 + 0.1285X1 + 0.05212X2 + 0.0003X3 \quad (2)$$

where the constant 0.03888 - estimates the aggregate influence of other (than those taken into account in the model Xi) factors on the result of Y and means that Y in the absence of Xi would be 0.03888. The coefficient at X1 indicates that with increasing X1 by 1, Y increases by 0.1285. The coefficient at X2 indicates that with increasing X2 by 1, Y increases by 0.05212. The coefficient at X3 indicates that with increasing X3 by 1, Y increases by 0.0003.

According to the maximum coefficient  $\beta_1 = 0.405$ , we conclude that the factor X1 has the greatest influence on the result Y. The statistical significance of the equation is verified using the coefficient of determination and Fisher's test. The application of these methods in the complex allows to obtain an information base to determine the impact of macroeconomic indicators on foreign direct investment, as well as to decide on the choice of strategy. It is established that in the obtained situation 18.18% of the total variability Y is explained by the change of factors Xj.

According to the Darbin-Watson tables for  $n = 8$  i  $k = 3$  (level of significance 5%) we find:

$d_1 = 0.82$ ;  $d_2 = 1.75$ .

Because  $0.82 < 1.48$  i  $1.75 > 1.48 < 4 - 1.75$ , the autocorrelation of residues is present. The calculated value of the RS-criterion falls in the range (2.7-3.7), therefore, the property of normal distribution is fulfilled. Thus, the model is adequate for the normal distribution of the residual component. Thus, the presented model proves the significance of the costs of innovations that affect the profits of the financial corporation "MetLife". The global financial crisis, which began in 2007, underscored the important role that financial corporations play in the stability of global and national economies. The enormous economic scale achieved by financial corporations, as well as their presence in various financial sectors of the economy (which were previously shielded from significant regulatory barriers), creates new problems and challenges for the system of state supervision of individual financial market participants.

## 5. CONCLUSION

Application in practice of the proposed methodological approach and compliance with standard recommendations aimed at improving the functioning of the financial services market and the activities of financial corporations will lead to a synergistic effect in the integration of banking, insurance and investment sectors of the economy. It is defined that if the operation of financial corporations is based on the principles of openness, support, accessibility, education and responsibility, the client of the financial corporation will receive at least the following benefits: the ability to obtain insurance services at lower prices than in the insurance market; meeting the needs, the ability to obtain a full range of financial services; minimization of document flow; product supply diversification; competent service personnel; reduction of transaction costs, etc. It is defined that the mechanisms of functioning of financial corporations are the natural interaction of all participants with each other using development tools. This allows to achieve the ensurance of dialogue, involvement and formation of ready-made solutions for all financial market participants.

## LITERATURE:

1. Довгий, В. (2018) *Методичний підхід до ранжирування міжнародних фінансових конгломератів в Україні*. Ефективна економіка. 2018. № 4. Retrieved 27.07.2021 from: <http://www.economy.nauka.com.ua/?op=1&z=8743>
2. Забаштанський, М., Роговий, А., Дубина А, (2020). *Забезпечення фінансово-економічної безпеки корпорацій на основі оптимізації їх фінансової архітектури*. ВІСНИК, 6179.
3. Коваленко, Ю., Коваль, І., Близненко, Є. (2020). *Вплив моделі сектору фінансових корпорацій і ринку цінних паперів на інвестиційні процеси в Україні*. Проблеми і перспективи економіки та управління, (2 (22)), 117-130.
4. Кривов'язюк, І. (2018). *Концептуальна модель та принципи діагностики потенціалу фінансово-економічної стійкості корпорації*. Молодий вчений, (3 (1)), 354-358.
5. Немсадзе, Г. (2020). *Аналіз впливу фінансової архітектури на ефективність фінансової діяльності корпорації*. Бізнес Інформ, (7 (510)).
6. Фролов, С., Виговська, Н., Дзюба, В. (2021). *Фінансова політика щодо формування оптимальної структури капіталу корпорацій*. Економіка, управління та адміністрування, (2 (96)), 85-90.

7. Шевченко, В. (2014) *Дослідження глобалізаційних процесів у сфері страхового та банківського бізнесу через створення стратегічних альянсів*. International scientific journal. 2014. № 11. С. 25-28. Retrieved 27.07.2021 from: [http://nbuv.gov.ua/UJRN/mnj\\_2014\\_11\\_9](http://nbuv.gov.ua/UJRN/mnj_2014_11_9)
8. Швайдак, В., Серотюк, Б. (2017). *Застосування макроекономічних функцій при консолідації фінансових посередників та взаємодії з реальним сектором економіки*. Економічний простір, (124), 164-173.
9. Швайдак, В., Гірман, Ю. *Взаємодія фінансових посередників з банківським сектором економіки у контексті клієнтського сервісу*. Економіка. Фінанси. Право, 2017, 8 (3): 24-28.
10. Шлапак, А. *Вплив міжнародних фінансових конгломератів на динаміку диверсифікаційних змін фінансових ринків*. Глобальний економічний простір: детермінанти розвитку. Матеріали III Міжнародної науково-практичної конференції (м. Миколаїв, 27 квітня 2017 р.). – Миколаїв : МНУ імені В.О. Сухомлинського, 2017. – 132 с. – с. 62/
11. Ясинський, В., Субочев, О. (2017). *Теоретичні аспекти розвитку міжнародних фінансових центрів*. Рекомендовано до друку та розповсюдження через мережу Інтернет Радою факультету міжнародної економіки та менеджменту ДВНЗ «КНЕУ імені Вадима Гетьмана» Протокол № 4 від 22 листопада 2017 р., 110.
12. *Joint Committee. List of Financial Conglomerates 2020. Financial Conglomerates with head of group in the EU/EEA 1* (2020) Retrieved 27.07.2021 from: [List of Financial Conglomerates 2020.pdf \(europa.eu\)](#)
13. <https://www.metlife.ua/>

## THE PARADOX OF RESOLVING COMPLAINTS IN THE WELLNESS CENTER GUARANTEES PROFITABILITY

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### **ABSTRACT**

*Wellness is a relatively new phenomenon in the tourism world which, as the season expands and capacity utilization increases, becomes a strategic product and should be considered, treated and nurtured with staff, sales agents and anyone who can directly or indirectly participate in product's sales. Although the potentials of wellness and other forms of health tourism in the Republic of Croatia are insufficiently used, it can be confirmed that in the Republic of Croatia there is a complex structure of wellness tourism. The quality of service in the wellness center becomes a central determinant that can attract and retain consumer, but also irreversibly "lose" it. In order to adequately manage the quality of service in the wellness center in tourism, it is necessary to know the strategies in resolving complaints and reclamations. The aim of this paper is to determine how most consumers of wellness services are actually dissatisfied with the way of resolving a complaint. The phenomenon of the paradox of resolving complaints is the focus of this research and using the theory of the paradox of resolving complaints, the authors will assess the amount and structure of complaints in terms of outcomes, methods of procedures used in the wellness center to achieve outcomes and the nature of interpersonal procedure, complaints and reclamations. Furthermore, the paper will test the hypothesis of the interdependence between satisfaction with resolving complaints and satisfaction of consumers of wellness services.*

**Keywords:** *wellness, quality of service, complaints, way of resolving complaints and reclamations, satisfaction*

### **1. INTRODUCTION**

Wellness can be viewed as a concept and as a form of tourism. Wellness is obviously a complex concept that combines elements of lifestyle, physical, mental and spiritual well-being, and an individual's relationship to himself, others, and the environment (Smith and Puczkó, 2009:54). The complexity of the concept of wellness is also visible in its dimensions, which are often presented in a circle as a "wheel of wellness", and such an example is given by (Smith and Puczkó 2009:56). The first dimension is emotional, the second dimension is the occupation and vocation dimension, the third dimension includes physical wellness, nutrition and fitness, the fourth dimension includes society, family, community and environment, the fifth dimension is intellectual and the sixth spiritual and ethical (Smith and Puczkó, 2009:57). However, the authors also state that few trips can have a positive effect on all dimensions of wellness (Kušen E. 2006:118). The connection between wellness and tourism in general can be observed in several ways, depending on whether it is considered a concept or a form of tourism. In the broadest sense, every tourist trip contributes to some aspect of well-being, so all tourism can be

considered wellness. "Travel can contribute to all aspects of health if we consider the physical and mental benefits of rest and relaxation, the social aspect of mixing with other tourists and locals, and the intellectual stimulation that can result from learning about new places (Smith and Puczkó, 2009:40). Of course, wellness is not a static concept and is subjective and relative, which is why it is constantly changing. The needs of wellness tourists will obviously vary drastically at different times and stages of their lives (Smith and Puczkó, 2009:10)". The word activity is perhaps the most related to wellness tourism. Tourists are people who actively work on their well-being, wellness is a lifestyle for them and regularly practice wellness-related activities in everyday life, and tourist trips often use them to expand their knowledge about wellness (Andrijašević, M. Bartoluci, M. 2004:225). "People who consume wellness services usually have a higher health awareness than others. They are eager to do something for a healthier lifestyle, they are aware of their diet and often exercise physically (Smith and Puczkó, 2009:40).

## **2. WELLNESS METHODS**

Therapy is provided by rehabilitation or medical centers, and wellness treatments address or reduce the consequences of medical interventions. When the programs are implemented under the supervision of medical staff and in a certified institution, then it is about medical wellness as a combination of wellness and medical tourism. Medical wellness is a more complex health-tourism product that primarily refers to the offer of programs that are targeted at the prevention of non-communicable diseases and mitigation of the consequences of chronic non-communicable diseases. In the past and even today, most chronic non-communicable diseases are caused by lifestyle itself, overwork or unemployment, identity crisis, risky health behaviors and excessive stress. Therefore, the name "medical wellness programs" is associated with the most common diseases: respiratory diseases, cardiovascular diseases, ie circulatory problems, digestive diseases, premature menopause, obesity, premature aging, early osteoporosis, type 2 diabetes, high pressure dependence and the like (Gračanin, M. (2010:215). Medical wellness implies the implementation of therapeutic and health-preventive programs and services they offer, while ensuring measurable results. This means that each program must begin and end with an initial and final health or medical examination. Thus, the type and duration of individual treatments are optimized at the initial examination, in order to evaluate the outcomes or results of the performed treatments on the health of the individual as a whole at the final examination. Medical wellness methods in addition to massages, relaxation in saunas and swimming pools necessarily include specialized personal development workshops, where the individual learns how to cope, ie to manage stress, emotions, empathy, assertiveness and relationships. In addition to personal development, it also includes guided recreation, autogenic training, progressive muscle relaxation, workshops for healthy eating and basic medical control of vital functions of the body. The target groups are most often individuals who are paid for this type of service by companies or state health funds, supplementary health insurance, but also individuals who are aware of the importance of investing money and time to preserve and improve the health of the so-called LAHAS (Life style of Health and Sustainability) consumers who focus on fitness and health, personal development, environment, etc. Medical wellness users are more demanding in terms of service quality, hygiene and qualified staff expecting measurable results and value for money (Halbert D. 1959:119). Medical wellness programs allow an individual to renew their energy from time to time and restore the balance of body and mind. The advantages of medical wellness and therapeutic programs are rest, relaxation and revitalization, restoration of psychophysical balance, improvement of concentration and quality of sleep, regulation of body weight, improvement of locomotor system mobility, improvement of fitness, reduction of chronic and acute pain, improvement of physical appearance, promotion of healthy lifestyle habits, raising awareness about healthy living,

raising the quality of life (Andrijašević, M., Blažević, S., et.al. 2006:63). Some of the well-known therapies in wellness tourism are Thalasso therapy, Balneotherapy and Aromatherapy. Thalasso therapy is used for medical purposes and it primarily means the use of sea water in therapeutic procedures. There are different types of inhalations with sea water, then different procedures of physical medicine and rehabilitation that are also performed with sea water. The seas and oceans have always magically attracted people. The ancient Egyptians, Greeks and Romans considered medicinal baths to be important medical treatments. Thalasso therapy involves a complete treatment of the body and mind based on the ancient belief in the natural healing physical and chemical properties of seawater. The term comes from the Greek words "thalassos", which means sea, and "therapeia", which means healing. Today, the term "treatment from the sea" means natural and alternative treatments for the treatment of various diseases that complement conventional methods of treatment and rehabilitation of various diseases and conditions, anti-aging treatments and techniques to reduce stress and relaxation. Balneotherapy is a type of therapy that aims to alleviate pain and improve daily functioning, means the use of thermo-mineral waters, medicinal muds and naphthalenes in treatment and medical rehabilitation. It comes from the Latin word "balneum" which means bath, and the Greek word "therapeia" which means healing. It is carried out in natural spas such as spas under the supervision of professional staff, ie doctors and physiotherapists. Some of the indications for balneotherapy are diseases and injuries of the locomotor system, diseases of the cardiovascular, respiratory and digestive systems, and metabolic, nervous and skin diseases. Aromatherapy is a therapy that maintains and improves health, and uses essential and base oils to improve health, body and mind. Essential oils and other natural ingredients such as cold pressed vegetable oils of the best quality are used, which are taken into the body or applied to the skin. This type of therapy was not considered a reliable and effective method of treatment in the late 20th century, but numerous new scientific studies have proven its effectiveness. When approaching the client, aromatherapists choose methods that balance the client's psyche and body, ie nurture a holistic approach. Essential oils are applied in several ways: inhalation, inhalation, massage or resorption through the skin, and vaginal, rectal and oral administration. Aromatherapy can treat stress, body and muscle pain, headaches and migraines, respiratory and digestive problems, circulatory problems, symptoms of menopause and menstruation, but also depression. There are various fragrant oils on the market that can deceive us, they are of synthetic origin and do not form part of aromatherapy, their use can cause unpleasant consequences.

### **3. QUALITY OF SERVICE IN THE WELLNESS CENTER**

Customer orientation in the wellness products and services industry is of great importance, and everyone pays great attention to consumer satisfaction. Orientation towards clients of wellness products, ie wellness services aims to meet the needs of consumers. Today's modern wellness or Spa centers take care of potential clients, their needs and desires, as well as the current needs and desires of current clients. Also, in order to create satisfaction, they take into account the efforts of the competition, which are also aimed at consumers and increase their satisfaction by using the wellness or Spa service. Wellness centers in hotels are dedicated to introducing clients to wellness services for the reason that in the sharp constellation in the tourism market and the market of wellness products and services, in addition to the emergence of "new" wellness centers more luxurious than existing ones and existing wellness centers market new wellness products. Knowing the behavior of wellness center clients in creating a quality marketing relationship with their clients is a key element. The consumer of wellness services today searches for information, tries to be connected with the cosmetic brand that wellness centers use in the placement of services, is often distrustful and large diversification of wellness services confuses him, and most importantly that such a client prefers quality wellness services.

Due to the significant increase in the stress of everyday life and higher disposable income, a person's need for rest and recovery has also increased, which in fact leads to more massive development and differentiation of wellness. The current development of wellness is based on a holistic approach according to which wellness means every product or service that rests and relaxes the human mind and body, which is why wellness today is increasingly integrated with other products, such as vacation by the sea, lake, mountain - tourism or after working hours with the aim of relieving stress - urban (urban). Visiting wellness centers today is - being "in"! (Vuković, 2012:83). Knowledge of the current level of customer satisfaction with wellness services is invaluable and the results of previous customer satisfaction indicate guidelines for the development of new wellness services, but also new cosmetic lines that are necessary for the placement of the service itself. The goal of interaction with wellness service clients is to create customer satisfaction and initiate and build profitable relationships with wellness service clients. In order for wellness centers to interact with the target clients of their services, three components are needed (according to Oliva, T.A., Oliver, R.L., MacMillan, I.C.,1992):

- Dialogue with wellness service clients
- Satisfying the needs of clients of the wellness service, which is also the result of dialogue with clients;
- Maintaining dialogue.

At the very beginning of communication with clients of the wellness service, a dialogue with the client is initiated, presenting the wellness service, checking the consumer's reactions to each presented wellness service, studying the satisfaction index and loyalty index (according to Vuković, 2012: 156). When implementing and establishing relationships with clients of a wellness service, wellness centers apply certain strategies for which they need three basic aspects (according to Anderson, Fornell, Lehmann, 1994):

- knowledge of clients of wellness services and their values
- knowledge of wellness treatments, their application and purpose and the results they achieve, and the side effects that they can cause;
- the ability of employees to communicate interest in the wellness service in communication with clients, and to resolve complaints and reduce discrepancies in the communication itself.

The new approach to relationships with clients of wellness services implies knowledge of client profiles, but also knowledge and adjustment of the range of wellness services to the wishes of those same clients. The goal of wellness centers is to provide their clients with a continuous service tailored to the structure of wellness service users, with a special emphasis on additional values that are important when defining profitable users. The concept of creating customer satisfaction for wellness services is based on marketing, quality and service, the indivisibility of the elements of the strategy and is important from the aspect of keeping clients in wellness centers. The essence of creating satisfaction with clients of wellness services is to adjust the offer of wellness services to the attitudes of clients in order to achieve the most favorable marketing relationship that must permanently align products and services with the needs and desires of clients.

#### **4. COMPLAINTS AND RECLAMATIONS OF CLIENTS**

Customer satisfaction and dissatisfaction are open positive or negative feelings about a particular wellness service provided or a cosmetic care product purchased. They occur after purchase. Examples of customer dissatisfaction are complaints and reclamations. When a client is dissatisfied this can result in several forms of client complaints. Forms of client complaints are usually oral reactions (expressed dissatisfaction directly with the wellness center staff),

private reactions (expressing negative opinions in front of friends) and reactions to a third party (sending complaints to consumer protection associations or even taking legal action). It is certainly important for every wellness center to keep in mind that dissatisfied customers convey their opinion to a larger number than satisfied customers, as well as that oral personal messages can be very influential and convincing. Desires are strong drivers and clients exposed to increasing stress and hectic pace in everyday life are willing to spend a significant amount of money in realizing their desires. Wellness therapists or wellness beauticians must be fully aware that the client who comes to the wellness center expects him to realize his needs or desires. Therefore, communication with the client is aimed at defining the client's wishes, talking to the client to get acquainted with the lifestyle of his client, their needs for face and body care and concluding the sale of wellness services.

## 5. RESEARCH METHODOLOGY

The research of wellness service clients is focused on understanding and explaining motivational frameworks, factors that influence the decision to buy a wellness service, as well as the needs of clients that influence the choice and purchase of a particular wellness service, its application and purpose. The better the process of perception is understood by the users of the wellness service, and the process of making a decision to purchase a wellness service, the greater the certainty can be identified and the factors influencing the decision to purchase a wellness service. Also, the research provided information on the structure of the market segment and their demographic characteristics, lifestyle, habits, expectations, preferences, attitudes, etc. that affect the choice and use of wellness services, and their dissatisfaction. When a client chooses a wellness service, he buys the entire personality of the service (the way of presenting the wellness service, the process of performing the wellness service, preparations used in performing the wellness service, their quality) or elements of the wellness service, but also all the luxury and image he has. This personality of the wellness service consists of the image created by the consumer of the wellness service about the real and often imagined benefits of consuming wellness treatment, about the employees who perform it, about communication skills, and conversation skills before, during and after providing wellness service. In accordance with the paper, the following hypotheses are set:

- **Hypothesis H1:** There is a positive relationship between the quality of wellness service and customer satisfaction with wellness service.
- **Hypothesis H2:** A knowledgeable approach to complaints brings multiple benefits to wellness.

A structured survey questionnaire was used as a research instrument. Based on the study of relevant literature in the subject area, a survey questionnaire was created. In the creation of the survey questionnaire, closed questions with the offered answer, open questions, and closed questions with the offered modalities measured by the Likert scale with five levels were used. The sample consisted of consumers (men and women) of younger age (18 - 35 years) and more mature age (36 - 55 years), selected by a deliberate sample during the summer season 2021 who are users of wellness treatments, and also consumers of luxury cosmetics face and body care products. The selected sample is suitable for obtaining indicative results and making general conclusions about the factors influencing the way of resolving complaints after using the wellness service and can in the future serve as a basis for further research on the paradox that arises if the complaint is approached by resolving complaints and objections, their motives and attitudes that influenced the choice of treatment and preferences when choosing a wellness service.

*Table 1: Description of the research sample (n = 250)*

	n	%
<b>SEX</b>		
Male	55	26%
Female	185	74%
<b>AGE GROUP</b>		
18-24	40	16%
25-34	45	18%
35-44	50	20%
45-54	50	20%
55+	65	26%
<b>COMPLETED EDUCATION</b>		
Elementary school	20	8%
High school	140	56%
Faculty and more	90	36%
<b>MARITAL STATUS</b>		
Single	80	32%
Married	145	58%
Divorced	25	10%
<b>NUMBER OF HOUSEHOLD MEMBERS</b>		
1	90	36%
2-3	100	46,65%
4-5	56	17,35%
6-more	0	0%
<b>HOUSEHOLD INCOME</b>		
Up to 2.000,00 kn	21	8,46%
2.001,00 – 4.000,00 kn	33	13,30%
4.001,00 – 6.000,00 kn	44	17,74%
6.001,00 – 8.000,00 kn	52	20,96%
8.001,00-10.000,00 kn	55	22,17%
10.001,00-more	43	17,37%

*Source: Author's own work*

The research was conducted on a deliberate sample of 250 respondents who expressed their dissatisfaction with the service provided in wellness centers at locations in Zagreb, Split, Dubrovnik, Rovinj and Porec. 74% of women participated in the study. Most respondents 26% are over 55 years old. 56% of respondents have completed high school and more than 43% of respondents have a monthly income of more than HRK 6,000.00. Data analysis was performed by the method of descriptive statistics and is listed in the following tables.

*Table 2: Defining needs - desire for wellness service*

Item Statistics		Mean	Std. Deviation	N
DP1	For a successful sales interview, it is not important for me to determine the needs - desires for accurate wellness service, because be sure to buy	2,6	0,773	250
DP2	I expect the wellness therapist to listen to me carefully at the first meeting	4,65	0,732	250
DP3	I am aware of the fact that the questions asked by my wellness therapist / beautician have been asked to determine my wishes	3,98	1,072	250
DP4	Making a good impression is important to me at first contact	4,04	1,333	250
DP5	When presenting a wellness service (facial and body treatment), the information I receive from wellness staff is important to me	4,16	0,89	250

*Source: own work*

Wellness staff when arranging wellness treatments must actively listen, use the client's imagination. Listening must be logical, meaningful and anticipatory. From which it can be concluded that the communication of wellness staff must take place in such a way that the client when choosing a wellness treatment says everything he thinks. Thus, the average particle rating: I expect the wellness therapist to listen to me carefully is rated 4.65; Making a good impression is important to me at first contact is the arithmetic mean of 4.04; When presenting the wellness service (facial and body care treatments), the information I receive from the wellness staff is important to me, it was rated with an average grade of 4.16.

*Table 3: Method of presenting the wellness offer*

Item Statistics				
		Mean	Std. Deviation	N
PP1	Presentation of the offer aims to reduce the uncertainty given the large amount of wellness offer	4,6	0,707	248
PP2	It is important for me that the wellness staff points out to me all the benefits of wellness treatment for which I am inquiring	4,55	0,724	248
PP3	The way of presenting a wellness offer is important to me because if the wellness staff presents the offer it certainly reduces my insecurity	4,17	0,585	248
PP4	I expect the wellness staff to try to resolve my dissatisfaction and the complaint I made	4,87	0,617	248

*Source: own work*

The presentation of the offer is a key phase in which the wellness staff with their activity, and in the wake of defining the wishes of the client, seeks to satisfy the client. That is why the presentation of the wellness offer must be such that the messages of the wellness staff are interesting, understandable and convincing enough. The following items were rated with average grades: The presentation of the offer aims to reduce the uncertainty given the large amount of wellness offer 4.6; It is important to me that the wellness staff point out to me all the benefits of the wellness treatment I am inquiring about 4.55; The way of presenting the wellness offer is important to me because if the wellness staff presents the offer it certainly reduces my insecurity 4.17 and I expect the wellness staff to try to resolve my dissatisfaction and the complaint I made 4.87.

*Table 4: Correlation between dissatisfaction elimination particles*

Item-Total Statistics						
		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
RR1	Wellness staff are kind and accept the complaint	180,46	167,658	0,492	,	0,79
RR2	Wellness staff took a number of actions to address dissatisfaction	180,4	166,978	0,56	,	0,788
RR3	If I have noticed that wellness staff have done everything to reduce my dissatisfaction I will be more grateful	181,08	167,281	0,749	,	0,792

*Source: own work*

The existence of a positive relationship between filing complaints and creating satisfaction is defined in Table 4, in which all the above statements have a positive correlation.

That's right: parity Wellness staff acts kindly and accept the complaint ( $r = 0.492$ ); Wellness staff took a number of actions to eliminate dissatisfaction ( $r = 0.56$ ) and If I noticed that wellness staff did everything to reduce my dissatisfaction I will be more grateful ( $r = 0.749$ ).

## 6. CONCLUSION

Satisfaction with the wellness service as well as any other management process is influenced by the elements that form it. Thus, studying the satisfaction with the wellness service, it can be concluded that the elements that affect the satisfaction of clients with the wellness service are related to the treatment itself. Consumer satisfaction depends on the experience that the consumer has in consuming the wellness service, expectations from the wellness service, and the experience of the service itself. When resolving a complaint, the wellness staff must carefully consider each complaint, and if it is justified, they must take it into the process of resolving complaints. Work in wellness, as well as in tourism, is mostly service-oriented, so in communication wellness staff must not be intrusive. When resolving complaints in the wellness industry, staff must take into account that customer satisfaction, and thus dissatisfaction, has three groups of factors that have a specific impact on the formation of customer satisfaction with wellness services: basic factors, excitement factors and success factors. Basic factors are the basic attributes of a wellness service that cause extreme dissatisfaction if they do not exist or if the effects are not at a satisfactory level, but which on the other hand do not contribute to creating significant satisfaction if the effects are at a satisfactory (or higher) level. Meeting the basic needs is necessary, but not a sufficient condition for achieving a high level of customer satisfaction, because customers consider them an integral part of the wellness service and expect their existence and performance at a high level. Excitement factors have a diametrically opposite effect on the formation of overall satisfaction compared to the underlying factors. The absence of arousal factors does not cause dissatisfaction among users, but if they exist and are performed at a satisfactory (or higher) level, they have a strong impact on creating satisfaction. Users do not expect them and are therefore positively surprised if they exist. Success factors, in contrast to the first two groups, have a relatively constant impact on the formation of overall satisfaction, regardless of whether the effects are low or high. Positive effects cause satisfaction, while negative ones lead to the opposite (linear factors). When resolving a client's complaint, it is important to assess what the client is dissatisfied with, and by expressing dissatisfaction, the client gives the wellness the opportunity to correct the mistake. If the problem is resolved in a short time and in a satisfactory manner, the client shows greater loyalty than those clients who were not dissatisfied.

## LITERATURE:

1. Andrijašević, M., Blažević, S., et.al. (2006) Wellness - a new trend in tourism. *Homo Sporticus*, 9 (2), 58-63.
2. Anderson, E.W., Fornell, C., Lehmann, D.R. (1994): Customer Satisfaction, Market Share, and Profitability: Findings from Sweden, *Journal of Marketing*; <https://journals.sagepub.com/doi/abs/10.1177/002224299405800304>
3. Bartoluci M., Čavlek N. (1998). *Tourism and Sports*, Faculty of Physical Education, Faculty of Economics, Zagreb.
4. Bartoluci M., Čavlek N. et.al. (2007). *Tourism and sport development aspects*, Zagreb, Školska knjiga.
5. Bartoluci, M. (2013) *Management of tourism and entrepreneurship development*, Zagreb, Školska knjiga.
6. Blažević, B., Peršić M. (2009) *Tourist regionalization in global processes*, Opatija, Faculty of Tourism and Hospitality Management.

7. Čavlek, N., Bartoluci, M., et.al. (2011) *Tourism, economic basics and organizational system*, Zagreb, Školska knjiga.
8. Geić, S., (2011). Management of selective forms of Tourism. Split: University of Split.
9. Gračanin, M., (2010): Wellness in Croatian health tourism, Croatian Scientific Conference on Tourism and Sports Management, Vol. 1 No. 1, 2010.
10. Gržinić, J., (2014) *International Tourism*, Faculty of Economics and Tourism "Dr. Mijo Mirković", Pula.
11. Gržinić, J., Bevanda, V., (2014) *Contemporary trends in tourism*, Pula, Faculty of Economics and Tourism "Dr. Mijo Mirkovic".
12. Halbert D. (1959) High level wellness for man and society, *American Journal of Public Health*.
13. Hendija Z., Boranić Živoder S. (2011). *Managing wellness offer based on tourism analysis in coastal Croatia*. Zagreb: Faculty of Kinesiology Zagreb.
14. Hendija, Z. (2014) *International Tourism*, Zagreb, Faculty of Economics.
15. Kušen E. (2006) Health tourism. In: Čorak S, Mikačić V, ed. *Croatian tourism - blue, white, green*. Zagreb: Institute of Tourism
16. Magaš, D., (2008). *Destination Management-Models and Techniques*. Rijeka: University of Rijeka.
17. Oliva, T.A., Oliver, R.L., MacMillan, I.C. : "A Catastrophe Model for Developing Service Satisfaction Strategies", *Journal of Marketing*, Chicago: AMA, Vol. 56, 3, 1992.
18. Pilzer, P. Z. (2006). *Wellness Revolution*, Varaždin, Katarina Zrinska.
19. Rašić, D. (2014) *Wellness tourism, Irresistible Croatia*, Zagreb, Lux.
20. Smith, M.K., Puczko, L. (2009): *Health and Wellness Tourism*, Elsevier Ltd., Oxford
21. Vuković, D. (2012) *Consumer behavior when buying luxury cosmetics*, Faculty of Economics Opatija, University of Rijeka

## EXAMINING THE THREATS TO COMPLIANCE WITH THE ACCOUNTING ETHICS PRINCIPLES

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### **ABSTRACT**

*Accounting ethics became an important issue worldwide due to many recent accounting frauds and financial scandals. Financial reporting quality must be high (containing accounting information that is unbiased, relevant, complete and correct) so that financial statements could be reliable to all stakeholders. Financial reporting quality can be jeopardized if professional accountants act in an unethical manner. Therefore, the ethics of accountants is of public interest since it has wide effect. The various circumstances (professional activities, interests and relationships) in which accountants work might create threats to compliance with the fundamental accounting principles. In order to avoid various ethical dilemmas, professional accountants should consult The International Code of Ethics for Professional Accountants. This code provides a conceptual framework as well as guidelines that should be applied in order to identify, evaluate and address five types of threats (self-interest threat, self-review threat, advocacy threat, familiarity threat and intimidation threat). The purpose of this study is to determine the level of the exposure to the threats to compliance with the fundamental accounting principles. Another aim of the paper is to find out whether the exposure to these threats is related to gender, age and education level of professional accountants. An online questionnaire was used as a research instrument. Empirical research results indicate that some demographic characteristics such as age and gender are not related to the exposure to the threats. On the other hand, the education level can affect the level of exposure of professional accountants to the threats to compliance with the fundamental accounting principles.*

**Keywords:** *Accounting ethics, Financial reporting quality, Professional accountants*

### **1. INTRODUCTION**

Accounting ethics is strongly related to business ethics which has been recently in research focus of many scholars due to different frauds, malfeasance, scandals and ultimately to financial crisis. As Messikomer and Cirka (2010) stated, there is an explosion of unethical behavior in business practice. A gradual deterioration of accounting ethics is the result of the wider social context (Gendron et al., 2006) with severe consequences that could eventually lead to bankruptcy. Unethical behavior of professional accountants can result in unreliable accounting information disclosed in financial statements. Higher quality of financial reporting is beneficial to the investors and other financial statement users (Aljinović Barać, 2021) while low-quality financial reporting is sometimes related to accounting manipulations. Cases of accounting malfeasance are often linked with the issues regarding revenue recognition (such as premature recognition of revenues or the recognition of fraudulent revenues). Aljinović Barać et al. (2017) reported that manipulations in Croatia are “principally oriented towards creditors, tax authorities and suppliers with the intention to hide bad performance, get better terms of crediting and minimize fiscal and political costs”. Thus, the need for integrity-boosting framework is obvious. Establishing ethical guidelines and following the code of ethics could promote professional conduct that is moral, and therefore beneficial to all stakeholders. As Messikomer and Cirka (2010) pointed out, a written code of ethics (although carefully designed and constructed) is not sufficient to prevent unethical behavior. Rogošić and Bakotić (2019) acknowledged that introduction of the code of ethics represents the initial phase of

institutionalization of ethical standards in a company. The well-known framework for the ethics of the accounting profession is the International Code of Ethics for Professional Accountants published by the International Ethics Standard Board for Accountants. This code addresses the issues regarding the threats to compliance with the fundamental accounting principles. The aim of this study is twofold: to determine the level of the exposure to the threats to compliance with the fundamental accounting principles and to explore the exposure to the threats depending on gender, age and education level of professional accountants.

## **2. THE IESBA CODE OF ETHICS**

Developed by the International Accounting Standards Board (IFAC) in collaboration with International Ethics Standard Board for Accountants (IESBA), the International Code of Ethics for Professional Accountants is intended to promote awareness and application of fundamental accounting ethics principles. These principles are integrity, objectivity, professional competence and due care, confidentiality and professional behavior. The latest revised IESBA Code is issued in 2020. It contains four parts. The fundamental ethical principles are explained in the first part along with the conceptual framework. The second part is dedicated to the professional accountants in business (who are employed or otherwise engaged in private, public, and non-profit sector, education and regulatory or professional bodies). The third part includes guidelines for the professional accountants in public practice. The fourth part consists of guidelines for achieving independence for audit review engagements as well as independence for assurance engagements (other than audit and review). Professional accountants should read this Code when they face ethical dilemmas because it provides guidance and enables conflict resolution. The Code (IESBA, 2020) prescribes that a professional accountant must be careful and avoid the association with financial statements and other reports (or any kind of communications) where the s/he believes that the information: “contains a materially false or misleading statement; contains statements or information provided recklessly; or omits or obscures required information where such omission or obscurity would be misleading”. Since low-quality financial reporting can be the result of various accounting misrepresentation, application of the Code guidelines can contribute to better financial reporting quality. The International Code of Ethics for Professional Accountants is highly recommended by many scholars (Clements et al., 2009; Spalding and Oddo, 2011; Nerandzic et al., 2012; Espinosa-Pike and Barrainkua-Aroztegi, 2014; Rogošić and Bakotić, 2019; Žager et al., 2019). The American Institute of Certified Public Accountants’ (AICPA) Code of Professional Conduct (CPC) for accountants practicing in the U.S. is also highly promoted (Spalding and Lawrie, 2019; Jenkins et al., 2020). Clements et al. (2009) noted that as a requirement for membership in the IFAC, a national accounting organization must either adopt the IESBA Code or adopt a code of conduct that is not “less stringent” than the IESBA Code. Smith et al. (2009) compared the accounting ethics codes in three countries (Canada, Egypt and Japan) and concluded that they are alike since they all promote the same ethical principles. Therefore, the objective of the IESBA to harmonize accounting ethics standards worldwide is on its path of fulfillment. According to the IESBA Code, the purpose of its conceptual framework is to “identify threats to compliance with the fundamental principles; evaluate the threats identified; and address the threats by eliminating or reducing them to an acceptable level” (IESBA, 2020).

## **3. THE THREATS TO COMPLIANCE WITH THE FUNDAMENTAL PRINCIPLES**

The literature is abundant of the evidence regarding the importance of accounting ethics education. Cameron and O’Leary (2015) pointed out that ethics education should promote the development of students’ moral sensibility and avoid focusing only on academic knowledge of ethics. Although accounting ethics education may not affect moral reasoning, it could help to recognize the threats to compliance with the fundamental accounting ethics principles.

The IESBA Code provides a conceptual framework that professional accountants should apply in order to identify, evaluate and address those threats. Professional accountants should reflect about conditions, and beware of policies and procedures since these might be relevant factors in their evaluation of whether a threat is at an acceptable level. If those threats are not at an tolerable level, the accountants should address those threats by applying safeguards. According to IESBA Code (2020), the threats to compliance with the fundamental principles are classified as self-interest threat, self-review threat, advocacy threat, familiarity threat and intimidation threat. The board range of circumstances that are threatening accountants' independence fall into one or more of the mentioned categories. Self-interest threat can be described as a threat when a financial or other interest might inappropriately influence a professional accountant's judgment or behavior (like receiving a loan from employing organization, having access to corporate assets for personal use, being offered a gift from a supplier etc.). Self-review threat occurs when a professional accountant does not properly evaluate the results of a previous judgment made or activity performed (by the accountant or by the associate within the accountant's company or employing organization), on which the accountant might rely when forming a judgment that reflects on their current activity. If a professional accountant has an opportunity to manipulate information in a prospectus in order to obtain favorable financing, there is an advocacy threat. Therefore, advocacy threat is the threat that the accountant might uphold a client's or employing organization's position compromising his/her objectivity. Familiarity threat can be recognized when a professional accountant has a close or long (especially if a family member is involved) association with individuals influencing business decision. Long term or close relationship with a client or employing organization can make a professional accountant overly bias and sympathetic to their interests or too accepting of their work. If a professional accountant or his/her family member face the threat of dismissal or replacement due to the application of accounting principles or the way of financial information reporting, an intimidation threat occurs. Intimidation threat also happens when an accountant is discouraged from acting objectively because of actual or perceived pressures, including attempts to exercise unjustified influence over the professional accountant. According to Ishaque (2020) the root causes to these threats are, mostly, "the misaligned incentives with roots in temptation for gain and/or in fear of loss and the workplace pressures with roots in fear of loss". When professional accountants in practice are concerned, intimidation emerges as the most frequent threat (Fearnley et al., 2005). This kind of threat has two clear dimensions. One aspect of intimidation threat is conjoined by the underlying threat from management of removal of the auditor. This results with the self-interest threat where the professional accountant in public practice may perceive damage to himself personally through loss of income and status. The other dimension is bullying, when superiors (directors) may attempt to overcome the auditor's objections by employing aggressive or other unappropriated behavior without any underlying threat of removal from office. Fearnley et al. (2005) explained that intimidation with self-interest could also arise from within a company where other partners make pressure. Erasmus and Matsimela (2020) concluded that real problem is unawareness of the self-review threat that arises due to the conflict between oversight and advisory services provided. Islam et al. (2019) pointed out that professional accountants faced various self-interest and self-review threats to their fair reporting. Thus, they found it difficult to act according to the code of accounting ethics. Familiarity threat was investigated on auditors in United Kingdom (Hussey, 1999). This study revealed that the present directors of both private and public companies have a significant influence on the appointment of the auditor and view their own personal relationship with the auditor as the most desirable characteristic in the selection process. Fearnley et al. (2005) noted that direct financial interest in a client (self-interest threat); a close friend or relative being involved in the management of a client (familiarity threat); and, involvement in the management of a client (self-review threat) undermine accountant's

independence if the safeguards were not adequately applied. Shafer et al. (2004) pointed out that accountants in public practice could change their behavior due to advocacy threat. Hutterski et al. (2020) found that influence of people in charge and pressure exerted by the management represent as well as the attempt to hide previously made mistakes are the most common situations that lead to unethical behavior of accountants. Quick and Warming-Rasmussen (2015) found out that high self-interest and a high-familiarity threat may impair auditor independence in appearance. If all of those threats are not recognized or ignored, they will give rise to the conflict of interests. Consequently, a risk of deviation from compliant behavior is higher (Ishaque, 2020). In order to address the threats to compliance with the accounting ethics principles, adequate safeguards must be applied. Hussey (1999) stated that controls should be introduced to ensure the threat is kept to a minimum.

#### **4. HYPOTHESES**

Moral judgment requires knowledge of concepts, ethical principles, and codes of conduct (Asadiyan Owghani et al., 2020) and enables ethical decision-making. Fraedrich et al. (1994) argued that cognitive moral development theory has been acknowledged as a construct in understanding business ethics. Several models were developed to explain the ethical decision making process in business. Individual factors like cognitive moral development affect ethical decision-making. Ethical decision making in business could additionally be influenced by other factors like demographic characteristics. Findings of Radtke (2000) generally supported the results of prior research that found no differences in the ethical decisions of female and male accounting professionals. Contrary, Roxas and Stoneback (2004) performed cross-country empirical study and concluded that males were significantly less ethical than females but on the country level, results are somewhat different. They found that women in China are less likely to behave ethically while in U.S.A., Australia, the Philippines, Germany and the Ukraine men had higher inclination to unethical behavior. Research conducted on accountants in U.S.A. demonstrated the results that do not support the idea that gender is associated with differences in ethical decision-making (Keller et al., 2007). On the other hand, their findings indicate that there are differences in individual ethical standards based on gender, educational level (graduate versus undergraduate), religiosity, and work experience. Pierce and Sweeney (2010) assumed that there is no relationship between gender (on one side) and ethical judgement, ethical intention, ethical intensity and perceived ethical culture of professional accountants in Ireland. They hypothesized the same between age, degree type, education and all the mentioned aspects of ethical decision-making. The threats to compliance with the fundamental accounting ethics principles can affect accountant's decision-making process and, ultimately, judgment or behavior. The question is if some demographic characteristic are related to the perception of self-interest, self-review, advocacy, familiarity and intimidation threat. Therefore, based on the recent (above mentioned) studies it is reasonable to assume that:

- H<sub>1</sub>: No relationship exists between gender and the threats to compliance with the accounting ethics principles.
- H<sub>2</sub>: No relationship exists between age and the threats to compliance with the accounting ethics principles.
- H<sub>3</sub>: No relationship exists between level of education and the threats to compliance with the accounting ethics principles.

#### **5. METHODOLOGY AND RESULTS**

An online questionnaire was used as a research instrument. The link to this survey created on Google Forms was sent to randomly selected e-mail addresses of the professional accountants in Croatia. After three rounds of e-mails, 370 professional accountants in business filled the questionnaire, containing closed questions (mostly a 5-point Likert scale) and various

demographic questions, although not everyone answered to all the questions. The collected data were analyzed using the MS Excel and IBM – SPSS 23 program. The univariate statistics was used to test the hypotheses. A total of 299 female respondents completed the survey and only 71 male did the same. It is not clear if there is more women employed as accountants in Croatia or they are more eager to participate in this kind of survey. The age of the respondents was grouped in four categories: 1- age between 20 and 29; 2 – age between 30 and 39; 3 – age between 40 and 49; and 4 – age 50 and more. Only 8% of accountants covered with this study are young people of age between 20 and 29. Most of the respondents (36%) are age between 30 and 39 followed by accountants of age between 40 and 49 (34%). The proportion of more experienced accountants (age 50 +) that filled the questionnaire is 22%. The education level was also grouped in four categories: 1 - high school; 2 – undergraduate; 3 - graduate; and 4 – postgraduate degree. High school diploma represents the highest level of education for 19% of respondents. Undergraduate degree is obtained by 18% of professional accountants. Most of the respondents (58%) have graduate degree but only 5% postgraduate degree. The perceived threats to compliance with the fundamental accounting ethics principles were self-assessed using a 5-point Likert scale (where 1 represents “never” and 5 is for “very frequently”) with the offered statement regarding self-interest, self-review, advocacy, familiarity and intimidation threat (Figure 1).

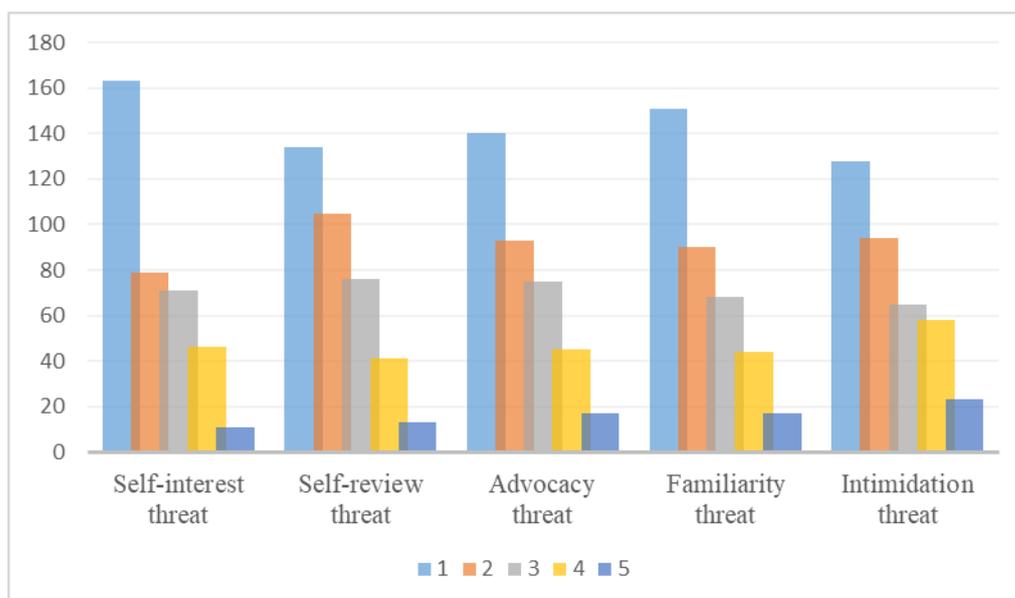


Figure 1: Threats to compliance with accounting ethics principles  
(Source: Author's calculation)

According to these empirical results, most of the professional accountants in business rarely (or never) experienced these threats. The mean value of the perceived exposure to the threats ranges from 2.089 to 2.332 (self-interest threat - 2.089; self-review threat - 2.171; advocacy threat - 2.205; familiarity threat – 2.151; intimidation threat - 2.332). Results indicate that accountants in Croatia face more frequently intimidation threat (comparing to the other kind of threats) that is in line with the findings of Fearnley et al. (2005) and Huterski et al. (2020). The first hypothesis was tested using Mann-Whitney test (Table 1). Independent (grouping) variable was gender. This test was used to determine whether there is difference between men and women regarding their perceived exposure to the threats to compliance to fundamental ethical principles.

	Self-interest threat	Self-review threat	Advocacy threat	Familiarity threat	Intimidation threat
Mann-Whitney U	10431.500	10434.000	10442.500	8949.500	10498.500
Wilcoxon W	12987.500	54985.000	55292.500	53799.500	54751.500
Z	-.239	-.187	-.221	-2.155	-.058
Asymp. Sig. (2-tailed)	.811	.851	.825	.031	.954

Grouping Variable: Gender

*Table 1: Threats to compliance with the fundamental principles regarding the gender (Source: Author's calculation)*

The results (Table 1) indicate that the relationship between gender and the level of the perceived self-interest, self-review, advocacy and intimidation threat does not exist. The only threat that is gender related is familiarity threat. The males admit to be more exposed to familiarity threat. Thus, men seem to be more influenced with the close and/or lasting relationships with the clients or employers that made them overly bias and sympathetic to their interests. The second hypothesis was validated using the Jonckheere-Terpstra test (Table 2). Independent (grouping) variable was the age of the respondents. This test was used to determine whether there is difference between the age groups regarding accountants' perceived exposure to the threats to compliance with the accounting ethics principles.

	Self-interest threat	Self-review threat	Advocacy threat	Familiarity threat	Intimidation threat
Number of Levels in Age	4	4	4	4	4
N	368	367	368	368	366
Observed J-T Statistic	22807.000	23662.000	23679.500	21464.000	22293.000
Mean J-T Statistic	23675.500	23554.000	23675.500	23675.500	23384.500
Std. Deviation of J-T Statistic	1059.558	1069.130	1073.861	1067.961	1071.472
Std. J-T Statistic	-.820	.101	.004	-2.071	-1.019
Asymp. Sig. (2-tailed)	.412	.920	.997	.038	.308

Grouping Variable: Age

*Table 2: Threats to compliance with the fundamental principles regarding the age (Source: Author's calculation)*

According to the results (Table 2), age is only related to the familiarity threat. Younger accountants are more exposed to the familiarity threat than their more mature colleagues. It can be assumed that more mature accountants are more resilient to the familiarity threats. As people grow old the exposure to the familiarity threat weakens. The Jonckheere-Terpstra test was performed in order to test the third hypothesis. It was assumed that education level, as other demographic characteristics, is not related to the perceived exposure to the threats.

	Self-interest threat	Self-review threat	Advocacy threat	Familiarity threat	Intimidation threat
Number of Levels in Education	4	4	4	4	4
N	369	368	369	369	367
Observed J-T Statistic	22215.000	22161.000	21461.000	22901.500	22674.000
Mean J-T Statistic	20112.000	19988.500	20210.500	20210.500	19983.500
Std. Deviation of J-T Statistic	996.549	1004.347	1011.393	1005.901	1009.372
Std. J-T Statistic	2.110	2.163	1.236	2.675	2.666
Asymp. Sig. (2-tailed)	.035	.031	.216	.007	.008

Grouping Variable: Education

*Table 3: Threats to compliance with the fundamental principles regarding the education level (Source: Author's calculation)*

According to the results (Table 3), the third hypothesis is rejected. The level of education is related to the perceived exposure to self-interest, self-review, familiarity and intimidation threat. Only advocacy threat (promoting a client's or employer's position that can lead to detraction of the accountant's objectivity) is not related to the accountant's education level.

## 6. CONCLUDING REMARKS

This paper examines the level of self-reported exposure to the threats to compliance with the accounting ethics principles. The professional accountants in business generally face low level of self-interest, self-review, advocacy, familiarity and intimidation threat. Among those threats, the intimidation threat is the most frequent and the self-interest threat is the least recurring. Prior studies show conflicting results regarding demographic aspects of ethical behavior in accounting. This study aimed to determine the effect of gender, age and education level of professional accountants on their exposure to the threats. These threats could lead to unethical behavior of accountants so must not be ignored. Furthermore, the compromised accountant's objectivity and, ultimately, judgement can jeopardize financial reporting quality. The research is based on a large sample of professional accountants in business with a good spread across the demographic variables of interest that adds to the reliability of the findings. Research results appear to support the first and the second hypothesis. Therefore, gender and age do not have an effect on the perceived exposure to the threats (except the familiarity threat). On the other hand, the education level is related to the exposure to the threats to compliance with the accounting ethics principles (advocacy threat excluded). Hence, this paper contributes to the accounting ethics literature since it sheds light on the exposure to the threats to compliance with the accounting ethics principles. All of these findings could be the result of a specific cultural environment so the future research should be cross-country with more demographic features. One of the limitations of this study is due to self-reported exposure to the threats since accountants can have some implicit bias.

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## LITERATURE:

1. Aljinović Barać, Ž. (2021). *Financial Reporting Quality Measurement - Approaches, Issues and Future Trends*. In: Načinović Braje, I., Jaković, B., Ferjanić Hodak, D.. (eds.) Proceedings of FEB Zagreb 12th International Odyssey Conference on Economics and Business. Zagreb: University of Zagreb, Faculty of Economics & Business, 1 - 13.
2. Aljinović Barać, Ž., Vuko, T., & Šodan, S. (2017). What can auditors tell us about accounting manipulations?. *Managerial Auditing Journal*, 32(8), 788-809.
3. Asadiyan Owghani, A., Hajiha, Z., Royae, R., & Vakilifard, H. (2020). Investigating the Impact of Ethical Ideology and the Threat of Self-Interest on Ethical Decision-Making of Auditors. *International Journal of Ethics and Society*, 1(4), 20-14.
4. Cameron, R. A. & O'Leary, C. (2015) Improving Ethical Attitudes or Simply Teaching Ethical Codes? The Reality of Accounting Ethics Education, *Accounting Education*, 24(4), 275-290.
5. Clements, C., Neill, J. D., & Stovall, O. S. (2009). An analysis of international accounting codes of conduct. *Journal of Business Ethics*, 87(1), 173-183.
6. Erasmus, L. J., & Matsimela, T. (2020). The Municipal Audit Committee Self-review Threat: The South African Dilemma. *Southern African Business Review*, 24, 1-22.
7. Espinosa-Pike, M., & Barrainkua-Aroztegi, I. (2014). A universal code of ethics for professional accountants: Religious restrictions. *Procedia-Social and Behavioral Sciences*, 143, 1126-1132.

8. Fearnley, S., Beattie, V. A., & Brandt, R. (2005). Auditor independence and audit risk: A reconceptualization. *Journal of International Accounting Research*, 4(1), 39-71.
9. Fraedrich, J., Thorne, D. M., & Ferrell, O. C. (1994). Assessing the application of cognitive moral development theory to business ethics. *Journal of Business Ethics*, 13(10), 829-838.
10. Gendron, Y., Suddaby, R., & Lam, H. (2006). An examination of the ethical commitment of professional accountants to auditor independence. *Journal of Business Ethics*, 64(2), 169-193.
11. Hussey, R. (1999). The familiarity threat and auditor independence. *Corporate governance: an international review*, 7(2), 190-197.
12. Huterski, R., Voss, G., & Huterska, A. (2020). Professional Ethics in Accounting as Assessed by Managers of Economic Units. *European Research Studies*, 23, 720-731.
13. IESBA. (2020). *International Code of Ethics for Professional Accountants*, International Ethics Standards Board for Accountants (IESBA), Retrieved 28.08.2021 from <https://www.ethicsboard.org/international-code-ethics-professional-accountants>
14. Islam, M. R., Uddin, M. N., & Ghose, U. (2019). Can Professional Accountant Carry out their Code of Ethics in Reporting?. *International Journal of Accounting & Finance Review*, 4(1), 17-23.
15. Ishaque, M. (2020). Cognitive approach to understand the impact of conflict of interests on accounting professionals' decision-making behaviour, *Accounting Forum*, 44(1), 64-98.
16. Jenkins, J. G., Popova, V., & Sheldon, M. D. (2020). Monitoring the accounting profession under the AICPA code of professional conduct: An analysis of state board of accountancy participation. *Journal of Accounting and Public Policy*, 39(3), 106742.
17. Keller, A. C., Smith, K. T., & Smith, L. M. (2007). Do gender, educational level, religiosity, and work experience affect the ethical decision-making of US accountants?. *Critical Perspectives On Accounting*, 18(3), 299-314.
18. Messikomer, C. M., & Cirka, C. C. (2010). Constructing a code of ethics: An experiential case of a national professional organization. *Journal of Business Ethics*, 95(1), 55-71.
19. Nerandzic, B., Perovic, V., & Zivkov, E. (2012). Personality and moral character traits and acknowledging the principles of management ethics, auditing and accounting ethics. *Economic research-Ekonomska istraživanja*, 25(sup1), 288-312.
20. Pierce, B., & Sweeney, B. (2010). The relationship between demographic variables and ethical decision making of trainee accountants. *International Journal Of Auditing*, 14(1), 79-99.
21. Quick, R., & Warming-Rasmussen, B. (2015). An experimental analysis of the effects of non-audit services on auditor independence in appearance in the European Union: Evidence from Germany. *Journal of International Financial Management & Accounting*, 26(2), 150-187.
22. Radtke, R. R. (2000). The effects of gender and setting on accountants' ethically sensitive decisions. *Journal of Business Ethics*, 24(4), 299-312.
23. Rogošić, A., & Bakotić, D. (2019). Job satisfaction of accountants and their professional ethics. *Ekonomski Vjesnik*, 32(1), 165-177.
24. Roxas, M. L., & Stoneback, J. Y. (2004). The importance of gender across cultures in ethical decision-making. *Journal of Business Ethics*, 50(2), 149-165.
25. Shafer, W. E., Ketchand, A. A., & Morris, R. E. (2004). Auditors' willingness to advocate client-preferred accounting principles. *Journal of Business Ethics*, 52(3), 213-227.
26. Smith, M., Charoensukmongk, P. P., Elkassabgi, A., & Lee, K. H. H. (2009). Aspects of accounting codes of ethics in Canada, Egypt, and Japan. *Internal Auditing*, 24(6), 26-34.
27. Spalding, A. D. & Lawrie, G. R. (2019). A Critical Examination of the AICPA's New "Conceptual Framework" Ethics Protocol. *Journal of Business Ethics*, 41(4), 349-360.

28. Spalding, A. D., Jr., & Oddo, A. (2011). It's time for principles-based accounting ethics. *Journal of Business Ethics*, 99(1), 49–59.
29. Žager, K., Dečman, N., & Novak, A. (2019). Importance of ethics in the education of accountants. *Ekonomski Vjesnik*, 32(2), 463-476.

## EDUCATING FUTURE ECONOMISTS IN THE ERA OF ROBOTIZATION – ARE WE ALREADY LATE?

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### **ABSTRACT**

*Market for robots is getting more important and implications of robotization and automatization process are both microeconomic and macroeconomic, along with raising social and ethical dilemmas. In that sense, this paper deals with the issue of future economists' awareness of ongoing changes. Focus is not on the education system, neither the purpose of the article is to criticize a higher education system. Rather, the aim is to draw attention to potential economic consequences of unpreparedness of future experts in different fields and application of economic knowledge who will eventually have to deal with robotization and automation in their work. In that sense, survey analysis has been performed on 443 students of public faculties of economics in the Republic of Croatia. Its purpose was to detect their attitudes on various aspects of robotization process, as well as their perception of the importance of this issue for students of economic faculties. Results indicate that almost a third of students in the sample believe that robotization process and related subjects are not relevant for students of economic faculties and 87,6% of students never had a chance to learn something about robotization and related subjects within the framework of their study process. Although solely Croatian students formed a sample, obtained results can be observed in the context of economically similar countries and the question arises whether the existing gap between these and economically highly developed countries will become even larger if future economists are not aware of the speed and power of the ongoing technological change.*

**Keywords:** *Economists, Education, Robotization, Labour, Students*

### **1. INTRODUCTION**

Robotization and automation are becoming increasingly important economic topics, and are most often mentioned in the context of their impact on the labour market in terms of employment level and wages (Muro and Andes, 2015; Manyika et al., 2017; Graetz and Michaels, 2018; etc.). However, their impact is more complex and has numerous consequences on both micro and macroeconomic level<sup>1</sup>, along with social and ethical dilemmas. Namely, direct effects of robotization on labour market are clear when robots are viewed as inputs because certain actions/tasks can be performed at lower costs, more precisely and save workers from repetitive/dangerous actions and there are simply actions that individual workers cannot perform (Decker, Fisher and Ott, 2017). But while thinking about robots that replace workers, simply looking at robots as inputs that substitute human workers is rather one-sided and it is necessary to analyse this issue from a broader context. A distinction should be made between the influence of robots on occupation and on activities, because almost any occupation can be at least partially automated.<sup>2</sup> Furthermore, with the necessary implementation of cost-benefit analysis before the decision to introduce these technological improvements (Ivanov and Webster, 2017), managers will need to pay more attention to the repercussions of worker-robot interaction (WRI) (Moniz and Krings, 2016). Likewise, over time, the number of business issues related to artificial intelligence will increase.

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<sup>1</sup> Cf. Višić (2020).

<sup>2</sup> Manyika et. al., (2017) estimate that about 50% of all activities that workers are paid to do could potentially be automated if existing technologies are adopted.

Robots as outputs also raise various issues such as cultural differences among customers (Bartneck et al., 2005; Yasser and Toyooki, 2015; Nitto et al. 2017) and adaptation, i.e. acceptance of technology (Šabanović, 2010). Macroeconomic implications of robotization are as diverse as the microeconomic ones, and in addition to the fact that robotic market is growing<sup>3</sup>, they include previously mentioned issues of repercussions on employment and wages. At the same time, the attitude towards robotization and assessment of its effects, as with all relatively new and powerful changes, varies from positive to negative.<sup>4</sup> Further, it is important to emphasize that there are differences in effects of robotization depending on the type of occupation and observed country (Allen, 2017). However, with the ongoing development of technology, new issues such as tax-and-transfer policies<sup>5</sup> and various legal issues with economic consequences open up (Bryson et al., 2017; Solaiman, 2016). In addition to the above mentioned micro and macroeconomic implications of robotization and automation, there are various social and psychological aspects that need to be taken into account as well, such as the impact of technological changes on mental health, creative thinking and many ethical issues.<sup>6</sup> All of the above indicates complexity of the economic effects of robotization, while this paper focuses on the question whether future economists are aware of the ongoing changes. The emphasis in the paper is not on the education system, neither the purpose of this study is to criticize higher education system, yet the goal is to point out possible economic consequences of unpreparedness of future economic experts who will (most likely) eventually encounter and have to deal with robots and robotization process. At first, question of students' attitudes on robotization may seem redundant, yet it has long-term economic consequences. Namely, today's students (with major in business, economics or tourism) are future employees and managers in both private and public sector. Certainly, during their working life they will expand their previously acquired knowledge. However, economic environment changes rapidly and it is interesting to reflect on the strength of the impact of probable delay in response to changes because students might be unaware that these changes are happening. Observed on a country level, the existing gap in economic development between countries might become even greater if economic decision makers are not aware of the factors that affect it, and the importance of robotization process in this context will certainly increase. Presented rational is shown in Figure 1 illustrating, among other connections, direct impact of education system on students. It is not reasonable to expect that educational system is solely responsible for students' future beliefs, perception and consequently actions, but it strongly shapes them. Therefore, it is important to broaden students' mind and to encourage them not to stop learning after getting a desired degree. On the other hand, students, with their knowledge, attitudes, expectations and resilience capabilities, are future employees of many different companies and institutions and directly influence their competitiveness and future in general. Simply stated, students are inputs that affect output in both private and public sector and if students are aware of complexity of ongoing changes they are more likely to act/work in a way that ensures achieving the set goals but doing it with respect towards workers (as presenters of society in general) and environment. Business results and nurtured values of these companies and institutions cause many different macroeconomic effects and affect various social aspects. Society, observed in general, changes along with advances in industry and this is evident when we observe fourth industrial revolution

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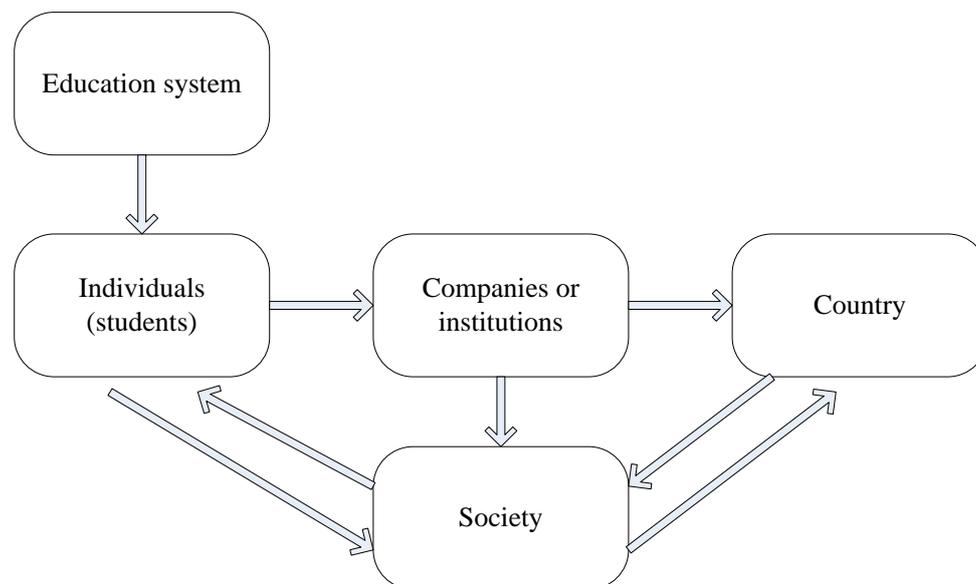
<sup>3</sup> Total size of the market for industrial and non-industrial robots in 2017 was 39,3 billion US dollars, and Statista (The portal for statistics, 2019) estimates that this market will reach a value of 498,6 billion US dollars by 2025.

<sup>4</sup> Muro and Andes (2015) and Graetz and Michaels (2018) highlight positive effects on productivity, while Manyika et al. (2017) emphasize that automation could boost productivity and narrow the economic gap between the 20 largest economies in the next ten years. On the other hand, Sachs and Kotlikoff (2012) believe that advances in machine productivity might have an adverse impact on unskilled workers, especially young ones, while DeCanio (2016) believes that the expansion of AI might increase economic inequality if returns to robotic assets are spread across population.

<sup>5</sup> Cf. Sachs and Kotlikoff (2012) and DeCanio (2016).

<sup>6</sup> For example, future manager of a weapon factory can use technological advances to develop cheaper and more lethal weapons, which is at the same time a rational business decision, but raises a number of ethical questions.

that evolved to Industry 5.0 in a way that it refines the interaction between humans and machines emphasizing the importance of humans' critical thinking skills and creativity, all with sustainability in mind (Demir and Cicibaş, 2017). As stated earlier, technological change will change the way we live and the way we work and if these changes are not addressed properly changes in society might have negative impact on individuals and consequently on companies/institutions and respective country in general. Connection between aforementioned stakeholders is important on a country level, but its relevance is recognised on a global level as well. Namely, European Commission (2019), among other priorities, emphasizes importance of new technologies and developing economy that works for people while at the same time encouraging resource-efficient economy. Therefore, it is not enough just to educate students of economic faculties to be ahead of technological progress in a way they can easily collaborate with STEM experts. The aim should be to educate them to be able to follow and lead technological progress while being responsible citizens working to ensure a sustainable economic development that is beneficial for environment and individuals, observed either from their personal or professional life. Of course, it would be naive to believe that is possible to educate all young experts to work as responsible citizens and not just effective workers, but we should at least try to make them realize that impact of ongoing technological change is complex and versatile.



*Figure 1: Robotization process and stakeholders – interconnection scheme  
(Source: Author's illustration)*

There is growing literature on different aspects of robotization and its economic repercussions. However, to the author's best knowledge, importance of future economists' ability to perceive changes related to robotization and automation process have not yet been recognised. Additionally, this paper emphasizes consequences of such situation on economy of transitional and underdeveloped countries since the paper presents analysis performed on Croatian students. In other words, this paper detects several themes related to robotization that are important for economists, and offers original approach to economic implications of technological changes. By emphasizing the importance of students' attitudes on robotization it provides new insights for researches in this field, policy makers and managers. Following chapter provides more details on the used method, sample and obtained results while shortcomings of the paper, future research directions and overall conclusion are given in the last chapter.

## 2. METHOD

The paper seeks to detect students' attitudes towards robotization analysed from different perspectives. Main goal of the conducted survey analysis is to explore to what extent students find robotization important in terms of formal and informal education of future economists. Additionally, research includes analysis of students' attitudes on specific implications of robotization. Finally, survey aims to analyse whether these students have already acquired some knowledge about robotization and related topics during their study. Or in other words, aim is to answer following research questions:

- 1) What do students of economics, business and tourism think about gathering knowledge on robotization process?
- 2) How do students of economics, business and tourism feel about different themes related to robotization?
- 3) Have students of economics, business and tourism ever been provided some insights about robotization during their formal education?

### 2.1. Participants

Primary data have been collected in period from March 2019 to February 2020 via online survey among 443 undergraduate and graduate students of economics, business and tourism in Croatia. Seven out of eight public universities in Croatia have been included in the sample. Analysis included students from University of Dubrovnik (6,3%), University North (0,2%), University of Osijek (1,6%), University of Pula (7,7%), University of Rijeka (10,6%), University of Split (69,5%), and University of Zadar (4,1%).<sup>7</sup> As shown in Table 1, female participants have been more willing to participate in the research and as expected, majority of the sample form participants that are 25 and younger. When it comes to level of the study, approximately two thirds are undergraduate students which is in line with student structure on respective universities.

	Characteristic	Number	Percentage
Gender	Female	323	72,9
	Male	120	27,1
	Total	443	100
Age	18-21	182	41,1
	22-25	217	49,0
	26-29	19	4,3
	>29	25	5,6
	Total	443	100,0
Study	Undergraduate	287	64,8
	Graduate	156	35,2
	Total	443	100,0

*Table 1: Sample description  
(Source: Author's calculations)*

<sup>7</sup> Each University has a faculty or department for business, economics and tourism, and each of eight Vice Deans of Education have been asked to provide their students the opportunity to fill out this online survey. Seven out of eight responded, and some of them put the link on their faculty's public website and some on their internal web system such as Moodle. It is important to mention that the share of students from University of Split in the whole sample is significantly larger than from other university solely because students in Split have been informed about the survey during classes. On other universities, students have received an information about the survey solely from the external/internal web site. The survey has been created by using Google Forms and can be obtained at request.

## 2.2. Questionnaire

Data relevant for this research have been collected via questionnaire that consists of 17 questions, written in Croatian, where five questions deal with general information about the respondent. Three questions reflecting the core of this research are presented more specifically. First question has been designed to test how important students find the knowledge about the process of robotization and related subjects. They have been asked to choose which of the following statements most accurately reflects their attitude:

- 1) Robotization process and related subjects are not at all important for students of economic faculties, and students should not waste their time on these issues.
- 2) Students should by themselves, regardless of the program of study/curriculum, acquire knowledge on respective subject, if they find it interesting.
- 3) Students should acquire knowledge on respective subject but they should do it largely by themselves, while the program of study/curriculum should cover the respective subject in a lesser extent.
- 4) Students should acquire knowledge on respective subject mainly through the program of study/curriculum, while they should do it by themselves in a lesser extent.
- 5) Students should acquire detail knowledge on the respective subject through the program of study/curriculum.
- 6) I don't know.

Second question aims to detect to what extent students find following segments, related to the process of robotization, important for students of economic faculties. They were instructed to answer this question only if they previously have picked an answer either 2, 3, 4, or 5. There are five Likert scale survey questions, with answers ranging from 1 (extremely irrelevant) to 5 (extremely relevant). However, an answer "I don't know" is also offered since a pilot testing of the survey showed that it is necessary to provide such an answer to students to get their most accurate attitude on the relevance of different themes related to robotization. Students have been asked to grade importance of these five elements:

- 1) Theme 1 - Development trends and achievements in robotics.
- 2) Theme 2 - Impact of robotization on different aspects of company's business.
- 3) Theme 3 - Impact of technological progress and robotization on long-term government decisions (e.g. harmonizing economic development measures with global economic trends, advocating for updating study curriculums etc.).
- 4) Theme 4 - Impact of robotization on labor market (e.g. number of jobs available, working conditions, necessary education etc.).
- 5) Theme 5 - Different ethical and psychological issues related to significant technological progress, with special attention to greater use of robots in both private and professional life.

Third question is a simple YES/NO question. It is designed to check whether students, during their study (in formal classes, workshops, seminars, external lectures organized by their faculty etc.) had an opportunity to acquire knowledge on process of robotization and related subjects.

## 2.3. Results

Aim of research is to detect students' attitudes towards robotization in the context of their formal university education. Therefore, data have not been tested for possible differences in answers between students depending on their gender, age, university and level of education.<sup>8</sup> In other words, one of the ideas was to get an impression whether students believe it is necessary to extend existent curriculums in different courses, or form a new course, in a way that it deals with robotization and related subjects.

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<sup>8</sup> These differences between students are in the focus of other research project, still in progress.

Results of the analysis regarding first question show that almost a third of students in the sample believe that robotization process and subjects related are not relevant for students of economic faculties. Namely, thirty students (8,1%) believe that they should not waste their time on these issues while 93 students (25,1%) think they should acquire knowledge on their own, if they find the respective theme interesting. One hundred and eight students (29,1%) find it relevant, but not relevant enough to be extensively elaborated during official university study program. Seventy-two students (19,4%) think that official university study program should cover the respective theme more extensively while they should learn about this theme alone in a lesser extent. Forty students (10,8%) believe that students should acquire detail knowledge on the respective subject through the program of study/curriculum<sup>9</sup> while 28 students (7,5%) answered "I don't know". Data related to the second question, and five previously presented themes related to robotization, is presented in the Table 2. Students have been asked to grade how relevant is each theme for students of economic faculties.

Theme	Extremely irrelevant	Moderately irrelevant	Neither	Moderately relevant	Extremely relevant	I don't know	Did not respond to the question	Total
Theme 1	3,4 %	11,3 %	19,0 %	33,2 %	19,6 %	1,4 %	12,2 %	100 %
Theme 2	2,5 %	5,6 %	8,6 %	31,6 %	37,9 %	1,6 %	12,2 %	100 %
Theme 3	2,5 %	6,8 %	11,7 %	30,9 %	32,1 %	3,8 %	12,2 %	100 %
Theme 4	3,4 %	3,6 %	8,1 %	19,0 %	49,2 %	3,8 %	12,9 %	100 %
Theme 5	2,7 %	9,3 %	17,2 %	28,7 %	25,3 %	4,3 %	12,6 %	100 %

*Table 2: Analysis of attitudes towards themes related to robotization  
(Source: Author's calculations)*

Impact of robotization on different aspects of company's business (Theme 2) seems to be the most relevant for students of economic faculties since 69,5% of students graded this theme as moderately or extremely relevant. As expected, similar result (68,2%) is obtained for the impact of robotization on labour market important (Theme 4), while almost half of the respondents find the theme extremely relevant. Three other themes were not graded as high as two previously mentioned themes. Further, different ethical and psychological issues related to significant technological progress (Theme 5) seem to raise most doubts since this is the theme where majority of respondents stated that they don't know how relevant this theme is for future economists. Since students attitudes have been analysed with a multiple Likert questions, Cronbach's Alpha has been calculated<sup>10</sup> for five presented items (themes) in order to measure internal consistency. According to obtained results (Table 3) Cronbach's Alpha is 0,841 indicating high level of internal consistency, i.e. used scale is reliable.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,841	,843	5

*Table 3: Reliability Statistics  
(Source: Author's calculations)*

The third question revealed that only 55 students (12,4%) had an opportunity to acquire some knowledge on process of robotization and related subjects.

<sup>9</sup> Of course, these results would probably be different if students really needed to learn about another theme, i.e. robotization and related subjects. In that sense, their answers would probably be less honest just to avoid additional work during study.

<sup>10</sup> Response „I don't know“ has been coded as 0 denoting *respondent* missing data rather than *system* missing data since „I don't know“ is a legitimate response. In other words, *respondent missing* denotes intentionally treating a value as missing in comparison to an actual absence of data due to a skipped question. Remaining details such as inter-item correlation matrix, item statistics, scale statistics etc. can be obtained at request.

These research results show that significant number of students of economics, business and tourism in Croatia are not aware of the speed of technological progress and this should start up alarm on so many levels. However, students are not to blame, since 87,6% of students never had a chance to learn something about robotization and related subjects within the framework of their study process. Results obtained for Croatian students should be observed as an indicator for similar countries. In other words, Croatia is not highly developed country, but it is an EU member and there are many countries with similar economic past and present that might get similar results if the same research was performed on their students. Therefore, beside microeconomic impact of students' unawareness of ongoing technological changes, there is a valid concern that existing gap between Croatia (and similar countries) and highly developed countries might become even broader if future economic changes in form of robotization and its repercussions are not at least perceived, if not adequately responded to.

### **3. CONCLUSION**

For students it is easy to perceive obvious implications of any process, as well as when it comes to robotization, but those indirect and sometimes hard to perceive impacts have their economic and social consequences as well. In other words, if we observe it strictly from an economic perspective, we need to educate economists to use resources in a most efficient way, and if we are more altruistic then we need to educate responsible members of society. No matter what is their main driver, educators should prepare future economists to cope with issues that are known and with those that are yet to be detected in the future. As obtained results show, students perceive impact of robotization on different aspects of company's business and impact on labour market as important and these results are expected since these are the subjects that are the easiest to perceive. However, ethical and psychological issues related to technological progress seem to be less recognized as important and that is why students should be guided to broad their perspective while analysing this and any other theme. Further, policy makers should also perceive importance and complexity of changes caused by robotization process, and in this context, advocate updating of curriculums in other scientific fields beside those ranging from STEM area. Finally, presented findings might serve as an alarm for managers as well. Namely, if young educated people are not all aware of ongoing economic, technological and related social trends it is necessary to have it mind while making various business decisions ranging from hiring new employees to deciding in which country to invest. Presented issues are especially important when it comes to countries that are already late when it comes to robotization. Namely, in a broader sense, students are inputs that are going to be "implemented" in companies, government agencies etc. Their knowledge, ability to adapt, to predict possible changes and detect correlation between different actions has effects on both microeconomic and macroeconomic level. Therefore, this issue should not be neglected and its importance should be further addressed. Presented research serves as starting point while analysing economic repercussion of students' attitudes on robotization and it could be strengthened by expanding the sample to include students from additional countries (those more developed as well) in order to detect eventual differences in results. In other words, future work on this issue will cover a wider sample, which will consequently provide possibility to perform more complex econometric analysis. Additionally, along with cross-country analysis, implementing cross-time dimension could add to the field as well since it might detect whether these students became more aware of robotization process. The latter might provide interesting facts if we take into account period since the beginning of Covid-19 pandemic that enhanced and speeded up the use of technology in many different fields. Further, studying differences in students' personal characteristics that affect their attitudes toward robotization is another prolific research path.

## LITERATURE:

1. Allen, R.C. (2017). Lessons from history for the future of work. *Nature*, 550 (7676), 321-324. Retrieved from <https://www.nature.com/news/lessons-from-history-for-the-future-of-work-1.22825>.
2. Bartneck, C., Nomura, T., Kanda, T., Suzuki, T., Kennsuke, K. (2005). Cultural Differences in Attitudes Towards Robots. In *Proceedings of the AISB Symposium on Robot Companions: Hard Problems And Open Challenges In Human-Robot Interaction* (p. 1-4). Hatfield.
3. Bryson, J. J., Diamantis, M. E., Grant, T. D. (2017). Of, for, and by the people: the legal lacuna of synthetic persons. *Artificial Intelligence and Law*, 25, p. 273–291.
4. DeCanio, S. J. (2016). Robots and humans—complements or substitutes? *Journal of Macroeconomics*, 49, p. 280–291.
5. Decker, M., Fischer, M., Ott, I. (2017). Service Robotics and Human Labor: A first technology assessment of substitution and cooperation. *Robotics and Autonomous Systems*, 87, p. 348-354.
6. Demir, K. A., Cicibaş, H. (2017). The Next Industrial Revolution: Industry 5.0 and Discussions on Industry 4.0. In *Industry 4.0 from the MIS Perspective*, Peter Lang GmbH, Internationaler Verlag der Wissenschaften
7. Graetz G., Michaels, G. (2018). Robots at Work. *Review of Economics and Statistics*, 100 (5), p. 753-768.
8. Ivanov, S. H., Webster, C. (2017). Adoption of robots, artificial intelligence and service automation by travel, tourism. Paper presented at *International Scientific Conference Contemporary tourism – traditions and innovations*, Sofia University, Sofia, Bulgaria.
9. Manyika, J. et al. (2017). A future that works: Automation, employment, and productivity. *McKinsey Global Institute*. Retrieved from <https://www.mckinsey.com/~media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx>.
10. Moniz, A. B., Krings, B.-A. (2016). Robots Working with Humans or Humans Working with Robots? Searching for Social Dimensions in New Human-Robot Interaction in Industry. *Societies*, 6 (3), p. 1–23.
11. Muro, M., Andes, S. (2015) Robots Seem to Be Improving Productivity, Not Costing Jobs. *Harvard Business Review*. Retrieved from <https://hbr.org/2015/06/robots-seem-to-be-improving-productivity-not-costing-jobs>.
12. Nitto, H., Taniyama, D., Inagaki, H. (2017). Social Acceptance and Impact of Robots and Artificial Intelligence – Findings of Survey in Japan, the U.S. and Germany. NRI Papers No. 211, Nomura Research Institute. Retrieved from <https://www.nri.com/~media/Corporate/en/Files/PDF/knowledge/report/cc/papers/2017/np2017211.pdf?la=en&hash=A730998FD55F6D58DF95F3479E3B709FC8EF83F4>.
13. Sachs, J., & Kotlikoff, L. (2012). *Smart Machines and Long-Term Misery*. Working Paper No. 18629, National Bureau of Economic Research.
14. Solaiman, S.M. (2016). Corporate Manslaughter by Industrial Robots at Work: Who Should Go on Trial under the Principle of Common Law in Australia. *Journal of Law and Commerce*, 35(1), p. 21-54.
15. Šabanović S. (2010). Robots in society, society in robots: Mutual Shaping of Society and Technology as a Framework for Social Robot Design. *International Journal of Social Robotics*, 2 (4), p. 439-450.
16. The European Commission's priorities. (2019). *European Commission*. Retrieved from [https://ec.europa.eu/info/strategy/priorities-2019-2024\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024_en)

17. Višić, J. (2020). Robots and Economics: It Is More Complex Than It Seems. In *Bridging Microeconomics and Macroeconomics and the Effects on Economic Development and Growth* (ed. Kostis, Pantelis C.), Hershey, Pennsylvania: IGI Global, p. 173-187.
18. Yasser, M., Toyooki, N. (2015). Cultural Difference in Back-Imitation's Effect on the Perception of Robot's Imitative Performance. In *First International Workshop, Cultural Robotics 2015*, LNAI 9549, ed. J.T.K.V. Koh et al., p. 17-32.

## DETERMINING THE BENEFITS OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS: A LITERATURE REVIEW

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### ABSTRACT

*Enterprise Resource Planning (ERP) system is a powerful business application that integrates all company functions into a unified software solution that improves business processes and overall organizational efficiency. Due to its many benefits, companies are adopting ERP systems as they adapt to a changing and competitive market. The introduction of the ERP system brings together a vast amount of data from the entire company environment, thus contributing to a faster flow and availability of information, making the ERP system an important tool for monitoring business performance and providing information to management. Nowadays, traditional on-premise ERP systems are being overshadowed by the growing demand for cloud-based ERP systems due to lower costs and faster deployment. In this migration to cloud technology, the impact of the ubiquitous Digital Transformation of businesses is visible. Various reports on the global ERP market state that the value of this market has increased and is projected to grow at significant rates in the near future. However, according to EU data, the percentage of companies that have integrated their processes in the context of the implementation of the ERP package is not high, which gives the main motive for this paper. The aim of this paper is therefore to provide a systematic review of the literature from the previous decade on the impact of ERP systems on a company's operations, performance, strategy and organizational change. The reported benefits from selected papers are classified using a framework to provide an information base for decision makers who have not yet decided to implement an ERP system to support their business activities and for researchers in this field.*

**Keywords:** *Benefits, Digital Transformation, Enterprise Resource Planning (ERP) Systems, Literature Review*

### 1. INTRODUCTION

ERP systems are well-known information systems that have been present since the 1980s, when they emerged as an evolution of Manufacturing Requirements Planning (MRP) and Manufacturing Resource Planning (MRP II) extending it to other company systems such as finance, marketing, and HR (Duan et al., 2013; Handoko, 2015). The reason for their adoption by companies arose from the need to integrate information that was dispersed across a number of other systems, making it difficult to access (Neto & Neumann, 2020). Since then, they have become core business systems that enable employees and managers to retrieve their authorized information from a centralized and shared database system that connects the entire organization and allows information to be entered once and made available to all users (Handoko, 2015). This practice leads to a faster flow of information and an improvement in overall business efficiency. Nowadays, numerous changes are taking place in the expanding global ERP market, reflecting the development and adoption of digital technologies in companies. The market grew by 9% in 2019 and is expected to increase at a CAGR of over 8.1% over the next five years along with the adoption of trends such as Artificial intelligence and Machine learning (Gartner, 2019; Biel, 2020). Traditional on-premise ERP systems are being replaced by cloud-based ERP systems where vendors provide the infrastructure (software, storage, computing capacity, etc.) on a pay-per-use basis, enabling significant cost reduction and faster implementation (Duan et al., 2013).

According to the statistical office of the European Union, only 36% of companies are ERP users (Eurostat, 2019), which is surprising given the opportunities offered by the modern business environment, especially in developed European countries. This piece of information gives the main motive for this paper. Reliable data for other regions of the world were not found, and most surveys refer only to ERP users. There are studies that point out the many benefits of implementing an ERP system, but these can vary depending on the industry and the time that has elapsed since implementation. Also, the studies are mainly concerned with Critical Success Factors (CSFs) of implementation and less often with post-implementation impacts (Takei et al., 2014). Therefore, the main objective of this paper is to provide a systematic literature review focusing on the benefits of ERP systems in the post-implementation phase. Furthermore, the reported benefits have been classified using a comprehensive framework given by Shang & Saddon (2000) to provide decision makers with an information base and facilitate the decision on whether to adopt this technology in their company. This decision can be an important driver for the inevitable digital business transformation or even a key stage in the innovation process (Križanić et al., 2020; Ram et al., 2016). The rest of the paper is organized as follows: Section 2 describes the strategy for finding relevant papers in the Web of Science scientific database. Section 3 presents the search results and provides an overview of the classified benefits of ERP systems identified in the selected papers, while discussing the main findings. Finally, the conclusions and limitations of this paper along with recommendations for further elaboration of the topic are given in Section 4.

## 2. METHODOLOGY

To achieve the research objectives, a systematic literature review was conducted as mentioned earlier. Since the literature review involves the collection of relevant literature related to the topic, the analysis was carried out with the help of one of the most important scientific databases - Web of Science Core Collection. In order not to overlook any valuable papers, all available citation indexes were considered. With the intention of getting insights into the latest research in the field, the timespan was limited to papers published between 2012 and 2021. For the paper to be considered, it had to include the terms "enterprise resource planning" and benefit, impact, or effect in the title, abstract, or keywords to increase the likelihood of finding papers that addressed the impact of an ERP system that had already been implemented. In addition, the search was refined to result in articles and proceedings papers as relevant sources for this type of research (Webster & Watson, 2002). Finally, the search was also refined to find only papers that have open access so that the author would be able to analyze the entire text to derive the benefits and advantages of the ERP system implementation case (or cases) under study. Thereupon, the search strategy employed was as follows:

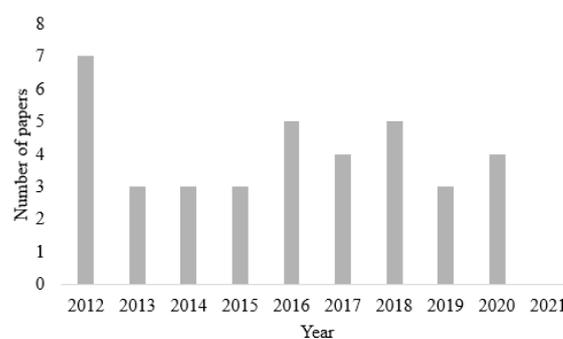
- [Web of Science Core Collection] ALL FIELDS ("enterprise resource planning") AND (benefit\* OR impact\* OR effect\*); Indexes: SCI-EXPANDED, SSCI, AHCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, IC; Refined by: PUBLICATION YEARS: 2012-2021, DOCUMENT TYPES: Articles AND Proceedings papers; Filtered by: Open Access.

The search was conducted during August 2021 and led to 233 papers in total. Further selection of papers followed two steps: (1) title, abstract, and keyword analysis and (2) full text analysis. After the first step, i.e. the evaluation of the title, abstract and keywords of all the papers found, those that did not deal with the ERP system in the post-implementation phase were excluded. Consequently, there were 57 papers left that met the set criteria, including 30 articles and 27 proceedings papers. In the second step of the selection process, the full text was analyzed and another 20 papers were rejected. These were, for example, papers that examined CSFs of implementation or user learning.

In addition, papers where post-implementation benefits could not be clearly demonstrated were excluded. Thus, only papers that clearly articulated the benefits of already implemented ERP systems were considered. Finally, the search yielded 37 significant papers, including 21 articles and 16 proceedings papers, that met all of the specified criteria and are discussed in more detail in the following sections.

### 3. PAPER ANALYSIS AND DISCUSSION

This section presents the results of the relevant papers obtained from the search. Of particular interest in the analysis are the year of publication, the country, the industry, and the benefits reported in each paper. All papers include one or more companies that have implemented an ERP system. For example, Neto & Neumann (2020) studied the impact of ERP system implementation on a medium-sized metallurgical company in Brazil, while Asamoah & Andoh-Baidoo (2018) conducted a survey of 115 companies from 13 different industries to gain insight into ERP implementation outcomes in sub-Saharan Africa. To gain insight into whether any of the years within the selected timespan have been fruitful on this topic, Figure 1 is presented. Figure 1 shows that 2012, the first year of the observed period, is the most fruitful year with 7 papers, which represents about 19% of the total number of papers. After that, the number of publications stagnates from 2013 to 2015 with 3 papers per year. In 2016, 2017 and 2018, the number of published papers increases slightly with 5, 4 and 5 papers respectively. The decrease in the number of publications continues in 2019 with 3 published papers, and in 2020 it increases slightly to 4 published papers. The current year 2021 is the only year in which no papers were published on this topic, but it should be noted that the search was conducted in August of the same year. Although probably due to the specificity of the objective of this paper, the trend of publishing papers cannot be observed, Schlichter & Kraemmergaard (2010) noted that academic knowledge on ERP systems has reached a certain level of maturity and that the number of publications has decreased. Later, Deloini et al. (2016) noted an increasing interest in "social or collaborative" evolution of ERP systems. Today, the interest in cloud-based ERP systems is quite noticeable.



*Figure 1: Number of papers per publication year (n=37)  
(Source: Authors' work)*

An overview of the countries where the observed ERP user companies are located can be found in Figure 2, which shows that a significant number of the observed papers examine the impact of ERP systems on companies in Malaysia and Indonesia. One possible reason for the greater number of studies in Malaysia could be that the Malaysian government has provided incentives for SMEs to adopt information systems in order to become more efficient and lead the country's post-crisis economic recovery (Kadir & Yatin, 2015; Kharuddin et al., 2010). Related to that, 2021 Allied Market Research reports that Asia-Pacific is an emerging ERP market that is expected to grow at high rates. Brazil and Poland follow with three papers each.

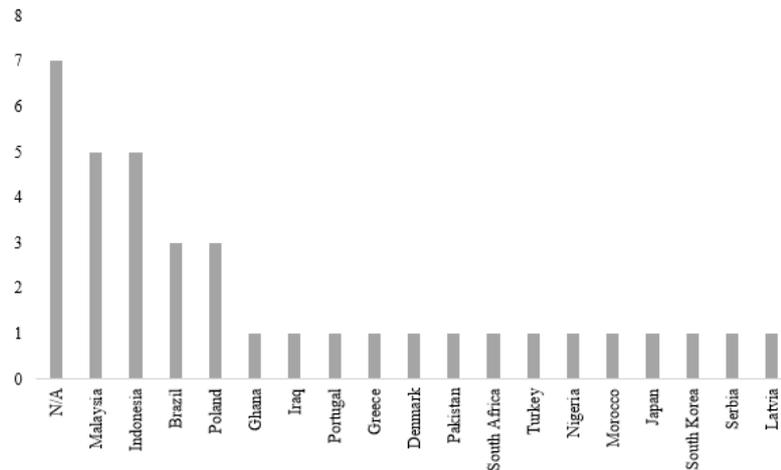


Figure 2: Number of published papers by country of observed ERP system usage (Source: Authors' work)

Regarding the industry, most of the papers (11) include multiple industries, which is not surprising since some authors of the selected papers have conducted surveys among ERP user companies or have conducted multiple case studies in different industries. In the remaining papers, it is clear that the use of ERP is not limited to a specific industry, but most of the cases are related to manufacturing (8), which is in line with several ERP market reports (Panorama, 2019; Panorama, 2020; Allied Market Research, 2021). It should be emphasized that the classification of industries in this paper is based on the NACE Rev.2 framework, which is the official European Communities framework for classifying economic activities. The use of other methods to classify industries could lead to different findings. Figure 3 also shows that industry could not be identified in 3 papers.

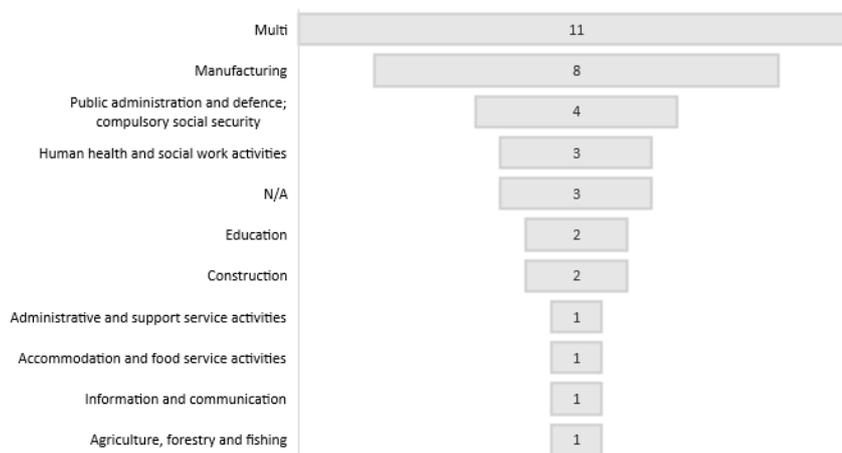


Figure 3: Industry by Nace Rev. 2 classification (Source: Authors' work)

Since the primary objective of this paper is to review the recent literature to determine the benefits of ERP system, an established classification framework has been chosen which has been found to be suitable. Shang & Seddon (2000) proposed a framework under which it is possible to classify the benefits of ERP systems into 5 main dimensions: Operational, Managerial, Strategic, IT Infrastructure and Organizational. The framework is presented in Table 1. For even more details on subdimensions see Shang & Saddon (2000).

Dimensions	Subdimensions
1.Operational	1.1 Cost reduction
	1.2 Cycle time reduction
	1.3 Productivity improvement
	1.4 Quality improvement
	1.5 Customer services improvement
2.Managerial	2.1 Better resource management
	2.2 Improved decision making and planning
	2.3 Performance improvement
3.Strategic	3.1 Support business growth
	3.2 Support business alliance
	3.3 Build business innovations
	3.4 Build cost leadership
	3.5 Generate product differentiation (including customization)
	3.6 Build external linkages (customers and suppliers)
4.IT infrastructure	4.1 Build business flexibility for current and future changes
	4.2 IT costs reduction
	4.3 Increased IT infrastructure capability
5.Organizational	5.1 Support organizational changes
	5.2 Facilitate business learning
	5.3 Empowerment
	5.4 Build common visions

*Table 1: Proposed ERP benefits framework  
(Source: Shang & Seddon, 2000)*

The primary findings from relevant papers on the benefits of ERP were analyzed following a comprehensive framework by Shang & Seddon (2000) and are summarized in Table 2 along with other useful information for each paper.

Ref.	*Country	Industry	Size	Method(s)	Benefits				
					*Op	M	S	IT	Org
Alomari et al. (2018)	Malaysia	Manufacturing	N/A	Survey; Structural Equation Modeling (SEM)			<input checked="" type="checkbox"/>		
Andrianto (2019)	Indonesia	Education	N/A	Descriptive evaluation of conducted interviews	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Asamoah & Andoh-Baidoo (2018)	Ghana	Multiple	N/A	Survey; SEM					<input checked="" type="checkbox"/>
Atrushi et al. (2020)	Iraq	Humanitarian organization	N/A	Interviews, observations; System Usability Scale	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Azevedo et al. (2019)	Portugal	Hospitality	N/A	Case study, interviews, survey	<input checked="" type="checkbox"/>				
Chatzoglou et al. (2016)	Greece	N/A	N/A	Structured questionnaire; SEM		<input checked="" type="checkbox"/>			
Christiansen et al. (2012)	Denmark	Navy	N/A	Case study, Observations, interviews, documentary research					<input checked="" type="checkbox"/>
Couto et al. (2017)	Brazil	Food industry	Large	A multiple case study, survey, interviews	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Couto et al. (2016)	N/A	Multiple	N/A	A multiple case study and questionnaire-guided-interviews	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Fernandez et al. (2017)	Malaysia	Public sector organizations	N/A	Survey; descriptive statistics	<input checked="" type="checkbox"/>				
Fiaz et al. (2018)	Pakistan	Healthcare	N/A	Questionnaire, Structural modeling	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Handoko et al. (2015)	Indonesia	Public companies	N/A	Survey; Serqual Equation Modeling		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Hart & Snaddon (2014)	South Africa	Manufacturing, mining and power generation	N/A	Structured interview questionnaire, survey; ABC analysis, Performance measurement system	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
Ilyas et al. (2016)	N/A	Healthcare	N/A	Questionnaire; Descriptive statistics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Ince et al. (2013)	Turkey	Multiple	N/A	Survey; SEM		<input checked="" type="checkbox"/>			
Isah et al. (2020)	Nigeria	Manufacturing	N/A	Semi-structured interviews, observations; Descriptive statistics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

Jalil et al. (2016)	Morocco	Multiple	Large	Questionnaire					<input checked="" type="checkbox"/>
Jinno et al. (2017)	Japan	Multiple	N/A	Japanese ERP users' survey; Covariance structure analysis	<input checked="" type="checkbox"/>				
Junior et al. (2019)	Brazil	Agriculture	Large	In-depth interviews; SEM	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Kadir & Yatin (2015)	Malaysia	Telecommunications	Large	Survey; SEM					<input checked="" type="checkbox"/>
Lee et al. (2018)	South Korea	Construction	Large	Comparing as-is and to-be process maps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Machen et al. (2016)	N/A	Manufacturing	N/A	Case study, interviews; Validation score method		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Malinić & Todorović (2012)	Serbia	Multiple industrial companies	Large	Survey; Descriptive statistics		<input checked="" type="checkbox"/>			
Mira et al. (2020)	Indonesia	Public institution	N/A	Case study, interviews, observations; contextual analysis etc.	<input checked="" type="checkbox"/>				
Murphy et al. (2020)	N/A	Education	Mid	Case study, survey, interviews; Job Characteristics Model framework		<input checked="" type="checkbox"/>			
Neto & Neumann (2020)	Brazil	Metal industry	Mid	Case study, documentary research, interviews, observations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Patalas- Maliszewska & Krebs (2014)	Poland	N/A	SMEs	Survey; Group Method of Data Handling	<input checked="" type="checkbox"/>				
Pawelozek (2015)	Poland	Furniture, metallurgic, chemical, foundry, services and other	N/A	Survey questionnaire; Cluster analysis	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Pohludka et al. (2018)	N/A	N/A	Large	Case study, expert survey, systemic analysis, peer review etc.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Sadrzadehrafiei et al. (2013)	N/A	Dry food packaging industry	N/A	Literature review	<input checked="" type="checkbox"/>				
Shatat & Udin (2012)	Malaysia	Manufacturing	Small, medium and large	Survey; Descriptive statistics, Multiple regression analysis			<input checked="" type="checkbox"/>		
Tambovcavs (2012)	Latvia	Manufacturing and construction	Mid	Case study with descriptions of observations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Tarigan et al. (2019)	Indonesia	Manufacturing	N/A	Questionnaires; SEM		<input checked="" type="checkbox"/>			
Uçaktürk & Villard (2013)	N/A	Multiple	N/A	Literature review		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Weli (2014)	Indonesia	Multiple	N/A	Survey; Partial Least Square method, End User's Satisfaction Computing Model		<input checked="" type="checkbox"/>			
Zainol et al. (2017)	Malaysia	Public sector agencies	N/A	Survey; Descriptive statistics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Zarzycka (2012)	Poland	Manufacturing	N/A	Field study, interviews and project documentation		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>

*\*Country - the country in which the observed companies are located, \*Op, M, S, IT, Org - Operational, Managerial, Strategic, IT infrastructure, and Organizational dimension*

*Table 2: An overview of the main findings of selected papers  
(Source: Authors' work, based of Shang & Seddon, 2000)*

Out of the total 37 papers, both Operational and Managerial benefits were reported in 21 papers. Strategic benefits were reported in 13 papers and Organizational benefits in 10 papers. A single paper reported the benefits of the IT infrastructure, which is consistent with Hart & Snaddon (2014) who found that "reduced IT operating costs" was the only benefit that did not show significant improvement. Similarly, in the Panoramas' 2020 ERP report, only 15% of respondents realized the expected benefit in the "updating technology" category. Regarding similar papers, another framework for classifying the benefits of ERP systems can be found in Sadrzadehrafiei et al. (2013), where they identified the benefits through a literature review and classified them into Strategic, Tactical and Operational benefits for each business function.

The number of papers reporting company size is relatively small, making it difficult to draw conclusions regarding the size. In general, the reasons for implementing an ERP system vary depending on the size of the company. According to (Software Path, 2021), small companies want to support growth, medium-sized companies want to increase efficiency, while large ones want more functionality. In terms of methodology, a multitude of different methods can be seen, but most relate to surveys and case studies with several supporting methods. These approaches seem appropriate given the specificities of companies, businesses and industries and the fact that certain benefits are difficult to capture or quantify. In general, changes in benefits identified in empirical research can be expected as many ERP market reports note a move away from legacy software as it lags behind in terms of the lack of advanced analytics required to analyze the growing amount of data collected. The Panoramas 2020 ERP report notes that 62% of companies surveyed are already using more advanced cloud-based ERP systems.

#### **4. CONCLUSION AND RECOMMENDATIONS**

This paper presents a review of the literature from the previous decade on the study of the beneficial effects of the ERP system in the post-implementation phase. In the search for relevant papers, most significant scientific database Web of Science Core Collection was used. The search resulted in 37 papers that met all the set criteria. Then, the sample of relevant papers was analyzed and their main findings regarding the benefits of ERP systems were classified using a framework that includes 5 different dimensions: Operational, Managerial, Strategic, IT Infrastructure and Organizational (Shang & Seddon, 2000). Most authors reported operational and strategic benefits of an ERP system, while a single paper reported benefits in the IT infrastructure dimension. The limitations of this literature review are different. Considering that 36% of ERP user companies refer only to companies in the European Union, it would be more informative to find reliable data on other regions of the world. Given the relatively small number of selected papers and the diversity of research objectives, focus and perspectives, it is impossible to draw general conclusions. In addition, the selected papers examined the impact of ERP systems in different industries and companies of different sizes. Also, this study focused exclusively on the beneficial effects of ERP system, but it is equally important to know the shortcomings because the implementation process is demanding, time consuming and expensive (Mira et al., 2020). It should also be noted that companies typically need 8 months after implementation to reap the benefits of the system (Shatat & Udin, 2012). Therefore, attention should be paid to what stage the system was at when the study was conducted. The results presented can serve as a basis for further research in terms of extending the search to other scientific databases. Future research could focus on analyzing a more uniform sample that takes into account industry, company size, and type of ERP system (on-premise, hosted, or cloud) to make the identified benefits clearer and more informative to interested practitioners and researchers. Such work could be useful to managers and decision makers in facilitating decisions about implementing an ERP system in their company. Likewise, the results of such research could help influence policies to incentivize investment in technology in specific sectors of the economy.

#### **LITERATURE:**

1. Aloini, D., Dulmin, R., Mininno, V., & Spagnesi, A. (2016). Benefits and barriers of social/collaborative ERP systems: a state of the art and research agenda. *Strengthening Information and Control Systems*, 171-184.
2. Alomari, I. A., Amir, A. M., Aziz, K. A., & Auzair, S. M. (2018). Effect of enterprise resource planning systems and forms of management control on firm's competitive advantage. *Asian Journal of Accounting and Governance*, 9, 87-98.

3. Andrianto, A. (2019). Impact of Enterprise Resource Planning (ERP) implementation on user performance: studies at University of Jember. In *Journal of Physics: Conference Series* (Vol. 1211, No. 1, p. 012040). IOP Publishing.
4. Asamoah, D., & Andoh-Baidoo, F. K. (2018). Antecedents and outcomes of extent of ERP systems implementation in the Sub-Saharan Africa context: A panoptic perspective. *Communications of the Association for information systems*, 42(1), 22.
5. Atrushi, D., Salah, R. M., & Ahmed, N. S. (2020). Integrating Enterprise Resource Planning with the Organizations' Management Structure for Decision-Making. *ARO-THE SCIENTIFIC JOURNAL OF KOYA UNIVERSITY*, 8(2), 34-39.
6. Azevedo, P. S., Romão, M., & Rebelo, E. (2012). Advantages, limitations and solutions in the use of ERP systems (enterprise resource planning)—A case study in the hospitality industry. *Procedia Technology*, 5, 264-272.
7. Biel, J. (2020). 50 Critical ERP Statistics: 2020 Market Trends, Data and Analysis. Retrieved 24.9.2021 from <https://www.netsuite.com/portal/resource/articles/erp/erp-statistics.shtml>
8. Chatzoglou, P., Chatzoudes, D., & Apostolopoulou, G. (2016). Antecedents and outcomes of ERP implementation success. In *2016 Federated Conference on Computer Science and Information Systems (FedCSIS)* (pp. 1253-1262). IEEE.
9. Christiansen, U., Kjærgaard, A., & Hartmann, R. K. (2012). Working in the shadows: Understanding ERP usage as complex responsive processes of conversations in the daily practices of a Special Operations Force. *Scandinavian Journal of Management*, 28(2), 173-184.
10. Costa, C. J., Ferreira, E., Bento, F., & Aparicio, M. (2016). Enterprise resource planning adoption and satisfaction determinants. *Computers in Human Behavior*, 63, 659-671.
11. Couto, C. A., de Oliveira Morais, M., Brejão, A. S., Vendrametto, O., & Neto, P. L. D. O. C. (2017). Managing Enterprise Resource System (ERP) and Balanced Scorecard (BSC) in Food Industry in Brazil-Food and Beverage Products: A Multiple Case Study. In *IFIP International Conference on Advances in Production Management Systems* (pp. 99-104). Springer, Cham.
12. Couto, C. A., Vendrametto, O., Neto, P. L. O. C., de Oliveira Morais, M., & Brejão, A. S. (2016). ERP Systems and BSC in the Operations Management: An Analysis of Results by Companies. In *IFIP International Conference on Advances in Production Management Systems* (pp. 478-484). Springer, Cham.
13. Duan, J., Faker, P., Fesak, A., & Stuart, T. (2013). Benefits and drawbacks of cloud-based versus traditional ERP systems. *Proceedings of the 2012-13 course on Advanced Resource Planning*.
14. Eurostat. Integration of internal processes (2021). Retrieved 25.9.2021 from [https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc\\_bde15dip&lang=en](https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_bde15dip&lang=en)
15. Fernandez, D., Zainol, Z., & Ahmad, H. (2017). The impacts of ERP systems on public sector organizations. *Procedia Computer Science*, 111, 31-36.
16. Fiaz, M., Ikram, A., & Ilyas, A. (2018). Enterprise Resource Planning Systems: Digitization of Healthcare Service Quality. *Administrative Sciences*, 8(3), 38.
17. Handoko, B. L., Aryanto, R., & So, I. G. (2015). The impact of enterprise resources system and supply chain practices on competitive advantage and firm performance: Case of Indonesian companies. *Procedia Computer Science*, 72, 122-128.
18. Hart, C. A., & Snaddon, D. R. (2014). The organisational performance impact of ERP systems on selected companies. *South African Journal of Industrial Engineering*, 25(1), 14-28.

19. Ilyas, A., Fiaz, M., & Tayyaba, A. (2016). Individual and organizational impact of enterprises resources planning system in healthcare sector. *Mehran University Research Journal of Engineering & Technology*, 35(3), 317-324.
20. Ince, H., Imamoglu, S. Z., Keskin, H., Akgun, A., & Efe, M. N. (2013). The impact of ERP systems and supply chain management practices on firm performance: case of Turkish companies. *Procedia-Social and Behavioral Sciences*, 99, 1124-1133.
21. Isah, Y., Shakantu, W., & Ibrahim, S. (2020). Utilisation of forecasting technology for improving construction logistics in Nigeria. *Acta Structilia*, 27(1), 1-28.
22. Jalil, F., Zaouia, A., & El Bouanani, R. (2016). The Impact of the Implementation of ERP Satisfaction of End Users in Major Moroccan Companies. In *ICEIS (1)* (pp. 188-195).
23. Jinno, H., Abe, H., & Iizuka, K. (2017). Consideration of ERP effectiveness: From the perspective of ERP implementation policy and operational effectiveness. *Information*, 8(1), 14.
24. Junior, C. H., Oliveira, T., Yanaze, M., & Spers, E. E. (2019). Performance, farmer perception, and the routinisation (RO) moderation on ERP post-implementation. *Heliyon*, 5(6), e01784.
25. Kadir, R. A., & Yatin, S. F. M. (2015). The benefits of implementing ERP system in telecommunications. *Procedia-Social and Behavioral Sciences*, 211, 1216-1222.
26. Kharuddin, S., Ashhari, Z. M., & Nassir, A. M. (2010). Information system and firms' performance: The case of Malaysian small medium enterprises. *International business research*, 3(4), 28.
27. Križanić, S., Šestanjan-Perić, T., & Kutnjak, A. ERP Solutions in Cloud Technologies as a Driver for Digital Transformation of Businesses. In *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)* (pp. 1274-1279). IEEE.
28. Lee, C., Lee, C., & Lee, E. B. (2018). A method for analyzing the effect of implementing an enterprise system based on the complexity of activities. *Journal of Civil Engineering and Management*, 24(7), 526-536.
29. Machen, B., Hosseini, M. R., Wood, A., & Bakhshi, J. (2016). An Investigation into using SAP-PS as a Multidimensional Project Control System (MPCS). *International Journal of Enterprise Information Systems (IJEIS)*, 12(2), 66-81.
30. Malinić, S., & Todorović, M. (2012). How does management accounting change under the influence of ERP?. *Economic research-Ekonomska istraživanja*, 25(3), 722-751.
31. Mira, I. G., Lubis, M., Puspitasari, W., & Lubis, A. R. (2020). ERP system implementation with accounting modules in national amil zakat institutions. In *IOP Conference Series: Materials Science and Engineering* (Vol. 801, No. 1, p. 012117). IOP Publishing.
32. Murphy, G. D., Chang, A., & Unsworth, K. (2012). Differential effects of ERP systems on user outcomes—a longitudinal investigation. *New Technology, Work and Employment*, 27(2), 147-162.
33. Neto, A. A., Neumann, C. (2020). Implementation of Enterprise Resource Planning in a metal industry with differentiated product lines. *Sistemas & Gestão*, 15(2), 143-155.
34. Patalas-Maliszewska, J., & Krebs, I. (2014). The impact of enterprises systems on sales performance: a study of ERP system implementations in Polish SMES. *Management and Production Engineering Review*, 5.
35. Pawełoszek, I. (2015). Approach to analysis and assessment of ERP system. A software vendor's perspective. In *2015 Federated Conference on Computer Science and Information Systems (FedCSIS)* (pp. 1415-1426). IEEE.
36. Pohludka, M., Stverkova, H., & Ślusarczyk, B. (2018). Implementation and unification of the ERP system in a global company as a strategic decision for sustainable entrepreneurship. *Sustainability*, 10(8), 2916.

37. Sadrzadehrafiei, S., Chofreh, A. G., Hosseini, N. K., & Sulaiman, R. (2013). The benefits of enterprise resource planning (ERP) system implementation in dry food packaging industry. *Procedia Technology*, 11, 220-226.
38. Ram, J., Corkindale, D., & Tagg, R. (2016). Empirical validation of a performance-based innovation process model: a case of ERP. *Journal of Computer Information Systems*, 56(2), 116-126.
39. Schlichter, B. R., & Kraemmergaard, P. (2010). A comprehensive literature review of the ERP research field over a decade. *Journal of Enterprise Information Management*.
40. Shang, S., & Seddon, P. B. (2000). A comprehensive framework for classifying the benefits of ERP systems. *AMCIS 2000 proceedings*, Paper 39.
41. Shatat, A. S., & Udin, Z. M. (2012). The relationship between ERP system and supply chain management performance in Malaysian manufacturing companies. *Journal of Enterprise Information Management*, 25(6), 576-+
42. Takei, Y., Nagase, R., & Izuka, K. (2014). Consideration on Achieving Effectiveness Using ERP System: From the Analysis of Satisfaction Structure. In *International Symposium on Business and Management proceedings* (pp. 1035-1055).
43. Tambovcevs, A. (2012). ERP system implementation in Latvian manufacturing and construction company. *Technological and Economic Development of Economy*, 18(1), 67-83
44. Tarigan, Z. J. H., Suprpto, W., & Basana, S. R. (2019). The effect of procedure change, TQM and ERP implementation to company performance on manufacturing industries. In *IOP Conference Series: Materials Science and Engineering* (Vol. 473, No. 1, p. 012052). IOP Publishing.
45. Uçaktürk, A., & Villard, M. (2013). The effects of management information and ERP systems on strategic knowledge management and decision-making. *Procedia-Social and Behavioral Sciences*, 99, 1035-1043.
46. Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, 26(2), 3.
47. Weli, W. (2014). Manager Satisfaction in Using the Enterprise Resource Planning (ERP) System and Managerial Performance. *Australasian Journal of Information Systems*, 18(3), 119-135.
48. Zainol, Z., Fernandez, D., & Ahmad, H. (2017). Public sector accountants' opinion on impact of a new enterprise system. *Procedia Computer Science*, 124, 247-254.
49. Zarzycka, E. (2012). Management Accountant's Role and Functions in the Enterprise Resource Planning Environment-Author's Own Research into Enterprises in Poland. *COMPARATIVE ECONOMIC RESEARCH-CENTRAL AND EASTERN EUROPE*, 15(2), 47-64

## THE OVERVIEW OF THE IMPACT OF THE EU MEMBERSHIP ON CROATIA WITH LESSONS THAT COULD BE USED BY THE WESTERN BALKANS STATES IN THE POST-COVID19 ERA

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### **ABSTRACT**

*The Western Balkans states have since 2003 been promised a European Union (EU) integration perspective. Nevertheless, the economic situation in the Western Balkans is far from optimistic, with slim prospects for a significant economic development. The demographic situation is showing either accelerating decrease or stagnation of the population, as well as rapid demographic ageing. It is not probable that the investment boom and GDP growth experienced in the “New Central Europe” in the pre-accession period will be repeated. The emigration from the Western Balkans states will most likely increase due to the gradual opening of the labour market in the EU member states. What could be the major implications of the accession to the EU for the Western Balkans states? The economic results and their negative demographic impacts, which have significantly annulled the positive effects of the EU membership for Croatia, are presented, with predictions what might occur in the Western Balkans, if socio-economic development is not comprehensively encouraged and financed by the EU. In the first half of the 2020, the Croatian presidency, considering the geographic proximity, as well as historical experience and contemporary ties of Croatia to the region, continued to put the issue high on the EU’s agenda. However, the COVID-19 pandemic has put aside many priorities of the EU. Therefore, it is necessary to study the major implications of recent difficulties for the Western Balkans states.*

**Keywords:** *Croatia, the Western Balkans, the European Union (the EU), the 2020 Croatian presidency of the EU, demographic indicators, economic performance, COVID-19 pandemic*

### **1. INTRODUCTION**

The Western Balkans states have a European perspective, stated in various documents of the EU, the most important recent one the Credible Engagement Western Balkans Strategy from February 2018. However, the economic situation in the Western Balkans is not optimistic, with bleak prospects for rapid economic development. The GDP per capita of the “most developed” Western Balkans state (Montenegro) is still lower than the GDP of Bulgaria, the least developed EU member state. It is not probable that the investment boom and GDP growth experienced in the Visegrad Four and the Baltic States in the pre-accession period will be repeated. Demographic challenges in some of the Western Balkans states are staggering (as well as in the Baltic States, Romania, Bulgaria, Hungary, and Croatia), with Albania, Bosnia-Herzegovina, Kosovo, and Serbia losing 12.8, 26.3, 11.6, and 9.7 percent of their population, from the respective peak years until the end of 2018, according to the World Bank estimates. With the possible accession to the EU, the emigration from all Western Balkans states would most likely increase; hence gradual or instant opening of the EU labour market has been the most significant factor influencing the demographic characteristics of post-communist EU members. According to *Emerging Europe* portal “In Central Asia and Eastern Europe, slowing activity in Russia could reduce remittances, which account for an important portion of income in countries including Moldova and Ukraine. In Europe and Central Asia, worsening demographic trends – including the shrinking size of the working-age population – add to these challenges.” More than just sheer numbers on population loss, the data on “brain drain” show even bleaker perspective for most of the Central European post-socialist states as well as for the Western

Balkans states: “55 per cent of people with higher education from Bosnia and Herzegovina live abroad, and this figure is over 40 per cent of the educated populations of Armenians and Latvians, and close to 40 per cent for Albania, Moldova, North Macedonia and Romania.”<sup>1</sup> Therefore, demographic issues will haunt the Western Balkans in the long-term period, same as they haunt post-socialist EU members. It is therefore necessary to study the experience of Croatia, as the most recent EU member state, regarding demographic and economic issues after its accession to the EU, as a precursor for the Western Balkans states. As for the “purely” political and strategic issues, the Western Balkans are of less relevance to the EU than they were 10 or 15 years ago, due to internal problems of the EU and the “enlargement fatigue”. The Western Balkans are at a certain dividing line, whereby it can either really and not only declaratively continue its path towards European integration or have only a declarative perspective, and in reality, be in a similar position to the Eastern Partnership countries, with developed relations with the EU, but without a real membership perspective. The arguments for the EU membership based solely on the fact that if the EU does not admit the Western Balkans Member States, external players will exert greater influence are not correct, since the impacts already exist and the Western Balkan Member States are not strategically important enough to just for that reason admitted to membership. NATO is either present through full membership (Albania, Montenegro, North Macedonia) or otherwise in almost all Western Balkan countries except Serbia, and NATO members completely surround other Western Balkan states that are not (yet) its member states. Therefore, the spread of possible conflicts and the impact of outside influence are still limited. The Western Balkans today are much more threatened by the implosion and the fall into irrelevance for Europe (this has already happened in a certain way) than by the spread of conflict across the whole or even less likely, outside the region.

## **2. THE EU MEMBERSHIP EXPERIENCE OF CROATIA – THE MOST RECENT EU MEMBER STATE**

Before analysing the current data, a longer historical perspective regarding the economic performance, although not fully relevant for the present situation, has be introduced. In the year 1990, the last year before the War and the start of the privatization process, Croatia was (then still a federal unit of the former Yugoslavia, as Slovenia), the second most developed socialist state, immediately after Slovenia. As the statistical data shows, for Central European post-socialist states, approaching the EU meant an imminent, significant increase in the GDP per capita, FDI and other important economic indicators. However, this integration was done in a different period, before the Great Recession. Substantial problems with the integration to the EU surfaced in the cases of Bulgaria and Romania, which were put under close monitoring due to low transparency of EU funding spending. Due to previous experience and increased enlargement fatigue, Croatia faced higher criteria for membership, and all its chapters had benchmarks.

*Table following on the next page*

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<sup>1</sup> <https://emerging-europe.com/business/migration-raises-brain-drain-concerns-for-many-cee-countries-as-regional-economy-slows/>.

*Table 1: GNI per capita, PPP (constant 2011 international \$) of the post-socialist EU member states and the Western Balkans states in 2008, 2013 and 2018*

State	2008	2013	2018
<b>Bulgaria</b>	14 811	15 597	19 644
<b>Croatia</b>	21 983	19 835	23 316
<b>Czech Republic</b>	27 438	26 667	31 533
<b>Estonia</b>	24 472	25 199	28 783 (2017)
<b>Hungary</b>	22 196	22 529	27 335
<b>Latvia</b>	21 225	21 532	25 753
<b>Lithuania</b>	22 769	24 573	30 158
<b>Poland</b>	20 031	22 768	27 548
<b>Romania</b>	18 479	18 654	23 900
<b>Slovak Republic</b>	24 740	26 192	29 234 (2017)
<b>Slovenia</b>	30 271	27 411	32 206
<b>Albania</b>	9 192	10 669	11 826 (2017)
<b>Bosnia and Herzegovina</b>	10 227	10 616	12 675
<b>Kosovo</b>	7 856	8 789	10 254
<b>Montenegro</b>	14 785	14 848	17 544
<b>North Macedonia</b>	10 907	11 589	12 874
<b>Serbia</b>	13 173	13 634	15 216

*Source of data: World Bank Country Indicators,  
<https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.KD?end=2018&start=2008>  
(December 22<sup>nd</sup>, 2019)*

The 1990ies War (in Croatia officially knows as the Homeland War) and the difficulties in its aftermath, the loss of traditional markets, and a very badly managed transition (especially the privatization of state-owned property) caused the Croatian GDP per capita to decrease significantly in the 1990s. In 1999, Croatia suffered a recession, as the only European state that was affected by this economic phenomenon, so common in Europe after 2008. The year 1999 exposed poorly managed economy, already, even only a couple of years after the end of the War, which has crippled Croatian tourism, strongly dependent on tourism. The Croatian tourism was heavily negatively affected by the NATO's bombing action against then Yugoslavia (Serbia and Montenegro). In 2000, GDP per capita still did not reach its 1990 level. Nevertheless, from 2000 to 2008, Croatia succeeded in raising its GDP per capita 3.2 times (measured in current US\$). Since 2009, Croatia has suffered the longest period of recession, lasting six years, of all EU member states (except Greece), and its GDP has fallen over 13 percent. Croatia has not been able to pursue with the necessary reforms and make its economy more competitive. All these developments have contributed to the feeling that the EU membership has not been used enough when it comes to Croatia. In an interview given in June 2018, Stubbs (2018) states that Croatian citizens have not benefited from the EU membership, supporting the claim by concrete economic indicators. In 2013, Croatia's percentage of average EU GDP was 60%, and in 2016, it was exactly the same, 60%. As for income for the person exactly in the 50<sup>th</sup> percentile in terms of income, which is in euro and adjusted according to purchasing power – in 2013, annual median was 5 078 euros, and in 2016 it was 5 726 euros. However, in 2010, it was 5 810 euros. Stubbs also recognizes the effects of massive emigration. This process threatens the future sustainability of social subsystems and causes problems at the labour market in dozens of economic activities. Croatia has still not been recognized as a desirable country for temporary migrants who would like to work here.

Confirming this unfortunate Croatia's lagging behind in economic terms is the fact that already in 2018, Romania surpassed Croatia in GDP per capita adjusted for the Purchasing Power Parity (PPP), leaving in this category only Bulgaria behind Croatia among the EU member states<sup>2</sup>. Differences in the levels of economic development between the regions of Croatia are increasing, with the peripherisation<sup>3</sup> processes having strong influence. This peripherisation of rural, underdeveloped areas is in the case of Croatia, as in most other post-socialist EU member states, connected with the process of social exclusion. The transformation process in the new EU member states has resulted in an extremely polarized regional development where the capital regions have more or less caught up economically with Western Europe while the rural peripheries stagnate on a low level or fall even further behind (Schön, 2006: 388-389). Regions located along the western borders or close to larger regional centres are in a better situation but economically still far behind the respective capital cities. The socio-economic divide between the metropolitan and rural regions which chiefly arises from three factors- availability of infrastructure, economic structure and availability of skilled labour forces- dates back to the socialist era and can hence be interpreted as a positive or negative continuity. The data regarding the second-level statistical, NUTS2 regions of the EU show that both statistical regions of Croatia are still lagging very much behind the EU-27 average, with the Continental Croatia having 62 percent of the EU-27 GDP per capita (due to the fact that the capital city is included – it is debatable whether it should be a separate NUTS2 region), and the region of Adriatic Croatia having 59 percent. However, the regional differences at the NUTS3 level (in Croatia, NUTS3 level regions are counties) show the difference in the level of GDP per capita between capital city and two counties in the eastern part of Croatia, Brodsko-Posavska and Vukovarsko-Srijemska of approximately 3.1 to 1. Besides the capital city of Zagreb, which is disproportionately large and attracts more educated and skilled workforce, comprising better-paid jobs and state administration (this trend is especially accentuated in small, low and middle developed states), only some parts of Croatia are showing the economic trends that can be described as positive: Northern or North-western Croatia (adjacent to the borders with Slovenia and Hungary, respectively) and Western Croatia (Istra and Hrvatsko primorje regions). Eastern Croatia (Slavonia) is especially faced with rapid depopulation and economic depression. The capital city Zagreb is no more faced with high levels of immigrants, hence the people from backward and depressed regions of Croatia, as well as Croatian citizens from Bosnia-Herzegovina have begun to move directly to other, more developed EU member states (particularly Germany and Ireland). The areas closer to the borders with Bosnia-Herzegovina and Serbia, respectively, are becoming even more sparsely populated. We can conclude that the demographic basin, producing immigration to the more prosperous parts of Croatia has dried out, exposing the real scale of demographic disaster. The cost of public administration in 2015 (state and local) and servicing of public debt in Croatia is the second highest in the EU (EU average: 13.1%): Cyprus 25%, Croatia 19.5%, Latvia 14%, Slovenia 13.6%, Romania 13.5%, Lithuania 12.5%, Poland 11.8%, Czech Republic 10.3%, and Bulgaria 7.8%. High income EU member states show the results that are close to the EU average: Finland 14.9%, Sweden 14.1%, Ireland 13.9%, Denmark 13.5%, Germany 13.5%, and Austria 13.3%<sup>4</sup>. A country with little more than four million people, and with an economy that produced a GDP (current US\$, World Bank data) of about 61 billion US dollars (World Bank Data) in 2018, has more than 570 administrative divisions – 127 cities, 429 municipalities, and 20 counties.

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<sup>2</sup> <https://arhivanalitika.hr/blog/eurostat-potvrديو-rumunjska-ispred-hrvatske-samo-bugarska-ostaje/>.

<sup>3</sup> Keim (2006: 3-4) defines "peripheralization" as the gradual weakening and/or uncoupling of the socio-spatial development in a given region vis-U-vis the dominant process of centralization. Hence, peripheralization is not an independent process but a logical consequence of centralization that leads to a concentration of people, economic power and infrastructure in metropolitan regions at the expense of other, mostly rural, regions.

<sup>4</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Government\\_expenditure\\_by\\_function\\_%E2%80%93\\_COFOG](http://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_by_function_%E2%80%93_COFOG).

Concurrently, local levels of government can keep less than 20 percent of the taxes collected, making Croatia a very centralized country, albeit with a highly atomized territorial-political structure. It seems that the EU may have recognised the problem in its Strategy for the Western Balkans (EU Strategy, 2018: 5), which points out the unsatisfactory level of competitiveness of the economies, which are not functioning market economies at the moment, with a high influence of politics, that does not let the private sector to flourish. A compensatory mechanism which could protect, up to a point the Western Balkans states' economies from the shock that will very likely be caused by the opening to the EU market might be the Regional Economic Area, as "an essential step for furthering economic integration between the EU and the Western Balkans and boosting the attractiveness of the regional market" (EU Strategy, 2018: 12). Goals besides Regional Economic Area, such as "strengthening the EU-region trade, stimulating private sector, start-ups and economic links with diaspora" (EU Strategy, 2018: 12), also have to be noted, as well as "a new reinforced social dimension for the Western Balkans, the Commission will work to support employment and social policy in the region", in accordance with the European Pillar of Social Rights (EU Strategy, 2018: 13). Almost five years have passed since Croatia accessed the EU (July 1<sup>st</sup>, 2013). High expectations that have arisen long before the accession have given way to reality, especially after the outbreak of the economic crisis. Croatia has experienced six years of recession (2009-2014), the longest of all EU member states. Croatia is currently experiencing high levels of workforce emigration towards the EU countries (Germany, Ireland, Austria etc.).

*Table 2: The population, total population change, and net migration of the post-socialist EU member states and the Western Balkans countries 1988-2019*

Post-socialist EU member state	Population, thousands, 2019	Population, thousands (peak year)	Total demographic loss, peak year – end of 2019, thousands (percentage)	Net migration, 1988-end of 2017
<b>Bulgaria</b>	6 976	8 981 (1988)	-2 005 (-22.3)	-732 034
<b>Croatia</b>	4 068	4 780 (1990)	-712 (-14.9)	-457 563
<b>Czech Republic</b>	10 670	/	/	604 343
<b>Estonia</b>	1 327	1 569 (1990)	-242 (-15.4)	-181 700
<b>Hungary</b>	9 770	10 712 (1981)	-942 (-8.8)	355 278
<b>Latvia</b>	1 913	2 667 (1989)	-754 (-28.2)	-529 670
<b>Lithuania</b>	2 787	3 704 (1991)	-917 (-24.8)	-779 379
<b>Poland</b>	37 971	38 660 (1999)	-689 (-1.8)	-878 100
<b>Romania</b>	19 357	23 202 (1990)	-3 845 (-16.6)	-3 192 850
<b>Slovak Republic</b>	5 454	/	/	16 806
<b>Slovenia</b>	2 088	/	/	70 944
<b>Albania</b>	2 854	3 287 (1990)	-433 (-13.2)	-1 220 373
<b>Bosnia and Herzegovina</b>	3 301	4 508 (1988)	-1 207 (-26.8)	-1 220 310
<b>Kosovo</b>	1 794	2 086 (1997)	-292 (-14.0)	n/a
<b>Montenegro</b>	622	/	/	-58 431
<b>North Macedonia</b>	2 083	/	/	-145 928
<b>Serbia</b>	6 945	7 735 (1994)	-790 (-10.2)	-880 269

*Source of data: World Bank Country Indicators*

From Table 2, it is visible that more than half of the post-communist EU members are facing serious demographic challenges, with the Western Balkans states facing mostly similar

challenges, with North Macedonia and Montenegro as the hitherto exceptions. In the Baltic States, the influence of de facto decolonization, resulting in the beginning of the return of significant portions of Russian populations back to Russia. Besides these processes that are a product of historical events and had nothing to do with the accession to the EU, gradual or instant opening of the EU labour market (depending on the decisions of the particular EU member states after the EU enlargements of 2004, 2007, and 2013, respectively) has been the most significant factor that influences the demographic characteristics. With the possible future accession to the EU, the emigration from all Western Balkans states will probably increase, if these states will follow the path of the post-communist EU members, hence gradual or instant opening of the EU labour market has been the most significant factor that influences the demographic characteristics of the post-communist EU members. The second factor with primarily economic implications (besides the EU accession) that has negatively influenced the demographics of the analysed countries was the Great Recession that hit the Baltic States the worst (in the most challenging year for the economies, 2009) and Croatia the longest (six years of continuous recession). When it comes to Croatia, in the first phase of the gradual EU labour market opening-related outmigration, mostly the unemployed migrated, many of whom had their bank accounts blocked and were undergoing distraints or even foreclosures. Most of them successfully eluded distraints by moving from Croatia, mostly to Germany and Ireland. The introduction of private distraint enforcers was successfully abolished when the new centre-left government took power in the late 2011. However, disproportionately high expenses of the procedure of account distraints were kept, hence the lobby of notaries is very strong. The demographic exodus from Bulgaria, Croatia, Romania, and the Baltic States should be used as a precursor and a warning what the EU should try to reduce with compensatory mechanisms – prolonging the process of freedom of movement of workforce, and investing in the Western Balkans states' economies through FDI. The demographic exodus from the Western Balkans, present and future, is a reality, which will only be more serious, considering the region's economic stagnation and backwardness, compared to the EU (even to the most its post-socialist members) and the lower level of wages, higher level of corruption and nepotism (clientelism), and social insecurity (all these parameters have to be compared with the EU in general and especially its most developed member states). Compensatory mechanisms for avoiding a total demographic disaster and thereby giving a region at least some economic and in general social perspective, provided by the EU in pre-accession and post-accession period, should be comprehensive, rationalized and rational, targeting the most vulnerable groups in the societies and giving them incentives to stay in their home countries. The Western Balkans states are clearly not capable, nor will they likely be, to perform these measures alone, and it can be fairly said that the experience of the Baltic States, as well as Croatia, Bulgaria, and Romania, shows that these countries, most of which are small or medium-sized (except Romania) and vulnerable, were and still are unable to cope with the demographic exodus. The role of compensatory mechanisms, in the economic sphere, should be exploited, however, the FDI and trade will not help, hence these do not create better living conditions for the majority of the population, although these significantly improve overall economic indicators. Namely, out of total 634 836 EU citizens that have immigrated to Germany in 2017, 491 494 (77.4 percent) have originated from post-communist members, with Romania (179 838, or 0.92% of its total population in 2017), Poland (118 024, 0.31%), Bulgaria (66 790, 0.95%), Croatia (50 283, 1.23%) and Hungary (40 014, 0.41%) as the main originating countries. However, if we compare these numbers to the overall population of the afore-mentioned countries, it is visible that Croatia is the EU member state that is still most affected by immigration to Germany, with the total number of emigrants in 2014 doubling compared to 2013 (Croatia has been EU member since July 1<sup>st</sup>, 2013). The statistics show that Germany attracts the migrants from the post-socialist members of the EU, whose number has since 2010 tripled.

Considering the total population of Poland compared to other post-communist EU members, it is not surprising that the immigrants originating from Poland still make up for the largest total number of EU-originating immigrants to Germany. The number of immigrants from Croatia is rapidly increasing since 2013 and the invocation of the freedom of workforce movement. The second important moment that influenced the increase of Croatian immigration to Germany, besides poor economic situation in Croatia, is the fact that Germany abolished all restrictions for Croatian citizens after only two years of transitional period (July 2015). After five years of Croatia's membership in the EU, Austria is the only EU member state still having restriction on employment of Croatian citizens. Nevertheless, these expire on June 30<sup>th</sup>, 2020, so an additional outflow of Croatian citizens to Austria can be expected after this date, due to geographical proximity, as well as historical and present economic ties.

### **3. THE VULNERABILITY OF THE CROATIAN ECONOMY BESIDES SMALLNESS AND LOW COMPETITIVENESS: THE OVERDEPENDENCE ON TOURISM**

The overexposure to tourism, mainly the 3S tourism (sun-sea-sand) tourism, due to poor performance in other sectors of economic activity, mainly dependent on the guests from the EU/EEA and Switzerland, plus other important emitting tourist countries, such as Japan, Russia, China, and the U.S.A. has turned Croatia into an economy that is the second most tourism dependent in the EU (behind Malta). Various statistics exist, and one of those that measures the dependence on "travel industry" of countries puts Croatia on the second place in the World with 15% dependence, with Malta at the first place (15% as well). Thailand is at the third place with 9.3%, Jamaica fourth (8.9%) and Iceland fifth (8.2%)<sup>5</sup>. Other statistic puts the dependence of Croatian economy (2016) on 18% of the GDP, ahead of Malta (14.5%) and Cyprus (13.2%), making Croatia the most tourism dependent economy in the EU (and probably in Europe, if we exclude microstates)<sup>6</sup>. To compare, the country with a 20 percent dependence of its economy on tourism is The Gambia. It has to be noted that very small economies of the Caribbean, Pacific and Indian Ocean, respectively, were not included. Nevertheless, Croatia is the biggest European (and EU) state (by population) so heavily dependent on tourism, hence Malta has about 450 thousand inhabitants, and Iceland about 330 thousand, compared to roughly four million in Croatia. As we are aware of the negativities of small economies that, besides other features, usually include vulnerability to external shocks (albeit resilience as well, especially in some cases), less opportunities to diversify the economy, smaller workforce base, small resource base, the overexposure to tourism activities based on the arrivals of foreign tourists makes an economy very vulnerable (Kurecic and Kokotovic, 2017), which Croatia experienced in the 1990ies due to the War and NATO bombings of Serbia, respectively, as well as during the Great Recession in most of the developed economies of Europe (2009-2014). Therefore, 2015 was the first year of the recovery of Croatian tourism (and the economy in general) from the effects of external shock caused by the recession. The countries heavily dependent on tourism tend to share some characteristics of resource extraction dependent countries – masses of poor people and rentiers that live well of tourism. It has also become an increasing trend in the coastal part of Croatia, which is by far the most important tourist region of Croatia. Social inequalities are increasing in the coastal and island parts of Croatia, creating tensions in small communities along the coast and on the isles, as well as in the cities (Dubrovnik, Split etc.). This overexposure to tourism, besides showing the development of tourism, means that other sectors of the economy are mostly stagnating or declining.

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<sup>5</sup> <https://howmuch.net/articles/travel-tourism-economy-2017>.

<sup>6</sup> <http://www.total-croatia-news.com/item/14122-croatia-among-top-counties-by-share-of-tourism-in-gdp>.

The recent epidemic of the COVID-19 again showed the vulnerability of countries dependent on tourism, with booking for the spring and early summer 2020 tourist season heavily affected, thereby creating huge problems for the economy, especially in the tourism, agriculture, transport sectors, as well as for the country's budget and local budgets.

#### **4. POSSIBLE DEVELOPMENT OPPORTUNITIES: THE PROSPECTS FOR CROATIA BECOMING AN ENERGY TRANSPORTATION HUB**

Due to all US geo-economic and geopolitical interests (hence these are inseparable), stopping the construction of the Nord Stream 2 Pipeline remains the primary objective, parallel with the construction of the LNG Terminal on Krk and the building of gas pipeline interconnectors among the countries of the region. The dependence on imported energy of Central and South-eastern Europe is a reality that will certainly be a given in the foreseeable future. In the issues of energy, the countries of the region are still heavily dependent on Russia. Some of them have increased their efforts diversify their gas supply through floating LNG terminals and through building reverse flow pipelines and interconnectors. The dependence on gas supply from Russia does not represent a key issue that is making the most dependent countries most willing to comply, and vice versa. The answer to this "aberration" lies in the determinants of their geographical position and heritage, which cannot be changed or not even slightly modified (history and geography). Therefore, the Baltic States, despite being heavily dependent on gas supplies from Russia, are the ones (together with Poland) that are supporting the harshest stance towards the Russian actions in Ukraine as well as against its provocations in the Baltic region. Because of the falling and then stagnating prices of crude oil and natural gas as well as the increasing efforts on interconnections between the particular regions and the continuous attempts towards diversification of gas supply, Russia cannot use the dependence on Russian gas supply of the Central and Southeast European countries as the means for blackmail, in a sense that it was able to pursue this agenda (especially against Ukraine) in previous periods. At present, the one who pays will get the gas, and most disputes that take place are about the price of gas. Although several projects have been completed or are near completion (interconnectors and reverse gas pipelines) that are intended to make the interchange of gas between the countries of the Initiative and other interested countries of the Western Balkans, such as Serbia, possible, thereby severely decreasing the reliance on only one supplier (Gazprom) and even more, one supply route (from Russia, mostly through Ukraine – Družba pipeline, or Belarus) to the countries of Central and South-eastern Europe, the dependence on gas imports from Russia, albeit in a lesser degree as time goes by, is a fact that will be present for decades. The Baltic States, almost totally dependent on gas supplies from Russia, are actively working on reducing the dependence on gas supply from Russia, by bringing a Norwegian-made floating LNG terminal Independence to the port of Klaipeda (Lithuania<sup>7</sup>), and the site in Skulte harbor (Latvia) is being developed as well, as one of the priority energy projects in the Baltics, with an estimated cost of 150 million Euros<sup>8</sup>. The project that should be a primary asset for diversification of energy supply in the southern flank of the ABC Initiative, and would be used as a supply path to Central Europe is a planned LNG Terminal that would be located on the Croatian island of Krk, near Omišalj<sup>9</sup>. The initial concourse to sell the capacity in the possible future Terminal effectively failed, hence the interest was expressed for only four percent of the capacity that was offered, with none of the US companies expressing their interest. Nevertheless, in 2020, there was a significant overturn in the events, with several international actors expressing interest and buying the capacities of the LNG Terminal for the next three

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<sup>7</sup> <https://euobserver.com/news/126272>.

<sup>8</sup> <http://www.geopolitika.lt/?artc=6077>;

<https://ec.europa.eu/eipp/desktop/en/projects/project-187.html>.

<sup>9</sup> <http://lng.hr/en/>.

years, with the Qatari gas company Power Globe Qatar as the most formidable actor<sup>10</sup>. Therefore, Croatia should in the future become a hub for LNG tankers and natural gas should flow towards the buyers in Central Europe. States (Hungary, Slovakia, Austria, Slovenia) that might be interested for the import of LNG from this proposed Terminal rely on Russian gas heavily and do not seem to have a problem with that, whilst the states from the Baltic region (Poland and the Baltic States) are developing their own terminals and planning gas pipelines (Poland and Norway plan to connect Norway's gas fields and Poland with undersea gas pipeline by 2022), and are not interested in LNG Terminal in the Adriatic Sea. Nevertheless, the money from the EU has been insured for the building of the Terminal, and the project has been proclaimed as one of the priorities for EU energy supply diversification efforts.

## 5. CONCLUSIONS: CHALLENGES AND OPPORTUNITIES

*The main challenges for Croatia's future perspective are the following:*

- *Demographic challenges* – a population that is rapidly aging and shrinking, due to the negative demographic trends (negative natural growth rate for the last two decades, emigration in the 1990ies, and the presently increasing emigration after the accession to the EU);
- *Economic challenges* – low wages (particularly compared to geographically close German-speaking countries), low competitiveness compared to neighbouring EU member states, low productivity, “deindustrialization” without a proper replacement in the R&D sector, overdependence on tourism (about 20 percent of the GDP is generated by this activity, which is still on the continuous rise, creating an overexposure to external economic and security factors, the COVID19 pandemic has exposed this over reliance extensively), and the emigration of skilled workers, medical doctors, engineers, researchers (“brain and skills drain”) – the accession to the EU served as a catalyst for this negative trend that will certainly continue in the foreseeable future, obese state and local administration (about 19.5% of the budget); a crucial role of the state that generates about 50% of the total GDP, in the economy of the country; a very centralized country with a highly atomized territorial-political structure ideal for the development of clientelism;
- *Social and political challenges* – divisions in the society (repetitions of the divisions from the Second World War live on, are “relived”, and used for political purposes), tensions between the underdeveloped, mostly eastern parts of Croatia, and the capital city, as well as between the young and more educated that are leaving the country and the ones that are staying (the ratio of the elderly, pensioners, clients is on the rise, putting into question the sustainability of the social services, healthcare, and pension system), the incompetence and the unwillingness of all governments to pursue the proclaimed reform agendas etc.
- *Foreign policy challenges* – the possibility that Croatia is left out of the new, deeper integrated EU – currently it is not a member of the EMU (it aims to join the ERM II) and not in the Schengen regime (although the Commission has given a positive opinion about the fulfillment of technical criteria, this is a political decision that could take years, especially hence Slovenia is most likely to block Croatia due to unsolved bilateral border issue). The foreign policy initiatives such as the ABC Initiative, expressed through overreliance on foreign policy ties with Poland and the U.S.A. do not exclude this possibility. The closeness of Bosnia-Herzegovina and the Western Balkans in general makes Croatia vulnerable to possible future crises in its neighbourhood, which could, among other negative influences, cripple its tourist sector for some time.

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<sup>10</sup> <https://seenews.com/news/powerglobe-qatar-books-all-free-capacities-at-croatias-krk-lng-terminal-for-next-3-years-702733>.

<https://seenews.com/news/mfgk-croatia-books-68-bcm-capacities-at-krk-lng-terminal-until-2027-701776>.

*The consequences of the incapability of Croatia to tackle with the afore-mentioned economic and social challenges:*

- aging (from earlier period) and decreasing (especially in the last five years, since the accession to the EU) population;
- poorly managed natural resources (numerous cases of waste deposits, incapability to fulfil the criteria of the EU in time, in accordance with the EU environment protection policy);
- overdependence on tourism (“rentier economy” in the coastal part of Croatia, with basically nothing else significant going on in the economy, thereby producing vulnerability) – especially the first COVID19 pandemic year, the year 2020, has shown the vulnerability of on tourism over reliant economies, with Croatia suffering from the dramatically lower number of tourists and tourist stays during the summer holiday season;
- inefficient and oversized public administration i.e. “bureaucracy” in a negative meaning of the word.

#### **LITERATURE:**

1. Keim, K.-O. 2006. Peripherisierung ländlicher Räume. *Aus Politik und Zeitgeschichte*, 37: 3-7.
2. Kurecic, P. and F. Kokotovic. 2017. The Relevance of Political Stability on FDI: A VAR Analysis and ARDL Models for Selected Small, Developed, and Instability Threatened Economies. *Economies*, 5 (3) 22.
3. Leibert, T. 2013. The peripherisation of rural areas in post-socialist Central Europe: A case of fragmenting development? Lessons from rural Hungary. In: Andrea Fischer-Tahir, Matthias Naumann (Eds.), *Peripheralization: The Making of Spatial Dependencies and Social Injustice*. Springer VS, pp.101-120.
4. Schön, K.-P. 2006. Territoriale Kohäsion auf europäischer Ebene-Ziele und Wege. *Informationen zur Raumentwicklung*, 617: 383-392.
5. Stubbs, P. 2018. *Croatian citizens are indifferent about the EU*. Interview by I. Milekic, June 26, <https://www.balcanicaucaso.org/eng/Areas/Croatia/Croatian-citizens-are-indifferent-about-the-EU-188604> (retrieved October 21, 2019).
6. Migration raises brain drain concerns for many CEE countries as regional economy slows, *Emerging Europe*, October 14, 2019), <https://emerging-europe.com/business/migration-raises-brain-drain-concerns-for-many-cee-countries-as-regional-economy-slows/> (retrieved February 13, 2020).
7. *GDP, total (current US\$, Atlas method)*, World Bank, 2017, <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (retrieved December 18, 2019).
8. *Unemployment rate – monthly average (%)*, Eurostat 2015I, [ec.europa.eu/eurostat/web/main/home](http://ec.europa.eu/eurostat/web/main/home), May.
9. *GNI per capita, PPP, in 2011 dollars*, <https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.KD?end=2018&start=2008> (retrieved December 22, 2019).
10. *Net migration*, World Bank, 1988-2018, <https://data.worldbank.org/indicator/SM.POP.NETM> (retrieved December 21, 2019).
11. *Population, total*, World Bank, 1988-2018, <https://data.worldbank.org/indicator/SP.POP.TOTL> (retrieved December 21, 2019).
12. *Eurostat and European Commission data (2015), European Forecast Autumn 2015*. <http://europa.eu/rapid/press-release>, <http://ec.europa.eu/eurostat/tgm/table> (retrieved December 15, 2019).
13. *Eurostat, Government expenditure by function (COFOG) 2015*, [http://ec.europa.eu/eurostat/statistics-explained/index.php/Government\\_expenditure\\_by\\_function\\_%E2%80%93\\_COFOG](http://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_by_function_%E2%80%93_COFOG) (retrieved December 18, 2019).

14. *Freizügigkeitsmonitoring: Migration von EU-Bürgern nach Deutschland*, [http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/freizuegigkeitsmonitoring-jahresbericht-2017.pdf?\\_\\_blob=publicationFile](http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/freizuegigkeitsmonitoring-jahresbericht-2017.pdf?__blob=publicationFile) (retrieved December 20, 2019).
15. <https://arhivanalitika.hr/blog/eurostat-potvrديو-rumunjska-ispred-hrvatske-samo-bugarska-ostaje/> (retrieved April 29, 2021).
16. <https://howmuch.net/articles/travel-tourism-economy-2017> (retrieved December 23, 2019).
17. <http://www.total-croatia-news.com/item/14122-croatia-among-top-counties-by-share-of-tourism-in-gdp> (retrieved December 23, 2019).
18. <https://www.ft.com/content/27e28a44-51b0-11e7-a1f2-db19572361bb> (retrieved December 23, 2019).
19. <https://euobserver.com/news/126272> (retrieved December 26, 2019).
20. <http://www.geopolitika.lt/?artc=6077> (retrieved December 27, 2019).
21. <https://ec.europa.eu/eipp/desktop/en/projects/project-187.html> (retrieved December 27, 2019).
22. <http://lng.hr/en/> (retrieved December 20, 2019).
23. <https://seenews.com/news/powerglobe-qatar-books-all-free-capacities-at-croatias-krk-lng-terminal-for-next-3-years-702733> (retrieved June 17, 2020).
24. <https://seenews.com/news/mfgk-croatia-books-68-bcm-capacities-at-krk-lng-terminal-until-2027-701776> (retrieved June 17, 2020).

# OVERVIEW OF THE USE OF ABBREVIATIONS IN DIGITAL COMMUNICATION THROUGH SHANNON'S THEORY OF COMMUNICATION

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## ABSTRACT

*This paper seeks to explore and show the use of abbreviations in digital communication through Shannon's theory of communication. The paper will research and present, recently especially popular and represented among different populations, communication with abbreviations with special reference to its use in the context of social networks and applications. The use of abbreviations is not only a linguistic-communicative, but also a broader social and cultural phenomenon that is developing and functioning in accordance with the changes brought to us by new media and new technologies. In this paper, we will try to show how new technologies and new media affect everyday life, especially communication processes, and we will try to explain the ubiquitous tendency towards visualization, speed, immediacy and economy as fundamental principles in conveying messages. We will focus in particular on researching short text and chat abbreviations used in online communications, including social networks Facebook, Twitter, LinkedIn, then e-mail, and abbreviations used on mobile phones and on Viber, WhatsApp, Messenger, Telegram applications. For the purposes of the paper, a survey was previously conducted on a selected sample with the aim of trying to systematize abbreviations with respect to the personal and professional profile of the respondents. In Shannon's communication model, the source of information and the destination of the message, which are located at the endpoints of the communication channel, are connected by a message in the form of a signal that is transmitted through the communication channel from sender to receiver.*

**Keywords:** *Abbreviations, communication by applications, communication by abbreviations, internet communication, Shannon communication theory, social networks*

## 1. INTRODUCTION

When SMS (Short Messaging Service) appeared in 1992, the first text messages were limited to 20 characters. The main landmark of communication was as cheap as possible. However, with the development of social networks and applications, the number of characters becomes an irrelevant factor. Cheap replaces the notion of time and speed. It is precisely this way of communication - as fast and as short as possible - that emerges as an imperative. Man as an interactive being, resourceful in his habitus, very quickly took up the challenge; he invented abbreviations. The emergence of social networks and applications truly represents an exceptional "fertile field" for communication with abbreviations. Social networks and applications have become a part of human everyday life and an indispensable form of communication for a large number of people. New media technologies affect all aspects of life, not only entertainment and communication but also the social, cultural, political and economic aspects of life. The spread of the internet has changed the way we use the media. The modern way of accelerated pace and dynamics of life requires the greatest possible use of time, so communication adapts to these same requirements. Until not so long ago, it took maybe a few hours to write a letter, a postcard, go to the post office and send a telegram, but today such a form of communication is unthinkable. One gets the impression that official correspondence, which in its form and form should really be formal and normative, is reduced to the minimum of syntagms.

Professors Elena Družeta and Nada Zgrabljic Rotar in their work *The role of Facebook in the sentimental relations of young people*, considering the problems of modern communication, introduce a new term "digital culture". Digital culture as a new concept in the information society, with its products has formed a new type of audience that builds its own rules of communication. The Internet as a platform thus becomes a "good place to live" (Družeta, Zgrabljic Rotar: 2011).

### **1.1. Briefly from the history of the use of abbreviations in communication**

The use of abbreviations in communication is not a creation of the new age or a fundamental product of the use of social networks, chats, e-communication and applications, but actually has its roots in the 19th century when the editor of the Boston Morning Post first used the abbreviation OK, instead of all correct or oll correct. At the time, it was fashionable to write orthographically incorrect abbreviations<sup>1</sup>. OMG is an acronym first recorded on the telegraph between Winston Churchill and one of his generals, John Fisher. John wrote: I heard a new order of knighthood is on the tapis. O.M.G. (Nuwer: 2012). The abbreviation WTF (for those who will still look for a translation, this abbreviation means What The Fuck), which first appeared in the prachat era, on the so-called Usenet, an Internet service that was launched in the USA in 1980. 1985 Jay Fields wrote: And I asked myself, WTF?! LOL was an acronym for lots of love in the pre-internet age, and was first used in today's sense (Laughing Out Loud) in the early 1980s in Canada by then-student Wayne Pearson.

### **1.2. Abbreviations, e-communication and the modern times**

The use of abbreviations must be linked to the development of the Internet and Internet networks and analogously to the emergence of social networks and later applications. The appearance of the Internet in the world came much earlier than us in the Republic of Croatia. The first internet connection was established by the Republic of Croatia 28 years ago; November 17, 1992, when it connected to computers in the Republic of Austria via computers of the Croatian Academic and Research Network CARNet in Zagreb<sup>2</sup>. The first SMS (Short Messaging Service), as previously mentioned, was sent in 1992, in the late 90's mobile phone users sent dozens and even on average up to a hundred messages a month, while mass messaging began in the early 2000s. With the launch of Facebook, the development of e-communication is developing exponentially, the world is becoming a global village, and thus all previous communication barriers are being erased. The development of mobile technology makes a particularly great contribution to e-communication. The number of registered social network users as well as the number of application users today numbers in the billions and is growing daily. The nature and functionality of individual social networks as well as applications, we will not analyse here. In conclusion, all of the above suggests that social networks and applications have become a new way of communicating or a communicative phenomenon that transcends sociological, cultural, religious and geopolitical levels. Simply, a new way of life.

## **2. SHANNON'S COMMUNICATION MODEL**

Shannon's communication model deals with concepts such as information, entropy, information transfer, data compression, coding and related topics (Bosančić: 2016).

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<sup>1</sup> Cf. Bucic, Iva. 2016. *Abbreviations we can't live without*. <https://x-ica.com/kratice-bez-kojih-ne-mozemo/>. (accessed August 20, 2019).

<sup>2</sup> Cf. Dezelic, Djuro. (2018). *Memories on the occasion of the 25th anniversary of the connection of the Republic of Croatia to the Internet and the establishment of CARNet*, Bulletin of the Croatian Society for Medical Informatics, 24 (1), p. 57-65. <https://hrcak.srce.hr/194026> (accessed 14 July 2020)

According to Shannon, each information system consists of 5 parts:

- a) The information source that is the creator of the message or message sequence
- b) A transmitter that converts a message into a signal suitable for transmission over a communication channel
- c) A channel is a medium for transmitting a message
- d) A receiver that reconstructs a message from a signal and actually performs the reverse process from the transmitter
- e) Destination is the person or thing for which the message is intended (Shannon & Weaver: 1964)

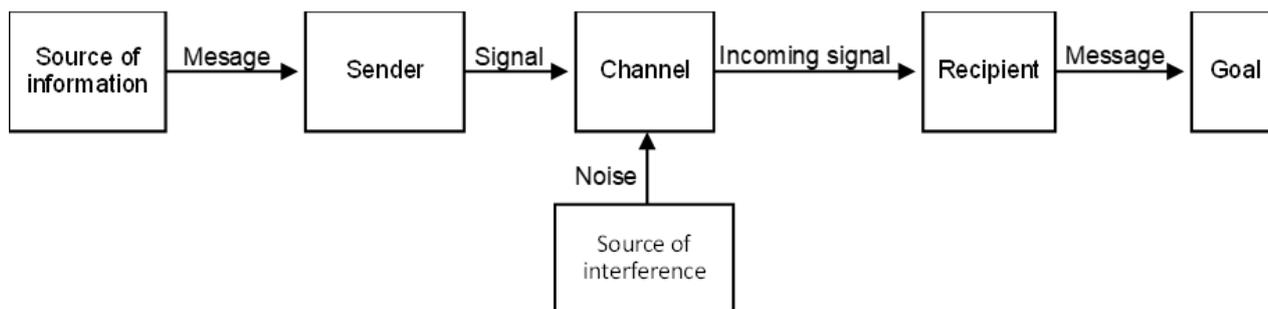


Figure 1: Shannon-Weaver model of communication

### 3. RESEARCH OF THE USE OF ABBREVIATIONS IN DIGITAL COMMUNICATION ON SOCIAL NETWORKS AND APPLICATIONS

#### 3.1. Research methodology and objectives

For the purpose of researching this scientific paper, a survey questionnaire of 27 questions was compiled. 119 respondents participated in the survey, ie (53.3%) men and 55 (45.8%) women, while 1 (0.8%) respondent did not want to comment. The sample was taken intentionally. The research was conducted in the period from August 28 to September 12, 2019. The survey was distributed via the social networks Facebook and LinkedIn, as well as the Viber, WhatsApp and Telegram applications, while the contacts on the applications were selected at random. There was no possibility that the respondents did not answer the questions asked. The sample included persons of all ages except minors. The restriction of the survey form to adults is for the reason required by the General Regulation on Personal Data Protection, which stipulates that the consent of parents must be obtained for the purpose of examining minors<sup>3</sup>. The survey form is designed in 5 groups of questions: the first 4 questions refer to general data (age, gender, level of education and business status), the second group of questions refers to knowledge and use of social networks, the third group of questions refers to knowledge and use application, the fourth group of questions refers to the knowledge and use of abbreviations used by respondents on social networks and applications, and the fifth group of questions refers to the correlation of semantic experience, language and written expression and use of abbreviations. The research, conducted through the Google survey form, aims to find out how much and to what extent the use of abbreviations is present in communication on social networks and applications. The necessary research results will be obtained by an analogous approach to survey questions; respondents want to know whether they know and use social networks and applications, how much they have facilitated communication and how much they use abbreviations in communication as a way of communication.

<sup>3</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council. 2016. *General Data Protection Regulation*. <https://eur-lex.europa.eu/legal-content/HR/TXT/?uri=CELEX:32016R0679>. (accessed June 6, 2021).

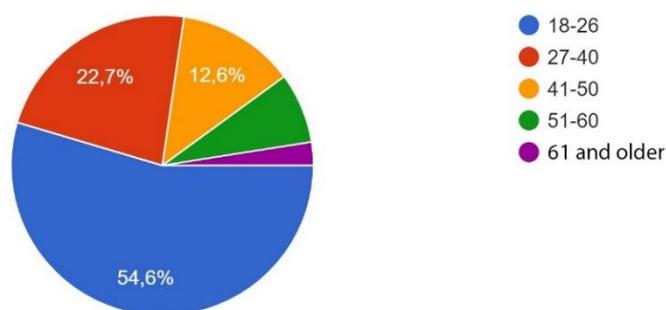
One of the goals is to find out from the respondents whether they can express their feelings in the same way through abbreviations as in "traditional communication". Also, respondents are asked to find out how much the use of abbreviations affects their oral expression and literacy.

### 3.2. Research results

After the survey, 119 survey questionnaires were collected and analysed by a descriptive statistical method. The following is an interpretation and graphical presentation of the results: The first important finding of the research is the fact that the survey questionnaire was answered by the majority of respondents aged 18-26 years, i.e., 54.6%, while each subsequent age group decreases linearly by 27-40 years. 22.7% -> 41-50 years 12.6% -> 51-60 years 8.3%. and 61+ 2.5%. The result is very indicative and clearly gives the answer that the use of the Internet is the most widespread and most present among younger respondents.

Your age?

119 responses

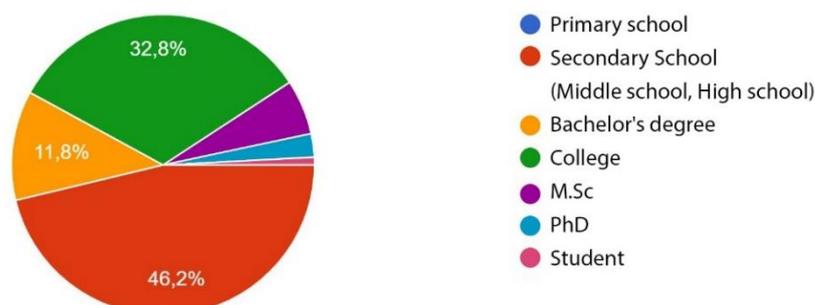


Graph 1: Your age? <sup>4</sup>

The survey was answered by the highest number of respondents with a high school diploma, 47.6%, followed by 33.3% of respondents with a university degree, 11.7% with a bachelor's degree or a high school diploma, 5.8% with a master's degree and 2.5% with a doctorate. science. One third of the respondents 32.8% are employed in the private sector, 20.2% of the respondents are employees in the public sector or students, 4.2% are owners or co-owners of companies or crafts, 3.3% of the respondents are unemployed and 0.8 % of respondents is 1 retiree.

Your level of education?

119 responses

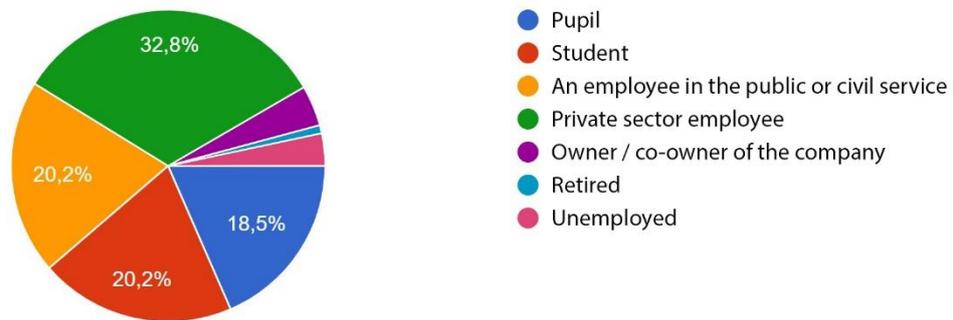


Graph 2: Your level of education?

<sup>4</sup> The names of the graphs are identical to the name of the Survey Question. The same methodology will be applied below.

### Your occupation?

119 responses

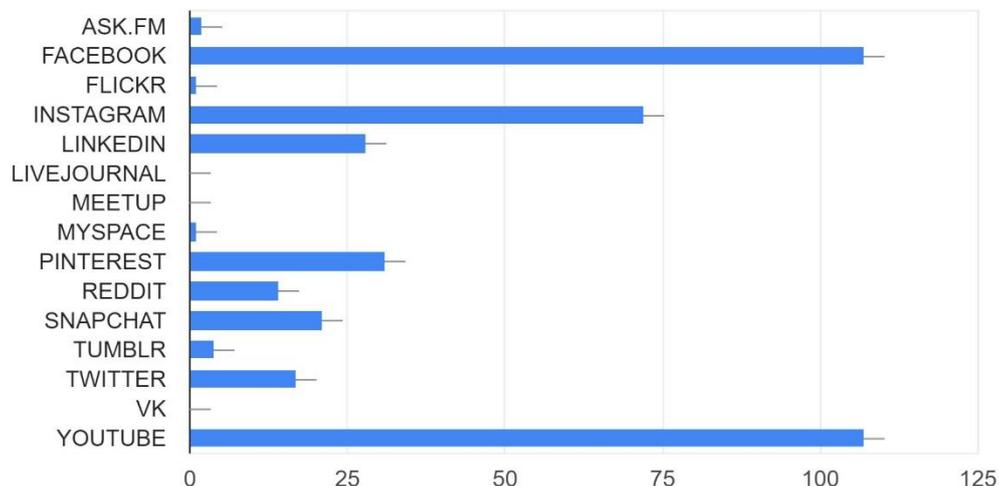


Graph 3: Your occupation?

When asked which social networks do you know; all respondents 100% know Facebook, largely YouTube 97.5%, Instagram 95%, Twitter 84.2%, Snapchat 71.7%, LinkedIn 63.3%, Myspace 57.5% while respondents know other social networks in a smaller percentage below 50% or some only in very small percentages. The largest number of respondents use an equal percentage of 90.7% of the social network Facebook and YouTube, 61% of respondents use Instagram, 23.7% LinkedIn, 26.3% Pinterest while others while other networks respondents still use Snapchat 17.8% and Twitter 17.4% while other social networks are used by a very small percentage of respondents. 38.3% of respondents use Facebook as their preferred social network, YouTube 30.8%, Instagram 22.5%, LinkedIn 3.3% and Twitter and Reddit 2.5%. Respondents do not use other social networks as preferred at all. Interestingly, a third of respondents are employed in the private sector and another 4.2% who own or co-own a business or craft, the social network LinkedIn, which is known as a network of business people, use as a preference only 3.3%. When asked how often they use social networks, 3.3% of respondents use social networks 24 hours a day, 60.8% several times a day while 22.5% of respondents use them at least once a day. Several times a week, 8.3% of respondents use social networks, 1.7% once a week, while 3.3% of respondents rarely use social networks.

### Specify which social networks do you use?

118 responses

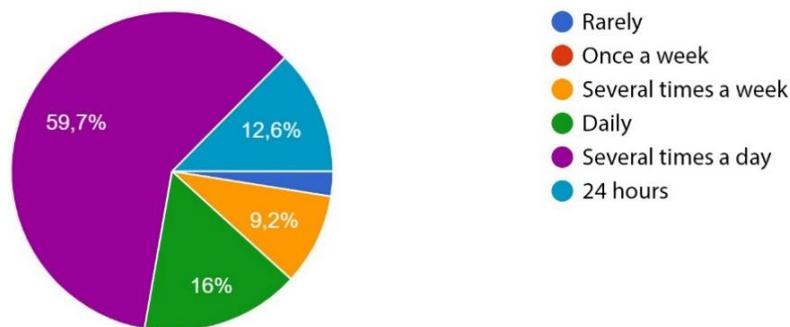


Graph 4: Specify which social networks do you use?

For the purpose of communication, 12.5% of respondents use applications 24 hours a day, 59.2% several times a day while 15.8% of respondents use them at least once a day. Several times a week 10% of respondents use applications while 2.5% of respondents rarely use communication applications. For business communication, 48.3 respondents use Viber and WhatsApp, 54% of respondents use Facebook Messenger 39.2%, Skype 18.3%, Telegram 4.2% of respondents, while other applications do not enjoy popularity for the purpose of communication.

### How often do you use applications for communication purposes?

119 responses

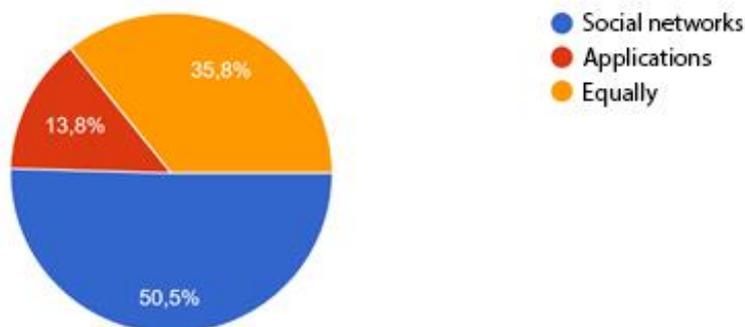


Graph 5: How often do you use applications for communication purposes?

Abbreviations are used in communication by 87.5% of respondents, while 12.5% of respondents use abbreviations very rarely and not at all. Equal use of abbreviations on social networks and applications is used by 35.8% of respondents, while 50.5% of respondents prefer the use of abbreviations in communication on social networks, and 13.8% of respondents prefer applications.

### Abbreviations are most often used on..

119 responses



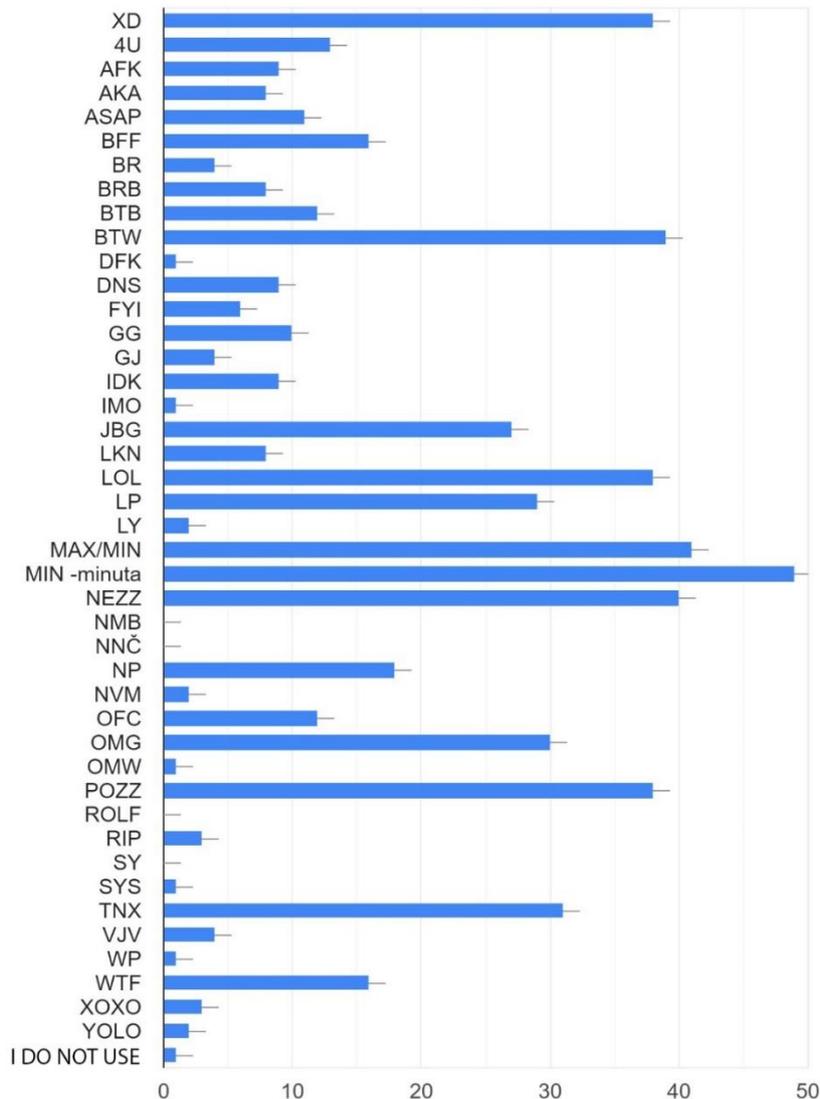
Graph 6: Abbreviations are most often used on ...

When asked which abbreviations they know in the multiple choice, the respondents state their knowledge of a large number of abbreviations (5% of respondents know over 40 abbreviations, 30% of respondents know over 20 abbreviations while 15% of respondents know all abbreviations!).

Respondents cite the use of the following abbreviations as "Top 20"<sup>5</sup>: LOL - laughing out loud, OMG - oh my God, POZZ - pozdrav (Hi), MIN - minute, BTW - by the way, XD - laughing face, really hard laugh where D is a smiley mouth, TNX - thanks, MAX / MIN -maximum / minimum, BFF - best friend forever, ASAP - as soon as possible, NEZZ -I don't know (I don't know), WTF - what the fuck, RIP - rest in peace, LP - nice regards ), JBG - fuck it (fuck it), NP - no problem, XOXO - hugs and kisses, YOLO - you only live once, IDK - I don't know and GG - good game. The most common 5 abbreviations used by the respondents are: 1. MIN - minute 40.8%, 2. MAX / MIN - maximum / minimum 34.2%, 3. NEZZ - I don't know 33.3%, 4. BTW - by the way 32.5%, 5. XD - laughing face 31.7%, POZZ - greetings 31.7%. The following abbreviations are often still used: OMG 25%, NP 15%, BFF 13.3%, WTF 13.3%, 4U 10.8% and BTB - God bless you 10%.

Highlight the 5 abbreviations that you most often use in communication on social networks and applications?

119 responses



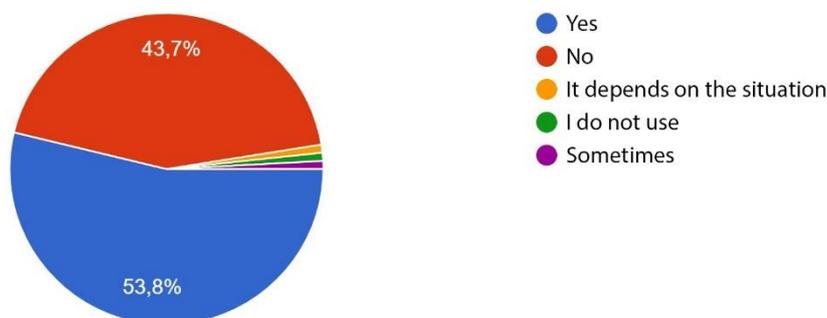
Graph 7: Highlight the 5 abbreviations that you most often use in communication on social networks and applications

<sup>5</sup> 20 abbreviations known to the largest number of respondents; from the largest number to the smallest.

Respondents use abbreviations in communication on social networks and applications in specialized areas of communication, as follows: in gaming communication 37.3%, in communication expressing love, sympathy and friendship 37.3% of respondents, for computer communication abbreviations use 20.8%, in the field of economics and business 19.2%, in sports 18.3%, while the respondents still use abbreviations in internal communication for jokes and neighbourhood slang communication. The reasons given by respondents for using abbreviations in communication on social networks and applications are the speed of communication for 83.3% of respondents, it has become a habit for 67.1% of respondents, time 35%, 31.7% of respondents already consider it normal communication in society while 17.5% of respondents use abbreviations due to specialized areas in which they communicate e.g. gaming communication. Almost two thirds of respondents - 64.1% believe that the use of abbreviations has significantly facilitated their daily communication, while 35.9% of respondents believe that the use of abbreviations does not facilitate their communication. More than half of the respondents 53.3% can express their feelings and thoughts in the same way as in traditional communication, 44.2% cannot, while only 1.6% of the respondents think that they can sometimes or that it depends on the situation they are in. In contrast to traditional communication, 34.2% of respondents believe that they can express semantic content more strongly with abbreviations, while 65.8% believe that they cannot express their feelings more semantically using abbreviations. Almost an identical percentage of respondents also refer to the use of e-communications in expressing feelings.

### Can you use abbreviations to express feelings and thoughts in the same way as in "traditional" communication?

119 responses

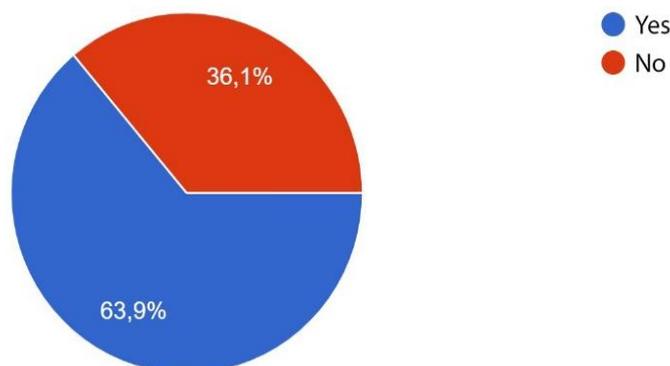


Graph 8: Can you use abbreviations to express feelings and thoughts in the same way as in "traditional communication"?

76.5% of respondents point out that the use of abbreviations is appropriate only for informal communication, 21% believe that abbreviations can be used in official communication, while 1 respondent points out: "I am of the opinion that it is, but I notice that it is increasingly used in formal communication. communication and I don't think it's very professional. Everyone should have time to write an "honest", formal and professional e-mail or message. "With a keyboard on a computer, tablet or mobile phone, only 14.3% of respondents can fully satisfy the need to express their own mood, another 26.9% can do it often, but still most 57.1% can express their own moods with the keyboard only occasionally. Almost the same number of respondents believe that the use of abbreviations in communication on social networks and applications does not affect 50.8% or 49.2% of literacy. However, 63.9% of respondents believe that the use of abbreviations in communication on social networks and applications affects their quality of oral expression.

Do you think that communication with abbreviations on social networks and applications affects the quality of oral expression?

119 responses



*Graph 9: Do you think that communication with abbreviations on social networks and applications affects the quality of oral expression?*

#### **4. OVERVIEW OF THE USE OF ABBREVIATIONS, OBSERVED PROBLEMS<sup>6</sup> IN SIGNAL TRANSMISSION / INFORMATION IN THE COMMUNICATION CHANNEL AND LEARNED TRENDS IN DIGITAL COMMUNICATION THROUGH SHANNON'S THEORY OF COMMUNICATION**

##### **4.1. Observed trends created by the use of abbreviations<sup>7</sup>**

Certain "anomalies" and "side effects" occurred through the use and communication of abbreviations. From the last question we asked in the survey questionnaire during the research from the preliminary answers, it was quite clear that the use of abbreviations affects literacy, but the results showed even more on the quality of language expression. The observed trends arose as a consequence of a new type and mode of communication; communication with abbreviations on social networks and applications.

But let's take a look at the trends created by the use of communications:

**Deformalizing the message** — there is no introduction, no conventional address, no signature at the end — goes straight to the heart of the message. The reason - when we are online, we turn from our immediate physical into a "virtual identity" (often we have another name - nickname) and with other virtual identities we create a "matrix", we network into a kind of "collective existence" in which everyone participates equally with all its characteristics, interests, needs, etc. through which we shape this "matrix" and which in turn shapes us by bringing us into contact with others. It is a social space in which we are all equal and have no other social roles that we have in our immediate life other than the one that we are part of a network. In addition, too much explanation and formalization is not common, it is not cool, online spontaneity is required.

<sup>6</sup> According to Shannon, the problem is interference / noise in the communication channel which causes the signal in the decoder to be deformed.

<sup>7</sup> Cf. *Abbreviations, smilies, numbers instead of words - language and spelling on the Internet.*

<https://www.medijskapismenost.hr/kratice-smajlici-brojevi-umjemo-rijeci-jezik-i-pravopis-na-internetu/>. (accessed 09.06.2021.).

**Expanding the semantic capacity of the basic written message by adding characters for emotions** - "naked" message is semantically limited, and then gains in meaning when additional characters and typographies are added, because "ordinary" text messages, without additional characters are "cramped" and do not convey all aspects of the message as other media or direct communication have. E-communication users have therefore come up with some possible compensations that semantically "amplify" messages: facial expressions, capital letters, abbreviations "... A special segment of these messages is **the use of so-called "Smilies"** (smiles), combinations of signs reminiscent of certain facial expressions - and in addition to the naked message, they represent a kind of emotional context in which it is written. One and the same message, with different types of "smile" can have completely different meanings - for example, the message "I heard from Mark :)" and "I heard from Mark :( " conveys the type of message that is different - in the first In the case of obviously good news, and in the other about bad news, we can convey many of our states with signs - winking, screaming, wondering, sticking out our tongues... and they actually give the message an extra meaning with a very short code. **Economize text** - the number of characters and keystrokes, with the goal of faster and cheaper. The basic trend is to economize the text, convey the most extensive message with the use of as few characters as possible and typing on the keyboard. In this sense, this type of communication is often deformed, there are no punctuation, diacritical marks, often no spaces between words, and sometimes no vowels (especially in SMS messages due to the limitation of one message to 150 characters), they use initials and abbreviations, and if in some other language (usually English) something can be said shorter, the transition from Croatian to others is very spontaneous. Example: "bck2zg" = "I returned to Zagreb." **Capital letters** - each capital letter (all in capital letters) means the introduction of additional emotions, for example: "it's BEAUTIFUL here !!!". In direct e-communication, the use of capital letters means - shouting. Due to "shouting", capital letters are not considered "decent" - it is better to use current (lower case). **Avoiding punctuation** also serves to shorten the message. This is usually written without commas and periods, if possible, without spaces (especially in SMS messages). Example: "hi send me the @yahoo scripts as soon as possible". The "minuses" as young people usually call them (hyphens, dashes) can separate 2 parts of the content of the same message, eg "sent ono4ono - are you in the book tonight?" - here we also see the use of the number 4, which when read in English sounds [for] which means "for", so the message actually means "I sent what for what". Also, the three points at the end of the enumeration (()) are reduced to two (..) **The omission of diacritical marks (ticks)** happened a long time ago, while computer programs did not yet have versions for Slavic languages, but only for English. At one time it was considered rude to write with ticks because programs on external servers or internal computers would "read" these characters differently, and then "& # \* {" would appear in the text instead of "č", which would for example, the word "more often" looked something like "& # \* {e \* fl}" / § & e, which would make the text completely illegible. This still happens sometimes today. **The fusion of language and speech** occurred because words from the Croatian and English languages are used equally. People from all over the world meet and socialize on the Internet, so the e-version of the English language, which started to develop a long time ago, is often a letter to our children when they communicate internationally. Apart from the fact that this principle also derives from the principle of economization, it also arose because at first, on the Internet, communication was usually exclusively in English, so it was gradually switched to our language as well. But some "clever" expressions remained. The principle of brevity was added to them, so if it is shorter in English than in Croatian, a part in English is inserted in Croatian. To make it short, it is written incorrectly and phonetically ("Kipintač" - Talk to you soon).

#### **4.2. Examples of possible problems<sup>8</sup> in the communication channel**

As shown by the results of the research listed in section 3.2. Respondents have singled out the "top 20"<sup>9</sup> most commonly used abbreviations, and here we will present through several isolated examples, and in the previous section on possible and possible problems in the communication channel that occur due to differences in the profile of sources and destinations, or interference the communication channel between the sender and the recipient of the information, i.e. in our specific example, the use of abbreviations in the communication channel. The difference between the sender and the recipient of information in the form of an abbreviation depends on age (generational), social, educational, cultural, geographical (urban, rural), religious and gender profile. Example 1) OMG (oh my God) - source of information / signal (sender) is a person who uses words and loanwords from the English language in everyday speech and writing; it also uses abbreviations from that language area in digital communication on social networks and applications. However, the destination of the information, the signal (recipient) does not speak or use English and does not know how to interpret the received abbreviation. Example 2) JBG (fuck it) - the destination of information / signal (recipient) is a person who in his vocabulary does not use vulgar words, simple words, swear words and inappropriate street jokes so that he does not understand the received signal (message). Example 3) MIN (minute or minimum) - in the destination of information / signal (receiver) due to the abbreviation-doublet there is confusion when interpreting the abbreviation.

#### **5. SUMMARY**

The use of abbreviations in communication is no longer an instant hit, but a communicological phenomenon that is entering all social spheres. By the mere fact that 82% of households have internet access, which translates into figures of 3,406,288 inhabitants, and furthermore, according to our research, 86.6% of respondents use social networks daily and 87.5% of respondents use communication applications on a daily basis. Therefore, in the Republic of Croatia approximately 3,000,000 inhabitants communicate with abbreviations through social networks and applications. The use of abbreviations in communication on social networks and applications has both good and bad sides: it communicates immediately and now, speed and time are constantly affecting our dynamics and pace of life, so that more and more users of social networks and applications are able to express their feelings by shortening including the formal one where diversification of official correspondence takes place. One gets the impression that this virtual reality is no longer recognizable as distorted or spelled. Respondents in the survey are aware that the use of abbreviations affects their literacy and quality of linguistic expression, and by analogy, it can be concluded that this new paradigm of communication will present a great challenge for linguists as well as professors and teachers of Croatian language in teaching spelling and spelling. From all the above we can conclude that the research results clearly confirm that the use of abbreviations on social networks and applications is becoming a new paradigm of communication, and it is especially evident that Shannon's communication model is so universal and applicable to each and every possible form of communication.

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<sup>8</sup> Problems that arise between the source of information (sender) and the destination of information (receiver) depend on the transmission of signals, information through the communication channel, and are determined by interference or noise. Noise, interference or noise is a disruptive factor in the communication process. In the communicative sense, noise is any phenomenon that changes the signal or interacts with it. It can occur when formatting a message (eg incomprehensible or ambiguous message), when transmitting it (loss of parts of the message, interfering with signals and information) as well as when receiving a message (inattention or information overload of the recipient, misunderstanding and misinterpretation of messages). It is precisely in the area of noise, interference or noise when designing, transmitting or receiving that there are difficulties in understanding, interpreting and applying and using abbreviations in digital communication. Interference and noise were detected in the previous chapter 4.1.

<sup>9</sup> See graph no.7

## LITERATURE:

1. Beal, Vangie. 2018. *Huge List of Texting and Online Chat Abbreviations*. [https://www.webopedia.com/quick\\_ref/textmessageabbreviations.asp](https://www.webopedia.com/quick_ref/textmessageabbreviations.asp). (accessed 02.09.2019.).
2. Bešker, Inoslav. 2010. *Što vaš klinac kaže kada piše: btw cuga, bilo ky ili vttnns?*. <https://www.jutarnji.hr/vijesti/sto-vas-klinac-kaze-kada-pise-btw-cuga-bilo-ky-ili-vttnns/2130792/>. (accessed 29.09.2019)
3. Bosančić, Boris. 2016. *Proces stjecanja znanja kao problem informacijskih znanosti*, Libellarium, Vol. 9 No. 1
4. Bucić, Iva. 2016. *Kratice bez kojih ne možemo*. <https://x-ica.com/kratice-bez-kojih-ne-mozemo/>. (accessed 20.08.2019.).
5. Claude Elwood, Shannon; Warren, Weaver. 1964. *Theory of Communication*. Champaign, Illinois, USA, University of Illinois Press.
6. Deželić, Đuro. (2018). *Sjećanja u povodu 25. obljetnice priključenja Republike Hrvatske na Internet i osnutak CARNet*, Bilten Hrvatskog društva za medicinsku informatiku, 24(1), str. 57-65. Preuzeto s: <https://hrcak.srce.hr/194026> (accessed 14.07.2020.).
7. Družeta, Elena ; Zgrabljic Rotar, Nada. 2017. *Uloga Facebooka u sentimentalnim*
8. Državni zavod za statistiku. [https://www.dzs.hr/Hrv\\_Eng/publication/2018/02-03-02\\_01\\_2018.htm](https://www.dzs.hr/Hrv_Eng/publication/2018/02-03-02_01_2018.htm). (accessed 21.08.2019.).
9. Gaines, Elliot. 2010. *Media literacy and semiotics*. Palgrave Macmillan. New York.
10. Greguraš, Mladen ; Rosanda Žigo, Iva. 2020. *Upotreba kratica u digitalnoj komunikaciji*. Doktorska konferencija Mediji i komunikacija 2020. Zbornik radova. Sveučilište Sjever. Varaždin.
11. Jonuzi, Emina. 2019. *Komunikacija nekad i danas*. Diplomski rad. Sveučilište Sjever. Varaždin.
12. Kosić, Siniša. 2010. *Online društvene mreže i društveno umrežavanje kod učenika osnovne škole: navike Facebook generacije*. Život i škola. LVI(24). str. 103-125. <https://hrcak.srce.hr/63281>. (accessed 09.09.2019.).
13. *Kratice, smajličići, brojevi umjesto riječi – jezik i pravopis na internetu*. <https://www.medijiskapismenost.hr/kratice-smajlicic-brojevi-umjesto-rijeci-jezik-i-pravopis-na-internetu/>. (accessed 09.06.2021.).
14. Nuwer, Rachel. 2012. *The First Use of OMG Was in a 1917 Letter to Winston Churchill*. <https://www.smithsonianmag.com/smart-news/the-first-use-of-omg-was-in-a-1917-letter-to-winston-churchill-145636383/>. (accessed 03.09.2019.). *odnosima mladih*. Medijske studije Media studies 2017.8.(16) . str.78-98.
15. Primorac, Jelena. 2016. *Korištenjem kratica do američkog sna*. <https://blog.vecernji.hr/speak-up/koristenjem-kratica-do-americkog-sna-8874>. (accessed 28.08.2019.).
16. Rosanda Žigo, Iva ; Tkalec, Gordana (2018): *Socio-Semiotic “Reading of the Truth” in the Context of Virtual Communication*, Open Journal of Social Sciences, 6, 188-202. <http://www.scirp.org/journal/paperinformation.aspx?paperid=82037> (accessed 02.09.2019.).
17. Semantika. 2019. Enciklopedija.hr. Leksikografski zavod Miroslav Krleža. <http://www.enciklopedija.hr/natuknica.aspx?id=55330>. (pristupljeno 21.08.2019.).
18. Slavica, Vrsaljko ; Ljubimir, Tea. 2013. *Narušavanje pravopisne norme u ranojezičnoj neformalnoj komunikaciji (na primjeru sms poruka i internetske društvene mreže Facebook)*. Magistra Iadertina 8.(1.) str. 155-163. <https://hrcak.srce.hr/122648>. (accessed 29.08.2019.).
19. Turk, Marija. 1998. *Semantičke posuđenice u hrvatskome jeziku*. Croatica, 27(45-46), str. 203-213. <https://hrcak.srce.hr/214733> (accessed 18.08.2019.).

## THE ATTITUDE OF POLISH JOURNALISTS AND MEDIA MANAGERS TO CONTENT PERSONALIZATION IN DIGITAL MEDIA

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### ABSTRACT

*Personalization of the offer, practiced primarily in the marketing context, takes place in various sectors of the economy. In the digital media environment where leading technology organizations are at the forefront of data collection and analysis, personalization is increasingly manifested in the algorithmic generation of content (articles, videos, and images) created as part of the so-called algorithmic journalism. Personalisation of adverts is common practice. In the article, we have analyzed examples of personalization in digital media, presenting the results of qualitative research (in-depth interviews) on the attitude to content personalization of journalists and managers of 24 leading Polish media organizations.*

**Keywords:** *Personalization, digital media, algorithmic journalism, Poland*

### 1. INTRODUCTION

The individualisation of products and services is the offer providers' response to the changing preferences of consumers and the growing competition on the market. These phenomena result primarily from the societies becoming wealthier and from the technological progress, which is driven by the universal access to the Internet. However, advanced technologies and fast flow of information also result in the situation where the competitive advantages of enterprises quickly find followers, ceasing to be distinguishing factors in the enterprises' fight for customers. The effect is the phenomenon of commoditization - making the offer similar (LaSalle and Britton, 2003). Therefore, as the result of the above, companies striving to attract the attention of customers and to exist in their awareness, in order to increase sales as a result, see their opportunity in the individualisation of products and services. In saturated markets, to quote Slywotzky, "people always get too little of what they want and too much of what they don't want" (Slywotzky, 2000). This can provoke in consumers the sense of being overwhelmed by the abundance of proposals on the one hand and the difficulty in finding proposals that would best satisfy their needs on the other hand. In accordance with this logic, the offer should be tailored to the expectations of consumers, which will affect their satisfaction and loyalty behaviour (Kim and Lee, 2020). Technological progress has opened up opportunities for enterprises to acquire, collect and use information about individual clients and enable one-to-one marketing activities with the highest degree of segmentation, in which the market offer is addressed to a single client (Arora *et al.*, 2008).

Individualization can take two forms: personalization or customization (Arora *et al.*, 2008). According to Prahalad and Ramaswamy (2000), customization involves adapting the offer to the client's needs through the appropriate configuration of marketing mix tools within their existing options (Prahalad and Ramaswamy, 2000), while personalization is associated with the co-creation of the content of his/her experience by the client. Meanwhile, according to Arora *et al.* (2008) both ways of individualization are differentiated by the initiating party. In the case of personalization, it is the enterprise that decides on the shape of the offer, and in the case of customization, it is the result of proactive specification of its features by the consumer (Arora *et al.*, 2008). This publication adopts the latter approach, which seems to dominate the most recent literature on the subject (de Bellis *et al.*, 2019; Kumar *et al.*, 2019; Kim and Lee, 2020). In the article, we have analyzed examples of personalization in digital media, presenting the results of qualitative research (in-depth interviews) on the attitude to content personalization of journalists and managers of 24 leading Polish media organizations.

## **2. PERSONALISATION IN THE DIGITAL MEDIA**

In the media environment, personalization is a “form of user-to-system interactivity that uses a set of technological features to adapt the content, delivery and arrangement of a communication to individual users’ explicitly registered and/or implicitly determined preferences”(Sørensen and Schmidt, 2016). This process faces several important, interrelated problems resulting from the confrontation of data acquisition practices under the so-called new logic of accumulation with the axiological assumptions of editorial functioning, such as values and meanings for the community, or multidimensional diversity of recipients (Hendrickx, Smets and Ballon, 2021). First of all, personalization is based on the quantification of media recipients and an increasingly better recognition of their needs owing to the analysis of data related to them. The conclusions drawn indicated the gap between what is important for the audience and what, according to journalists, is of social importance. In practice, therefore, the recipients only receive content that, according to publishing houses (editors and journalists), they would like to read, even if it is contrary to their preferences. Nevertheless, the digital analysis of users’ needs influences the programme changes, for example in the form of greater emphasis on creating content on a topic that was already popular and the growing importance of tabloid content (Lee, Lewis and Powers, 2014; Welbers *et al.*, 2016). These issues are confronted with the editorial missions (Zamith, 2018) and the problems of translating the formalized editorial decisions regarding journalistic content into the algorithmic language. Therefore, the challenge involves the discrepancies not only between the appropriate selection of the right news for the right recipient, but such fundamental issues as ambiguous criteria for determining what the news is. As noted by Timothy Cook, reporters, when asked about what “information attractiveness” is are usually unable to answer the question (Cook, 1998). All this constitutes a unique challenge for programmers dealing with content personalization and creating algorithms for the so-called algorithmic journalism, primarily concerning financial and sports information. For example, during a match, the robot writes content from the perspective of both teams (so we have one game, but different reports). Another problem concerns the consequences of the relationship between financing the media organization from the money from advertising and content personalization, i.e. in practice the use of the same technologies to deliver personalized ads and personalized journalistic content. This relationship generates a threat to the primacy of the market goal over – at least theoretically – an important social goal (Bodó *et al.*, 2019). This is another episode of the conflict between the declared editorial neutrality and commercial pressure. A particularly important issue is the market primacy of digital platforms and the logic of platformization, and in this context, subordinating the functioning of media organizations (especially those creating content) to such leaders as Facebook, Google and YouTube (Alphabet), Amazon, Apple and others which have dominated the distribution of content and

which keep imposing their own personalization tools. In the early days of mass media digitization, content personalization manifested itself through RSS feeds, newsletters, widgets and “my news” sections (Thurman and Schifferes, 2012). Later, with the development of confidential techniques for creating digital user profiles, it was primarily demonstrated by the social media and search engine personalization led to such important steps as Google’s personalized search service in 2009 and Facebook’s departure from chronological sorting of posts in favour of algorithmic content ordered in accordance with the expected individual interests of users. The personalized Google News service, where almost all materials are selected using algorithms that determine what the user sees and in what order, is an iconic example, due to the scale and potential of impact, and above all the quality of data analysis. Google News offers automatic selection of news from over 50,000 sources around the world (Filloux, 2013). Articles and multimedia content are selected and systematized automatically. Google News also analyzes the content of the publication: topicality, distance from the place of events or diversity of opinions (*How Google News stories are selected*, no date). Algorithms, therefore, personalize exposure to content by responding to the changing behaviour of consumers, their choices, online activities and content consumption. Moreover, implicit personalization techniques in information organizations rely on inferring user preferences from data collected by monitoring their digital activity (Thurman and Schifferes, 2012). Among the consequences of those processes of personalisation and selection it has been indicated that some voices (positions/opinions) are amplified at the expense of other perspectives and voices which practically means the formulation of a modern relationship of power because algorithms construct reality in a way that reflects the interests and points of view of specific groups (Kreft, 2017). In 2015, The New York Times published an article that explored the impact of a person’s place of birth and upbringing on their entrepreneurial abilities. The study was based on tax documents that made it easier to trace the fate of 5 million children who moved between different counties in the territory of the United States in 1996-2012 (Lecompte, 2016). The main conclusion of the experiment was: “The area in which a child grows has a key impact on his/her prospects for increasing mobility.” An interactive excerpt was included in this article, highlighting data from 2,478 districts included in the research. The editors responsible for the graphics created an article that adapted to the preferences of the individual users based on their location. When viewing its IP-address, the key paragraphs highlighted local income statistics and compared them with the national average (Lecompte, 2016). The accompanying map would automatically focus on the appropriate county of the user and its direct vicinity. After the publication of the next article *The Best and Worst Places to Grow Up* (Aisch *et al.*, 2015) many users ignored the fact that the text had been constructed solely by algorithmic actions. Each user was convinced that the text s/he was reading was the only version of it. Readers thought that everything was edited by an experienced journalist, especially in such a respected publishing house, where the right tone had to be maintained. This phenomenon can therefore be considered a milestone towards personalization of content. Three bots in the Washington Post would deserve special attention. The first was called Feels. The bot asked users to share their experiences on specific events, so it could track readers’ feelings on a daily basis, as well as record how events affected people and tracked trends in emotional responses. Moreover, it gave users the opportunity to express their opinions and conduct discussions in a safe environment (Marburger, 2017). Every day at 7.00 p.m., the bot would contact users to ask one question: “how are you feeling?” and would send notifications the next morning along with a compilation of the opinions of other people asked the same question. In all the examples cited, the offer was created with the use of structured data. Simple algorithms or complex NLG-based software were able to produce content on any topic – sports, finance, weather, elections, traffic jams, personalized reports and many more.

### 3. JOURNALISTS AND MANAGERS ON PERSONALIZATION

While algorithmic content personalization has become a powerful technology, used primarily for a commercial purpose, there is very little research into the attitudes of the media staff towards personalization. Identifying this gap, we conducted qualitative research among 22 people from 16 leading media organizations in Poland. Interviewees, journalists and media managers were employed in a total of 23 editorial offices, as several people were directly employed by several editorial offices at the same time. In-depth interviews were conducted in 2019-2020. The study covered the following companies and editorial offices:

- Television: Polsat (3 persons, 4 newsrooms in total), Telewizja Polska (1 person), TVN (2 persons, 2 different editorial teams)
- Portals: Onet (2 persons from two editorial teams), Wirtualna Polska (4 editorial teams), Interia, Nowiny.pl;
- Press/portals: Eurosport, Spider's Web, Rzeczpospolita, Grupa Agora, Tygodnik Katolicki, Gość Niedzielny, Weszło.com;
- Radio: Radio Zet;
- Information Agency: Katolicka Agencja Informacyjna [Catholic Information Agency];
- Freelancers: 2 persons.

Before we answer the questions related to the topic, it should be emphasized that only a few interviewees had heard about the work of advanced technologies based on artificial intelligence. They were generally aware of the potential for technological innovation, but only knew of simple algorithms or templates for content such as weather, stocks, and sports. Moreover, journalists did not have programming knowledge and coding skills, but most saw the need to expand their skills in this area. In their opinion, none of the organizations in which the interviewees worked used technologies based on artificial intelligence and natural language generation to create content, while larger websites used algorithms to personalize the content. Journalists as well as managers mentioned almost as many unique advantages and disadvantages (with advantages being slightly more numerous) of the possible use of advanced technologies in editorial offices. Journalists and managers were asked questions about personalization based on automatic content creation, including the basic question: "Is it possible for the automatically generated content to also be personalized for each reader of the issue?" They all agreed. As the responses were extensive, they included important thoughts regarding personalized ads, cookies, and other personalization algorithms.

The unequivocally affirmative responses, however, were vague, for example:

- *Yes, of course. It's happening already* (Anonymous, Dzień dobry TVN)
- *Most certainly. I think it's absolutely possible.* (Bartosz Kurek, Telewizja Polska News)
- *Most certainly yes.* (Maciej Słomczyński, Eurosport)
- *I think it's possible and definitely doable.* (Tomasz Rożek, Gość Niedzielny)
- *Of course.* (Krzysztof Miękus, Freelancer)

In parts of the answers definite examples have been indicated constituting the basis for generalisations.

- *Yes, most certainly. We obviously know that social media profile people based on their observations of the users. So, this may be used both for political content to influence their choices during elections but also to profile them as regards their business views, and the tendency to buy these goods and services and not others. We have examples of this already in the media published in a traditional way or particular TV stations are in fact profiled. These are the so called identity media, targeted at certain audience. This content may be*

*profiled for a single human, his/her political preference and any other preferences. (Tomasz Królak, KAI)*

- *Personalisation is in my opinion most certainly possible. After all, it's been happening already on Facebook, so introducing it in the media is realistic. (Anonymous, Telewizja Polsat)*
- *Yes, for sure. That's why we have cookies, to show ads already today to people who are interested in something and who are looking for something, there. If we are already able to do it with commercials, all the more for some news or some materials or articles. (Martin Śliwa, Rzeczpospolita)*
- *For sure. Someone opens a website and sees the description of the match of the local team. Or this match is discussed in more detail. So, for sure, yes – everything tends to personalisation (Leszek Milewski, Weszlo.com)*
- *Most decidedly yes. It's happening now already: the content is personalised on portals and displayed in accordance with the previous choices of the user. In the future, probably each user will get selected and personalised content. From what I know, it's not happening on Polish portals for each user individually, but for a few dozen of users, and they choose certain articles. This personalisation is based on the division into, say, fifty segments and each of them is specified thematically, for example sports, information, celebrities, cuisine, cooking etcetera. When someone chooses one segment more often than the others, then the information from that segment is displayed. That's what personalisation is based on at present. (Anonymous, Onet.pl)*
- *Big data serves just this. This tool is not perfect, of course and is constantly modified, because the thing is that the user should get the content of interest. This algorithm expands and the knowledge about the user is bigger and bigger, so the possibilities of matching this website to the user are bigger and bigger too. The content on some portals is tailored to a particular user and you don't need bots or big data for this, because it's obvious that when someone opens a website on motor industry, they are interested in cars. Then there are horizontal portals with users that are so varied with so many interests that you need to get to know a user really well to match their taste. I think that the horizontal portals will try to make the personalisation of the portal to work in the best possible way. (Anonymous, Wirtualna Polska)*
- *This is possible and technologically feasible. (Anonymous, information journalist, Telewizja Polska)*

Only one interviewee pointed at the current range of personalised content.

- *"In the future, the content will be selected and personalised with one particular user in mind. To my knowledge, at Polish portals at present it doesn't happen for each user separately but for a few dozen groups of users who choose particular articles. This personalisation is based on the division into, say, fifty segments and each of them is specified thematically, for example sports, information, celebrities, cuisine, cooking etcetera. When someone chooses one segment more often than the others, then the information from that segment is displayed. That's what personalisation is based on at present." (Anonymous, Onet.pl)*

In statements where uncertainty occurred, the interviewees continued expressing their views intended to confirm their position:

- *It seems to me that yes. Each of us leaves some trail although it seems sad to us and we would prefer it not to take place. Our needs and interests are easy to predict and figure out that is demonstrated in Google ads, for example. The algorithm sees what music we listen to, what books we read, what movies we watch, what we click at, that's why I would freely*

*imagine that the appropriately formulated content could reach a certain user, considering their needs.* (Piotr Jagielski, Onet Kultura)

- *If this is programmed like that by the authors of this system, then I would think, yes, for sure. There shouldn't be any problem with that.* (Bartosz Kwiatek, Telewizja Polsat News)
- *I think so.* (Agnieszka Łopatowska, Interia.pl)
- *I read about such tests that the analysis of the viewed websites performed by AI will consequently lead to the situation where I will keep receiving the content that firstly I've been looking for or I would like to be looking for, secondly, and here I would be a little afraid, AI will try to predict what I expect and what I count for. And this is a little bit dangerous because if I am looking for something, I am also doing it to broaden my thinking, my cognitive apparatus, and here I will have a situation where something will be pushed before me.* (Priest Kazimierz Sowa, Freelancer)
- *Yes, it seems to me that most certainly. Someone could set up an account in a service and receive personalised content concerning their team or their sportsman. But it is no different from what we have today. Here, you can simply automate the process of generating this information itself. Where, even when we are talking about sports related applications that provide a match result, for example, we do not treat it as journalism, but this is knowledge transmission. And here, such an application could send you a notification, if someone scored a goal, for example, and this is some form of journalism because in this way we send some notification to our client that this team scored a goal and 'click the notification to learn more', as the match is progressing. The personalisation process itself is most definitely possible.* (Karol Kopańko, Spider's Web)
- *Since there are personalised ads appearing, I suspect the content can be personalised as well.* (Anonymous, TVN24)
- *I think so. This is why there are all those cookie files that segment the content depending on the user of the web browser.* (Anonymous, Radio Zet)
- *I think that in a sense, yes, similarly to personalised ads that we see depending on what we read, what we watch in the Internet and what we are looking for; the same with such content that can be generated depending on our preferences and our interests. That's right. So here I am, looking for a hotel on the sea, for example, in some town, and I view it in Google and in a while on Facebook, I can see ads with offers of various hotels right there on the sea. We know it's not a coincidence, just these bots in the Internet are spying on us, they know what we are looking for and they try to serve us or provide things we are looking for to make us buy them, choose them and so on, or at least click on them.* (Anonymous, Agora S.A.)
- *I think that theoretically it is possible. They know us so well, so I guess so.* (Monika Białkowska, Tygodnik Katolicki)

#### **4. CONCLUSION**

Personalisation is relatively common practice in the media, mainly concerning the social media, search engines and information portals but it is also applied by digital versions of TV stations, press publishers and radio stations. Although digital editorial rooms of the Polish media are technologically advanced and "immersed" in the users' environment, utilising digital technology en masse, personalisation applying digital technology is state "imagined" by journalists and managers and not something experienced or practiced. They do not participate in the processes of digital personalisation that is mainly associated with the market of advertisements. They notice its potential but they also see threats. Their intuitive, general orientation is dominant. The statements suggest large, uniform awareness of the personalisation offer of the media but relatively low knowledge of particular solutions.

Remembering about non-representativeness of the qualitative research, it may be indicated that there is a clear dissonance between the personalisation of ads and the personalisation of journalist content, although this issue requires further research.

#### LITERATURE:

1. Aisch, G. *et al.* (03.05.2015). The Best and Worst Places to Grow Up: How Your Area Compares, *The New York Times*.
2. Arora, N. *et al.* (2008). Putting one-to-one marketing to work: Personalization, customization, and choice, *Marketing Letters*, 19(3–4), pp. 305–321. doi: 10.1007/s11002-008-9056-z.
3. de Bellis, E. *et al.* (2019). Personalizing the Customization Experience: A Matching Theory of Mass Customization Interfaces and Cultural Information Processing, *Journal of Marketing Research*, 56(6), pp. 1050–1065. doi: 10.1177/0022243719867698.
4. Bodó, B. *et al.* (2019). Interested in Diversity, *Digital Journalism*, 7(2), pp. 206–229. doi: 10.1080/21670811.2018.1521292.
5. Cook, T. E. (1998) *Governing with the news: The news media as a political institution*. Chicago: University of Chicago Press.
6. Filloux, F. (25.02.2013). Google News: the secret source, *The Guardian*. Retrived 28.09.2019 from <https://www.theguardian.com/technology/2013/feb/25>.
7. Hendrickx, J., Smets, A. and Ballon, P. (2021). News Recommender Systems and News Diversity, Two of a Kind? A Case Study from a Small Media Market, *Journalism and Media*, 2(3), pp. 515–528. doi: 10.3390/journalmedia2030031.
8. How Google News stories are selected (no date). *Google News Help*. Retrived 25.03.2021 from <https://support.google.com/googlenews/answer/90057>
9. Kim, H. Y. and Lee, Y. (2020). The Effect of Online Customization on Consumers' Happiness and Purchase Intention and the Mediating Roles of Autonomy, Competence, and Pride of Authorship, *International Journal of Human-Computer Interaction*, 36(5), pp. 403–413. doi: 10.1080/10447318.2019.1658375.
10. Kreft, J. (2017). Algorithm as demiurge: a complex myth of new media'. In *Strategic Imperatives and Core Competencies in the Era of Robotics and Artificial Intelligence* (pp. 146–166). IGI Global.
11. Kumar, V. *et al.* (2019). Understanding the role of artificial intelligence in personalized engagement marketing, *California Management Review*, 61(4), pp. 135–155. doi: 10.1177/0008125619859317.
12. LaSalle, D. and Britton, T. A. (2003). *Priceless. Turning ordinary products into extraordinary experience*. Boston, Massachusetts: Harvard Business School Press.
13. Lecompte, C. (2016). *Automation in the Newsroom. How algorithms are helping reporters expand coverage, engage audiences, and respond to breaking news*. NiemanReports. Retrived 18.07.2021 from <http://niemanreports.org/articles/automation-in-the-newsroom/>
14. Lee, A. M., Lewis, S. C. and Powers, M. (2014). Audience Clicks and News Placement, *Communication Research*, 41(4), pp. 505–530. doi: 10.1177/0093650212467031.
15. Marburger, J. (26.04.2017). These are the bots powering Jeff Bezos' Washington Post efforts to build a modern digital newspaper, *NiemanLab*. Retrived 18.10.2020 from <http://www.niemanlab.org/2017/04/these-are-the-bot>.
16. Prahalad, C. K. and Ramaswamy, V. (2000). Co-opting Customer Competence', *Harvard Business Review*, 78(1), pp. 79–87.
17. Slywotzky, A. J. (2000). The Age of the Choiceboard, *Harvard Business Review*, 78(1), pp. 40–41.

18. Sørensen, J. K. and Schmidt, J.-H. (2016). An Algorithmic Diversity Diet? Questioning Assumptions behind a Diversity Recommendation System for PSM. In *RIPE@2016*. Antwerp: University of Antwerp, p. 776.
19. Thurman, N. and Schifferes, S. (2012). THE FUTURE OF PERSONALIZATION AT NEWS WEBSITES, *Journalism Studies*, 13(5–6), pp. 775–790. doi: 10.1080/1461670X.2012.664341.
20. Welbers, K. *et al.* (2016). News selection criteria in the digital age: Professional norms versus online audience metrics, *Journalism*, 17(8), pp. 1037–1053. doi: 10.1177/1464884915595474.
21. Zamith, R. (2018). Quantified Audiences in News Production, *Digital Journalism*, 6(4), pp. 418–435. doi: 10.1080/21670811.2018.1444999.

## THE ROLE OF INTELLECTUAL CAPITAL IN THE ECONOMIC GROWTH: THE CASE OF THE EU COUNTRIES

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### ABSTRACT

*During the last four decades the relative importance of resources has been changed giving advantage to the immaterial resources over the material ones. This change has put emphasis on the significance of intellectual resources for the success of companies, cities, regions, and national economies. The position of these actors in the global market has been determined by the ability to use knowledge and other intellectual resources to create value for various stakeholders. Those who succeeded in these activities have achieved the higher level of competitiveness. In the contemporary business and social environment, knowledge represents the main production factor, whereas intellectual resources are the key determinant of competitiveness and success. Therefore, the aim of this paper is to determine the impact of national intellectual capital on the economic growth in the EU countries while taking into account some macroeconomic indicators as well. The results confirmed positive and statistically significant correlation between intellectual capital indicators and economic growth. Also, the findings revealed positive impact of high technology export, mobile cellular subscriptions, and researchers in research and development (R&D) on the economic growth. The authors proposed several measures to be taken into account by macroeconomic policy makers in drafting strategies for managing intellectual potential of their economies.*

**Keywords:** *knowledge, intellectual capital, management, economic growth, EU countries*

### 1. INTRODUCTION

In the contemporary circumstances, economic and social changes induced by the development of technology and science, have reflected on the relative importance of economic resources – physical, financial, human, and other intellectual resources. During 20th century enterprises have passed transformation from processing raw materials and production activities to processing information and development, application, and transfer of new knowledge. Continuous changes towards knowledge-based economy and innovations have put into the scene the question of creating, disseminating, capturing, and using knowledge for gaining economic returns. Hence, knowledge embedded in intellectual assets (i.e. human capital, R&D, patents, software, organizational structures, etc.) has become crucial for economic performances and prosperity not only of enterprises, but national economies as well. On their way from industrial economies to knowledge-based economies, and especially at the begging of the 21st century, the hierarchy of resources has been shifted towards intellectual assets, making their dominance over the tangible assets (90%:10%) (Ocean Tomo, 2021). Successful transformation of industrial economies towards knowledge economies entails numerous activities resulting in sustainable economic growth, such as: education and training, adopting

innovation and technology, information infrastructure, and supporting business and institutional environment (Kozak, 2013). Evidently, the process of value creation has been altered, and knowledge and intellectual resources have become its main drivers (Rađenović and Krstić, 2020). Therefore, the future economic prosperity of a country will depend on its capacities and capabilities to create knowledge base and wisely use it to enhance the well-being of its citizens (Rađenović, 2017). Potentials to profitably exploit intellectual abilities and create new solutions for satisfying ever growing human needs represent key characteristic of global knowledge economy (Viedma Marti and Cabrita, 2012). Possibilities for creating economic value from intellectual assets is mainly determined by the management capacities, as well as by the implementation of the appropriate business strategies. Thus, the management of intellectual capital is especially important. Bearing all this in mind, the aim of this paper is to determine the impact of national intellectual capital on the economic growth in the EU countries and provide recommendations to policy makers to effectively manage national intellectual potentials to improve the competitiveness of a country. In that regard, the following hypothesis is assessed: the national intellectual capital significantly impacts the economic growth in the EU countries. To fulfill the set objective, paper is divided in several sections. After the introduction, the theoretical and empirical background is presented, followed by the data and methodology section. The subsequent part is devoted to the results and discussion, and finally, in the conclusion some managerial recommendations are given.

## **2. THEORETICAL AND EMPIRICAL BACKGROUND**

During the last four decades, intellectual capital has become the most important source for creating value, wealth, and prosperity (Krstić and Rađenović, 2019). Expansion of knowledge-based business activities and technological advances have led to the economic transformation on both micro and macro level, and have put emphasis on capacities to generate and exploit knowledge resources in the value creation process. The basic assumption underlying national intellectual capital is reflected in the importance of generating, acquiring, and developing valuable knowledge, and its efficient and effective usage (Käpylä et al., 2012). National intellectual capital comprises of hidden values of various entities (individuals, enterprises, institutions, communities, regions) which are the source of wealth creation, competitiveness, and productivity of nations (Bontis, 2005; Užienė, 2014). It can be described as knowledge-based assets which support growth and development of a country (Seleim and Bontis, 2013). These immaterial assets are important for companies and their stakeholders and for macroeconomic policy makers as well. Immaterial resources are the main source of competitive advantage that have to be identified, measured and controlled in order to provide efficient management in companies. Additionally, these resources are key drivers of growth and competitiveness in a society, and their measurement is crucial for designing and implementing public policies (García-Ayuso, 2003). The World bank and many other international organizations recognize investments in intellectual capital as key determinant of economic growth, employment, and living standard of citizens (Užienė, 2014). Therefore, the allocation of resources in education, health and social services, public infrastructure, should not be based on expenditures, but on the potential to generate value through knowledge (Bounfour and Edvinsson, 2005). Those countries investing more in education, training, R&D activities, have greater possibilities to grow and develop. The connection between intellectual capital and competitiveness is strong, due to the knowledge embedded in them (Stähle and Stähle, 2006). Competitiveness is a multidimensional concept which on the macroeconomic level imply the capacity of an economy to successfully respond to the demands of international market while providing the high standard of living for its citizens. But there is no competitive economy without competitive enterprises and vice versa. Stable fiscal and monetary policy, reliable and efficient legal system, and strong democratic institutions can significantly contribute to the

stable and stimulating business environment. Hence, the success of enterprises is closely connected with the quality of national business environment. According to the World Economic Forum (WEF) Global Competitiveness Index (GCI), the impact of intellectual capital on competitiveness varies between 58% and 70%, depending on the level of economic development, and it is more prevailing in developed countries (Stevanović et al., 2018). These countries invest significant funds in education and R&D, thus further improving their competitiveness. Although the concept of intellectual capital has been widely studied issue among researchers, consensus does not exist regarding its main components. Different authors provide different segmentation (i.e. human, relational, market, structural, process, renewal, entrepreneurial, innovation), and hence, the classification remains quite unclear. Notwithstanding the inability to give general classification, it is more important to stress the relevance of synergy among components in creating and augmenting national wealth (Rađenović and Krstić, 2017). According to Bontis (2004), the wealth of nation represents the connection between financial wealth, reflected in GDP per capita, and national intellectual capital – human, market, renewal, and process capital. National human capital comprises of knowledge, education, and competences of individuals in realizing national economy goals. National market capital relates to intra-organizational relationships and connections, and capabilities of a country in the global scene. National process capital encompasses the knowledge warehouses embedded in information and communication technology (ICT) systems, i.e. infrastructure which enables creation, exchange, transmission, and dissemination of knowledge. National renewal capital represents the future intellectual national wealth encompassing R&D, patents, trademarks. In the extensive literature dealing with intellectual capital, some authors stress the role of intellectual capital for competitiveness improvement (Bounfour, 2003; An, 2015; Dorinela, 2015), while others study the impact of some of its components on the economic growth. Some researchers investigate the role of innovation and ICT (Franco and de Oliveira, 2017; Mehrara et al., 2017; Majeed and Ayub, 2018), others the role of education and human capital (Neycheva, 2010; Suri et al., 2011; Mercan and Sezer, 2014; Pelinescu, 2015; Rakić and Rađenović, 2016b) for economic growth and competitiveness. The importance of education and innovations, as elements of intellectual capital, for the long-term economic growth has been the subject of interest of the endogenous growth theory starting from 1980s. Namely, endogenous growth theories point to the importance of intellectual capital as determinant of economic growth, where economic growth is a function of accumulated knowledge and innovations (Plummer et al., 2014). Besides, endogenous theories highlight the importance of institutional framework for stimulating innovations, as the motivation for innovations depends on the possibilities for innovators to commercialize their inventions (Sredojević et al., 2016). By employing endogenous growth models numerous empirical studies have been performed aiming to determine the impact of human capital, especially education, and innovation on the economic growth and competitiveness. For example, the research conducted by Neycheva (2010) on the sample of EU countries, has employed the ratio of public expenditures on education to GDP as proxy indicator of human capital, while the contribution of innovations has been analyzed through the public investments in R&D. The obtained results revealed positive connection between analyzed expenditures and economic growth, except in the case of post-communist countries in which the relationship between education and growth was either statistically insignificant or unstable. When developing countries are in question, the results of the study, which included 118 countries for the period 1975-2000, showed that social expenditures had positive and significant direct impact on accumulation of knowledge and health, as well as positive and significant indirect impact on economic growth (Baldacci et al., 2008). Some studies analyzed and confirmed the positive influence of human capital development (Suri et al., 2011), education expenditures (Mercan and Sezer, 2014), innovative capabilities (measured by the

number of patents) and number of employees (with secondary education) (Pelinescu, 2015), higher education and training (Rakić and Rađenović, 2016a) on economic growth. Research conducted by Stevanović et al. (2018) investigated the impact of national intellectual capital on the economic growth on the sample of 15 Southeast European countries for the period 2003-2015. The obtained results showed that increase in high-technology export, number of R&D researchers and mobile phone subscribers had positive and significant impact on economic growth in the analyzed countries, while the impact of R&D expenditures as percentage of GDP and the gross enrolment rate in tertiary education although positive were statistically insignificant, whereas the impact of patent applications was negative and significant. Based on the results of these studies it is evident that intellectual capital represents an important determinant of economic growth. However, there is no consensus among researchers regarding the indicators used for measuring some components of intellectual capital, whereas employment of different proxies leads to divergent results, confirming the fact that impact of intellectual capital on the economic growth greatly depends on the selected indicators.

### **3. DATA AND METHODOLOGY**

In this study, several indicators have been employed for measuring national intellectual capital. Indicators are chosen based on the analysis of variables used in previous studies by covering all components of national intellectual capital. Government expenditures on education as percentage of GDP (GEE) is used as an indicator of human capital (Lin and Edvinsson, 2013; Seleim and Bontis, 2013; Stähle et al., 2015). According to the reviewed literature, higher investments in education are expected to positively influence economic growth, as educated population could easily use modern technologies and engage in R&D intensive activities. High technology export (HTE) is used as an indicator of market capital (Bontis, 2005; Weziak, 2007). According to the reviewed literature, higher level of high technology export is expected to positively influence economic growth. It illustrates the knowledge and capabilities of a country to successfully meet the needs of international customers. Mobile cellular subscriptions per 100 people (M) is used as an indicator of process capital (Weziak, 2007; Lin and Edvinsson, 2013; Stevanović et al., 2018). It is expected to have positive impact on the economic growth, as it represents supporting infrastructure facilitating the access and dissemination of information. Since renewal capital is seen as the source of future national wealth, we have employed several indicators for its measurement: patent applications (P), R&D expenditures as percentage of GDP (R&D), and researchers in R&D per million people (R) (Bontis, 2005; Lin and Edvinsson, 2013; Stähle et al., 2015; Stevanović et al., 2018). All these indicators determine the technological competence of a country and are expected to have positive impact on the economic growth. The study employs the real Gross Domestic Product per capita in constant 2017 PPP \$ (GDP) as the proxy indicator of economic growth. For investigating the impact of national intellectual capital on the economic growth, apart from these variables, some macroeconomic indicators will be included in the model as well. These are unemployment rate (UNE) and inflation rate (I), since empirical evidence shows a strong relationship between macroeconomic policy and level of economic activities. Data used in this study are from the World Bank Development Indicators database covering the period from 2007 to 2020. The sample consists of 27 EU countries. Since we have panel data, the tests for choosing appropriate model are performed before the interpretation of regression analysis results. The F-test decides between the Pooled Regression Model (Pooled) and the Fixed Effects Model (FEM). By rejecting the null hypothesis, it can be concluded that there are differences in the intercepts across analyzed countries. The Breusch-Pagan LM test decides between Pooled and Random Effects model (REM), and acceptance of null hypothesis indicates nonexistence of significant individual effects in the error term.

Finally, the Hausman test reveals whether the REM and FEM estimators differ substantially or not, where acceptance of null hypothesis indicates appropriateness of REM (Gujarati, 2004).

#### 4. RESULTS AND DISCUSSION

Descriptive statistics are presented in Table 1. The average value of GDP per capita in analysed countries is 40,720.68 \$ (2017 PPP), and the minimum value of GDP per capita has Bulgaria in 2007 (16,583.96), while the maximum value of GDP per capita has Luxembourg in 2007 (114,889.20). The average value of the government expenditures on education as percentage of GDP (GEE) is 5.17 percent and the minimum value of 2.95 percent is recorded in Romania in 2012, while maximum rate of 8.56 percent is recorded in Denmark in 2010. The average value of high technology export (HTE) is 23.28 billion \$, the minimum value of 54.77 million \$ is recorded in Cyprus in 2017, and maximum value of 216.3 billion \$ is recorded in Germany in 2014. As regards mobile cellular subscriptions per 100 people (M), average value is 123.24, minimum value of 89.48 is recorded in France in 2007, and maximum value of 174.21 is recorded in Lithuania in 2020. The minimum value of the patent applications (P) of 2 is achieved in Cyprus in 2013, while the maximum level of 49,240 is achieved in Germany in 2008. The average value of the patent applications in the analysed countries is 3,616. The minimum value of the R&D expenditures (R&D) is 0.38 percent of GDP in Romania in 2014, while the maximum value of R&D expenditures is 3.75 percent of GDP in Finland in 2009. The mean value of the R&D expenditures is 1.54 percent indicating insufficient level of R&D investments in these countries. The minimum number of researchers in R&D per million people (R) of 790.69 is recorded in Romania in 2011, while the maximum of 8,065.89 is recorded in Denmark in 2018. The average number of researchers in analysed countries is 3,339.70.

Variable	Mean	Standard Deviation	Minimum	Maximum
GDPpc	40,720.68	18,058.73	16,583.96	114,889.20
GEE	5.17	1.16	2.95	8.56
HTE	23,276,374,000	41,886,896,575	54,768,490	216,297,040,017
M	123.24	16.04	89.48	174.21
P	3,616	9,424	2	49,240
R&D	1.54	0.89	0.38	3.75
R	3,339.70	1,719.81	790.69	8,065.89
UNE	8.65	4.45	2.01	27.47
I	1.82	2.07	-4.48	15.40

*Table 1: Descriptive statistics  
(Source: Authors' calculations)*

The results of correlation analysis are presented in Table 2. For determining the correlations between variables, the Spearman's coefficients are used. The correlation between GDP per capita and the government expenditures on education is moderate, positive and statistically significant (0.47). As regards high technology export, this measure has positive strong statistically significant correlation with GDP per capita (0.54). The strongest positive statistically significant relationship is determined between GDP per capita and R&D investments (0.75) and researchers in R&D (0.74). Moderate, positive and statistically significant correlation exists between GDP per capita and patent applications (0.43). As regards mobile cellular subscriptions, this measure has low correlation with GDP per capita (0.13). Unemployment and inflation are negatively moderately correlated with GDP per capita (0.43 and 0.24 respectively).

	ln GDPpc	GEE	ln HTE	M	P	R&D	R	UNE	I
ln GDPpc	1								
GEE	0.4699*	1							
ln HTE	0.5429*	0.0184	1						
M	0.1302**	0.0061	-0.0226	1					
P	0.4266*	-0.0035	0.7891*	-0.0069	1				
R&D	0.7527*	0.4826*	0.6193*	0.0891	0.5254*	1			
R	0.7376*	0.4826*	0.4588*	0.0748	0.3426*	0.9161*	1		
UNE	-0.4311*	-0.1412**	-0.2410*	-0.0839	-0.1153	-0.2348*	-0.2175*	1	
I	-0.2424*	-0.1727*	-0.0980	-0.0681	-0.0641	-0.1652**	-0.1740*	-0.1433**	1

Note: \* Correlation is significant at the 0.01 level, \*\* Correlation is significant at the 0.05 level

Table 2: Correlation analysis  
(Source: Authors' calculations)

Table 3 shows the results of tests for choosing the appropriate regression model. Based on the obtained results it is determined that FEM is appropriate for fitting analysed data.

<i>F</i> -test	<i>Breusch-Pagan LM</i>	<i>Hausman</i>
<i>H</i> <sub>0</sub> : Pooled, <i>H</i> <sub>1</sub> : FEM	<i>H</i> <sub>0</sub> : Pooled, <i>H</i> <sub>1</sub> : REM	<i>H</i> <sub>0</sub> : REM, <i>H</i> <sub>1</sub> : FEM
316.07 (0.0000)	447.72 (0.0000)	17.21 (0.0280)

Note: *p* values in ( )

Table 3: Test results for choosing the appropriate model  
(Source: Authors' calculations)

The regression analysis results are presented in Table 4. The estimated model explains 98.92 percent change in GDP per capita and this model is statistically significant as confirmed by the F test ( $p < 0.0000$ ). According to the obtained results, patent applications are not statistically significant in explaining the GDP per capita changes, although their impact is positive as expected. If patent applications increase by 1, the GDP per capita will increase by 0.001 percent, *ceteris paribus*. All other analysed variables are statistically significant in explaining changes in GDP per capita. However, some variables negatively impact the GDP per capita contrary to the expectations – government expenditures on education and R&D expenditures. If the government expenditures on education increase by 1 percent, the GDP per capita will decrease by 2.51 percent, holding all other variables constant. These results are in line with Pelinescu (2015) who also confirmed negative impact of government expenditures on education on GDP per capita in the EU countries for the period 1990-2000. The possible explanation for such results could be the heterogenous group of countries (Pelinescu, 2015) or the fact that huge amount of these expenditures is directed towards the wages of employees in the education process instead for the improvement of the quality of the education process. Furthermore, if the R&D expenditures increase by 1 percent, the GDP per capita will decrease by 4.46 percent, *ceteris paribus*. Similar results are obtained by Kacprzyk and Doryń (2017), who examined the innovation-growth nexus in the EU countries over the period 1993-2011. They offer several explanations for negative R&D-growth connection: 1) R&D expenditures in the EU are incapable of generating economic growth due to the insufficient critical mass; 2) public R&D expenditures are mainly focused on generating basic knowledge instead to support high technology innovations; 3) public R&D expenditures are inefficient.

Dependent variable: ln GDPpc								
constant	GEE	ln HTE	M	P	RD	R	UNE	I
9.1914*	-0.0251*	0.0583*	0.0009*	0.00001	-0.0446**	0.00005*	-0.0143*	-0.0076*
[40.32]	[-4.09]	[5.76]	[2.78]	[1.02]	[-2.34]	[6.20]	[-13.18]	[-5.79]
$R^2$	0.9892	$\bar{R}^2$	0.9874	$F$ test	51.14*			

*Note: t statistics in [ ], \*, \*\* significant at the 0.01 and 0.05 level respectively*

*Table 4: Regression analysis results  
(Source: Authors' calculations)*

As we expected other intellectual capital components have positive impact on GDP per capita. If high technology export increases by 1 percent the GDP per capita will increase by 0.06 percent, holding all other variables constant. If number of researchers in R&D per million people increases by 1, the GDP per capita will increase by 0.005 percent. Similar situation is with mobile cellular subscriptions per 100 people, if they increase by 1 the GDP per capita will increase by 0.09 percent, ceteris paribus. These results are consistent with the findings of the study by Stevanović et al. (2018), who confirmed this nexus on the sample of SEE countries. The increase in unemployment and inflation rates by 1 percent will lead to the decrease in GDP per capita by 1.43 percent and 0.76 percent respectively, ceteris paribus.

## 5. CONCLUSION

Intellectual capital represents the source of national competences and capabilities which are seen as crucial for economic growth, competitiveness, human development, and quality of life (Malhotra, 2000). These immaterial assets attract the attention of researchers, practitioners, and numerous institutions all around the world. Considering the importance of intellectual capital for generating national wealth and prosperity, the intention of this study was to investigate the impact of national intellectual capital on the economic growth on the sample of the EU countries. As among intellectual capital researchers do not exist consensus regarding indicators of intellectual capital, the indicators in this study were selected after careful and critical examination of relevant literature. Following indicators were employed: government expenditures on education as percentage of GDP (GEE) as an indicator of human capital; high technology export (HTE) as indicator of market capital; mobile cellular subscriptions per 100 people (M) as indicator of process capital; and patent applications (P), R&D expenditures as percentage of GDP (R&D), and researchers in R&D per million people (R) as indicators of renewal capital, and unemployment (UNE) and inflation (I) rates as macroeconomic indicators. The findings of the study revealed the positive impact of high technology export, mobile cellular subscriptions, and researchers in R&D on economic growth in the EU countries over the period 2007-2020. These findings are expected and are in line with previous studies, as ICTs have inevitable role in obtaining and processing information, reducing research costs, and enhancing the knowledge sharing (Majeed and Ayub, 2018). Hence, these countries should put efforts towards additional development of ICT infrastructure, i.e. process capital. Additionally, the positive impact of R&D researchers and high technology export on economic growth is comparable to the findings of Stevanović et al. (2018). By involving R&D researchers in the activities directed towards high technology products and their export, the economic growth of a country could be significantly increased. Considering this, it is important for the macroeconomic policy makers to provide stimulating business environment for companies employing R&D researchers and producing high technology products. Also, the emphasis should be given on the close collaboration between public and business research institutions to provide supporting and inspiring environment for their researchers. Governments should consider forming technological parks or business incubators to gather researchers and engage them in innovative research projects resulting in the disruptive innovations and technologies.

However, our findings revealed negative impact of government expenditures on education and R&D expenditures on the economic growth. Potential explanation for these results could be found in the insufficient critical mass of investments to make significant changes, but also in inefficient usage of invested funds. Therefore, the governments should consider raising the level of investments in both education and R&D activities, but through specialised financial programs that will focus on the outputs – the research and innovative activities leading to the generation of new high technology products and services. The main limitation of this study could be viewed in the choice of the intellectual capital indicators, as notwithstanding the critical assessment of previous studies, it is still the issue without final consensus. As regards future research directions, the potential studies could be directed towards developing countries, since intellectual capital could make significant difference for their economic growth. Based on the all the above mentioned the defined hypothesis could be confirmed suggesting that national intellectual capital significantly impacts the economic growth in the EU countries. Finally, trends towards intellectual capital dominance in the value creation process are overpowering, and hence, it is not the question whether countries should use their intellectual potentials, but how to develop and manage those potentials for achieving sustainable economic growth. Hence, it is necessary to have intelligent systems that will enable mapping the knowledge and intellectual resources and provide the effective management intellectual potentials.

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#### **LITERATURE:**

1. An, Y. (2015). *Reporting of Intellectual Capital Information: Evidence from a Developing Country*. Saarbrücken: Scholar's Press.
2. Baldacci, E., Clements, B., Gupta, S. and Cui, Q. (2008). Social Spending, Human Capital, and Growth in Developing Countries. *World Development*, 36(8), 1317-1341. DOI: 10.1016/j.worlddev.2007.08.003.
3. Bontis, N. (2004). National Intellectual Capital: A United Nations Initiative for the Arab Region. *Journal of Intellectual Capital*, 5(1), 13-39. DOI: 10.1108/14691930410512905.
4. Bounfour, A. (2003). *The Management of Intangibles*. London: Routledge.
5. Bounfour, A. and Edvinsson, L. (2005). *Intellectual Capital for Communities: Nations, Regions, and Cities*. Burlington, MA: Elsevier Butterworth-Heinemann.
6. Dorinela, N. (2015). The Knowledge Assessment Methodology of Countries, *Ovidius University Annals, Economic Sciences Series*, 15(2), 156-159.
7. Franco, C. and de Oliveira, H. R. (2017). Inputs and outputs of innovation: analysis of the BRICS: Theme 6 – innovation technology and competitiveness, *Revista de Administração e Inovação*, 14(1), 79-89, DOI: 10.1016/j.rai.2016.10.001.
8. García-Ayuso, M. (2003). Intangibles: Lessons from the Past and a Look into the Future. *Journal of Intellectual Capital*, 4(4), 597-604. DOI: 10.1108/14691930310504590.
9. Gujarati, D. N. (2004). *Basic Econometrics* (4th Ed.). Boston: The McGraw-Hill Companies.
10. Kacprzyk, A., & Doryń, W. (2017). Innovation and economic growth in old and new member states of the European Union, *Economic Research-Ekonomska Istraživanja*, 30(1), 1724-1742, DOI: 10.1080/1331677X.2017.1383176.
11. Käpylä, J., Kujansivu, P., & Lönnqvist, A. (2012). National Intellectual Capital Performance: A Strategic Approach. *Journal of Intellectual Capital*, 13(3), 343-362. DOI: 10.1108/14691931211248909.

12. Kozak, M. (2013). Intellectual Capital as a Key Factor of Socio-Economic Development of Regions and Countries. *Procedia Economics and Finance* (6), 288-295. DOI: 10.1016/S2212-5671(13)00142-1.
13. Krstić, B. and Rađenović, T. (2019). *Intellectual capital and competitiveness – micro and macro aspect*. Niš: Faculty of Economics, University of Niš.
14. Lin, C. Y.-Y. and Edvinsson, L. (2013). National Intellectual Capital in Israel and Financial Crisis Impact. *International Journal of Knowledge-Based Development*, 4(3), 245-273.
15. Majeed, M. T. and Ayub, T. (2018). Information and Communication Technology (ICT) and Economic Growth Nexus: A Comparative Global Analysis. *Pakistan Journal of Commerce and Social Sciences*, 12(2), 443-476.
16. Malhotra, Y. (2000). Knowledge Assets in the Global Economy: Assessment of National Intellectual Capital. *Journal of Global Information Management*, 8(3), 5-15.
17. Mehrara, M., Seijani, S. and Karsalari, A. (2017). Determinants of high-tech export in developing countries based on Bayesian model averaging, *Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu/Proceedings of Rijeka Faculty of Economics: Journal of Economics and Business*, 35(1), 199-215. DOI: 10.18045/zbefri.2017.1.199.
18. Mercan, M. and Sezer, S. (2014). The Effect of Education Expenditure on Economic Growth: The Case of Turkey, *Procedia - Social and Behavioral Sciences*, 109, 925-930. DOI: 10.1016/j.sbspro.2013.12.565.
19. Neycheva, M. (2010). Does Public Expenditure on Education Matter for Growth in Europe? A Comparison between Old EU Member States and Post-Communist Economies”, *Post-Communist Economies*, 22(2), 141-164, DOI: 10.1080/14631371003740597.
20. Ocean Tomo (2021). *Intangible Asset Market Value Study*. Retrieved 22.09.2021 from <https://www.oceantomo.com/intangible-asset-market-value-study/>
21. Pelinescu, E. (2015). The Impact of Human Capital on Economic Growth. *Procedia Economics and Finance*, 22, 184-190. DOI: 10.1016/S2212-5671(15)00258-0.
22. Plummer, P., Tonts, M. and Martinus, K. (2014). Endogenous Growth, Local Competitiveness and Regional Development: Western Australia’s Regional Cities, 2001-2011. *Journal of Economic and Social Policy*, 16(1), 1-29.
23. Rađenović, T. (2017). *Intellectual Capital as Determinant of Competitiveness Improvement of Enterprises in the Republic of Serbia* (Doctoral Dissertation). Niš: [T. Rađenović].
24. Rađenović, T. and Krstić, B. (2017). Measuring Intellectual Capital of National Economies, *Ekonomika*, 63(2), 31-43. DOI: 10.5937/ekonomika1702031R.
25. Rađenović, T. and Krstić, B. (2020). The Importance of Intellectual Capital for the Sustainable Growth of Regions: Evidence from the Republic of Serbia. In: J. M. Palma-Ruiz, J. M. Saiz-Álvarez and Á. Herrero-Crespo (Eds.), *Handbook of Research on Smart Territories and Entrepreneurial Ecosystems for Social Innovation and Sustainable Growth* (pp. 84-106). Hershey PA: IGI Global, DOI: 10.4018/978-1-7998-2097-0.ch006.
26. Rakić, B. and Rađenović, T. (2016a). Education as the Factor of Competitiveness of the Serbian Economy. In: J. Đurović-Todorović and M. Radosavljević (Eds.) *Anti-crisis politics and post-crisis processes: The challenges of economic science* (pp. 70-86). Niš: University of Niš, Faculty of Economics.
27. Rakić, B. and Rađenović, T. (2016b). Importance of human capital for regional development of the Republic of Serbia. In: Z. Arandžević (Ed.) *Regional Development and Demographic Flows of South-East European Countries* (pp. 95-111). Niš: University of Niš, Faculty of Economics.
28. Seleim, A. and Bontis, N. (2013). National Intellectual Capital and Economic Performance: Empirical Evidence from Developing Countries. *Knowledge and Process Management*, 20(3), 131-140. DOI: 10.1002/kpm.1412.

29. Sredojević, D., Cvetanović, S. and Bošković, G. (2016). Technological Changes in Economic Growth Theory: Neoclassical, Endogenous, and Evolutionary-Institutional Approach. *Economic Themes*, 54(2), 177-194. DOI: 10.1515/ethemes-2016-0009.
30. Ståhle, P. and Ståhle, S. (2006). Intellectual Capital and National competitiveness: Conceptual and methodological challenges. In A. Bounfour, *Capital Immateriel, Connaissance et performance* (pp. 415-430). Paris: L'Harmattan.
31. Ståhle, P., Ståhle, S. and Lin, C. Y. (2015). Intangibles and national economic wealth – a new perspective on how they are linked. *Journal of Intellectual Capital*, 16(1), 20-57. DOI:10.1108/JIC-02-2014-0017.
32. Stevanović, T., Ivanović-Đukić, M., Rađenović, T. and Radović, O. (2018). The impact of national intellectual capital on the economic growth in the South-Eastern European Countries, *Zbornik radova Ekonomskog fakulteta u Rijeci – Proceedings of Rijeka Faculty of Economics*, 36(2), 777-800. DOI: 10.18045/zbefri.2018.2.777.
33. Suri, T., Boozer, M. A., Ranis, G. And Stewart, F. (2011). Paths to Success: The Relationship Between Human Development and Economic Growth. *World Development*, 39(4), 506-522. DOI: 10.1016/j.worlddev.2010.08.020.
34. Užienė, L. (2014). National Intellectual Capital as an Indicator of the Wealth of Nations: The Case of the Baltic States. *Procedia - Social and Behavioral Sciences*, 156, 376-381. DOI: 10.1016/j.sbspro.2014.11.206
35. Viedma Marti, J. M. and Cabrita, M. R. (2012). *Entrepreneurial Excellence in the Knowledge Economy: Intellectual Capital Benchmarking Systems*. Basingstoke: Palgrave Macmillan.
36. Weziak, D. (2007). *Measurement of National Intellectual Capital: Application to EU Countries*. (IRISS Working Papers 2007-13). Differdange, Luxembourg: CEPS/INSTEAD.

## QUALITY ASPECTS OF DIGITAL SERVICES IN HIGHER EDUCATION: STUDENT-ORIENTED PERSPECTIVE

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### **ABSTRACT**

*Quality of information systems has extensively been studied for the past 30 years, but it has been mostly done in a corporative environment, whilst digital services in higher education have been understudied in literature. Additionally, the new evaluation era has moved the focus from technology to the end-user perspective. Information system quality has been most often evaluated through three sub-dimensions: system quality, information quality, and service quality. Moreover, new technologies have been used and therefore new dimensions in quality have emerged. In order to examine and identify which quality factors are considered as important from students' perspective, the survey has been conducted (N=284). Multivariate analysis has been done and the results confirmed ten factors, of which five belonged to system quality, four to information quality, and one factor belonged to service quality. The results also confirmed that service quality should not be neglected – as some researchers tend not to include it while measuring the quality of information systems.*

**Keywords:** *digital services, digital transformation, quality, higher education, student-oriented*

### **1. INTRODUCTION**

Digital transformation has been affecting higher education in a high manner (Biedermann, Kalbfell, Schneider, & Drachsles, 2019). Even if it can provide huge benefits for higher education institutions, i.e. it can be used to reduce drop-out rates and to improve students' experience, it also poses a significant challenge to institutions. In general, service quality has proven to be a very important factor when choosing the university (Sultan & Wong, 2019), as well as when measuring the overall students' satisfaction. However, due to digital transformation, the shift has been done – services have been redesigned and moved from the physical environment to digital. Nevertheless, the quality of digital service should be managed properly. There are numerous quality definitions, however when considering digital service, the most commonly used model dealing with quality dimensions is DeLone and McLean information system success model (DeLone & McLean, 2003). The success model, besides other constructs, relies on three quality dimensions: system quality, information quality, and service quality. According to the more recent study (2016), more stakeholders need to be considered since the whole new era highlights the importance of end users' needs (DeLone & McLean, 2016a). Also, it should be kept in mind that today's students belong to "generation z" which have interacted with technology for their whole life (Arkhipova, Belova, Gavrikova, Pleskanyuk, & Arkhipov, 2020; Martins, Branco, Au-Yong-Oliveira, Gonçalves, & Moreira, 2019). The literature review also showed that today's students evaluate their experience with higher education information systems as poor, comparing them with commercial digital services (Thoring, Rudolph, & Vogl, 2017). For that purpose, institutions of higher education need to properly understand the quality aspect on which they should pay attention in order to align with students' needs. Motivated by the presented need, this paper examines quality aspects of digital service in higher education from the end-users perspective. The following research question has been derived: *Which quality aspects of digital services are considered as the most important from end users' perspective?*

Related literature, along with the elaboration of why there is a need for an approach that focuses on end-users is presented in the next section. Section 3 elaborates the research methodology followed by research results in section 4. The last sections refer to a brief discussion and main conclusions of the paper, accordingly.

## 2. LITERATURE REVIEW

Digital transformation is considered the concept that is currently influencing higher education the most. Digital transformation can refer to numerous perspectives - from a focus on technology to digital user engagement, to new digital business models, and so on (Moreira, Ferreira, & Seruca, 2017). As a result, the area of higher education abounds in numerous digital services such as (Julião & Gaspar, 2020; Pasini, Estevez, & Pesado, 2019): student application, enrolling in a final exam, issuing a certificate of student status, etc. Results from the conducted survey have shown that institutions have started to pay attention to managing this whole concept (Grajek, 2020), and even though digital transformation has been getting more attention in recent literature, there is still a lack of empirical studies (Khalid, Ram, & Khalee, 2018). In the manner of digital transformation of higher education, a strategic approach has been extremely important; more precisely, the authors consider two aspects of digital transformation: a strategy and student-oriented digital services (Vindaca & Lubkina, 2020). Therefore, since digital services are *sine qua non* in today's higher educations and the effort has to be put on how those services should be, or what students expect those services would be like. Quality, in general, is considered to be one of the most important aspects of higher education (Sultan & Wong, 2019). Quality evaluation of digital services, especially the ones not related directly to the learning and teaching process, are emerging as very important for students but in literature have been mostly neglected (Xiao, 2019). A user-oriented approach is also the direction towards which an institution should be moving (Seres, Pavlicevic, & Tumbas, 2018). To adapt it properly, the institution needs to focus on students' needs which is aligned with the new era in evaluation advocating end-users needs (DeLone & McLean, 2016). Many models have been proposed for evaluating digital services, however, DeLone and McLean model is considered the most holistic model (Mukti & Rawani, 2016). Much effort has been done in previous researches, but antecedents of the quality dimension need to be more examined (DeLone & McLean, 2016a). In order to investigate factors influencing the quality dimension, it is important to investigate and identify key factors reflecting the quality dimensions. As the authors state, much has been done in a corporate environment, however research in the context of higher education is very scarce especially regarding administrative service, which is also supported by the results of the meta-study (Jeyaraj, 2020). The need for empirical research is also confirmed in the recent paper where authors have proposed a theoretical model for examining quality antecedents in higher education, but it has not been empirically tested (Tungpantong, Nilsook, & Wannapiroon, 2021). Also, the proposed model did not focus on dimensions indicators, even though authors of the DeLone and McLean success model explicitly say that measurement needs to be validated for each purpose, since the results may vary from field to field (DeLone & McLean, 2003). Recent research regarding the quality aspect of digital service used a broader perspective and was limited to users' secondary data (Nandakishore, Sridhar, & Srikanth, 2020). A starting point for identifying quality aspects of digital services in this paper are DeLone and McLean (2013) quality dimensions: system quality, information quality, and service quality. Since there are numerous different indicators used within the DeLone and McLean model, results from previous research, conducted with experts in Human-Computer Interactions and experts in higher education (Mijač, 2021), were used as a basis for this research.

A list of proposed indicators used for measuring the quality of digital services in higher education has been prepared, containing the indicators for:

- system quality: (1) system reliability, (2) security, (3) system availability, (4) response time and (5) system functionality;
- information quality: (1) information currency, (2) reliability, (3) accuracy, (4) completeness, (5) timeliness, (6) relevancy, and (7) information understandability;
- service quality - reliability.

Nandakishore et al. (2021) in their recent study had a goal to identify the key service quality attributes of digital platforms in higher education, however, they used secondary data from end-users ratings complemented with qualitative interviews. As the authors suggested, future work should obtain data regarding different digital services. In addition, the authors suggested bottom-up should be used when investigating the digital transformation (Bond, Marín, Dolch, Bedenlier, & Zawacki-Richter, 2018). This paper addresses identified research gap since this research was conducted with end-users who have experience with administrative digital services of higher education, and this research also examined whether the proposed list of indicators is appropriate for administrative digital services in higher education.

### 3. METHODOLOGY

The research was conducted on end-users of administrative digital services - who are in the context of higher education students. Participants in this study are students of the second and third year of undergraduate study, and the first year of graduate study of the Faculty of Economics, Business and Tourism, University of Split, Croatia. According to recent data (2020./2021.), the current number of students enrolled at the faculty exceeds 2500. Subjects of conducted research were administrative digital services developed *in-house*, within the custom-made student information system (e.g. enrolment in the final exam). Based on previously proposed indicators, items were created and an instrument has been developed. The instrument consisted of one demographic question (gender) and 43 questions to measure students' perceptions. For the measurement of variables, a 5-point Likert scale consisting of "Strongly Disagree", "Disagree", "Neither Agree Nor Disagree", "Agree", and "Strongly Agree" was used. The survey was prepared using the Lime Survey tool (SRCE, 2021). Confirmatory factor analysis (CFA) has been used since the purpose of this paper was to confirm the existed theory and research (Byrne, 2016). Data has been collected and extracted to SPSS format and results of statistical analysis are presented in the next section.

### 4. RESULTS

The total number of students who participated in this survey was 332, of which 284 students completed the survey (48 surveys were partially filled - 17%). This resulted in a response rate of 84%. Recommendations suggest that for conducting factorial analysis, the number of a sample should be at least 200 participants, and that ratio between observed variables and a number of the participant should be at least 1:5 (Hair, Black, Babin, & Anderson, 2010). Since the principal component analysis was then carried out with the 43 variables, and as the number of respondents was N=284, sample size criteria have been met. From the total number of 284, the number of female students is 191, while there are 93 male students. Results are in favor of female students (67%) which are consistent with the enrolment ratio (Jadrić, Čukušić, & Mijač, 2021).

*Table following on the next page*

Gender	N	%
F	191	67
M	93	33
<b>Total</b>	<b>284</b>	<b>100</b>

*Table 1: Gender structure  
(Source: Authors' calculation)*

For testing the sample adequacy, Kaiser-Meyer-Olkin (KMO) measure was calculated (0.921) to confirm sampling adequacy, and the model under the test fits the data. The referent value should be above 0.6 and Bartlett's test of sphericity is statistically significant (Approx. Chi-Square=8529.142, df 903, Sig. .000). Based on Kaiser-Guttman's criteria, the initial number of factors was ten, with the initial eigenvalue being 1 or above. These factors account for 71.849% of the total variance (Table 2). The first factor has an eigenvalue equal to 15.290 and accounts for 35.557% of the total variance, while the second factor with an eigenvalue of 3.604 accounts for an additional 8.382% of the total variance. The two factors account for 43.940% of the total variance. Results are presented below.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.290	35.557	35.557	15.290	35.557	35.557	3.849	8.951	8.951
2	3.604	8.382	43.940	3.604	8.382	43.940	3.812	8.866	17.817
3	2.268	5.275	49.214	2.268	5.275	49.214	3.547	8.250	26.066
4	2.010	4.675	53.890	2.010	4.675	53.890	3.389	7.881	33.947
5	1.638	3.808	57.698	1.638	3.808	57.698	3.276	7.620	41.567
6	1.437	3.342	61.039	1.437	3.342	61.039	3.155	7.336	48.903
7	1.329	3.091	64.131	1.329	3.091	64.131	3.152	7.329	56.233
8	1.169	2.718	66.848	1.169	2.718	66.848	2.460	5.721	61.954
9	1.096	2.548	69.396	1.096	2.548	69.396	2.345	5.453	67.407
10	1.055	2.453	71.849	1.055	2.453	71.849	1.910	4.443	71.849
11	.959	2.229	74.079						
12	...	...	...						

Extraction Method: Principal Component Analysis.

*Table 2: Total variance explained  
(Source: Author's calculation)*

Principal Component Analysis has been done with the varimax rotation method with Kaiser Normalization (rotation converged in nine iterations). As it is suggested, a variable whose factor loading was above the reference value of 0.6 has been excluded for further analysis. Results are shown in the table below, and eliminated variables (11) have been shaded in the table below.

*Table following on the next page*

Code	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
I6_RAZ2	.766									
I6_RAZ4	.759									
I6_RAZ3	.735									
I6_RAZ1	.683									
S4_SI2		.889								
S4_SI4		.826								
S4_SI3		.818								
S4_SI1		.787								
I1_AZ1			.841							
I1_AZ2			.833							
I1_AZ3			.779							
I3_TO3				.744						
I3_TO1				.728						
I3_TO2				.702						
I2_PO2				.533						
I2_PO1				.526						
I4_POT1				.446						
I2_PO3			.409	.439						
S5_FU3					.810					
S5_FU2					.774					
S5_FU1					.684					
I4_POT3			.435		.477					
I4_POT2					.448					
I7_REL3	.403				.415					
U1_PO2						.777				
U1_PO4						.759				
U1_PO3						.728				
U1_PO1						.666				
S6_OD1							.738			
S6_OD2							.681			
S6_OD3							.648			
S1_P1							.531			
S5_FU4							.494			
S1_P2							.474			
S1_P3							.422			
S2_D02								.852		
S2_D01								.774		
S2_D03								.737		
I5_PR2									.774	
I5_PR3									.709	
I5_PR1									.673	
I7_REL1										.750
I7_REL2										.719

Table 3: Results of confirmatory factor analysis  
(Source: Author's calculation)

Out of 43 items, 32 remained in the factor structure. In total, 10 factors have been extracted and properly named. Extracted factors are F1 – Information understandability, F2 – System security, F3 – Information currency, F4 – Information accuracy, F5 – System functionality, F6 – Service reliability, F7 – System response time, F8 – System availability, F9 – Information timeliness and F10 – Information relevancy.

Extracted factors and Cronbach Alpha for each factor have been calculated and shown in the table below, together with the number of items. Cronbach's alpha is a measure of internal consistency reliability and calculated values range from 0.772 to 0.918. Results are in accordance with the minimal reference value of 0.7 and maximum value of 0.95 (Cronbach, 1951; Tavakol & Dennick, 2011). Calculated values are presented in table 4 below. All items are identified as a part of the same factor.

F	Indicator	Code	Item	Number of items	Cronbach Alpha
F1	Information understandability	I6_RAZ1	Information within this digital service is clearly written.	4	0.909
		I6_RAZ2	I do not need further explanation of the information contained in this digital service.		
		I6_RAZ3	The way information is writing within this digital service is tailored to me as a student.		
		I6_RAZ4	All information is concise and clearly written.		
F2	System security	S4_SI1	The use of this digital service is safe.	4	0.918
		S4_SI2	I do not have fear of personal data misuse while using this digital service.		
		S4_SI3	I feel secure while using the digital service.		
		S4_SI4	I do not have fear of sharing the data via this digital service.		
F3	Information currency	I1_AZ1	I can find updated information needed for studying via digital services.	3	0.909
		I1_AZ2	By using this digital service, I can find all the updated information.		
		I1_AZ3	I do not need to look somewhere else for more updated information.		
F4	Information accuracy	I3_TO1	Available information within digital services is correct.	3	0.853
		I3_TO2	There are no errors in the information available within this digital service.		
		I3_TO3	Outputs of this digital service contain correct and verified information.		
F5	System functionality	S5_FU1	This digital service contains all functionalities needed for studying.	3	0.833
		S5_FU2	All functionalities I need are available via this digital service and I do not feel to go to the faculty in person.		
		S5_FU3	All functionalities that I need before, during, and after graduation are available within this digital service.		

F6	Service reliability	U1_PO1	If there is a problem with digital service, it is addressed thoroughly.	4	0.866
		U1_PO2	If there is a problem with digital service, it is rectified within a reasonable time.		
		U1_PO3	If I ran into a problem while using the digital service, I know I will receive adequate instructions.		
		U1_PO4	Customer service always solves the problem of digital service.		
F7	System response time	S6_OD1	There is no delay in response while using this digital service.	3	0.821
		S6_OD2	While using this digital service, I immediately get (system response) feedback.		
		S6_OD3	I use different functionalities within digital services without delay.		
F8	System availability	S2_D01	Digital service is always available to me 24/7 (when I need it).	3	0.772
		S2_D02	I can access the digital service from a variety of devices.		
		S2_D03	I can access the digital service from a variety of operating systems.		
F9	Information timelines	I5_PR1	Information within this digital service is published on time.	3	0.905
		I5_PR2	There is no delay in publishing the information within the digital service.		
		I5_PR3	Information is available when I need them.		
F10	Information relevancy	I7_REL1	All information is aligned with my student's needs.	2	0.881
		I7_REL2	All content is useful for me as a student.		

Table 4: *Quality aspect of digital services in higher*  
(Source: Author's calculation)

Results show that five extracted factors belong to the information quality dimension (F1, F3, F4, F9 and F10), four are considered to be system quality indicators (F2, F5, F7 and F8) and F6 refers to service quality dimension.

## 5. DISCUSSION

Even though some of the results have been previously validated in a corporate environment, up to the author's knowledge no paper validated quality aspects in the context of digital transformation in higher education nor from end users' perspective. However, results are consistent with the most recent suggestions of authors DeLone and McLean (2016) where recommended measures included *response time*, *system availability*, *security*, *information currency*, *information accuracy*, *timeliness*, *information relevancy*, *understandability* and *service reliability*. Additionally, F5 - *Functionality* has not been previously listed as a quality aspect, but the result from this study highlights its importance.

Even though previously mentioned recommendations include more than twenty measures, the result of this study confirmed the ones relevant to the higher education environment. By applying confirmatory factorial analysis results also confirmed the importance of service quality (reliability), even though some of the authors did not previously include it in their researches (Mtebe & Raisamo, 2014; Alzahrani et al., 2019). Results are also consistent with previous results based on secondary data which also pointed out that service quality attributes were marked as important from end users' perspective (Nandakishore et al., 2020). Also, as the authors assumed, security has been confirmed as the important aspect of digital service in higher education (Nandakishore et al., 2020), which is expected since digital services are web-based (DeLone & McLean, 2016). Although most results are consistent with previous studies, mentioned differences highlight the need for applied approach. As some other studies confirmed, various stakeholders have different perceptions and therefore different needs (Thoring et al., 2017). Hence, end users' (students) needs and perceptions need to be examined for the purpose of defining the quality aspect of digital services in higher education; what matters the most for students should be a starting point for digital service design.

## 6. CONCLUSION

The goal of this paper was to empirically examine which quality aspects of digital services in higher education are the most relevant for students. The list of these indicators represents quality aspects of digital services in higher education. From the initial list of thirteen indicators, ten factors have been extracted. This study was conducted to determine the composition of digital service quality. Thusly, this research can be considered a basic, initial step towards a better understanding of relevant quality aspects within the digital transformation. Also, the results of this study reflect in the final list of indicators that could be used for evaluating quality digital services in higher education and the outcome of this study contributes to the scientific validation of the instrument for measuring the quality of digital services. Extracted indicators could be used as guidelines for institutions of higher education when (re)designing their digital services. However, several limitations should be addressed in future research. The first limitation is that survey has been conducted only on one institution of higher education in Croatia, thus the sample must be expanded in order to generalize the presented results. Another limitation refers to digital services examined, accordingly specter of investigated digital services should also be extended. Although most of the extracted factors are consistent with previous research, the results yielded one not-so-frequently used indicator one factor – *functionality*. Also, some commonly used indicators were not extracted (*system reliability*, *information reliability* and *information completeness*). Results could indicate that more research effort should be put into investigating them in a more detailed manner.

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## LITERATURE:

1. Arkhipova, M. V., Belova, E., Gavrikova, Y. A., Pleskanyuk, T. N., & Arkhipov, A. N. A. (2020). Reaching Generation Z. Attitude Toward Technology Among the Newest Generation of School Students.
2. Alzahrani, A. I., Mahmud, I., Ramayah, T., Alfarraj, O. i Alalwan, N. (2019). Modelling digital library success using the DeLone and McLean information system success model. *Journal of Librarianship and Information Science*, 51(2), str. 291–306.
3. Biedermann, D., Kalbfell, L., Schneider, J., & Drachsles, H. (2019). Stakeholders attitudes towards digitalization in higher education institutions, 187–192.

4. Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2018). Digital transformation in German higher education: student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education*, 15(1), 1–20.
5. Byrne, B. M. (2016). *Structural Equation Modeling with Amos* (3rd ed.). Routledge.
6. Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika* 16, 297–334 (1951),
7. DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30.
8. DeLone, W. H., & McLean, E. R. (2016). Information Systems Success Measurement. *Foundations and Trends® in Information Systems*, 2(1), 1–116.
9. Grajek, S. (2020). *How Colleges and Universities Are Driving to Digital Transformation Today*. Retrieved from <https://er.educause.edu/-/media/files/articles/2020/1/er20sr214.pdf>
10. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis*. Pearson Prentice Hall.
11. Jadrić, M., Čukušić, M., & Mijač, T. (2021). Relating smart governance as a university feature to students' university perceptions. *Journal of Information and Organizational Sciences*, 45(1), 1–20.
12. Jeyaraj, A. (2020). DeLone & McLean models of information system success: Critical meta-review and research directions. *International Journal of Information Management*, 54(November 2019), 102139.
13. Julião, J., & Gaspar, M. C. (2020). Lean thinking in service digital transformation. *International Journal of Lean Six Sigma*, 12(4), 784–799.
14. Khalid, J., Ram, B., & Khalee, M. (2018). Promising digital university : a pivotal need for higher education transformation 12(January), 13. Retrieved from <https://www.researchgate.net/publication/324844227%0APromising>
15. Martins, J., Branco, F., Au-Yong-Oliveira, M., Gonçalves, R., & Moreira, F. (2019). Higher education students perspective on education management information systems: An initial success model proposal. *International Journal of Technology and Human Interaction*, 15(2), 1–10.
16. Mijač, T. (2021). Determinante uspjeha digitalnih usluga u visokom obrazovanju. Ekonomski fakultet, Sveučilište u Splitu.
17. Moreira, F., Ferreira, M. J., & Seruca, I. (2017). DIGITAL TRANSFORMATION - A NEW CHALLENGE FOR HIGHER EDUCATION: A CURRICULUM PROPOSAL. In *10th annual International Conference of Education, Research and Innovation* (pp. 8124–8131).
18. Mtebe, J. S. i Raisamo, R. (2014). A model for assessing learning management system success in higher education in sub-saharan Countries. *Electronic Journal of Information Systems in Developing Countries*, 61(1), str. 1–17.
19. Mukti, S. K., & Rawani, A. M. (2016). ERP system success models: A literature review. *ARPN Journal of Engineering and Applied Sciences*, 11(3), 1861–1875.
20. Nandakishore, K. N., Sridhar, V., & Srikanth, T. K. (2020). Key Quality of Service Attributes of Digital Platforms. *Asia Pacific Journal of Information Systems*, 30(1), 94–119.
21. Pasini, A., Estevez, E., & Pesado, P. (2019). Assessment Model for Digital Services provided by Higher Education Institutions. *ACM International Conference Proceeding Series*, 468–477.
22. Seres, L., Pavlicevic, V., & Tumbas, P. (2018). Digital Transformation of Higher Education: Competing on Analytics. *INTED2018 Proceedings*, 1(March), 9491–9497.
23. SRCE. (2021). LIMESURVEY. Retrieved from <https://www.srce.unizg.hr/limesurvey>

24. Sultan, P., & Wong, H. Y. (2019). How service quality affects university brand performance, university brand image and behavioural intention: the mediating effects of satisfaction and trust and moderating roles of gender and study mode. *Journal of Brand Management*, 26(3), 332–347.
25. Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55.
26. Thoring, A., Rudolph, D., & Vogl, R. (2017). Digitalization of higher education from a student's point of view. *EUNIS Paper*, 47.
27. Tungpantong, C., Nilsook, P., & Wannapiroon, P. (2021). A Conceptual Framework of Factors for Information Systems Success to Digital Transformation in Higher Education Institutions. *2021 9th International Conference on Information and Education Technology, ICIET 2021*, 57–62.
28. Vindaca, O., & Lubkina, V. (2020). Transformative Digital Learning in the Context of Higher Education: Definition and Basic Concepts. *Rural Environment. Education. Personality. (REEP) Proceedings of the 13th International Scientific Conference*, 13(May), 177–184.
29. Xiao, J. (2019). Digital transformation in higher education: critiquing the five-year development plans (2016-2020) of 75 Chinese universities. *Distance Education*, 40(4), 515–533.

# THE IMPACT OF COVID 19 PANDEMIC ON GLOBAL VIDEO GAMING MARKET

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## ABSTRACT

*Purpose - The aim of this paper is to analyse the trends of the global video game industry during the Covid 19 pandemic. Methodology - The research is based on an analysis of the revenue of the global video game industry and the trend in the number of users. The research is divided into an analysis of the revenue structure as well as a geographical segmentation of total revenue. The results of the financial analysis are compared with the results of the trend analysis of the number of users. The results - research has confirmed the strong impact of the Covid 19 pandemic on the revenue trend of the global video game industry. The crisis has hit the traditional media markets of Europe and the USA the hardest. The number of users has grown steadily despite the Covid 19 crisis. Conclusion - The global video game industry has developed into the largest segment of the media industry. Revenues and the number of users are constantly growing. Even higher revenue growth can be expected in the coming years.*

**Keywords:** *advertising, Covid 19, mobil games, video gaming industry*

## 1. INTRODUCTION

The video game industry has grown exponentially in recent years due to advances in personal computers (PCs) and the widespread availability of powerful video game platforms, such as Microsoft's Xbox and Sony's PlayStation (PS) (Al-Batineh, Alawneh 2021). The video game industry has become one of the leading segments of the media industry as a whole. In 2020, \$ 159.3 billion in revenue was generated, and the number of video game users reached 2.69 billion players (NewZoo Gaming Report 2021). Various studies have tried to explain the phenomenon of video game industry growth, but most of this research has been linked to research into gamers' personalities and motives that attract them to video games in general (Jimenez, San-Martin 2019). Most video games belong to the so-called. "Casual" video games that are played without special preparation or the need to achieve a significant result in the game. No special knowledge or skills are required to play these games, and they are most often played on smartphones and mobile consoles (Soeiro et.al. 2016). In 2021, the casual game genre is by far the most popular genre downloaded with 78% of the games downloaded falling into this category. Core games make up for 20% of downloads, while half surprisingly casino games account for only 2% of downloads (Geysler 2021). Triple A games, denote games that have large budgets and are sold in the largest editions (Zeiler, Thomas 2021). In May 2015, Dictionary.com added a new term to its database, "e-sports". This process has been marked by major video game websites, such as IGN and GameSpot, as a milestone that has shown that e-sports or e-sports are attracting the main attention and gaining recognition in a wider cultural spectrum. The term e-sports refers to "competitive video game tournaments, especially among professional players" (Lu 2016).

The research in this paper focuses on the financial analysis of the state and changes in the global video game industry in the last six years. The research is a continuation of previous research (Lozić 2018a; Lozić 2018b) and analysis of trends in the technological and geographical structure of income. The research will also include the impact of the user trend and advertising revenues on the trend of total revenues.

## **2. LITERATURE REVIEW**

The growing production of video content has directly affected major social networks that have provided their users with additional applications for video production. Real-time content viewing has contributed to accelerating the development of streaming technology. The streaming capabilities have directly enabled the further development of the video game industry (Anderson 2018). The development of streaming technology has enabled the use of music content in video games which has had a significant impact on revenue. The use of the right to music content in various video content is presented by the global music industry as revenue from dubbing (Lozić 2019). Video games are already recognized as an unavoidable part of everyday life and can be analysed as a concept of "cultural heritage" (Copplesstone 2017). Scholars often want to ignore and limit the impact of video games on "cultural heritage," but even more so they seek to criticize the impact and presentation of history in video games (Cassone 2016). Zeiler et al (2021) explore the connection between video games and cultural heritage to open up a whole new field of research in the social sciences. The study investigates the connection between the social environment of a particular geographical unit, ie the state, with the character and structure of dominant video games. Gaming has become more of an emotional experience. People are searching for more meaningful connections and new ways to interact (Schmidt 2021). Video games are not immediately synonymous with romance, but role-playing games can provide players with the opportunity to flirt, establish digital relationships, and even experience intimacy with the pre-programmed characters in the game (Tomlinson 2021). Very few papers focus on the impact of just one game on the overall player population such as the study of the video game World of Warcraft (Bean et.al. 2016) or the study of the game Blood Bowl (Singelton 2020). Thanks to globalization and the Internet, video game developers are currently trying to enter new markets by synchronizing video games to other languages (Al-Batineh, Alawneh 2021). Video games attract people for various reasons, which include enjoyment, socializing, cooperation, but also seeking recognition, creating social status, escaping from everyday life, etc. (Liu 2017). Playing video games can also have its problematic aspects that can be explored from different discourses (psychological, biological, social, structural, etc.) (Griffiths, Nuyens 2017). Wei and Lu (2014) analyse the theory of use and the theory of gratification associated with video games and determine three types of pleasures that divide into content, process, and social satisfaction. The development of the research model of the three types of satisfaction will be profiled in the research of hedonism, utilitarianism and, as particularly important, the analysis of player behaviour and social changes associated with the growth of video game use and play (Huang et.al. 2017). The market for video games is already so developed that the market for used games and used gaming equipment has developed in parallel. There are often retro versions of some hit games from the past that surpass the popularity of the original. In addition, the number of users who follow professional players exceeds the number of monthly active players (Anderson 2018). A negligible number of studies analyse the video game industry in the context of marketing business activities (Jimenez, San-Martin 2019). Mogre et.al. (2017) among rare scientists emphasizes the importance of analysing marketing practices in the business practices of the video game industry. Technological development and growth in sales of video games and digital music has directly affected the increase in the value of the network of user communities on certain social networks (Cassone 2016).

The size and financial potential of the video game industry is analysed by Netflix, the largest video streaming platform, with the option to launch a video game platform (Adgate 2021).

### 3. METHODOLOGY AND RESEARCH QUESTIONS

The research and analysis of the global video game industry market will use already published research on the financial results of the global market published by the specialized video game monitoring agency NewZoo. The research is divided into two basic parts, ie the analysis of financial indicators of total revenues, and the analysis of the trend in the number of users and marketing revenues. The analysis of business results and the trend of the number of users is oriented towards the answers to three basic research questions:

- How resilient are the video industry revenues to the Covid 19 crisis?
- How has the Covid 19 crisis affected individual markets?
- How much has the crisis affected the trend in the number of users?

The financial result survey is divided into an analysis of the revenue trend according to individual categories of the video game industry and according to the geographical segmentation of the market. The second part of the research is based on the analysis of the trend in the number of users and the analysis of marketing revenues in the global video game industry. The statistical index model, regression trend models and the ANOVA model analysis will be used in the analysis. The results and interpretation of the research results are published in the Conclusion chapter.

### 4. DATA ANALYSIS

Research and analysis comprises two fundamental parts. The first part analyses the financial results of the global video game industry. The second part analyses the trend in the number of users and marketing revenues of the global video game industry.

#### 4.1. Financial analysis

The research and analysis covered a period of six years, i.e. from 2015 to 2020. In the analysed period, the total revenues of the video game industry increased from \$ 91.5 billion to \$ 159.3 billion, i.e. revenues increased by 74.1%. The results of the research are divided into three basic categories of industry. The highest growth was achieved in the category of mobile games, i.e. revenues increased from \$ 30 billion at the beginning of the analysed period to \$ 77.2 billion at the end of the analysed period. The total growth of the mobile category was 157.3%, or twice as much as the total relative growth of the global industry. The category of mobile video games is the largest segment of the total industry and covers 48.5% of the total revenues of the global industry. The mobile gaming industry recorded 12% more players in 2020 than in 2019, with over 2.5 billion players. With the movement still restricted and people confined to their homes, it's predicted that the number will only go higher this year (Social Peta 2021).

*Table 1: Global video gaming market (\$; bill)*

	2015	2016	2017	2018	2019	2020
<b>Mobil</b>	30,0	36,9	46,1	70,3	68,5	77,2
<b>Console</b>	27,8	30,8	33,5	34,6	47,9	45,2
<b>PC</b>	33,7	31,9	29,4	32,9	35,7	36,9
<b>Sum</b>	<b>91,5</b>	<b>99,6</b>	<b>109</b>	<b>137,8</b>	<b>152,1</b>	<b>159,3</b>
<b>% (n/n-1)</b>		2016/15	2017/16	2018/17	2019/18	2020/19
<b>Mobil</b>		23,0%	24,9%	52,5%	-2,6%	12,7%
<b>Console</b>		10,8%	8,8%	3,3%	38,4%	-5,6%
<b>PC</b>		-5,3%	-7,8%	11,9%	8,5%	3,4%
<b>Sum</b>		<b>8,9%</b>	<b>9,4%</b>	<b>26,4%</b>	<b>10,4%</b>	<b>4,7%</b>

*Source: NewZoo.com (own illustration)*

Total Console category revenue increased from \$ 27.8 billion at the beginning of the analysed period to \$ 45.2 billion at the end of the period. Revenues increased by 62.6% and accounted for 28.4% of total revenues. Revenues in the Console category grew continuously throughout the analysed period. Games in the PC category generate the least revenue. In the analysed period, revenues increased from \$ 33.7 billion at the beginning of the period to \$ 36.9 billion at the end of the analysed period. Total revenue growth is 9.5%. Revenues fell until 2018, after which they continue to grow. PC category revenues account for a total of 23.2% of total revenues. The results of the research are shown in Table 1.

*Table 2: Regression analysis video gaming industry (2015-2020)*

	Regression equation	R <sup>2</sup>	s
<b>Mobile</b>	$y = 10,143x + 29,476$	0,9276	18,50
<b>Console</b>	$y = 3,9829x + 26,676$	0,8507	10,87
<b>PC</b>	$y = 0,8829x + 31,21$	0,3775	-
<b>Sum</b>	$y = 15,009x + 87,362$	0,9619	12,02

*Source: Own illustration*

The average annual revenue growth of the global video game industry was 12.02%. The average annual revenue growth was interpreted by the linear regression equation  $y = 15.009x + 87.362$ , with a coefficient of determination of 0.9619. Revenues from games in the mobile category had the largest average annual increase of 18.5%, interpreted by the linear regression equation  $y = 15.009x + 87.362$ , with a coefficient of determination of 0.9276. Average annual revenue in the Console category grew at a rate of 10.87%, interpreted by the linear regression equation  $y = 3.9829x + 26.676$  with a coefficient of determination of 0.8507. The average annual growth in the Console category is lower than the average growth at the level of the overall video game industry. The average increase in PC category revenue was interpreted by the linear regression equation  $y = 0.8829x + 31.21$  with a coefficient of determination of 0.3775. The coefficient of determination ( $R^2 < 0.8$ ) is insufficient for precise interpretation of the results. Revenues within the PC category declined and then grew and did not have a continuous trend. The results of the research are shown in Table 2.

*Table 3: Global video gaming market by regions (\$; bill)*

	2015	2016	2017	2018	2019	2020
<b>N. America</b>	23,8	25,4	27,0	32,7	39,6	40,0
<b>S. America</b>	4,0	4,1	4,4	5,0	5,6	6,0
<b>Europa, Africa, M. East</b>	20,5	23,5	26,2	28,7	34,7	35,0
<b>Asia</b>	43,1	46,6	51,2	71,4	72,2	78,4
<b>Sum</b>	<b>91,4</b>	<b>99,6</b>	<b>108,8</b>	<b>137,8</b>	<b>152,1</b>	<b>159,4</b>
<b>USA</b>	22,0	23,5	25,1	30,4	36,9	36,9
<b>China</b>	22,2	24,4	27,5	37,9	36,5	40,9
<b>%</b>	48,4%	48,1%	48,3%	49,6%	48,3%	48,8%
<b>% (n/n-1)</b>		2016/15	2017/16	2018/17	2019/18	2020/19
<b>N. America</b>		6,7%	6,3%	21,1%	21,1%	1,0%
<b>S. America</b>		2,5%	7,3%	13,6%	12,0%	7,1%
<b>Europa, Africa, M. East</b>		14,6%	11,5%	9,5%	20,9%	0,9%
<b>Asia</b>		8,1%	9,9%	39,5%	1,1%	8,6%
<b>Sum</b>		9,0%	9,2%	26,7%	10,4%	4,8%
<b>USA</b>		6,8%	6,8%	21,1%	21,4%	0,0%
<b>China</b>		9,9%	12,7%	37,8%	-3,7%	12,1%

*Source: NewZoo.com (own illustration)*

The second research question refers to the trend of income by geographical areas. The highest revenue growth was achieved by Asia, ie revenue growth in the analysed period was 81.9%. Only Asia achieved revenue growth higher than global growth of 74.1%. Europe, Africa and M. East achieved growth of 70.7%, which is less than the global average. Traditionally, the largest market of the media industry, North America, ie the USA, grew by 68.1% in the analysed period, which clearly indicates the saturation of the North American market. Video game industry revenues were the lowest in South America, and had the smallest increase of 50%. Within the geographic areas of North America and Asia, the USA and China generate the highest revenues. The total revenues of the USA and China are 48.8% of the revenues of the global video game industry. China has become the largest market for the video game industry in the world with total revenues of \$ 40.9 billion. The results of the research are shown in Table 3.

*Table 4: Regression analysis video gaming industry (2015-2020)*

	Regression equation	R <sup>2</sup>	s
<b>North America</b>	$y = 20,17e^{0,0967x}$	0,931	10,15
<b>South America</b>	$y = 0,4345x + 2,8917$	0,9828	9,85
<b>Europa, Africa, M. East</b>	$y = 17,615e^{0,1011x}$	0,9714	10,64
<b>Asia</b>	$y = 32,141e^{0,1342x}$	0,9678	14,36
<b>Sum</b>	$y = 72,977e^{0,1153x}$	0,9787	12,22

*Source: Own illustration*

The impact of the Covid 19 pandemic has affected individual global markets differently. Asia saw a significant drop in revenue in 2019, in the first year of the pandemic, and growth was 1.1%. In that period, other markets experienced a continuous increase in revenues. In 2020, Asia emerged from the Covid 19 crisis and achieved a growth of 8.6%, while all other markets achieved a significant decline in revenue. North America grew by 1%, while revenues in the USA were at last year's level. Analysis of revenue trends by the method of statistical indices clearly indicates the very strong impact of the Covid 19 pandemic on the total revenues of the global video game industry. The average annual revenue growth of the video game industry in Asia was 14.36%, interpreted by the exponential regression equation  $y = 32,141e^{0,1342x}$  with a coefficient of determination of 0.9678. All other markets had lower average revenue growth than average revenue at the global industry level. The average revenue growth of Europe, Africa and M. East was 10.64% per year, while the average revenue growth in North America was 10.15%. The smallest average increase in revenue in the analysed period was realized by South America, and the growth was 9.85%. The results of the analysis are shown in Table 4.

*Table following on the next page*

Table 5: ANOVA

SUMMARY OUTPUT									
<i>Regression Statistics</i>									
Multiple R	0,99999756								
R Square	0,99999512								
Adjusted R Square	0,99997558								
Standard Error	0,14146672								
Observations	6								
ANOVA									
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>				
Regression	4	4098,04832	1024,512	51192,75	0,003314784				
Residual	1	0,020012834	0,020013						
Total	5	4098,068333							
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 99,0%</i>	<i>Upper 99,0%</i>	
Intercept	0,3177166	0,817855994	0,388475	0,764112	-10,0741291	10,7095623	-51,744331	52,37976389	
N. America	0,96875253	0,077896445	12,43642	0,05108	-0,021015647	1,95852071	-3,9898813	5,927386358	
S. America	0,93325965	0,586812963	1,590387	0,357342	-6,522906004	8,3894253	-36,421341	38,28786056	
Europa	1,03965751	0,063025568	16,49581	0,038546	0,238841743	1,84047327	-2,9723447	5,051659746	
Asia	0,99845615	0,015568978	64,13113	0,009926	0,800633533	1,19627877	0,00738577	1,989526532	

Source: Own illustration

The analysis of revenues of selected geographical segments by the method of statistical indices revealed large differences in the trend of revenues according to individual time periods. In the first year of Covid 19, revenues fell sharply in Asia, while in 2020 revenues in Asia grew, while in other geographical units they fell. In analysing this phenomenon, we used the ANOVA model to determine the degree of significance of individual geographical segments to the total revenues of global industry. Analysis by the ANOVA method showed a very high degree of correlation between total revenues and revenues of individual geographical units (Multiple R = 0.99), with a coefficient of determination of 0.99. The degree of significance (Significance F = 0.0033) reveals that there is at least one variable that significantly affects total revenue. P-value analysis reveals that Asia has a very significant impact on total revenues, ie the P-value is 0.0099. The results of the analysis are shown in Table 5.

#### 4.2. Players and advertising analysis

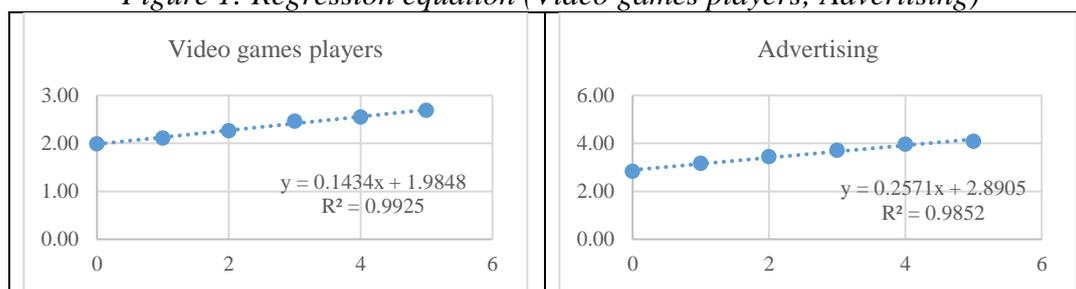
The trend in the number of players globally indicates the impact of the pandemic on the video game industry. The total number of players grew continuously until 2018, and in 2019 that growth stopped. Asia is the largest market for video games, and revenue in Asia has plummeted with the onset of the pandemic. The total number of players increased from 1.99 billion at the beginning of the observed period, to 2.69 billion at the end of the analysed period. The total number of players increased by 35.2%. In the last analysed period, the increase in the number of players was smaller than in the first analysed period, which proves the strong impact of the global crisis on the video game industry. In the context of the third research question, we can confirm the strong impact of the global crisis on the trend in the number of players. The results of the analysis are shown in Table 6. Revenues from advertising are growing digressively and do not follow the trend of total revenues and the number of users. In the analysed period, advertising revenues increased from \$ 2.83 billion to \$ 4.09 billion, or an increase of 44.5%. The relative growth of advertising revenues is significantly lower than the relative growth of total revenues.

Table 6: Number of players and advertising revenue

	Players (bill.)		Advertising; \$ bill.)	
		n/(n-1) %		n/(n-1) %
2015	1,99	n/(n-1) %	2,83	n/(n-1) %
2016	2,11	6,03%	3,16	11,7%
2017	2,26	7,11%	3,44	8,9%
2018	2,46	8,85%	3,71	7,8%
2019	2,55	3,66%	3,97	7,0%
2020	2,69	5,49%	4,09	3,0%

Source: NewZoo (own illustration)

Figure 1: Regression equation (Video games players; Advertising)



Source: Own illustration

Analysis of the trend of the number of users by the method of regression analysis shows the average annual growth trend of the number of players of 6.1%, interpreted by the linear regression equation  $y = 0.1434x + 1.9848$ , with a coefficient of determination of 0.9925. The average annual growth of advertising revenue was 7.3%, interpreted by the linear regression equation  $y = 0.2571x + 2.8905$ , with a coefficient of determination of 0.9852. The average annual growth of total revenue was 12.02%, which is twice as much as the increase in the number of users.

## 5. CONCLUSION

The results of the research and analysis proved the very strong impact of the Covid 19 pandemic on the global video game industry. The crisis was first felt in Asia, as the largest global market, and then spread to other markets. The results of the research are focused on four basic conclusions:

- The Covid 19 crisis also affected the overall revenues of the global video game industry. In the last analysed period, revenue growth was 4.7%, which is the lowest growth in the analysed period.
- Revenues in the category of mobile games grew continuously and in the last analysed period had a growth of 12.7%, which is the largest growth within the categories of video games.
- The trend of revenues according to the analysed periods proves the very strong impact of the Covid 19 pandemic on individual regional markets in the context of the pandemic period.
- The trend in the number of players proves the very strong impact of the Covid 19 pandemic on the video game industry.

In the context of the first research question, the research results showed a very large impact of the pandemic on the total revenues of the industry. Total revenues continued to grow until the crisis began, after which revenue growth declined. Revenues from the mobile category had the highest growth in the last analysed period, which was to be expected due to the global "lock-

down" situation in which players were focused on mobile games. In the context of the second research question, the results of the analysis proved a very different impact on individual markets. The crisis and declining incomes were first felt in Asia, and only the following year did the crisis hit other markets. In the first year of the crisis, the China market grew by only 1%, with a 1% increase occurring the following year in the North America market. Revenues from the video game industry are slowly emerging from the crisis in markets in Asia, which should be expected in other markets next year. In the context of the third research question, the crisis has strongly affected the trend in the number of users. Until the beginning of the crisis, the number of users grew linearly, only to stop this growth in the first year of the crisis. The increase in the number of users continued, but the growth rate was lower than the rate in the first analysed period. The results of the analysis prove a very strong impact of the Covid 19 pandemic on the video game industry, but despite that, total revenues continue to grow. The growth of total revenues twice above the growth of advertising revenues proves the stable growth of the industry and indicates the changes that have affected the new media industries. The old media industries were very sensitive to advertising revenue. Advertising revenues are falling in times of crisis which has been disastrous for many old media industries. The video game industry, as part of the new media industry, has developed entirely new models of content monetization and further revenue growth can be expected.

#### LITERATURE:

1. Adgate, B. (2021). „Why Netflix Is Looking At Video Games?“. *Forbes*. <https://www.forbes.com/sites/bradadgate/2021/06/03/why-netflix-is-looking-at-the-video-games/?sh=3a3bd6bc5bd0>. [18.09.2021.]
2. Al-Batineh, M; Alawneh, R (2021). „Current trends in localizing Video games into Arabic: localization levels and gamers' preferences.“ *Perspectives, Studies in Translation Theory and Practice*. DOI: 10.1080/0907676X.2021.1926520.
3. Anderson, K.E. (2018). „Getting acquainted with social networks and apps: streaming video games on Twitch.tv.“ *Library hi tech news*, Number 9, pp. 7-10, DOI 10.1108/LHTN-08-2018-0054.
4. Bean, A.M.; Ferro, L.S.; Vissoci, J.R.N.; Rivero, T.; Groth-Marnat, G. (2016), “The emerging adolescent world of Warcraft video gamer: a five factor exploratory profile model”, *Entertainment Computing*, Vol. 17, No. 11, pp. 45-54.
5. Cassone, V. I. (2016). “The HGR Framework: A Semiotic Approach to the Representation of History in Digital Games.” *Gamevironments 5*: 156–204. Research Gate.
6. Coplestone, T. J. (2017). “But That’s Not Accurate: The Differing Perceptions of Accuracy in Cultural-heritage Videogames between Creators, Consumers and Critics.” *Rethinking History 21* (3): 415–438. doi:10.1080/13642529.2017.1256615.
7. Geysler, W. (2021). „20 Mobile Gaming Statistics That Will Blow You Away: Mobile Gaming Industry Stats.“ *Influencer Marketing Hub*. <https://influencermarketinghub.com/mobile-gaming-statistics/>. [18.09.2021.]
8. Griffiths, M.D.; Nuyens, F. (2017). „An Overview of Structural Characteristics in Problematic Video Game Playing.“ *Curr Addict Rep* (2017) 4:272–283. DOI 10.1007/s40429-017-0162-y.
9. Huang, T.; Huang, T.; Bao, Z.; Bao, Z.; Li, Y.; Li, Y. (2017), “Why do players purchase in mobile social network games? An examination of customer engagement and of uses and gratifications theory”, *Program*, Vol. 51 No. 3, pp. 259-277.
10. Jimenez, N.; San-Martin, S. (2019). „What kind of video gamer are you?“ *Journal of Consumer Marketing*, 36/1, pp. 218–227. DOI 10.1108/JCM-06-2017-2249.
11. Liu, C. (2017), “A model for exploring gamers flow experience in online games”, *Information Technology & People*, Vol. 30, No. 1, pp. 139-162.

12. Lozić, J. (2018a). „Kina preuzima dominaciju nad globalnom industrijom video igrice.“ *Polytechnic and design*, 6 (4), 220.-227.
13. Lozić, J. (2018b). „Trendovi u industriji zabave i video igrice: industrija mobilnih igrice preuzima globalno tržište“. *Polytechnic and design*, 6 (3), 152.-158.
14. Lozić, J. (2019). “Digitalization creates a new paradigm of the global music industry: The traditional music industry is under pressure of the streaming platforms”. Economic and Development – 46<sup>th</sup> International Scientific Conference on Economic and Social Development – “Sustainable Tourist Destination”, pp. 179-180.
15. Lu, Z. (2016). „From E-Heroine to E-Sports: The Development of Competitive Gaming in China.“ *The International Journal of the History of Sport*, 33:18, 2186-2206. DOI: 10.1080/09523367.2017.1358167.
16. Mogre, R.; Lindgreen, A.; Hingley, M. (2017), “Tracing the evolution of purchasing research: future trends and directions for purchasing practices”, *Journal of Business & Industrial Marketing*. Vol. 32 No. 2, pp. 251-257.
17. NewZoo Gaming Report - <https://newzoo.com/>. [25.08.2021.]
18. Schmidt, M. (2021). „How to Keep Up With The Future Of The Gaming Industry.“ *Forbes*. <https://www.forbes.com/sites/forbesbusinesscouncil/2021/02/10/how-to-keep-up-with-the-future-of-the-gaming-industry/?sh=776629776d90>. [18.09.2021.]
19. Singleton, B.E. (2020). „We offer nuffle a sausage sacrifice on game day. Blood Bowl Players World-building rituals through the lens of theory of sociocultural viability.“ *Journal of contemporary ethnography*. Vol, 50. Issue, 2 pp. 176-201. doi.org/10.1177/0891241620948244.
20. Social Peta. (2021). “Mobile gaming industry statistics and trends for 2021.” <https://www.businessofapps.com/insights/mobile-gaming-industry-statistics-and-trends-for-2021/> [18.09.2021.]
21. Soeiro, F.C.; Santos, M.; Alves, J. (2016). „Network-based innovation: the case for mobile gaming and digital music.“ *European Business Review*, Vol. 28 No. 2, pp. 155-175. DOI 10.1108/EBR-07-2015-0072.
22. Tomlinson, C. (2021). „Priority pixels: the social and cultural implications of romance in video games“. *Information, Communication & Society*, 24:5, 717-732, DOI: 10.1080/1369118X.2021.1874478.
23. Wei, P.S.; Lu, H.P. (2014), “Why do people play mobile social games? An examination of network externalities and of uses and gratifications”. *Internet Research*, Vol. 24 No. 3, pp. 313-331.
24. Zeiler, X.; Thomas, S. (2021). „The relevance of researching video games and cultural heritage“. *International Journal of Heritage Studies*, 27:3, 265-267, DOI:10.1080/13527258.2020.1762705.

## CONSTRUCTION COSTS IN TERMS OF SERVICE LIFE AND WEAR AND TEAR OF BUILDINGS

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### **ABSTRACT**

*The aim of the paper is to determine and categorize construction work costs in order to create a methodology for valuating buildings in terms of service life and renewal of their parts within the life cycle operation phase. The costs of construction elements are crucial both in the pre-investment decision-making process and in addressing expert or insurance issues. The article identifies valuation processes and links within them.*

**Keywords:** *Construction Costs, Pre-Investment Decision-Making Process, Life Cycle*

### **1. INTRODUCTION**

The evaluation of the construction technical condition and age represents the key aspect in the valuation of already finished constructions. Building construction can be valued using the principles of the construction market if the aspects of the real estate market and the influence of these aspects on the final price (i.e. supply and demand, location and environmental influences) are not considered in case of valuating buildings in the construction market primarily using a cost approach, i.e., considering the costs that had to be spent on the construction. However, the final price in the real estate market is also determined by the above-mentioned influences. It is obvious that the valuation of new buildings in the construction market can be performed using item budgets or according to the price agreed between the supplier and the investor. The crucial issue is how this price changes over time and how the building as a whole or its parts wear out. Determining the wear and tear of individual building structures makes it possible to view the differences in the prices of building structures in terms of material demandingness. It is the material that represents an integral part of every construction and usually makes up for more than half of the total price of the construction work. Considering the wear and tear of buildings and their restoration is mainly based on the assumption that the bearers of wear and tear are the building structures, i.e. the material used. It is precisely the building material that is decisive for the final service life of buildings. At present, an inexhaustible number of technologies and materials from which buildings can be built is available. The possibility to compare the prices of individual building constructions on the basis of the material used in their implementation represents an issue that all entities operating in the construction market face on a daily basis. The aim of the research is the description of the structure of construction costs and the categorising of material costs. It is necessary to know the structure of prices in the building construction, costing and calculation formulas and the individual and production cost calculations to be able to categorize the cost of material. Equally important are the documents for the valuation of buildings, categorizing systems, price systems, including structures of functional and building parts. On the basis of these documents, it is possible to determine the expected wear and tear of buildings together with their service life, to analyse the degradation during the construction operation phase and the service life of the functional parts of the construction. For construction companies, the calculation is an activity that lasts from getting the order to its completion.

When obtaining the order, a preliminary (planned) calculation expressing the average of predetermined costs per calculation unit is carried out. The form of this calculation is given by the budget of offer, which is submitted to the investor of the construction. When a construction company wins a contract, it draws up an operational calculation which, according to specific technical, economic and organizational conditions, determines its own costs per calculation unit. When implementing a construction order in various time intervals (month, year, etc.), a production invoice, which purpose is to determine the standard consumption of production factors on the calculation unit of actually performed work, is processed by continuous updating. Finally, the construction company determines its own actual costs incurred for the construction implementation after the completion of the contract.

## 2. LITERATURE REVIEW

At present, it is possible to use software tools provided by private entities for the valuation of construction production [1, ÚRS PRAHA (2009)]. A detailed comparison of price outputs in the Czech Republic was presented in [2, Výskala (2019)], while the biggest differences in valuation were seen in:

- Different calculation formulas for overhead costs, despite identical calculation base;
- Different direct wages costs;
- Different technological procedures and machine equipment in identical construction-assembly works;
- Different standards for materials consumption and performance standard hours;
- Different measurement units.

Valuation documents, which form part of the legislation of individual countries [3], can also be used. The documents can be both in printed form (catalogues, price lists) and in electronic form (databases). In general, documents (proceedings, catalogues, databases) that contain the following details can be distinguished:

- Unit prices – i.e. guide prices, informative prices (for example, the price per 1 m<sup>3</sup> of load-bearing brick masonry),
- Price indicators per unit of measure of the functional element - aggregated unit prices (for example, the price per 1 m<sup>3</sup> of excavations, 1 m<sup>2</sup> of walls, etc.),
- Cost or price indicators related to the unit of measure or purpose (m<sup>3</sup> of enclosed space, m<sup>2</sup> of usable area, etc.). [4]

An important indicator for the valuation of buildings is the monitoring of the life cycle costs (LCC). These costs include all costs that accrue during the pre-investment phase (designs and construction project), investment phase (construction), and the operation and demolition phases [5]. Following the applied European standards, the costs of the operational phase include costs related to the operation, maintenance, and repairs [6]. Kishk [7] dealt with the modelling of the life cycle costs according to various calculation procedures, however, the most commonly used procedure was defined in [6]. The key costs for the building wear and tear problematics are costs associated with its use. That means reinvestment caused by the ageing of structures. Costs during the operational phase can amount to up to 70% [8] of the total life cycle costs of construction. Bromilow and Pawsey [9] or Sobanjo [10] dealt with basic life cycle cost models, however, their models used calculated cost inputs. According to [11], the operation of a building means its controlled functional use under the influence of decisive impacts, such as load, environment and forced modifications. The reaction of the building to these impacts are degradation processes of its functional parts, which result in a gradual reduction of the overall functional properties of the building as a whole within the intensity of partial degradation processes.

At the same time, it is necessary to consider the interconnection of individual functional parts in the building system and their time continuity. The wear and tear of a building is a term expressing the fact that a building gradually degrades due to ageing and use. Different wear analyses are required to determine the actual service life, depending on the nature of the maintenance. The wear and tear and service life of buildings can be characterized as a continuous process. According to [12], the wear and tear (deterioration) of a building shows a decrease in the quality and price of the building due to use, changes in material and atmospheric impacts. It expresses the real technical condition of the structure at a given moment. Wear and tear are usually given in the % rate of the value of the new building [12].

### **3. CASE STUDY**

#### **3.1. Input data**

The data for the research is based on a database of item budgets of one-family houses. More than 50 houses were included in the database in the 2016-2021 period. The research consists in separating the implementation costs of these houses from the point of view of valuating construction production using both private methodologies and those used by the public sector. First, the individual costs were sorted and divided into categories. In the Czech Republic, the largest intermediary and operator is the organizational unit of the state - the Czech Statistical Office (hereinafter the CZSO). Categorizing systems are binding in state statistical procedures for data providers, task processors and users of their results. The classifications used must meet the requirements of the EU statistical office which unifies national classification systems with pan-European systems. The construction industry is classified by the subject into two basic areas. Building structures represent the first area and the buildings the second area. In practice, categorizing systems currently used are both currently binding and those used historically. The division of building structures is possible using:

- Functional parts (CZSO, legislation of the Czech Republic),
- Building parts (private valuation documents and SW).

A comparison of these systems was performed for the purposes of the research to be able to assign costs to individual parts of both systems.

*Table following on the next page*

*Table 1: Comparison of the functional and building parts*

Functional parts	Building parts
<b>01 Foundations</b>	
0110 Foundations including excavations 0120 Hydro insulation	1 Earthwork 2 Foundation 711 Hydro insulation
<b>02 Vertical structures</b>	
0210 Vertical load-bearing structures 0220 Partitions and partition walls 0230 Chimneys	3 Vertical and complete structures
<b>03 Horizontal structures</b>	
0310 Ceiling construction 0320 Balconies 0330 Staircases	4 Horizontal structures 762 Carpentry constructions 764 Plumbing constructions 767 Locksmith constructions
<b>04 Roof</b>	
0410 Roof 0420 Roof windows, skylights, hatches 0430 Roof covering 0440 Roof drainage	712 Bituminous roofing 713 Thermal insulation 762 Carpentry constructions 764 Plumbing constructions 765 Hard roofing 766 Joinery constructions 767 Locksmith constructions
<b>05 Interior and exterior wall surfaces</b>	
0510 Interior walls - plaster, paintings 0520 Interior wall surfaces - tiles 0530 Exterior surfaces, facade insulation 0540 Exterior wall surfaces - tiles 0560 Mounted ceilings	6 Finishes, floors 711 Hydro insulation 713 Thermal insulation 763 Wooden buildings 766 Joinery constructions 767 Locksmith constructions 781 Ceramic tiles 782 Natural stone construction 783 Coatings 784 Paintings 785 Wallpaper 787 Glazing
<b>06 Hole fillers</b>	
0710 Floors	766 Joinery constructions 767 Locksmith constructions 769 Plastic opening elements
<b>07 Floors</b>	
0610 Interior doors 0620 Exterior doors 0630 Gates 0640 Windows, balcony doors	6 Finishes, floors 711 Hydro insulation 713 Thermal insulation 771 Tiled flooring and tiles 772 Stone paving 773 Terrazzo floors 775 Frieze and parquet floors 776 Coating floors 777 Synthetic floors 778 Floating floors
<b>08 Installations</b>	
0811 Water supply 0812 Internal sewerage 0813 Furnishings 0821 Central heating distribution 0822 Heat source, water heating, regulation 0830 Air conditioning, ventilation 0840 Gas installations 0851 Electrical installations 0852 Lightning conductor 0861 Weak current wiring 0862 Fire protection 0863 Security devices 0864 Intelligent control systems 0870 Lifts, platforms	720 Sanitary installations 721 Internal sewerage 722 Internal water supply 723 Internal gas pipeline 724 Machinery 725 Furnishings 726 Prefabricated installation devices 730 Central heating 731 Boiler rooms 732 Engine rooms 733 Piping 734 Fittings 735 Radiators 736 Underfloor heating
<b>09 Other constructions</b>	
0910 Gates and barriers 0920 Grilles, security blinds 0930 Gutter walkways, outer stairs 0940 Kitchen equipment, built-in wardrobes 0950 Indoor pool 0960 Conservatories	4 Horizontal structures 762 Carpentry constructions 766 Joinery constructions 767 Locksmith constructions 769 Plastic opening elements 771 Tiled flooring and tiles

*(Source: authors' own)*

### 3.2. Methodology

The procedure for determining the wear and tear is given by the fact that the bearer is the building material and the structures in which it is built. However, in terms of total construction costs, material makes up only for a part. It can also be said that the remaining costs are not subject to wear and tear. Thus: for reinvestments, it is necessary to consider the costs corresponding to the current price level, regardless of whether the material used is new or worn out. The distribution of costs is based on the cost concept of price. The price is made up of the amount of the costs that must be incurred in order to create a building structure or work. The amount of the costs can be expressed using a general calculation formula. The calculation formula consists of the costs of:

*material + wages of workers + construction machinery + levies and insurance + overheads + profit*

Furthermore, the percentage ratios of material costs to remaining costs are expressed according to the above-mentioned costs.

### 3.3. Results

In the case study, the costs from the item budgets of houses were divided according to the categorization given in Table 1. Table 2 shows the following results. The first column shows the name (designation) of the functional part 01-09. The total costs listed in the second column express costs according to the calculation formula, including material costs. These costs always express the sum of the costs and the calculation basis of 100% of the costs. The third column expresses the average ratio of material costs to total costs (second column). The material cost ratio is determined as the average value of all researched samples. The following columns determine the highest found share of material costs, the lowest share of material costs and the highest deviation.

*Table 2: Share of material costs to total costs*

Functional part	Total cost	Share of material	Highest share of material	Lowest share of material	Marginal deviation
%					
01	100	82.00	86.00	79.00	4.00
02	100	81.00	84.00	79.00	3.00
03	100	59.00	61.00	58.00	2.00
04	100	73.00	78.00	69.00	5.00
05	100	53.00	55.00	50.00	3.00
06	100	50.00	55.00	48.00	5.00
07	100	58.00	63.00	56.00	5.00
08	100	54.00	56.00	53.00	2.00
09	100	33.00	35.00	32.00	2.00

*(Source: authors' own)*

The share of material costs is higher than 50% for almost all functional parts. This represents the most significant part of the material costs out of the total costs. The most significant volume representation is occupied by functional parts 02 and 03. The results also show a relatively negligible deviation, which is given by the price level of the materials used. Lower deviations are evident for functional parts, which represent construction work performed in most cases from similar materials. On the contrary, functional parts, which represent construction works containing materials chosen according to the economic possibilities of the investor, show higher deviations.

### 3.4. Discussion

The presented study was limited to single-family houses. However, it is obvious that in the case of buildings of a different type, the material requirements may be different. In case of further research in this area, it is possible to extend the sample to other types of buildings. Similarly, the sample for single-family houses can be extended and a more detailed categorization can be made, for example on the basis of:

- Material design of main structures (brick buildings vs. wooden buildings),
- Energy intensity,
- Use of natural or recycled materials.

The results of the study can also be used in the valuation of insurance claims, i.e. damage to parts of the building. Furthermore, the results can be used in determining the amount of damage in criminal proceedings of court cases assessing the offences of damaging another's property.

### 4. CONCLUSIONS

The results of the presented study show the material demandingness of the construction of houses. In investment considerations, it is necessary to take into account in particular the dynamics of the development of the building material prices. The change in material prices depends both on the national economic level and the global trends. In contrast, the other costs included in the cost calculation do not develop so dynamically. When making investment decisions from a construction long-term point of view, it is essential to take into account possible material price changes. The procedure of the presented study and its results can be further incorporated into methodologies processing, for example, preliminary calculations and cost estimates. The material demandingness of the construction of houses was researched on samples carried out in the 2016-2021 period. The results show that the material demandingness does not change over time.

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### LITERATURE:

1. ÚRS PRAHA, a.s. Rozpočtování a oceňování stavebních prací. Praha: ÚRS PRAHA, a.s. inženýrská a poradenská činnost, 2009. ISBN 978-80-7369-239-1.
2. VYSKALA, M., AIGEL, P., a POSPISILOVA, P., 2019, Analysis of Obligatorily Used Price Systems in Public Works Contracts Procurement. In: IOP conference series. Materials Science and Engineering [online]. IOP Publishing, s. 112071 [cit. 2021-9-24]. ISSN 1757-8981. Available at: doi:10.1088/1757-899X/471/11/112071
3. Vyhláška č. 441/2013 Sb.: Vyhláška k provedení zákona o oceňování majetku (oceňovací vyhláška). Zákony pro lidi.cz [online]. [cit. 2019-05-17]. Available at: <https://www.zakonyprolidi.cz/cs/2013-441#prilohy>
4. Oceňování nemovitostí nákladovým způsobem. Stavební klub [online]. [cit. 2019-05-19]. Dostupné z: [https://www.stavebniklub.cz/33/ocenovani-nemovitosti-nakladovym-zpusobem-uniqueidgOke4NvrWuOKaQDKuox\\_Z9\\_cpS1m9RDeE61ttPd92s/](https://www.stavebniklub.cz/33/ocenovani-nemovitosti-nakladovym-zpusobem-uniqueidgOke4NvrWuOKaQDKuox_Z9_cpS1m9RDeE61ttPd92s/)
5. PLEBANKIEWICZ, E., ZIMA, K. and WIECZOREK, D., 2016, „Life cycle cost modelling of buildings with consideration of the risk,” in Archives of Civil Engineering 62(2), pp. 149-166.
6. ISO 15686-5:2008 gives guidelines for performing life cycle cost (LCC) analyses of buildings and constructed assets and their parts (July 2008).

7. KISHK, M., 2005, "On the mathematical modelling of whole-life costs," 21st Annual ARCOM Conference, pp. 239-248.
8. BIOLEK, Vojtěch a Tomáš HANÁK. 2018, Material life cycle costing of buildings: A case study. In: AIP conference proceedings [online]. [cit. 2021-9-24]. ISSN 0094-243X. Available at: doi:10.1063/1.5043874
9. BROMILOW, F. J. and PAWSEY, M., 1987, "Life cycle cost of university buildings," Construction Management and Economics 5, S3-S22. 5.
10. SOBANJO, J. O., 1999, "Facility life-cycle cost analysis based on fuzzy sets theory," Proceedings of 8th International Conference Durability of Building Materials and Component, pp. 1798-1809.
11. Oceňování nemovitostí nákladovým způsobem. Stavební klub [online]. [cit. 2019-05-19]. Available at: [https://www.stavebniklub.cz/33/ocenovani-nemovitosti-nakladovym-zpusobem-uniqueidgOkE4NvrWuOKaQDKuox\\_Z9\\_cpS1m9RDDeE61ttPd92s/](https://www.stavebniklub.cz/33/ocenovani-nemovitosti-nakladovym-zpusobem-uniqueidgOkE4NvrWuOKaQDKuox_Z9_cpS1m9RDDeE61ttPd92s/)
12. BRADÁČ, A. 2016, Teorie a praxe oceňování nemovitých věcí. I. vydání. Brno: Akademické nakladatelství CERM, s.r.o. Brno. ISBN 978-80-7204-930-1.

## INFLUENCER MARKETING IN TRAVEL AND TOURISM: LITERATURE REVIEW

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### ABSTRACT

*Influencer marketing has become a powerful way to influence consumers attitudes and decisions in choosing products or services they buy based on the recommendations of followed online influencers. From its beginning the influencer marketing started in the fashion industry but has spread to diverse industries such as travel and tourism. The aim of the paper is to see whether travel influencers have an effect on their followers when choosing travel destinations that is to see whether consumer behavior is influenced by social media influencers. For the purpose of this research a literature review was done searching two relevant databases; Web of Science and Scopus, using the search term (“influencer marketing”) AND (“travel“ AND (“tourism”). The objective of this literature review was i) to explore the field of influencer marketing and its effects on travel and tourism industry and ii) to provide an overview of the research literature in these areas. The results of the research indicate that there is a growing interest in the use of influencer marketing as a strategy tool to promote destination tourism and to induce customers travel intention. Analysed papers research relations of different factors like credibility, trust, attractiveness, expertise, information quality or ethics of social media influencers in gaining consumer trust and their intention to travel or choose the promoted destination.*

**Keywords:** *influencer, influencer marketing, travel, tourism industry*

### 1. INTRODUCTION

The report of a leading marketing company, eMarketer, published a report how digital marketing increases year by year by almost 20%. This is specially visible in the retail industry of Germany, since this industry represents a leader in spending on digital marketing. The report states that in 2021, retail industry in Germany will spend €2,26 billions on digital ads representing 23,8% of the national total (eMarketer, <https://www.emarketer.com/content/germany-digital-ad-spending-by-industry-2021>). Bearing in mind the fact that ten years ago, digital advertising represented only 10% of total expenses of one company and 90% was spent on analog advertising this is a big turn in marketing strategy of a companies (Levin,2020). The fact is that nowadays we are bombarded by social media and many people are informed through social media on a daily basis. Almost half of surveyed Twitter users did buy something because of an influencer’s tweet (Karp 2016, Lou and Yuan, 2019). The difference between traditional advertising and influencer advertising lies in the fact that influencer is a normal, everyday person who has become popular through their posts online contrary to the paid celebrity which are hired to advertise products they often don’t use. Advertising through influencers gives a higher dose of trust among followers than traditional advertising (Lou and

Yuan, 2019). First part of the paper represents the review of the literature explaining terms like influencer marketing and influencers and travel and tourism. The second part presents the methodology of conducting the systematic literature review about the influencer marketing and its significance in travel and tourism industry, as well as the results. In the final part of the paper, limitations of the study and conclusion was done.

## **2. LITERATURE REVIEW**

The digitalization of business and new ways of placing products and services on digital platforms to consumers and their behaviours gain more and more attention everyday. In this part we address the significance of influencer marketing and accordingly give a short review of terms influencer marketing and travel and tourism industry.

### **2.1. Influencer marketing and influencers**

Influencer marketing represents new marketing strategy that involves influencers (celebrities or normal people) who are active on social networks and the company uses their influence to drive consumers' brand awareness and/or their purchasing decisions (Lou and Yuan, 2019, Scott, 2015). The use of influencer marketing due technological development and corona crisis has increasingly been used in practice in the last years (Dimitriesk and Efremova, 2021) due to the inability of people to go to the store so they are forced to shop online. Companies benefit by advertising on social media through influencers since this can decrease the costs of reaching the target buyers (Childers et al., 2018) and increases brand trust due recommendations from social media influencers (Dimitriesk and Efremova, 2021) and there is a knock-on effect on the brand and the influencer (see Martínez-López et al. 2020; Fink et al., 2019; Mathys et al., 2016). Baker (2021) defines different types of influencers; micro-influencer, celebrity influencer, blog influencer, social media influencer, and key opinion leader. According to the research of Dimitriesk and Efremova (2021) respondents follow most often topics in the field of travel (27%) and entertainment (22%), and then fashion (13%) and cosmetics (13%). Our body of interest is oriented toward analysing the literature in the field of tourism and travel and to see how many papers analyse the relation between influencer marketing and choosing destination to travel due influencer recommendations.

### **2.2. Travel and tourism**

From the latest Travel and Tourism Competitiveness Report 2019 which represents strategic tool for every interested party in this case global leaders and companies, stated that in 2019 TTCI (Travel and Tourism Competitiveness Index) showed increase in air transportation, digital connectivity and international openness globally (this index includes 140 economies). The report states that there is an increase in internet connectivity all over the world so more economies can leverage the growing list of digital T&T services. Considering that effect and the rise in standard where travel has become less expensive to many consumers this sector still has the growth trend (tourism sector represented 7% of global trade in 2019). However, with pandemic in the last year and according to the UNWTO organization, COVID-19 has unprecedented economic impact on tourism industry. Their evaluation is that revenues from tourism could fall dramatically which reduces global GDP from 1% to 3% and many millions of jobs are at risk. But, digitalization and online movement in pandemic opened new ways or simply accelerated some not so prominent ways of providing services to customers in travel and tourism industry. Therefore, we connect and analyse the impact of influencer marketing in the most severely COVID impacted industry, travel and tourism.

### 3. RESEARCH APPROACH AND THE RESULTS

To analyse the impact of influencer marketing on choosing the tourism destination and travel, the systematic literature review was conducted in order to summarize findings in the research field. The search was limited to five years period from 2017-2021. Figure 1 represents the methodological approach for the systematic literature review. First, we identified relevant databases for our research, and we have decided to focus on the peer-review journals that are cited in Scopus and WoS (SSCI and SCI papers). Tables 2 and 3 present our search strategies in WoS (SSCI and SCI) and Scopus, with the period (2017 – 2021). We conducted a search using the scientific databases Web of Science (WoS) and Scopus in September 2021. Through the first part of the search, we checked WoS and Scopus using keywords: “INFLUENCER MARKETING” AND “TRAVEL AND TOURISM”. The main focus was on peer-reviewed papers in journals in English language. This approach resulted in 121 papers (95 in Scopus and 26 in WoS).

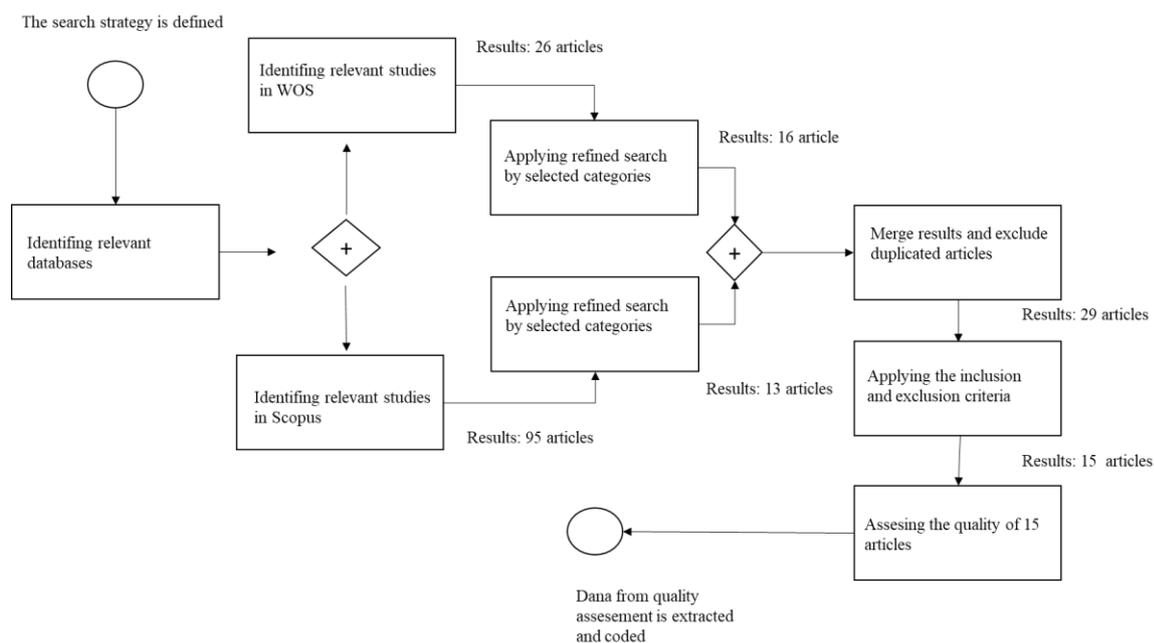


Figure 1: The selection process for the literature review  
(Source: Author's work)

In the second step we refined our search strategy. Since different scientific research areas analyse influencer marketing and travel and tourism, we limited our research to papers published in the fields of business, management and accounting and social sciences. In WoS further categories were chosen: Social Sciences other topics (Sci-Expanded, Ssci, A&Hci, Cpci-S, Cpci-Ssh, Bkci-S, Bkci-Ssh, Esci, Ccr-Expanded, Ic.). Also in Scopus categories/areas are chosen: Business, Management and Accounting and Social Sciences. This resulted in 29 papers (13 papers in Scopus and 16 paper in WoS) (table 1 and 2).

Table following on the next page

Search strategy	Hits	Time span	Indexes
((influencer marketing) AND (travel And tourism))	26	All years	SCIEXPAND., SSCI, A&HCI, ESCI
Refined by: DOCUMENT TYPES: (ARTICLE) AND PUBLICATION YEARS: (2021 OR 2020 OR 2019 OR 2018) AND LANGUAGES: (ENGLISH) AND RESEARCH AREAS: (SOCIAL SCIENCES OTHER TOPICS AND BUSINESS ECONOMICS)	16	2018- September, 2021	SCIEXPAND., SSCI, A&HCI, ESCI

*Table 1: WOS (SSCI, SCI) search strategy (2020-2021)  
(Source: Author's own elaboration)*

Search strategy	Hits	Time span	Indexes
( TITLE-ABS-KEY ( influencer AND marketing ) ) AND ( travel AND tourism )	95	All years	Scopus
( TITLE-ABS-KEY ( influencer AND marketing ) ) AND ( travel AND tourism ) AND ( LIMIT-TO ( OA , "all" ) ) AND ( LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )	13	2017- September, 2021	Scopus

*Table 2: Scopus search strategy (2020-2021)  
(Source: Author's own elaboration)*

In our analysis, we have included 29 papers (16 from WOS and 13 from Scopus). There was no duplicated papers listed in both databases. Further we reviewed abstracts and keywords of all 29 papers and eliminated papers that did not report the description of influencer marketing and travel and tourism. We found 2 papers out of 16 in WOS that did not meet defined criteria and 12 out of 13 papers in Scopus did not include travel or tourism, therefore in the final step following criterion that the paper was considered relevant if it specifically covers the influencer marketing and its relation to travel and tourism field left 15 papers to analyse (1 in Scopus and 14 in WOS databases, figure 1). Next, we extracted relevant data of papers (e.g. authors, title, year of publication, influencer marketing, travel and tourism) for our analysis.

### 3.1. Research results

When analysing the number of published papers in the period from 2017-2021 (figure 2), the results of the research indicate that in recent years, specially the 2020 and 2021 year, as the years of pandemic period when everything went online, the interest in this field increased as seen in the figure 2. We can see also see that in 2017 there are no papers published in searched databases indicating that influencer marketing and its influence on travel and tourism started to gain attention in 2018. Further, USA has the most published papers in this field (5 papers), further Spain (4 papers), and 11 papers in other countries from 2018-2021 (Figure 3).

*Table following on the next page*

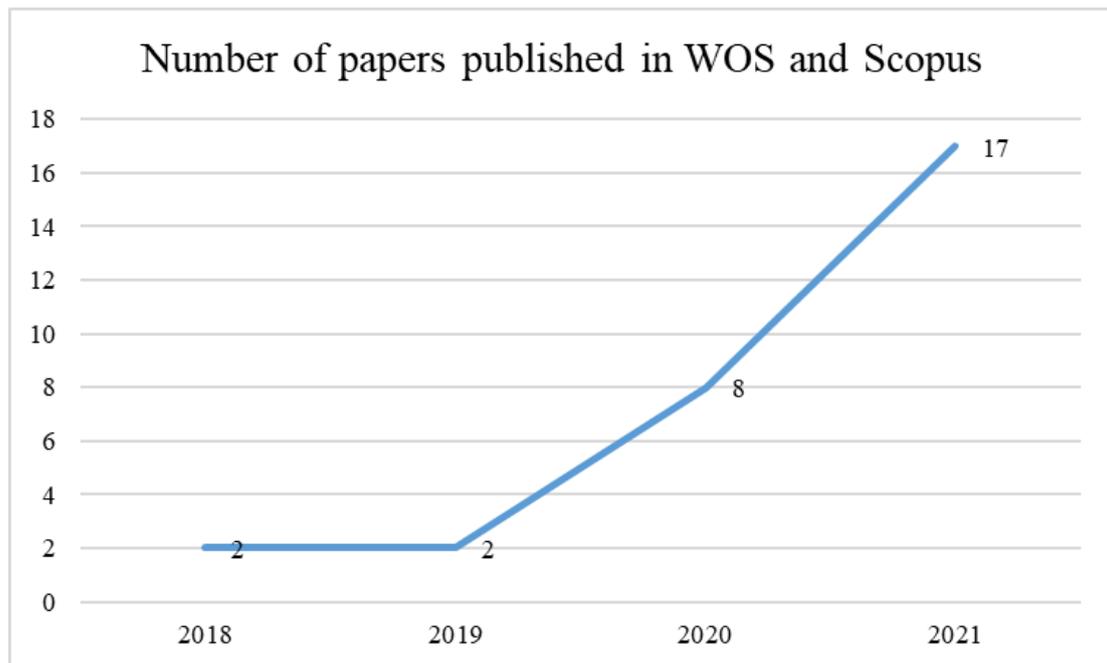


Figure 2: Number of papers published in WOS and Scopus in the 2018-2021 period  
(Source: Author's work)

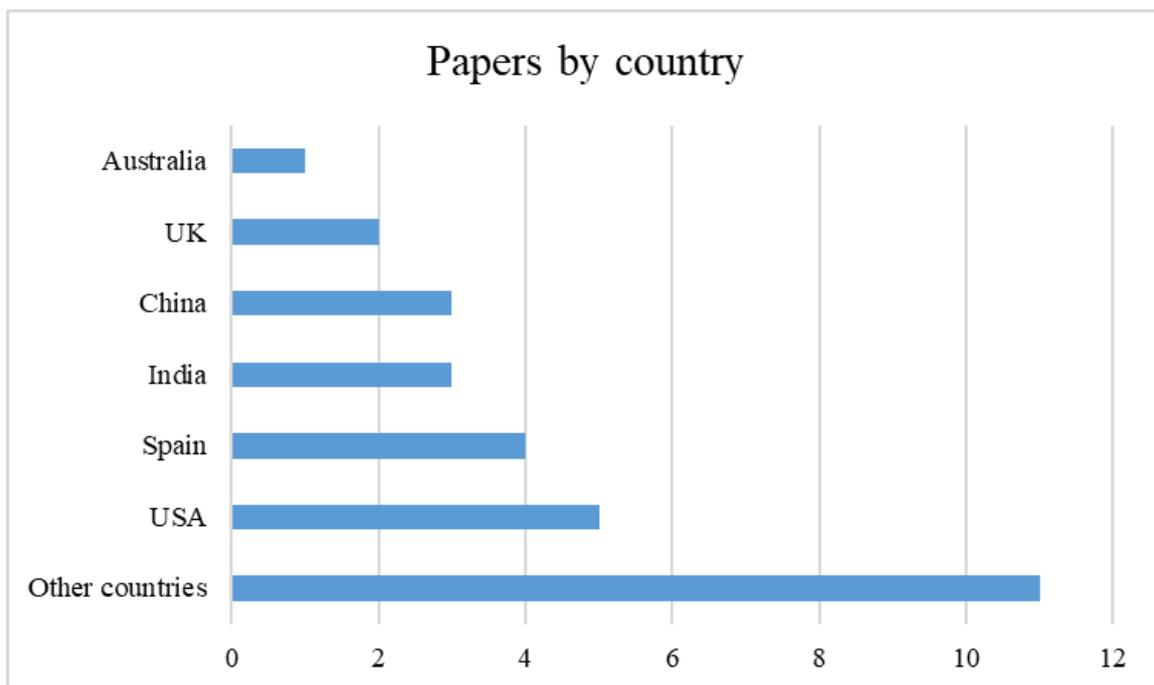


Figure 3: Number of papers published by country in the 2018-2021 period  
(Source: Author's work)

The objective of this literature review was i) to explore the field of influencer marketing and its effects on travel and tourism industry and ii) to provide an overview of the research literature in these areas. We searched two relevant databases and the search after applying the search criteria 29 papers were included for see which paper connects influencer marketing and travel and tourism. And second objective is to investigate the effect of influencer marketing in travel and tourism industry. As represented, out of 29 papers, finally 15 papers match the set objective.

	Authors, Year	Connection between influencer marketing and travel and tourism
<b>WOS</b>		
1	Asan, K, 2021	V
2	Wellman, ML; Stoldt, R; Tully, M; Ekdale, B, 2020	V
3	Jang, et al. 2021	V
4	Pop, RA; Saplacan, Z; Dabija, DC; Alt, MA, 2021	V
5	Dutta, K; Sharma, K; Goyal, T, 2021	V
6	Jin, X; Cheng, MM, 2020	NV
7	Xu, X; Pratt, S, 2018	V
8	Chaudhury, SR; Nafees, L; Perera, BY, 2020	V
9	Kapoor, PS; Balaji, MS; Jiang, YY; Jebarajakirthy, C, 2021	V
10	Gholamhosseinzadeh, MS; Chapuis, JM; Lehu, JM, 2021	V
11	Mariani, MM; Styven, ME; Natarajan, R, 2021	V
12	Yang, RC; Tung, VWS, 2018	NV
13	Singh, A; Munjal, S, 2021	V
14	Nath, A; Saha, P; Salehi-Sangari, E, 2019	V
15	Yilmazdogan, OC; Dogan, RS; Altintas, E, 2021	V
16	Le, LH; Hancer, M, 2021	V
<b>Scopus</b>		
17	Belanche D., Casaló L.V., Flavián M., Ibáñez-Sánchez S., 2021	NV
18	Weismayer C., Gunter U., Önder I., 2021	NV
19	Pornsrimate K., Khamwon A., 2021	NV
20	Meluzzi C., Balsamo S., 2021	V
21	Zogaj A., Tscheulin D.K., Olk S., 2021	NV
22	Sun Y., Wang R., Cao D., Lee R., 2021	NV
23	Shen Z., 2021	NV
24	de Bruin L., Roberts-Lombard M., de Meyer-Heydenrych C., 2021	NV
25	Rodrigues C., Skinner H., Dennis C., Melewar T.C., 2020	NV
26	Berne-Manero C., Marzo-Navarro M., 2020	NV
27	Belanche D., Flavián M., Ibáñez-Sánchez S., 2020	NV
28	Martínez-López F.J., Anaya-Sánchez R., Esteban-Millat I., Torrez-Meruvia H., D'Alessandro S., Miles M., 2020	NV
29	Al-Zyoud M.F., 2018	NV

\* V- validated connection

\*\*NV- not validated connection

*Table 3: Literature review  
(Source: Author's own elaboration)*

Table 4 represents 14 papers that were eliminated from further final analyses since they did not connect directly influencer marketing and the field of tourism or travel. However, we represented a short view of the areas that address connection between influencer marketing and fields like; ethics, fashion industry, followers attitudes, consumer brand relationship, self congruence and credibility, consumer trust, consumption, bank industry, brand targeting and impulsive purchasing.

No. of articles	Research field Authors, Year	Social media communication and event marketing	Family influence constraints and solo travelers	Emotions study contained in written text and decision making	Credibility, and followers' attitudes and behavioral	Process of building consumer-brand relationships with Millennials consumers	Self-congruence and credibility, consumer trust	Consumption of luxury brands, fashion industry	Banking industry and customer satisfaction	Sensory place branding	Influencer traits, brand, target audience	Impulsive purchasing
<b>WOS</b>												
1	Jin, X; Cheng, MM, 2020	+										
2	Yang, RC; Tung, VWS, 2018		+									
<b>Scopus</b>												
3	Belanche D. et al., 2021				+							
4	Weismayer C., Gunter U., Önder I., 2021			+								
5	Pornsrimate K., Khamwon A., 2021					+						
6	Zogaj A., Tscheulin D.K., Oik S., 2021						+					
7	Sun Y., Wang R., Cao D., Lee R., 2021							+				
8	Shen Z., 2021							+				
9	de Bruin L., Roberts-Lombard M., de Meyer-Heydenrych C., 2021								+			
10	Rodrigues C. et al., 2020									+		
11	Berne-Manero C., Marzo-Navarro M., 2020										+	
12	Belanche D., Flavián M., Ibáñez-Sánchez S., 2020							+				
13	Martínez-López et al., 2020						+					
14	Al-Zyoud M.F., 2018											+

*Table 4: Papers that address influencer marketing and other research area excluding travel and tourism  
(Source: Author's own elaboration)*

The findings of Asan (2021) showed four effects of followers that traveller influencers can influence; informative effects, motivating effects, effects as a role model, and communal effects. These findings are significant to managers and public leaders to use the influencer marketing approach in travel industry. Further research examines the effects of travel social influencers (TSIs)' and the consumers engagement level on travel intention to the destination they promote and purchase. The findings suggest that higher number of TSI followers predicts the effectiveness of advertising messages they promote and their perceived expertise referring to the fact that consumers are not skeptical about influencer messages (Jang et al., 2021). Other research from Pop et al. (2021) analyses the impact of social media influencer trust on customer travel decision-making. In this research direct and indirect effect between influencers trust and construct of decision-making journey (desire, information search, evaluating alternatives, purchase decisions, satisfaction and experience sharing) were analysed. Findings proved the positive relationship between influencer trust, desire to travel, and consumer information search behavior. This research is significant to managers and marketing experts who deal with destination marketing and can use this powerful tool as a strategy. Dutta, Sharma and Goyal (2021) explore the influence of online or digital advocacy on customer decision-making in buying the travel and tourism service. The findings indicate that customers decision making is based on online reviews and this reviews don't have to be published by famous influencers to gain trust. Xu and Pratt (2018) findings are based on the self-congruence theory to analyse the relationship between endorsers and potential tourists to evaluate endorsement effectiveness. Research results indicate that the social media influencer endorser–consumer congruence positively contributes to visit intentions toward the endorsed destinations as does endorser–destination congruence (Xu and Pratt, 2018, p. 958). Further, Kapoor et al. (2021), investigated the effectiveness of social media influencers on travelers perception about a hotel's commitment to sustainability and their intention to stay at the hotel by examining the role of argument quality and sponsorship status. Results indicate that when eco friendly hotels promote themselves through social media influencers the effect is greater than a simple recommendation message in influencing travelers' perceptions and intentions.

Also, findings of Singh and Munjal (2021) who explore digital trends in hospitality and tourism in India indicate that influencers and online reviews impact purchase tech decisions related to travel and tourism. Gholamhosseinzadeh, Chapuis, and Lehu (2021) did a case study and applied netnography on using Okinawa destination to analyse online communications between two travel bloggers and their followers and how they perceive Okinawa as possible tourist destination without any prior image about the destination. The findings show that followers were excited by this discovery and some of them expressed the intention to visit Okinawa. Mariani, Styven and Nataraajan (2021, p. 232) use social comparison theory perspective to examine the drivers of social comparison frequency (SCF) on Facebook among international travel bloggers. The findings of the study indicate that there is a positive correlation between social comparison frequency on Facebook and the ability dimension of social comparison orientation (SCO), as well as between SCF and opinion leadership. The paper of Nath, Saha and Salehi-Sangari (2019, p. 1468) validates the roles of information quality and enjoyment as influencers of behavior in travel industry since results indicate that perceived usefulness and information quality are stronger predictors of attitude and behavioral intention than perceived enjoyment. Yilmazdogan, Dogan, and Altintas (2021) investigated the impact of the sub-dimensions of source credibility (attractiveness, trustworthiness and expertise) on travel intention and parasocial interaction mediator role. Their contribution lies in confirming the impact of trustworthiness and expertise on travel intention and that there is a significant mediating role between the trustworthiness and expertise sub-dimensions of parasocial interaction and travel intention. Le and Hancer (2021) found with the use of social leaning theory that physical attractiveness, social attractiveness and credibility of travel vloggers positively affected audience wishful identification. The highest effect among studied variables has credibility of vloggers, while also gender matters where male vloggers were perceived as more credible and female vloggers as more physically attractive. Wellman et al., (2020) study gives a different approach to influencer marketing which involves the premise that influencer marketing ethical framework is not quite clear and that ethical principles guiding production of sponsored content are not fully understood. The findings showed that the demand to publish sponsored content on travel influencer networks did not outweigh the standards they have set for themselves and their commitment to followers. Common to all researched papers is that the most researches emphasize influencer marketing as a significant marketing tool that can influence consumer behaviours specially in order to influence their intention to travel to a certain destination if the credibility and reliability of the content has been proved. As seen, in the last 5 years, analyzing two databases, a total of 15 papers address the influencer marketing and analyses its effect on tourism industry. However there is a growing opportunity for marketers and organizations to benefit from influencer kind of promotion so this field of interest is definitely growing.

#### **4. CONCLUSION**

The aim of the paper was twofold, i) to explore the field of influencer marketing and its effects on travel and tourism industry and ii) to provide an overview of the research literature in these areas. We limited our search to the last five years (2017-2021), which seems to be correctly selected period since first papers seem to appear in the scientific databases from 2018th. Some limitations of the paper can be noted. For the systematic literature review we have chosen two notable databases (WOS and Scopus) in the field of economics, which excluded other papers in other databases. Also, only articles written in English language were taken into consideration, which automatically excluded works written in other languages. Most of the analysed papers deal and explore the effect social media influencers (SMI) have on consumer behaviours in terms of choosing the travel destination. Consumers engagement level on travel intention depends in some cases on the number of followers which influencer has, meaning if it is a high

number then this may predict the effectiveness of advertising messages. Some papers deal with credibility, trust, attractiveness, expertise and information quality of SCI and the customers intention to travel where the higher the trust, attractiveness and quality information is, the stronger is the intention to travel. There is also one paper that examines influencer marketing ethical framework which is not defined in a clear way, but in this case published travel influencer content did not outweighed the personal ethical standards and their commitment to followers. However, this paper opens many future questions and research in this area of ethics of social media influencers and brands promotion. This literature review may stimulate awareness in deeper analysing the influencer marketing as a powerful tool in tourism and destination marketing which is, and can be used as a strategy to attract more travelers to different destinations. managers and public leaders should consider this facts in their future planning regarding development of travel and tourism strategy for their companies or cities. Based on the analysed literature, we can state that there is a lack of research evidenc considering the five year period, however there is a significant indication about the rise of the research area since the most papers (17) have been published in year 2021, which represents a growth of 112% compared to the number of papers published in 2020. The fact is that digital marketing is a fast growing industry of today representng 13,8 bil dollars market and companies will have to embrace this new ways of promotiong their products and services where influencer marketing seems to have great efficiency in reaching out to the customers. Considering the noticed trend and the overall impact of pandemic where everything went online and that people got used to gather more and more informations online this field of interest will grow in the future.

#### **LITERATURE:**

1. Al-Zyoud, M. F. (2018). Does social media marketing enhance impulse purchasing among female customers case study of jordanian female shoppers. *Journal of Business and Retail Management Research*, 13(2), 135-151.
2. Asan, K. (2021). Measuring the impacts of travel influencers on bicycle travellers. *Current Issues in Tourism*, 1-17.
3. Baker Kristen, (2021). What will Influencer marketing look like in 2021? Retrieved from <https://blog.hubspot.com/marketing/how-to-work-with-influencers>.
4. Belanche, D., Casaló, L. V., Flavián, M., & Ibáñez-Sánchez, S. (2021). Building influencers' credibility on instagram: Effects on followers' attitudes and behavioral responses toward the influencer. *Journal of Retailing and Consumer Services*.
5. Belanche, D., Flavián, M., & Ibáñez-Sánchez, S. (2020). Followers' reactions to influencers' instagram posts. *Spanish Journal of Marketing - ESIC*, 24(1), 37-54. doi:10.1108/SJME-11-2019-0100
6. Berne-Manero, C., & Marzo-Navarro, M. (2020). Exploring how influencer and relationship marketing serve corporate sustainability. *Sustainability (Switzerland)*, 12(11).
7. de Bruin, L., Roberts-Lombard, M., & de Meyer-Heydenrych, C. (2021). The interrelationship between internal marketing, employee perceived quality and customer satisfaction—a conventional banking perspective. *Cogent Business and Management*, 8(1).
8. Dutta, K., Sharma, K., & Goyal, T. (2021). Customer's digital advocacy: impact of reviews and influencers in building trust for tourism and hospitality services. *Worldwide Hospitality and Tourism Themes*.
9. Francisco J. Martínez-López, Rafael Anaya-Sánchez, Marisel Fernández Giordano & David Lopez-Lopez (2020): Behind influencer marketing: key marketing decisions and their effects on followers' responses, *Journal of Marketing Management*.
10. Gholamhosseinzadeh, M. S., Chapuis, J. M., & Lehu, J. M. (2021). Tourism netnography: how travel bloggers influence destination image. *Tourism Recreation Research*, 1-17.

11. Jang, W., Kim, J., Kim, S., & Chun, J. W. (2021). The role of engagement in travel influencer marketing: The perspectives of dual process theory and the source credibility model. *Current Issues in Tourism*, 24(17), 2416-2420.
12. Jin, X., & Cheng, M. (2020). Communicating mega events on Twitter: Implications for destination marketing. *Journal of Travel & Tourism Marketing*, 37(6), 739-755.
13. Kapoor, P. S., Balaji, M. S., Jiang, Y., & Jebarajakirthy, C. (2021). Effectiveness of Travel Social Media Influencers: A Case of Eco-Friendly Hotels. *Journal of Travel Research*.
14. Karp, Katie (2016), "New Research: The Value of Influencer on Twitter," Twitter, May 10, <https://blog.twitter.com/2016/new-research-the-value-of-influencers-on-twitter>.
15. Le, L. H., & Hancer, M. (2021). Using social learning theory in examining YouTube viewers' desire to imitate travel vloggers. *Journal of Hospitality and Tourism Technology*.
16. Levin, A. (2020). *Influencer marketing for brands*. Apress.
17. Lou, C., & Yuan, S. (2019). Influencer marketing: how message value and credibility affect consumer trust of branded content on social media. *Journal of Interactive Advertising*, 19(1), 58-73.
18. Mariani, M. M., Styven, M. E., & Nataraajan, R. (2021). Social comparison orientation and frequency: A study on international travel bloggers. *Journal of Business Research*, 123, 232-240.
19. Martínez-López, F. J., Anaya-Sánchez, R., Esteban-Millat, I., Torrez-Meruvia, H., D'Alessandro, S., & Miles, M. (2020). Influencer marketing: Brand control, commercial orientation and post credibility. *Journal of Marketing Management*, 36(17-18), 1805-1831.
20. Meluzzi, C., & Balsamo, S. (2021). The Language of Food and Wine Tourism on the Web. *Online Journal of Communication and Media Technologies*, 11(2), e202104.
21. Nath, A., Saha, P., & Salehi-Sangari, E. (2019). Blurring the borders between B2B and B2C: a model of antecedents behind usage of social media for travel planning. *Journal of Business & Industrial Marketing*. 1468-1481.
22. Nath, A., Saha, P., & Salehi-Sangari, E. (2019). Blurring the borders between B2B and B2C: a model of antecedents behind usage of social media for travel planning. *Journal of Business & Industrial Marketing*.
23. Pop, R. A., Săplăcan, Z., Dabija, D. C., & Alt, M. A. (2021). The impact of social media influencers on travel decisions: The role of trust in consumer decision journey. *Current Issues in Tourism*, 1-21.
24. Pornsrimate, K., & Khamwon, A. (2021). How to convert millennial consumers to brand evangelists through social media micro-influencers. *Innovative Marketing*, 17(2 May 2021), 18-32.
25. Ray Chaudhury, S., Nafees, L., & Perera, B. Y. (2020). "For the Gram": An Exploration of the Conflict between Influencers and Citizen-Consumers in the Public Lands Marketing System. *Journal of Macromarketing*.
26. Rodrigues, C., Skinner, H., Dennis, C., & Melewar, T. C. (2020). Towards a theoretical framework on sensorial place brand identity. *Journal of Place Management and Development*, 13(3), 273-295. doi:10.1108/JPMD-11-2018-0087
27. Scott, David Meerman (2015), *The New Rules of Marketing and PR: How to Use Social Media, Online Video, Mobile Applications, Blogs, News Releases, and Viral Marketing to Reach Buyers Directly*, Hoboken, NJ: John Wiley
28. Shen, Z. (2021). A persuasive eWOM model for increasing consumer engagement on social media: Evidence from Irish fashion micro-influencers. *Journal of Research in Interactive Marketing*, 15(2), 181-199.
29. Singh, A., & Munjal, S. (2021). How is the hospitality and tourism industry in India responding to the dynamic digital era?. *Worldwide Hospitality and Tourism Themes*.

30. Sun, Y., Wang, R., Cao, D., & Lee, R. (2021). Who are social media influencers for luxury fashion consumption of the Chinese Gen Z? Categorisation and empirical examination. *Journal of Fashion Marketing and Management*
31. Weismayer, C., Gunter, U., & Önder, I. (2021). Temporal variability of emotions in social media posts. *Technological Forecasting and Social Change*, 167
32. Wellman, M. L., Stoldt, R., Tully, M., & Ekdale, B. (2020). Ethics of authenticity: Social media influencers and the production of sponsored content. *Journal of Media Ethics*, 35(2), 68-82.
33. Xu, X., & Pratt, S. (2018). Social media influencers as endorsers to promote travel destinations: an application of self-congruence theory to the Chinese Generation Y. *Journal of Travel & Tourism Marketing*, 35(7), 958-972.
34. Yang, R., & Tung, V. W. S. (2018). How does family influence the travel constraints of solo travelers? Construct specification and scale development. *Journal of Travel & Tourism Marketing*, 35(4), 507-516.
35. Yılmazdoğan, O. C., Doğan, R. Ş., & Altıntaş, E. (2021). The impact of the source credibility of Instagram influencers on travel intention: The mediating role of parasocial interaction. *Journal of Vacation Marketing*, 1356766721995973.
36. Yılmazdoğan, O. C., Doğan, R. Ş., & Altıntaş, E. (2021). The impact of the source credibility of Instagram influencers on travel intention: The mediating role of parasocial interaction. *Journal of Vacation Marketing*, 1-14.
37. Zogaj, A., Tscheulin, D. K., & Olk, S. (2021). Benefits of matching consumers' personality: Creating perceived trustworthiness via actual self-congruence and perceived competence via ideal self-congruence. *Psychology and Marketing*, 38(3), 416-430.

# CORPORATE INCOME TAX AS AN IMPORTANT INSTRUMENT FOR BUSINESS COMPETITIVENESS

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## **ABSTRACT**

*Taxes are currently being discussed, both in terms of their impact on national budget revenues and subsequently on the EU budget. Also for their impact on business outcomes and the competitiveness of business entities. Taxes represent the largest inflow of funds into the state budget, so this issue trying to find the limit of satisfaction between the state and taxpayers. The aim of the paper is to compare the tax burden of business entities in the Slovak Republic, the Czech Republic and the Republic of Poland on the basis an analysis. The paper focuses on selected aspects of the tax system, especially the comparison of selected indicators, correlation analysis, and evaluation in connection with the Doing Business Index. At the end of the paper are suggestions and recommendations for streamlining the tax system, respectively corporate income tax to promote the competitiveness of businesses in selected EU countries. Recommendations can contribute to make business more attractive, increase the motivation to start a business, increase support for small and medium enterprises and mainly increase the competitiveness of businesses.*

**Keywords:** *Competitiveness, Corporate income tax, Doing Business Index, Tax rate*

## **1. INTRODUCTION**

Many authors focus on taxation, tax burden optimization and tax evasion, as well as tax competition. Some economists and entrepreneurs consider tax competition as a tool to achieve greater business efficiency. Many authors focus on taxation, tax burden optimization and tax evasion, as well as tax competition. Non-profit economists and entrepreneurs regard tax competition as a tool for making business more efficient. European Union tax cooperation began in the early 1950s, focusing in particular on indirect taxes. Activities of EU in the field of direct taxation is focused on corporate taxation. However, this tax is still being harmonized [1]. Business taxation is considered one of the key parameters of the business environment. Most changes in corporate taxation lead not only to the budgetary interests of the state, but also to efforts to improve business conditions and to inflow foreign investment. The growth rate of corporate taxes in developed countries has been higher than the growth rate of the total tax burden since 1965 [2]. Auerbach argues that in recent years pressures and new challenges have been created for countries that want to maintain their relatively low corporate tax levels. According to him, those taxes are regarded as an integral part of the national tax system. Auerbach and Poterb have developed a methodology according to which they can attribute changes in corporate taxation to different sources. Some of the changes attributed to a decline in corporate profitability, others to a decrease in the average tax rate, etc. [3]. Andrejovska, who conducted an analysis of the financial sector of the Visegrad Four countries, concluded that households and non-financial corporations are the largest creditors. The Slovak Republic made the greatest progress in generating income in the tax competition of the V4 countries. For example, in the Czech Republic we register a low corporate income tax rate, but the Czech taxation system needs a major overhaul to reduce the administrative burden [4]. According to Vavrova, the tax systems of individual countries are improving on the basis of direct taxation and the level of income tax rates, but also through depreciation, various forms of tax relief and bonuses. This can prevent capital outflow into tax paradise [5].

According to a simple investment model developed by Brandstetter and Jacob, we can conclude that companies that do not have access to foreign capital transfers can respond more quickly to corporate income tax decrease than companies that have this possibility [6]. Investment strategies of companies are sensitive to changes in corporate income tax. The governments of the European Union are constantly trying to reduce corporate tax rates in order to prevent outflow of capital abroad. As an example, Sweden reduced its rate in 2013 of 26.3% to the current 22%. In her study, Andrejovska made several conclusions through a cluster analysis. Despite continuous integration, the results point to the existence of differences in corporate taxation within the EU. Differences result from the differentiation of macroeconomic situations, economic policy and different tax legislation. It also confirms a certain degree of convergence between corporate taxation in two groups of Member States of the European Union - the old and the new. There is pointed out the lack of harmonization of tax systems and the need to implement several harmonization measures. It is interesting that in the EU there is no uniform model, suggesting that there are still large economic disparities in EU Member States [4].

## **2. CORPORATE INCOME TAX AS AN IMPORTANT INSTRUMENT OF COMPETITIVENESS**

At present, taxes account for approximately 80-90 % of the state budget revenues in the countries under comparison. The corporate income tax rate in the Slovak Republic is the same for all legal entities. As of 1 January 2017, the tax rate was reduced to the current 21 % of the adjusted tax base for the relevant tax period. In the past, it was possible to apply a reduced tax rate in Slovakia, eg. for legal persons engaged in agricultural production and for legal persons who had at least 50 % of disabled employees. The introduction of a reduced tax rate also means a reduction in the tax burden for taxpayers [7]. The development indicates a decline in the number of differences between the two major forms of legal units - legal persons and natural persons-entrepreneurs [8]. Corporate taxation is an imperative constraint for entrepreneurship - in particular for high-quality entrepreneurs, as it is these who are more easily able to overcome the hurdles of tax legislation and acquire resources to start their ventures, and consequently perform better [9]. National tax policy is an instrument for promoting competitiveness. Coordination of tax policies of EU member states and their harmonization becomes one of the major economic, but also political issues faced by governments in order to maintain macroeconomic stability and economic prosperity of national economies [10]. The European Union has no direct influence on rate setting or tax collection. The government, not the EU, determines the level of taxes. The role of the EU is to oversee national tax rules to be in line with EU objectives. The main objectives include promoting economic growth and employment, ensuring that tax rules are not discriminatory against entrepreneurs from other EU countries, etc. [11]. The original EU states support harmonization, while the new EU states argue that taxation is a matter for individual Member States. Tax competition leads to a reduction in the tax burden across the EU and, moreover less developed countries can attract new investment by their low tax burden. The payer of the corporate income tax is not willing to pay taxes in a country in which he does not receive adequate consideration. Therefore, he decides on a more appropriate way of paying tax in a country with a lower tax burden [12], [13].

## **3. COMPARISON OF INCOME TAX IN THE SLOVAK REPUBLIC, CZECH REPUBLIC AND REPUBLIC OF POLAND**

To compare different aspects of taxes, we chose three countries belonging to the Visegrad Group - the Slovak Republic, the Czech Republic and the Republic of Poland and different tax aspects of the income tax were used for comparison during the period from 2008 to 2016. All financial data were used from the official website of the Statistical Office of the European Communities [11].

In 1992, the Czech Republic underwent a major global tax reform aimed at a comprehensive change of the previously unclear tax system, which is similar in character to developed European countries. Over time, laws have been amended to meet the prerequisites for EU tax harmonization, namely increasing consumption taxation at the expense of income taxation [14]. The Republic of Poland began its biggest reform of the tax system in the early 1990s. After the accession to the EU, the area of direct taxation has been harmonized according to EU requirements. One of the most recent amendments to the Act also includes increases in sanctions for tax fraud, assessed under the Criminal Code. In this way, Poland also seeks to eliminate tax evasion, which may bring a competitive advantage to certain entities. It also applies incentives to businesses investing in sectors with high unemployment [15].

### **3.1. Comparison of dependence of studied indicators**

To make a comparison the following indicators were chosen corporate income tax rate and Doing Business Index. The Doing Business Index is compiled annually by the World Bank and compares the regulations of the business environment of 190 countries of the world economy from the perspective of the business sector. The evaluation focuses on favorable conditions for business, regulations in business, property rights, attractiveness for foreign investors and especially competitiveness. The index is assessed on the basis of indicators during the various phases of the business life cycle. The aim of this evaluation is to provide sufficient information to understand and improve the legal environment for business. One of the biggest advantages is easy comparison between different countries. One of the disadvantages of the index is the fact that it does not take into account important data such as the size of the market and the quality of human capital, filing a tax return, etc. [16], [17].

### **3.2. Results of analysis for competitiveness**

The findings can be interpreted and compared from the perspective of the state, but also from the perspective of legal entities. We assume that higher revenues for the state budget can help the country to be more competitive and, on the contrary, lower tax paid can contribute to better competitiveness of legal entities. From the results of the analysis we can conclude that at a given level of tax burden has the highest revenues to the state budget of Poland, which should indicate that it is the most competitive among the three countries. This revenue can be further used by the state to support business, for example small and medium-sized enterprises, what Poland is focused on, and this may bring even higher revenues to Slovakia in the future. While the Poland has the highest tax revenues, it is the share of income taxes on the relatively small share of the income tax. On the other hand, Slovakia has the lowest tax revenues to the state budget among the three countries. However, the income tax shares the highest share of these incomes. As SMEs make up more than 99% of the total number of legal entities in the Slovak Republic, the state focuses on supporting SMEs. This support is financed from the state budget, i.e. the corporate income tax [18]. The average tax paid during the period of last ten years in the Czech Republic is around the level of 14,000 €, while in PR it is almost half less to the level of 7,500 €. In Slovakia, on average, a legal entity pays just over € 10,000 a year. (Eurostat data) Given the relatively similar tax rate, the results show that it is the legal entities in the Czech Republic that pays the highest tax, which is disadvantageous for their competitiveness in comparison with other countries. Legal entities in PR pay the least and therefore we assume that they are the most competitive from this point of view.

### **3.3. Tax rates on corporate income tax**

The evolution and changes in the rates of legal entities over the past decade can be seen in Figure 1. The gap between countries has been between 3 and 4% in recent years. If we take away from other influences, we can state that Slovakia is the least competitive in terms of the

level of tax rates. Legal entities are subject to the highest taxation of the countries under review. RP is most competitive because its level of tax burden has a long-term linear nature of 19% and also a reduced rate of 15% for small businesses. After its establishment, Slovakia achieved historically the highest tax rates of 45 to 40%. The rate gradually decreased only after 2004, when equal taxation was introduced for income tax at 19%. This decision was to make the country more attractive and attract new foreign investment. In 2013, several changes were made to the tax system and the tax again rose to 23%. According to entrepreneurs, the current form of the tax system is the most demotivating. Since 2013, the income tax rate has been reduced only to the current 21%. Compared to RP, where the gradual planned, gradual tax rate decrease by 2% mostly every 2 years had a business-supporting character for the business sector, there was an unplanned step rate cut in the Slovak Republic. In the Czech Republic, the tax rate of income tax in the Czech Republic gradually decreased from 1992 to 2010 from the initial 42% to 19%. It decreased by one percentage point each year between 2008 and 2010. This reduction was the result of a tax reform aimed at making the country more attractive to foreign investment and investment in general. The Czech Republic also tries to take into account the impact of tax competition through this reform. In recent years, the income tax has been linear in nature and the rate is 19% of the tax base. Like most European countries, Poland did not avoid the trend of lowering the rate of income tax, but also tax rates in general. Since 2000 the tax has been reduced by 11 percentage points to the current 19%. The tax has been linear since 2004 when it remains unchanged. The Republic of Poland is one of the EU countries whose tax levels are among the lowest.

### 3.4. Corporate income tax and its impact on the Doing Business Index

Comparison of Corporate income tax and business sphere in selected countries was carried out based on the country's ranking in the business environment quality ranking. The World Bank assesses in its annual Doing Business Index, 10 different factors, divided into two categories:

- the power of legal institutions - investor protection, contract enforcement, insolvency and borrowing;
- cost and complexity of regulatory procedures - conditions for starting a business, paying taxes, complexity of building permits and cross-border trade.

The most relevant factor is the factor of paying taxes. Table 1 shows the overall placement and placement in the taxation categories in the countries under review for the period from 2008 to 2019 [17].

	Total DBI Ranking			Tax Payment Category		
	SR	CR	RP	SR	CR	RP
2008	32.	56.	74.	122.	113.	125.
2009	36.	75.	76..	126.	118.	142.
2010	42.	74.	72.	120.	121.	151.
2011	41.	63.	70.	122.	128.	121.
2012	48.	64.	62.	130.	119.	128.
2013	46.	65.	55.	100.	120.	114.
2014	49.	75.	45.	102.	122.	113.
2015	37.	44.	32.	100.	119.	87.
2016	29.	36.	25.	73.	122.	58.
2018	39.	30.	51.	49.	62.	67.
2019	45.	41	40.	55.	53.	77.

*Table 1: Ranking in the Doing Business Index – Slovakia (SR), Czech Republic (CZ), Republic of Poland (PL) 2008-2019*

*(Source: Own processing based on World Bank, 2018)*

### 3.5. Correlation analysis of dependence between Doing Business Index and corporate income tax revenues

In the following text is a comparison of the dependence between the Doing Business Index and the corporate income tax. In the DBI index there is a separate category of paying taxes, where correlation analysis determines the degree of dependence between the two variables. For modelling a specific process one method in particular may be more suitable and another method perhaps cannot be used for the modelling of this process [19]. The first is examined Slovakia, where we can conclude from the values of the correlation coefficient that there is a strong indirect dependence between the category of paying taxes in the Doing Business Index and the income to the Slovakia budget from corporate income tax with the value of the coefficient - 0.89. In percentage terms, this means that there is a 79% probability that an increase in corporate income tax to the SR will improve the position of the Slovak Republic in the Doing Business Index (Table 2).

	DBI – paying taxes	Corporate income tax
DBI – paying taxes	1	
Corporate income tax	-0,8895734	1

*Table 2: Correlation analysis of the relationship between the Doing Business Index and Corporate income tax revenues in the Slovak Republic  
(Source: Own processing)*

The value of the correlation coefficient in Czech Republic is -0.47. Unlike the Slovak Republic, this coefficient value indicates a slightly strong indirect dependence between the category of paying taxes in the Doing Business Index and income to the state budget from corporate income tax. In percentage terms, we can state a 22% probability that an increase in tax revenues to the state budget will improve the position of CR (Table 3).

	DBI – paying taxes	Corporate income tax
DBI – paying taxes	1	
Corporate income tax	-0,472535617	1

*Table 3: Correlation analysis of the relationship between the Doing Business Index and Corporate income tax revenues in the Czech Republic  
(Source: Own processing)*

Republic of Poland, unlike the SR and CR, achieves a very low value of the correlation coefficient of -0.10. The value of the coefficient indicates a slightly strong indirect dependence between the category of paying taxes in the Doing Business index and revenues to the state budget of RP. In percentage terms, there is only a 1% probability that an increase in revenue from this tax to the state budget will improve the position of tourism in this category of Doing Business. We can consider such a low percentage as negligible and from the result we conclude that the measured quantities have almost no influence on each other.

	DBI – paying taxes	Corporate income tax
DBI – paying taxes	1	
Corporate income tax	-0,10331	1

*Table 4: Correlation analysis of the relationship between the Doing Business Index and Corporate income tax revenues in the Republic of Poland  
(Source: Own processing)*

The Doing Business Index assesses the business environment of individual states and focuses on attractiveness from the business perspective. From the macroeconomic point of view, the increase in corporate income tax will increase tax revenues to the state budget. It follows that if we increase revenue to the state budget should be place in the Doing Business index worsen - State is therefore located on the lower rung, because higher taxes for businesses are less attractive. Reducing the tax burden is attractive for legal entities. The Doing Business Index is influenced by the amount of the tax burden. If the tax burden increases, this leads to a deterioration in the ease of doing business. Correlation analysis, however, refutes this claim: the impact on business can be other factors of which we in this paper abstracted. This assumption could not be confirmed by correlation analysis. There is an indirect dependence among the observed indicators, which indicates that an increase in the tax burden will worsen the rating in the Doing Business Index. The country closest to our assumption is RP, because from the results of the correlation analysis we can conclude that there is almost no dependence between the two indicators. According to the World Bank, 20% of countries with more favorable conditions are in the category of tax payments. Indicators of the Slovak Republic, which are important for improving the position in the Doing Business Index are, for example, the level of low inflation, low interest rates, etc. On the other hand, the situation in the area of adopting the necessary structural reforms and supporting the business environment in the Slovak Republic, which may be key precisely for higher competitiveness and the creation of new businesses, is not improving. Similarly, according to the World Bank, 20% of the countries that have more favorable tax conditions are ahead of them. The Czech Republic has one of the main priorities to create an appropriate environment for paying taxes and simplifying the overall tax system, which will increase the attractiveness and competitiveness of businesses in the CR. Poland provides entrepreneurs with less favorable tax treatment than 20.5% of countries ranked in Doing Business Index. As in the other countries surveyed, one of the worst assessed indicators is the conditions for starting a business. The State has little support for small and medium-sized enterprises.

#### **4. CONCLUSION**

Based on the performed analyzes and comparisons of various aspects of corporate income tax, it is possible to streamline tax systems in the Slovak Republic, Czech Republic and Republic of Poland with a focus on business environment conditions and to ensure higher competitiveness of enterprises. The comparison of corporate income tax rates shows that Slovakia has long been the highest corporate income tax rate in these countries. Lowering the corporate income tax rate in the Slovak Republic to the same level as in the other countries, i.e. 19 %, as we are part of the integration group of the Visegrad Group will increase the competitiveness of enterprises. In the case of a further increase in the tax rate we can notice the departure of businesses to tax paradise. From the historical point of view, the level of the income tax rates is suggested that the government should not increase or decrease the rate of income tax suddenly but gradually continuously with the plan for the whole period. We observe this phenomenon after the independence of the Slovakia Czech Republic. Entrepreneurs and businesses were motivated by the fact that half of their income must be paid to the state, to which the government responded late with a sudden reduction of 5, 12 and later 6 %. Therefore, a large number of legal entities in the Slovakia and Czech Republic was decreased. For this reason, we recommend that the government plan to raise or increase Reducing corporate income tax rates inspired the Poland, which had a plan to continuously reduce rates annually up to 18 %. In all three countries, tax rates, tax regulations, excessive administrative burdens and corruption are among the most problematic areas. By creating an online system for The “user friendly” level in the financial report will eliminate the excessive administrative burden.

Streamlining the tax system has a positive impact on increasing the competitiveness of the state and enterprises, increasing the number of legal entities, new foreign investment, increasing the state budget revenue from tax collection in the future, improving the position in the Doing Business Index, regional development, reducing the number of businesses that move their headquarters to tax havens. The business environment requires the streamlining of the tax system, which would allow companies to compete on the market with competition from abroad through positive changes.

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#### LITERATURE:

1. Janickov, L. (2013). *Effective tax rates in the moravian-silesian region*. Danube: Law and Economics Review. doi: <https://doi.org/10.2478/danb-2013-0004>
2. Mejzlik, L., Arltova, M., Prochazka, D., Vitek, L. (2015). „*Implementace mezinárodních standardů účetního Výkaznictví v České republice a její vliv na zdanění podniků*“. Praha: Vysoká škola ekonomická v Praze. Politická ekonomie. doi:10.18267/j.polek.1036
3. Alan, J., Auerbach, J. (2006). *Why Have Corporate Tax Revenues Declined? Another Look*, Department of Economics. University of California. doi: 10.3386/w12463
4. Andrejovska, A., Hudakova, M. (2016). *Classification of eu countries in the context of corporate income tax*. Acta Univ. Agric. Silvic. Mendelianae Brun. <https://doi.org/10.11118/actaun201664051699>
5. Vavrova, K. (2015). Tax incentives of business entities in selected countries of the eu in the context of globalization. *15th International Scientific Conference Globalization and Its Socio-Economic Consequences*, University of Žilina.
6. Brandstetter, L., Jacob, M. (2016). *Do corporate tax cuts increase investments? Arqus-Diskussionsbeiträge zur quantitativen Steuerlehre*. doi: <http://dx.doi.org/10.1080/00014788.2016.1192985>
7. Schulzova, A. et al. (2007). *Daňovníctvo - daňová teória a politika*. Bratislava: Iura Edition. 308 p.
8. Soltes, V., K. Repkova Stofkova (2016). The impact of business environment on regional disparities”, *CBU International Conference on Innovations in Science and Education*, Prague, Central Bohemia Univ, *Proceedings of CBU*, Vol. 4, pp- 187-191.
9. Venancio, V. Barros, C. Raposo (2020). Corporate taxes and high-quality entrepreneurship. *Small Business Economics*. doi: 10.1007/s11187-020-00413-0
10. Repkova Stofkova, K., Stofkova, J., Kastanek, P., Gasova, K. (2020). *Financie a finančné riadenie*. Žilina: EDIS, 245 p.
11. European Commission, Eurostat, Available: [https://ec.europa.eu/info/departments/eurostat-european-statistics\\_sk](https://ec.europa.eu/info/departments/eurostat-european-statistics_sk)
12. Nerudova, D. (2011). *Harmonizace daňových systémů zemí Evropské unie*. Praha: Wolters Kluwer, 320 p.
13. Novotny, J., Kruml, K. (2015). Development of tax havens due to globalization processes and their impact on the Czech Republic. *15th International Scientific Conference Globalization and Its Socio-Economic Consequences*, University of Žilina.
14. Finančné riaditeľstvo Ceskej republiky. Available: [www.financnisprava.cz](http://www.financnisprava.cz)
15. Główny urząd statystyczny. Zmiany strukturalne grup podmiotów gospodarki narodowej w rejestrze Regon, Available: <http://stat.gov.pl>.
16. Repkova Stofkova, K., Stofkova, J. (2020). Use of Open Data in the Development of the Digital Economy in the Knowledge Society in the Era of Globalization, *19th International Scientific Conference Globalization and Its Socio- Economic Consequences*, Rajecke Teplice, Slovakia, *SHS Web of Conferences*, vol. 74, 03008.

17. The World Bank: *Doing Business - Measuring Business Regulations*. Available: [www.doingbusiness.org](http://www.doingbusiness.org).
18. Finančné riaditeľstvo Slovenskej republiky. Available: [www.financnasprava.sk](http://www.financnasprava.sk)
19. Kovacikova, M., Repkova Stofkova, K- (2016). Impact of globalization on access to process businesses management. *6th International Scientific Conference on Globalization and its Socio-Economic Consequences*, Rajecke Teplice, Slovakia, Proceedings, Pts. I-V, pp. 1022-1030, 2016.

# THE ETHICAL CHALLENGES OF ETHNOGRAPHIC FIELDWORK IN CONFLICT SETTINGS

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## **ABSTRACT**

*This article aims to analyze some of the ethical challenges that face field researchers working in conflict areas. I will rely on my own ethnographic field research completed in 2018 in the Moroccan Rif region, notorious for its conflicts and ecological confrontations over water and land. I will discuss the procedures that I adopted in implementing the principle of “do no harm” in the field research ethics. After presenting the general methodology, I will examine the conditions under which fieldwork took place in the local tribal community during the research period. I will then cover the measures which ensured that interviews were conducted with people giving their fully informed consent, and demonstrate all the steps I undertook in the field, before explaining the procedures pertaining to the anonymity of participants and ensuring the confidentiality of data collected in conflict circumstances. I will discuss the particular ethical dilemmas I have encountered in the research, including the complexities of community representation, researcher identity, and the emotional challenges in an ethno-tribal environment, a source of confusion for the researcher. I will finally analyze some new research questions arising in the context of conflict conditions.*

**Keywords:** *Respect participants, Fieldwork ethics, Ethnographic research, local population, society, ecological movements*

## **1. INTRODUCTION**

Conducting field research on local communities in conflict zones presents a major challenge for both methodological and ethical reasons. In conflict areas, the researcher faces difficulty in defining the representative sample and collecting data reflecting the real experience of the local community conditions. Similarly, fulfilling the ethical requirement of the “do no harm” principle is less frequent (more arduous) in difficult and sensitive contexts, as the local communities are under constant surveillance<sup>1</sup>, in the presence of many actors involved in some ethno-tribal political conflicts. It is seemingly difficult to predict the many ethical dilemmas and events in general and particularly in conflict areas that may arise during research. Researchers should permanently consider ethical obligations from the beginning of the research project development, and contribute with further research in conflict areas. In this paper, I will cover the ethical dilemmas that characterize the researcher in ethnographic fieldwork in conflict areas, and I will also try to assess the extent to which systematic research procedures can adequately address many dilemmas. I ultimately wonder whether the research procedures are capable of addressing many of the dilemmas that are definitively raised within the conflict environment, especially in the local communities of a tribal nature. Clearly, there are many situations in which it is not easy to conduct research in an ethical manner. In other contexts, research procedures can be handled in a more appropriate way; however, ethical research is critically contingent on the researcher’s judgment, and eventually adopting abstract rules will

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<sup>1</sup> - Thomson, Susan M. 2009a. “‘That Is Not What We Authorized You to Do...’: Access and Government Interference in Highly Politicized Research Environments.” In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, 108–24. New York: Routledge.

not be satisfactory; so training researchers on how to face expected ethical dilemmas in conflict areas is deemed necessary in order to instil in them the ethical principles that will guide them to make good judgments in the field. This article is based on my own experience in ethnographic field work in the Moroccan countryside region (a study funded by the Arab Council for Social Sciences between 2017 and 2018) which lasted three months in the field<sup>2</sup>. I have attempted to analyze local dynamics and resource management strategy, including conflict dynamics, as well as the way in which these dynamics contribute to a new debate on the effects of ecological policies, how new conditions for resource use lead to competition, and open up new ethnic conflicts in tribal societies over the legitimacy of access to resources (land and water). Drawing on three and a half months of field research in the countryside region of Morocco during tribal conflicts over resource management, trying to analyze some of the ethical challenges facing researchers in conflict areas. Then I briefly introduce the reader to the purpose and general methodology of my research, discuss the research procedures I followed, with respect to one of the research ethics, the “do no harm” principle, analyze the particular circumstances of the local tribal community during the fieldwork period, then discuss the steps to ensure that interviews are conducted with people with their fully informed consent. I will also address the procedures to ensure, as far as possible, the anonymity of interviewees, examining the ethical dilemmas I encountered in the research, including issues of self-presentation for the research community and the emotional challenges posed by fieldwork in an ethno-tribal environment with a history of political conflict. Of course, I will attempt to develop questions related to the role of the ethnographic researcher in respecting the participants, and his constraints, while presenting the most important dilemmas that arise during field work.

## **2. COLLECTIVE ACTION AND INTER-TRIBAL STRUGGLE FOR ACCESS TO RESOURCES**

I conducted research in the Moroccan countryside on a range of issues, including investigating the causes of ecological mobility in the region, the transformation of resource management and the intensification of ethno-tribal conflicts, as well as the way in which these dynamics open a new debate on the effects of ecological policies, and how new guidelines for resource use lead to competition and open up new ethnic conflicts in tribal societies over the legitimacy of access to resources (land and water), in addition to depriving the marginalized small farmers of their livelihoods and means of survival. In a rural area, namely in the oasis of the EL Jorf, and Fazna in southern Morocco, interviews were conducted with more than 270 tribal Sheikhs (elders) who possess a conscious historical experience in the social life of the oasis, the directors of the Water Basin Agency, the National Agency for the Development of Oasis Provinces, local associations and organizations, the Agricultural Development Centre, the Office of the Agricultural Investment, and the farming families who were selected intentionally to ensure the representation of different categories according to many variables, including migration, work wage families with a long farming history. The aim of these interviews was to understand family conditions and life experiences in the Oasis, which will ultimately help to categorize the demographic information according to social history and map natural resources, especially farming land, water sources, irrigation, etc. in order to clarify the connection between social relations and natural resource management. In addition, interviews were conducted with the local youth of the movement, to shed light on the various dynamics of the oasis community in relation to the living practices. The ethnographic field work also involved the participation in farming activities, and meetings with the parents and farmers, in addition to participating in the meetings of the tribal elderly and youth, to examine the causes of the present tribal conflicts and their historical origins.

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<sup>2</sup> - Fouzia borj: The environment of the poor: *Anthropology approach*, revue *Omran*, Issue 27, Winter 2019 (Arab).

While I was able to collect data and documents on the developments of the movement around the water problem in the region and on social conditions I could collect a number of primary data and monitor many meetings of the actors. I opted for the semi-structured interviews as my main research method since they offer the greatest amount of ethnographic data. The interviews covered open-ended questions which served as a follow up on the most important issues. After that, I had to recheck the interviews with the participants who had already provided their answers to support the data collected in the end. To enhance the quality of the research, it was very crucial to collect different representations of the various actors in society. As I will lay down the ethical difficulties, I will explain in more details the ethical dilemmas. Except for tribal sheikhs, investors, and agency officials, I have made sure that the identity of all individuals I interviewed would remain confidential, because it is about a tribal society that does not usually trust people who are strangers to the area, but may trust close friends or "respectable" community leaders, especially the Sheikhs and Honourable ones. My research assistant who was from a family considered as one of the leaders of the tribal community, facilitated my first entry into the area and introduced me to the residents. Referrals to these people were crucial, because the tribal community would rather communicate through personal relationships that connect the researcher with known individuals or families. Obtaining the true informed consent from the participants tends to be more difficult due to the differences in the researchers' languages, cultures, backgrounds, social norms, and authority<sup>3</sup>. The resolution of this problem is partly addressed through careful attention to the quality of the relationship between the researcher and the participants, respectful communication and openness with community members throughout the project, in addition to respect for their lifestyle. The stated purpose of the research project was to document the history of the oasis and the social conditions of the peasants on behalf of the university where I work in the hope of publishing a book on their social conditions, living practices, and various local social dynamics. I presented myself as an academic researcher, and openly stated that I had no other advantages. Within the context of inter-tribal conflicts, I did not attempt to build a representative sample of the local participants, but I did my best to conduct interviews with the various tribes disputing the waters, both upstream and downstream. Conducting ethnographic research on sensitive issues such as ethnic, tribal, and political questions, on the investors' control over farming lands, water and land rights, and on ecological mobility, would have posed a risk on the interviewees (and perhaps on myself).

### **3. FIELD WORK AND THE COMPLEXITIES OF REPRESENTING THE LOCAL COMMUNITY**

Simplifying assumptions of cultural, ethnic, social, and political homogeneity by the researcher often offers power to the people (representative bodies) who may not be well-equipped to play their roles in a democratic and equitable way. This may be due to a lack of food, and may often be lack of resources, infrastructure, and legal authority required to establish a representative society<sup>4</sup>. This makes admission of persons nominated by "community leaders" very problematic in local communities. Not only in this situation, but also in areas of ethnic conflict, positions of power and contact with outsiders, such as scholars, may confer further privileges, and enhance the political standing of an individual or group of individuals. Hence, I realized the necessity of dispensing with my research assistant, who introduced me to the local community at the beginning, and whom I later on removed permanently from the research project. Fortunately he happened to be outside of the region. This ability to control the research process by controlling access to interviewees, and the timing and location of communications has significant

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<sup>3</sup>-Leaning, Jennifer. 2001. Ethics of Research in Refugee Populations. *The Lancet* 357:1432-14

<sup>4</sup>- Hyndman, J. *Managing Displacement: Refugees and the Politics of Humanitarianism*. Minneapolis: University of Minnesota Press. (2000).

implications for the “do no harm” principle and respect of fieldwork participants. I made an interesting observation about the ideology practiced by some of the participants who belong to some political parties and who are beneficiaries of the agrarian reform. Researchers must be careful when a community is heterogeneous, and should be aware that research involves in the first place making policy choices about which voices are heard, “and may manipulate information through the promotion and suppression of voices<sup>5</sup>” Community representation is a complex task, and the identification of the person who rightly represents the local community necessitates a high level of contextual understanding<sup>6</sup>, important in conflict areas. As an example, in one of the interviews, I was told: “They lie to you, serve their political interests and benefit from state support to expand their farming lands, and no one wants to listen to us and feel our suffering with the water problem while the neighbouring tribe continues to dig. We get no justice from the leaders of our tribal society, but they are the ones who receive total attention from the committees mandated by the government and its followers.” Thus, researchers who rely on specific actors to reach participants may end up negotiating agreements that silence the voices of those who need to be heard most, i.e. those who are already marginalized and excluded. In some cases, where certain parties have authority over entire groups within conflict areas - the ethnic community here - the voluntary participation of an individual in an interview may be seriously questioned. I sought to attend for observation the meeting of the Khattarat (traditional water channels) Sheikhs at the house of the General Coordinator for the Defence of the Khattarat, after obtaining the approval of Sheikh "AbdeNebi" and other Sheikhs. When the data collection started, I kept my silence as much as I could, and contented with recording the responses. The first thing that the crowd discussed was the content of the answer received by the sheikhs who were assigned to go to the Water Basin Agency to look into the permits for drilling wells in the oasis (where the disputed tribe is located). Before the end of the meeting, one of the people who joined the meeting before its end asked us to stop recording, claiming that the meeting is supposed to be confidential and the discussions very sensitive, and so he asked: "What is this woman doing among us? Is she a journalist? How does she help us?" Everyone was confused. After I stopped the recording, I intervened, introduced myself, and addressed a letter to everyone, confirming once again that what happened in the meeting will remain strictly confidential, that I would bear all the responsibility in the event of a leak, and that I was very sympathetic with their cause. The Sheikhs said that they were afraid I would reveal the details of their political activities and upcoming tactics against the neighbouring tribe. There was concern that their cause, for which they have been fighting for years, would be affected. At the same time, the chief of another tribe, about which the meeting of the elders was held, called to invite me and my assistant to dinner, and I became sceptical. I thought that this invitation was not innocent, and that he was aware of my presence in this secret meeting; he was very persistent about inviting me. The logistic aspect of field research in conflict areas can be very difficult, and I was able to identify the locations in which I live with the tribes, so that I would not be accused of bias because the actors from the conflicting tribes accused me or warned me in advance in this regard. I was confronted with questions referring to a conflict of trust between me and the participants: Are you with us or with the tribes of the ElJorf, and the same applies with regard to the Oasis downstream: “We knew that you live in the Oasis upstream. We trust that you will not divulge any information pertaining to our correspondences and the petitions on the wells they are digging.” I believed that my research could be conducted in the water well drills affected area, where the ecological movement for water and land rights has erupted, to the extent that many actors have enthusiastically cooperated with me and acted

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<sup>5</sup> -Goodhand, J. (2000) Research in Conflict Zones: Ethics and Accountability. *Forced Migration Review*, 8, 12 15.

<sup>6</sup> - Fustukian, S. and Zwi, A.B. (2001) Balancing imbalances: Facilitating community perspectives in times of adversity. In H. Williams (ed.) *Caring for those in Crisis: Integrating Anthropology and Public Health in Complex Humanitarian Emergencies*. Napa Bulletin, 21, 17 35.

on the basis of willingness, and perhaps necessity, to discuss their history of resource (land and water) management and the history of their families, immigration, living practices and their legitimate demands for stopping all agricultural investments in the area where digging wells is prohibited by custom, because it affects the lands of small farmers. These are the contexts that gave rise to the challenges of verbal consent, confidentiality of materials collected, anonymity of people and my research topics, and being careful not to harm the participants.

#### **4. ETHICAL CHALLENGES**

The most important challenges I faced in terms of “do no harm” principle were to ensure that all participants in my research project gave me their informed consent and the data I collected were protected; so I sought that the participants gave their informed consent to participate and ensured that they were not at risk thereof. The minimum requirements for informed consent are that participants are fully and appropriately informed of the purposes, methods, risks, and benefits of the research, and that consent to participate is absolutely voluntary. In the context of my field research, this informed consent rule meant that those participants I interviewed should understand the purpose of my research and the potential risks they could face in speaking to me so that they could make an informed decision as to whether they wanted to interview with me or not. Numerous principles have been posed: What are the risks and benefits of participation? Will the illiterate and marginally educated rural population understand the informed consent process or will it alienate potential participants? How could I determine the benefits? The consent procedure for participation that I used with the residents of the oasis was oral, and not written, because any written record is considered rejected by the participants, and since they believed it would pose a threat to them, despite my assertion of the confidentiality of the meetings and the content of the interviews. The oral consent and adherence to it are not, of course, sufficient to ensure appropriate ethical judgment. Such consent cannot anticipate the many dilemmas that arise in the course of research, particularly in conflict areas. I have found that my ability to judge field conditions and understand the challenges and dilemmas of field research has increased over the course of this work. I assured the interviewees that their identity would remain strictly confidential, and that I would in no way identify them to anyone else, verbally or in writing, as part of my project or that they revealed certain information. The only exception was that I did not assure the interviewees that they could choose what to tell me and that it was going to be published or not (although anonymity was guaranteed). The complexities of obtaining actual informed consent, extends to returning the results to and engaging the research community. This constitutes the most sensitive challenge for me, as it pertained to my commitment to relationships of ethical consent and true representation of reality. These challenges point to a fundamental problem with standard interpretations of informed consent, as we often assume that consent provides protection for participants who are independent, understand the implications of giving consent, and are in relatively equal positions of power with the researchers. These assumptions are not justified in many research contexts in which research participants are at risk, but particularly in the context of community research in areas of crisis and conflict. The ethical obligation of “do no harm” diminishes in difficult and sensitive contexts, where communities are under constant scrutiny<sup>7</sup>. Consent is usually understood from an individual’s perspective, but fieldwork in tribal communities makes informed consent not only a matter of securing agreement between the researcher and research participants, but may also involve negotiating consent with community bodies or

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<sup>7</sup> - Thomson, Susan M. “‘That Is Not What We Authorized You to Do...’: Access and Government Interference in Highly Politicized Research Environments.” In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, 108–24. New York: Routledge. 2009.

representatives<sup>8</sup>. In this context, ethical review guidelines emphasize the need for culturally appropriate consent procedures. However, in many contexts the representation of the community is complex and contested, and the researchers are unlikely to require the consent of the representatives<sup>9</sup>. Moreover, obtaining informed consent becomes even more challenging. This is due to differences in the researchers' languages, cultures, backgrounds, social norms, and authority<sup>10</sup>. Smyth questions if the risk of harm is implicit in identifying some research topics, which may be taboo and have great risk, and others which may be sensitive, and must be dealt with indirectly in the field work<sup>11</sup>. The sensitivity of the subject matter of the interviews in a conflict environment, and the way in which the topics were presented, required a high level of my political judgment: "I could not mention the name of the tribe with which they were in conflict over water rights, since for the tribes to raise such topic means losing confidence and arousing suspicion on my credibility, as is the case with the issue of community lands." The Qaid of the region came to me when I was with the farmers; his face was cold, and I felt that his eyes were transfixed when he said: "Questions about the previous movement that the region knew are forbidden, and raising the issue of community lands with the tribal residents is a red line", then he left. These attitudes were new to me in the field of research, and they affected the possibility in obtaining true informed consent in a region notorious for its risky ethnic divisions. The informed consent challenges are voluntary in nature and based on negotiation to build trust. The inequality between the researcher and the participant, and power relations remain present, which is ultimately reflected in the research. It was often difficult to understand, and thus inform research participants of potential risks; regardless, the researchers are obligated to provide sufficient information for participants so they can make informed decisions about their participation<sup>12</sup>. Sieber<sup>13</sup> confirms that the perception of risk is largely subjective, and may be viewed differently by the researcher, because an accurate assessment of risk is related to the sensitivities present in the cultural environment of potential participants<sup>14</sup>. Oftentimes, I found myself in delicate and complex situations, such as when a group of youngsters with whom I had performed sometimes asked for my advice and requested my help to write petitions. In these situations I was afraid of losing the confidence of all the actors, and making the locals and authorities resentful towards me. In fact, I was monitored by the authorities in the area, by some of the people who lived nearby, and who did not hesitate to ask questions about my research, the people with whom I wanted to conduct interviews, the families I visited to provide them with assistance, and who identified for me the leaders who would suggest the names of the participants. This kind of position allowed me to predict the damage that could be inflicted on potential research participants. I have realized that entering tribal communities is a complex process that takes time and negotiation of relationships that are based on trust and mutual respect. Even in the best case scenario, this can be a difficult experience, involving, of course, errors and scepticism; so the researchers must understand the experience of conflict by those who live it<sup>15</sup>: "Moments in which the researcher does not make use of formal research methods,

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<sup>8</sup>-National health and medical research council of (NHMRC) National Statement on Ethical Conduct in Research Involving Humans (Commonwealth of Australia), <http://www.health.gov.au/nhmrc/publications/synopses/e35syn.htm>. (1999), p. 12.

<sup>9</sup> - Goodhand, Jonathan. 2000 ,Op,Cit.

<sup>10</sup> - Leaning, Op-Cit.

<sup>11</sup>-Smyth, Marie. "Introduction." In *Researching Violently Divided Societies: Ethical and Methodological Issues*, edited by Marie Smyth and Gillian Robinson, 1–11. Tokyo: United Nations University Press. 2001.

<sup>12</sup> - Paluck, Elizabeth Levy. "Methods and Ethics with Research Teams and NGOs: Comparing Experiences Across the Border of Rwanda and Democratic Republic of Congo." In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman. 2009.p:38–56.

<sup>13</sup>-Sieber, Joan E. *The Ethics and Politics of Sensitive Research*. In *Researching Sensitive Topics*, eds. Claire M. Renzetti and Raymond M. Lee, 14-26. Newbury Park: Sage Publications. 1993.

<sup>14</sup> - Wood, Elisabeth Jean. "The Ethical Challenges of Field Research in Conflict Environments." *Qualitative Sociology* , 2006. P:29: 380.

<sup>15</sup> - Millar, Geroid, ed. (2018) *Ethnographic Peace Research*. London: Palgrave Macmillan.

such as interviewing or archival research, but instead with life tasks that are not specified"<sup>16</sup>. In the research design it was unnecessary to judge the extent of the pressure that the participants could be subjected to, because my research was focused on local living practices and dynamics, and not directly on mobility and legitimacy of access to resources. To conduct research in conflict areas, researchers may not need to go through representative institutions, as this imposes explicit and implicit limitations on the research, and eventually putting the independence of the researcher in danger. Thus, many conditions in a conflict environment, especially in tribal societies, simply preclude the conduct of ethical field research.

## **5. EMOTIONS AND LIMITATIONS OF ETHNOGRAPHIC RESEARCH ETHICS**

In this section, I address the emotional challenges, because I am absolutely convinced that a lack of attention to these, in conflict zones, may cause the researchers to make mistakes that may have consequences for their research projects and their own safety. 'Outsider' researchers from community families and political actors are often invited to share their experiences and perspectives, and exchange their data. The emotional ethical challenge was to ensure the security of the data collected, especially sensitive data that could have political implications if it gets in the wrong hands. In my case, the most difficult aspect of this dilemma was how to manage the security of the data collected in the Oasis, because I was afraid that someone would break into my house and steal the data, so to face this challenge, I maintained the confidentiality of the collected materials and ensured the non-disclosure of my research topics through drawing maps in my journals, and recording names in a separate notebook, usually immediately when I returned home. I took unclear and almost illegible notes, and filled in the missing details on the computer after I returned, so as not to jeopardize the sensitive information that I previously had collected in my data. I have undergone stress in the Oasis, and was emotionally affected, as I was prone to being tempted by numerous invitations to share my experience (and certainly my data), or by some actors who tried to build connections with me outside the context of research, in order to pass on fieldwork data to a high official. So, a good field researcher is always the one who finds ways to face these challenges and protect his research project from the emotional constraints that he might face in the field. The ethnographic researcher often goes through periods of loneliness, fear and skepticism about the feasibility of his project, and whether he is indeed the right person to fulfil this task. In the context where social violence and capitalist oppression are practiced against the marginalized population, as is the case in the Jorf region, the researcher may wonder whether he should support the weaker side, with real activism rather than continuing with less politically engaged forms of research. This idea is consistent with my belief in the value of what I was doing since the oasis residents endorsed my research project. For instance, when they were willing to spend many hours telling me the history of the region, the history of inter-tribal conflict and all the political scandals and agreed to stay on track was a clear evidence that they believed in my project and helped me in many ways. I continued my role despite the different pressures from politicians and officials in the region.

## **6. METHODOLOGICAL SUMMARIES**

The research practices detailed above appear to have been sufficient to address the ethical dilemma of "do no harm" principle, but may not have been sufficient for the conditions of tribal communities or even elsewhere. Although informed consent protocols and systematic procedures that the field researcher attempts to implement to ensure the "do no harm" principle, the conditions of tribal conflict areas differ greatly from the conditions of regions with conflicts of another kind. I managed to survive some dilemmas, because I was familiar with the tribal community's culture, social intricacies, and even the local language.

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<sup>16</sup> - Fujii, Lee Ann (2015) Five stories of accidental ethnography: Turning unplanned moments in the field into data. *Qualitative Research* 15(4): 525–539.

This experience may not be available to other researchers, but what I want to emphasize is that even with research practices that follow appropriate protocols for specific field conditions, the researcher and his field skills play a crucial role in interpreting and adapting the ethical guidelines. I believe the considerations that protect the underprivileged participants during the field work are of paramount importance compared to the groups that detain power and refuse to meet the demands of the underprivileged groups. This prompts us to understand that research done on fragile and vulnerable groups is a "grey" ethical area, where it is not easy to apply ethical principles<sup>17</sup>, in order to provide equal opportunity between the researchers and participants in the presence of informants, and to exchange project texts with them. My experience and that of other researchers prove that we need exercises and training on research ethics in conflict areas, addressing the ethical dilemmas that face field researchers in these areas, and exchanging field experiences with emerging researchers.

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#### **LITERATURE:**

1. Borj, F(2019) : The environment of the poor: Anthropology approach, revue Omran ,Issue 27, Winter 2019 (Arab).
2. Fustukian, S. and Zwi, A.B. *Balancing imbalances: Facilitating community perspectives in times of adversity.* In H. Williams (ed.) *Caring for those in Crisis: Integrating Anthropology and Public Health in Complex Humanitarian Emergencies.* Napa Bulletin, 21, 17 35. (2000).
3. Fujii, Lee Ann. *Five stories of accidental ethnography: Turning unplanned moments in the field into data.* *Qualitative Research* 15(4), (2015).
4. Gallaher, Carolyn. “Researching Repellent Groups: Some Methodological Considerations on How to Represent Militants, Radicals, and Other Belligerents.” In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, 127–46. New York: Routledge. 2009.
5. Goodhand, Jonathan. “*Research in Conflict Zones: Ethics and Accountability.*” *Forced Migration Review* 8. 2000.
6. HYNDMAN, J. *Managing Displacement: Refugees and the Politics of Humanitarianism.* Minneapolis: University of Minnesota Press. (2000).
7. Leaning, Jennifer. *Ethics of Research in Refugee Populations.* *The Lancet* 357. 2001.
8. Millar, Geroid, *Ethnographic Peace Research.* Lon- don: Palgrave Macmillan. ed. (2018).
9. NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL OF AUSTRALIA (NHMRC) ,*National Statement on Ethical Conduct in Research Involving Humans (Commonwealth of Australia),* <http://www.health.gov.au/nhmrc/publications/synopses/e35syn.htm>. (1999).
10. Paluck, Elizabeth Levy. “Methods and Ethics with Research Teams and NGOs: Comparing Experiences Across the Border of Rwanda and Democratic Republic of Congo.” In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, 2009.

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<sup>17</sup> - Gallaher, Carolyn. “Researching Repellent Groups: Some Methodological Considerations on How to Represent Militants, Radicals, and Other Belligerents.” In *Surviving Field Research: Working in Violent and Difficult Situations*, edited by Chandra Lekha Sriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, 127–46. New York: Routledge. 2009.

11. Skultans, V. *Editorial: Culture and dialogue in medical psychiatric narratives. Anthropology and Medicine, 10.* (2003).
12. Sieber, Joan E. *The Ethics and Politics of Sensitive Research. In Researching Sensitive Topics, eds. Claire M. Renzetti and Raymond M. Lee, 14-26. Newbury Park: Sage Publications. 1993.*
13. Smyth, Marie. "Introduction." *In Researching Violently Divided Societies: Ethical and Methodological Issues, edited by Marie Smyth and Gillian Robinson, 1–11. Tokyo: United Nations University Press. 2001.*
14. Thomson, Susan M. 'That is not what we authorized you to do...': *Access and government interference in highly politicized research environments. In Surviving Field Research: Working in Violent and Difficult Situations, ed. Chandra LekhaSriram, John C. King, Julie A. Mertus, Olga Martin-Ortega, and Johanna Herman, Kindle edition. New York: Routledge and Taylor & Francis e-Library. 2009.*
15. Wood, Elisabeth Jean. "The Ethical Challenges of Field Research in Conflict Environments." *Qualitative Sociology 29.* 2006.

## POTENTIAL OF APPLICATION OF GAMIFIED DESTINATION PROMOTION

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### **ABSTRACT**

*Tourism service providers are increasingly combining and expanding their service products by incorporating game elements such as badges, points, levels and rewards in a non-gaming tourism context. While application of gamification is a fairly new trend in the tourism sector, it is gaining more importance in the global tourism practices, consequently raising questions about optimal approaches when integrating gamification elements into tourism offerings. Hence, in its opening segment this paper provides an overview of research dealing with theoretical and practical issues pertaining to implementation of gamification in tourism, acting both as a basis for empirical research performed in the latter section of the paper as well as a starting point for better understanding and implementation of gamification in marketing and tourism in future. Empirical research undertaken was based on an online questionnaire completed by 291 respondents recruited using convenience sampling from the Gen Y and Gen Z cohort. Data was processed and analysed using SPSS package. The results of the research suggest that gamification has a positive effect on the experience of individuals from generations Y and Z, as well as their interest in visiting and informing through play about lesser-known tourist attractions. Furthermore, research findings indicate that the ability to implement gamification in promotion depends on the readiness of the destination, which is determined through an in-depth interview with the selected tourism actor. Finally, the paper concludes with guidelines for the application of gamification, an overview of study's limitations and recommendations for future research.*

**Keywords:** *e-tourism, gamified destination promotion, generations Y and Z*

### **1. INTRODUCTION**

Considering estimates which indicate that, by 2030, half of the world's population will be online and mobile, it is becoming extremely important for tourism and hospitality industry to integrate usage of information and communication technologies (ICT) into their services (Negrusa et al., 2015). Buhalis (2008, cited in Tfaily , 2018) points out that e-tourism is the future of tourism and is considered to support everything related to long-term perspective of tourism-related activities, including the existence of travel organizers, travel agencies, catering staff and various virtual tourism entities (Yoo et al., 2017). The success of e-tourism depends on simplicity - how easily one can find the details needed to plan a trip and purchase travel services via mobile devices.

However, using digital channels in communication creates challenges for tourist organizations in terms of diversification and differentiation of their products and services. In order to avoid potential stagnation or even deterioration of the destination product, gamified promotion can serve as a solution in keeping pace with the latest trends and enable further development of the destination by focusing on integrated marketing communication that will ultimately result in an improved visitor experience. The main goal of this paper is to provide an overview of current research and knowledge on the topic of gamification in tourism, identify gamification tools in marketing and – using city of Split as an example, identify potential and provide guidelines for application to improve the experience of visitors.

## 2. LITERATURE REVIEW

Incorporating game-like mechanisms into product and service offerings, outside of casual entertainment, is not a novel idea. Rise of the concept of experience economy, in which individuals value maximization of self-expression and personal well-being over authority and economic achievement (Bulencea and Egger, 2015), was one of the driving forces behind increased interest in gamification. The World Tourism Organization points out that games have the potential to create positive experiences in tourism such as fun, pleasure and a sense of accomplishment while at the same time providing tourists with relevant information (UNWTO, 2008). Furthermore, there is a good chance that tourists will adopt more sustainable behaviours if they are provided with ways to measure personal progress in performing such behaviours and are provided with incentives to continue with them, be it by means of collecting points to receive discount vouchers, fulfil specific goals and earn new levels, or through the possibility of competing with other tourists through rankings and with special prizes for the best scores (Negrusa et al., 2015). Gamification is a concept which grew out of ICT, more precisely - through the development of web 2.0, social networks and mobile technologies (Negrusa et al., 2015). The term “*gamification*” was first used by British game developer Nick Pelling in 2002, and in the 2005 American company Bunchball developed the first modern gamification system with gameplay elements such as points, high score boards and badges (Hamed, 2017). Gamification became an “*institutionalized*” term in 2011, when it was added into the Oxford British Dictionary (Pamfilie et al., 2016), with both scientists and practitioners discussing its implications for industry. Schell (2014, cited in Bulence and Egger 2015) states that, in the long term, gamification as a separate term might become obsolete, expecting that - with research and better understanding of its facets, it will become just another aspect of website or application design. However, the current use of the term as a separate marketing tool is justified for two reasons: (1) growing adoption, institutionalization, and ubiquity of games in everyday life and (2) seeing how video games can motivate their users to engage with unparalleled intensity and duration, including game elements holds the potential to make non-gaming products and services more enjoyable and fun (Detering et al., 2011). Gamification can be defined as “*the use of game design elements in non-gaming contexts*” (Deterding et al. 2011, p. 10). Several researchers proposed further extension and adoption of this definition for different contexts, however - despite variances in emphasis, all definitions include a **systemic component** defining how the game is constructed, that is - that there is a difference between games (in general) and gamification, and an **experiential component** describing human involvement and results within the game. In marketing context, gamification efforts are usually employed in brand promotion, where the game or parts of the game are structured to promote the brand with an (expected) positive impact on brand’s image. Since brand image influences tourist behaviour, end result of successful implementation of gamification is an improved competitive position of a company. After participating in gamified activities, users are more likely to remember the brand and the product as well as attributes associated with the brand (Celtek , 2010).

Xu et al (2013b), focusing on gamification in tourism, have identified four main benefits stemming from incorporating gaming elements in tourism offerings for destination management organizations (DMO): encouraging stronger engagement, improving tourist experience, encouraging loyalty and improving brand awareness. Moreover, Negrusa et al (2015) discuss benefits of gamification, not only for DMOs, but also for other tourism stakeholders which in turn can potentially improve the economic, social and environmental sustainability of the destination. They also emphasize the effects of gamification in relationships between tourist organizations on one side and their employees, tourists and local communities on the other. Garcia et al (2017) state that the application of gamification has a particularly positive effect on small and medium-sized DMOs who often do not have the means to monitor their impact or information on the behavior of tourists on the spot. Swacha and Ittermann (2017) explore the gamification and potential that gaming offers for experience development and tourism marketing, and show that games can affect tourists before, during, and after travel. Types of application of gamification in e-tourism have been identified as: Location-based games using augmented reality, gamified tourist guides, games in theme parks, games within context of cultural heritage, storytelling using different media, gamified restaurant experience, gamification in hotels, gamified experience of flying, gamified virtual travel experience etc. (Webber, 2014). Robson et al. (2015) established a mechanics, design and aesthetics/emotions framework which helps in clarifying how designers and players experience gamified experiences differently. Players experience the game through aesthetics that are included in the dynamics, and are guided by mechanics. More precisely, through a set of carefully designed game mechanics - designers can create dynamics, which in turn will result in a unique gaming experience. In the process of creating gamified applications in tourism, it is necessary to understand the characteristics of the player - motivations and emotions which drive behaviours. Xu et al (2013) distinguish between external and internal incentives due to which individuals participate in gamification. External incentives to perform activities include various types of rewards, while internal incentives include enjoyment of the activity, self-actualization and a sense of self-achievement attained through performance of activities. Tondello et al. (2016) identified six groups of gamification system users: socialites, freelancers, accomplices, philanthropists, disruptors and real players. Through gamification, new tourism products integrate economic goals with positive environmental and social externalities. The learning environment becomes interactive and tourists discover the history, life and identity of the destination with minimal negative impact on the local community and environment (Negruşa et al., 2014). Considering that members of generations Y and Z (hereinafter Gen Y and Gen Z) constitute bulk of future tourists and taking into account that they are digital natives and their generational familiarity with and fondness for video games, gamification has clear potential for increasing their engagement and the quality of experiences during travel and stay in a tourist destination (Alčaković et al. 2018).

### 3. RESEARCH QUESTIONS

Tourism primarily "sells" the experience, and the central productive activity of tourism is the creation of that experience. The concept of a gaming experience in the context of gamification relates to the experiences of users who do not expect such (gaming) feelings when performing a particular activity (Domínguez et al., 2013; Robson et al., 2016 according to Eppmann et al., 2018). Therefore, the first research question (Q1) is: ***Does the application of gamified destination promotion enrich the visitor experience?***

An important defining feature of gamification, in addition to marketing communication tools, is the focus on message delivery (Yilmaz and Coskun, 2016). In gamification setting, the visitor is a willing participant in the game, hence accepting deliveries of game-related messages.

Hence, it can be argued that gamification enhances the learning experience, providing visitors with the opportunity to gradually discover and learn certain aspects of a tourist destination. Accordingly, our second research question (Q2) is: ***Does the information provided through gamified applications result in improved knowledge about the destination?***

Organizations gamify services and products to encourage participants to feel a certain way, show a certain behaviour, or perform a certain action, which might not otherwise happen. In the case of cultural attractions, gamification presents a way for dispersion and control at these locations (Yoo and al., 2017). Thus, our third research question (Q3) is: ***Does the application of gamification increase interest in lesser-known attractions?***

#### **4. METHODOLOGY AND FIELD WORK**

In order to gather data required, questionnaire was developed using questions compiled from previous studies and aligned with our research requirements. The questionnaire was initially written in English language and then was forward and backward translated to and from Croatian to English by professional translators. Both Croatian and English language versions of the questionnaire were used for the purpose of data collection. The questionnaire was distributed online using convenience sampling with 291 respondents completing the questionnaire. Since the study is focused on members of Gen Y and Gen Z, all respondents older than 38 (13 of them filled out the questionnaire) were excluded. Hence, the final number of completed questionnaires, used for the analysis, was 278. The answers were analyzed and processed using SPSS for Windows. In order for respondents to better understand what is meant by gamification, the questionnaire has provided clear explanations of both gamification and destination game concepts. Initial analysis of sample demographics revealed that women make two thirds of respondents (65%). Furthermore, members of Gen Z (23 and less) made up 37% of the total respondents, and members of Gen Y (24 - 38) 63% of the total number of respondents. Finally, most respondents (47%) have some form of college or university degree. While majority of respondents (49%) were from Croatia, also included were participants from Europe, Asia, Africa, North and South America and Australia.

#### **5. ANALYSIS OF DATA**

In order to test whether significant differences in responses can be identified when respondents are grouped based on sex and age, Mann-Whitney U test for two independent samples was used. Analysis revealed no significant differences between groups when sex was used as a grouping variable. However, when age (that is – generational cohort) was used, some differences emerged. Namely, Gen Y members displayed a statistically significant (at  $P \leq 0.05$ ) higher degree of agreement with statements about using destination game(s) in destination information and creating an overall destination experience (Table 1).

*Table following on the next page*

*Table 1: Ranking of variables*

	age	N	Middle rank	Sum of ranks
The main reason for my trip is to experience the destination	23 and less	102	154.34	15742.50
	24 - 38	176	130.90	23038.50
	In total	278		
Destination game could positively influence my opinion about a destination	23 and less	102	124.17	12665.00
	24 - 38	176	148.39	26116.00
	In total	278		
Destination game can improve my experience of a destinations	23 and less	102	117.22	11956.50
	24 - 38	176	152.41	26824.50
	In total	278		
Destination game would make getting around a destination easier for me	23 and less	102	118.24	12060.00
	24 - 38	176	151.82	26721.00
	In total	278		
Destination game is a useful way to pass time (eg. While waiting in a line)	23 and less	102	119.23	12161.00
	24 - 38	176	151.25	26620.00
	In total	278		
Destination game is a fun way to get informed about a destination	23 and less	102	125.84	12836.00
	24 - 38	176	147.41	25945.00
	In total	278		
I'm likely to learn / memorize more information about the destination through a destination game	23 and less	102	123.36	12583.00
	24 - 38	176	148.85	26198.00
	In total	278		
I would participate in a destination game before a trip in order to learn more about a destination	23 and less	102	129.27	13186.00
	24 - 38	176	145.43	25595.00
	In total	278		
Game of the destination can increase my interest for a certain product or service destinations	23 and less	102	124.19	12667.00
	24 - 38	176	148.38	26114.00
	In total	278		

*Source: author's work based on research results*

Furthermore, respondents were asked to choose a maximum of three answers about what a good destination game should contain. Results reveal that the majority of respondents believe that for a destination game to be considered good, it should contain interesting stories about the history of the destination, information about local products and cuisine and a map of the destination. Smaller part of respondents answered that it should contain information about local culture and customs, entertainment and cultural events, sports and recreational activities. Finally, least number of responses chose information about natural and cultural sights as interesting in the context of a destination game. When asked about preferred mode of delivery of a destination game, out of the total sample of respondents 47 (17%) of them indicated that they would chose participating in the game via social networks, 17 (6%) chose website(s), while 184 (66%) chose a mobile application as preferred mode of delivery. Finally, 30 (11%) respondents indicated that they would not participate in a destination game, regardless of its mode of delivery. As already indicated, there is no significant difference in responses among male and female respondents. On the other hand, significant differences can be found depending on age cohort, i.e. between members of Gen Y and Gen Z. Members of Gen Y displayed a higher degree of agreement with claims about the use of a destination game in getting informed about the destination and creating an overall destination experience, indicating better

responsiveness of Gen Y members to gamified experiences. While experiencing destination is the main reason indicated by respondents as driving their visits, interestingly, majority agrees with the statement that they visit only the most well-known / famous attractions. However, respondents also agree that incentives and information provided in the form of a destination game would motivate them to visit lesser known attractions. They believe that an interesting destination game should primarily contain interesting stories about the destination, information about local products and cuisine, reinforcing the notion that members of Gen Y and Gen Z want to get to know and experience the destination. In regard to research questions which this paper aims to answer, results of the empirical research indicate the following:

- Almost all respondents agree and fully agree with the statement that the main reason for their trip is the experience of the destination. Although the experience itself is influenced by a number of factors and visitors today create their own ways to experience the destination, a high degree of agreement has been found with the claim that a game about a destination can positively impact their destination experience. Also, a high degree of agreement was found with statements claiming that participating in a destination game make it easier for respondent to find their way to the destination as well as reduce psychological costs (primarily boredom) related to waiting for various services or activities in the destination (e.g. while waiting in a line to enter famous attractions or museums). Hence, after analysing the responses, it can be concluded that **the application of gamified destination promotion indeed can enrich the visitor experience.**
- Most respondents are well informed about the destination before the trip and agree that a destination game would be an entertaining way of finding out information about a destination. It is also interesting to note that those respondents who generally do not put particular effort in getting informed about the destination they are traveling to, also agree with destination games being entertaining and informative. Most state that they would use a destination game before the trip to find out about the destination. While responses do not indicate high expectations from respondents in terms of memorizing more information about a destination through play, it would be reasonable to expect that at least some of destination game users would in fact be exposed to new information which they would (consciously or unconsciously) memorize and use in planning of their trip. Overall, there is sufficient support for a conclusion that **the information provided through gamified applications does hold potential to improve potential visitors' knowledge of the destination.**
- Finally, majority of respondents indicated their interested in visiting only the most famous attractions in the destination. However, 50% of respondents also mostly and fully agree with the statement that a destination game would encourage them to visit lesser-known attractions and increase interest in a particular destination's products and service. With a high degree of agreement with all claims expressed, it can be concluded that **the application of gamification increases interest in lesser known attractions.**

## 6. CONCLUSION

With the amount of information available and competition for individual consumer's attention, the modern tourist requires creativity in the promotion, diversification and differentiation of products and services and focus on the experience of the destination. Gamification is still a rare and unexpected experience for tourists in all phases of their travel, especially for members of Gen Y and Gen Z. Gamification in tourism context became a topic of interest only in past few years, and there are very few papers dealing with it in the marketing context in the Republic of Croatia, hence this paper presents an effort to fill this gap and start a new avenue of research, focused on local applications and relevant globally. The results of the research show that the respondents are interested in participating and discovering the destination through a gamified

destination game experience. Furthermore, they also exhibit willingness to visit lesser-known attractions and believe that the game would provide highly relevant and useful inform for them about the destination. Although there are many factors that affect the experience of a destination, respondents agree that gamification holds the potential to enrich their experience. Ultimately, all factors joined together affect the image of the destination itself. Tourism is essentially an entertainment sector, and gamification will continue to be an interesting marketing tool for tourism organizations and visitors. Naturally, all this cannot be achieved without a well-designed destination management strategy and plan. Destinations need to be prepared to accept the gamified way of promotion since it is the long-term success and maintenance of such a tool which is necessary to implement strategic marketing plans in accordance with the destination management plan. Creating an integrated tourism product with the surrounding areas is a great way to create authenticity, expand the offer and joint promotion, and the application of gamification can help create an integrated tourism communication that will ultimately result in an improved visitor experience.

## 7. LIMITATIONS AND RECCOMENDATION

Majority of limitations of this study stem from sampling approach (i.e. convenience sample), which was used due to technical and temporal limitations researchers faced at the time when research was being conducted. Furthermore, this research focused exclusively on members of Gen Y and Gen Z, while other potential segments were excluded from consideration. Obviously, this prevented any cross-generational comparisons with older age cohorts, which could have provided valuable insights into potential for application of gamified promotion across wider spectrum of target consumer groups. It should also be emphasized that the results of this research, due to the size and structure of the sample, are exclusively indicative in nature and cannot be generalized. The use of innovative marketing tools in destination promotion will always be a challenging topic in the tourism literature as ICT is constantly evolving and new ways of attracting potential visitors are emerging. Thus, future research, apart from improvements in sampling approach used, could and should include new technologies (such as virtual and augmented reality, artificial intelligence etc.) and their applications in the research context.

## LITERATURE:

1. Alčaković, S., Pavlović, D. and Popescu, J. 2018. *Millennials and gamification - a model proposal for gamification application in tourism destination*. Singidunum University, Belgrade, Serbia, pp. 21-31.
2. Buhalis, D. and Law, R. 2008. *Progress in Information Technology and Tourism Management: 20 Years On and 10 Years After the Internet — The State of eTourism Research*. *Tourism Management*, 29, pp. 609-623.
3. Bulencea, P. and Egger, R. 2015. *Gamification in Tourism: Designing Memorable Experience*. Norderstedt, Books On Demand.
4. Celtek, E. 2010. Mobile advergaming in tourism marketing. *Journal of Vacation Marketing*, 16 (4), pp. 267-281.
5. Deterding, S., Dixon, D., Khaled, R. and Nacke, L. From game design elements to gamefulness, *Proceedings of the 15th International Academic MindTrek Conference on Envisioning Future Media Environments - MindTrek*, Tampere, Finland, 28-30. September 2011. pp. 9-14.
6. Eppmann, R., Bekk, M. and Klein, K. 2018. Gameful Experience in Gamification: Construction and Validation of a Gameful Experience Scale [GAMEX]. *Journal of interactive marketing*, 43, pp. 98-115.

7. Garcia, A., Linaza, MT, Gutierrez, A. and Garcia, E. 2017. Validation of a Gamified Mobile Experience by DMO. In: R. Schegg and B. Stangl, eds. 2017. *Information and communication technologies in tourism*. Springer International. pp. 331-341.
8. Hamed, H. M. 2017. Investigating the effectiveness of applying gamification on tourism websites from the customers' perspective: An exploratory study. *European Journal of Hospitality and Tourism Research*. 5(4). pp. 1-27.
9. Negrusa, AL, Toader, V., Sofica, A., Tutunea, MF and Rus, RV. 2015. Exploring Gamification Techniques and Applications for Sustainable Tourism. *Sustainability*. 7. p.11161-11189.
10. Pamfilie, R., Vasilcovschi, A. and Bumbac, R. 2016. A new possible way of promoting tourist packages: Gamification. *Cactus Tourism Journal*. 13(1). p. 5-10.
11. Robson, K., Plangger, K., Kietzmann, JH, McCarthy, I. and Pitt, L. 2015. Is it all a game? Understanding the principles of gamification. *Business Horizons*, 58(4), pp. 411-420.
12. Swacha, J. and Ittermann, R. 2017. Enhancing the tourist attraction visiting process with gamification: key concepts. *Engineering Management in Production and Services*. 9(4). pp. 59-66.
13. Tfaily, R.A. 2018. E- Tourism and the Competitiveness of Tourism Products in the Context of the Global Tourism and Travel Industry Market. *Review of International Comparative Management*. 19 (2). pp. 187-195.
14. Tussyadiah, IP. 2014. Toward a Theoretical Foundation for Experience Design in Tourism. *Journal of travel research*. 53(5). pp. 543-564.
15. Tondello, G.F., Wehbe, R.R., Diamond, L., Busch, M., Marczewski, A., Nacke, L.E.. 2016. The
16. Gamification User Types Hexad Scale. *Proceedings of the 2016 Annual Symposium on*
17. *Computer-Human Interaction in Play - CHI PLAY '16*. Austin, TX, USA, pp. 229–243.
18. Yilmaz, H. and Coşkun, IO. 2016. New Toy of Marketing Communication in Tourism: Gamification. In E. Sezgin. ed. *E-Consumers in the Era of New Tourism*. Springer. pp. 53-69.
19. Yoo, C., Kwon, S., Na, H. and Chang, B. 2017. Factors Affecting the Adoption of Gamified Smart Tourism Applications: An Integrative Approach. *Sustainability*. 9. p. 1-21.
20. Webber, J. 2014. *Gaming and Gamification in Tourism*. [pdf] Digital Tourism Think Tank. Available at: <<https://thinkdigital.travel/wp-content/uploads/2014/05/Gamification-in-Tourism-Best-Practice.pdf>> [Accessed 15 April, 2019].
21. World Tourism Organization. 2008. *Handbook on E-Marketing for Tourism Destinations*. [pdf], Available at: <[https://pub.unwto.org/WebRoot/Store/Shops/Infoshop/48EA/148E/19AC/BB41/5091/C0A8/0164/579A/080926\\_handbook\\_e-marketing\\_excerpt.pdf](https://pub.unwto.org/WebRoot/Store/Shops/Infoshop/48EA/148E/19AC/BB41/5091/C0A8/0164/579A/080926_handbook_e-marketing_excerpt.pdf)> [Accessed 28 August, 2018].
22. Xu, F., Weber, J., and Buhalis, D. 2013. Gamification in Tourism. In Xiang, Z. and
23. Tussyadiah, I. eds. *Information and Communication Technologies in Tourism -*
24. *Proceedings of the International Conference*. Dublin, Ireland, January 21-24., p. 525-535.
25. Xu, F., Tian, F., Buhalis, D., Webber, J. and Zhang, H. 2016. Tourists as Mobile Gamers: Gamification for Tourism Marketing. *Journal of Travel and Tourism Marketing*. 33 (8). pp. 1-22.

## **INTERDEPENDENCE OF ECONOMIC INEQUALITIES AND ECONOMIC GROWTH IN SELECTED POST-TRANSITION COUNTRIES OF THE EUROPEAN UNION**

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### **ABSTRACT**

*The purpose of this paper is to research the relationship between economic inequalities of distribution of household income and economic growth in the selected countries of the European Union in the period before and during the economic crisis, from 1995 to 2015. The following econometric methods were used: regression analysis, multiple econometric panel analysis and panel cointegration analysis using the vector error correction model (VECM). The result of the research confirms that there is a strong long-run relationship, in both directions of influence, i.e. from the variable of economic inequality of distribution of disposable equivalent income, expressed by the Gini coefficient (INEQG), to the variable change in gross domestic product (GDP) and vice versa. The conclusion is that there is a negative interdependence between economic inequalities of distribution of household income and economic growth, which has a long-run character.*

**Keywords:** *economic inequalities, crisis, economic growth, distribution of household income, post-transition EU countries*

### **1. INTRODUCTION**

The modern global environment imposes the issue of economic inequalities and their implications at the center of many scientific debates and economic reflections on future sustainable economic growth and development. Despite general well-being, the majority of the population does not live in abundance, but often the economic benefits of economic progress are markedly unevenly distributed. Although approaches to inequality have historically changed, depending on the prevailing ideology and theoretical framework, and even today there are different points of view, today many economists think that large inequalities in society distort the outcome of the general equilibrium and jeopardize economic, social and political stability which leaves consequences to economic growth and the overall quality of life in the community. Growing and immoderate economic inequality that can no longer be ignored is becoming a new global challenge of the modern age. Starting from the significance of this topic and the assumption that in modern 21st century society, growing economic inequalities negatively affect economic growth, the research in this paper focuses on the analysis of the interdependence between economic inequalities in the distribution of disposable household income, measured by Gini coefficient and economic growth measured by change in GDP.

Empirical research is conducted in the pre-crisis and crisis period from 1995 to 2015, on the example of nine post-transition countries of the European Union, which are mostly Central European and Baltic countries. Selected countries are considered individually and collectively at the group (cluster) level. The aim was to see the level of economic inequalities affected by the crisis. Therefore, the purpose of this paper is to provide guidance to decision makers to create future policies aimed at stimulating economic growth and reducing high economic inequalities. Considering the subject of research, the method of quantitative analysis, mathematical-statistical method and method of econometric analysis are mostly used. The basic econometric methods used are: regression analysis using the ordinary least squares method, multiple econometric panel regression analysis and panel cointegration analysis using the VECM model (Johansen methodology).

Remark: The paper is based on the doctoral dissertation of the first author prepared under the mentorship of the second author and the third author as members of the committee under the title: „Interdependence of economic inequalities and economic growth“. The doctoral dissertation contains 408 pages, and only 23 completed pages were used.

## **2. PREVIOUS RESEARCH ON INEQUALITY**

Previous research on inequality can be classified into two groups. The first group includes research that is separate from economic dynamics, ie the movement of inequality historically over time is observed (Piketty, 2014; Piketty and Saez, 2003), but it is not related to economic variables. These studies conclude that economic inequalities have increased especially since 1980. They are approaching worrying levels from the 19th century (Piketty, 2014). The second group of studies looks at the interdependence between inequality and economic growth (Kuznets, 1955), and other economic variables such as savings, capital investment, and the expansion of production capacity over time. Kuznets' theory is graphically represented in the form of an inverted letter U. The conclusion of his research suggests that inequalities will decrease in the future. Edwin L. Williamson (1965) took over the concept of the inverted U curve in explaining the movement of regional differences, that is, differences between developed and developing countries. Arthur Okun (1975) was one of the first theorists of the 20th century to address the problem of inequality and attach great social significance to it. The question of how much society is willing to allocate in the form of reduced efficiency of the economy for the purpose of greater equality, is the basis of Okun's analysis of the so-called. hollow bucket. Okun concludes that the outflow (water through a hollow bucket) is insignificant in relation to the benefits for society, ie the loss of economic efficiency is less than the loss due to the economic impact of poverty and malnutrition, and occurs in the form of impaired health, lost ability to work and human suffering. . The theoretical novelty is brought in 2012 by James K. Galbraith in the form of an extended Kuznets curve, which looks like a horizontally sloping letter S, instead of the inverted letter U. (Galbraith, 2012) Galbraith argues that as globalization progresses, it becomes increasingly independent of national economic policies, so inequality in the world is increasing, even in the richest countries. Inequality in the richest countries of the world (USA and Japan) Galbraith shows through propulsive sectors (financial sector, information technology sector, military industry and mortgage industry). These propulsive sectors create jobs in other sectors but for much lower incomes. Branko Milanovic, one of the world's leading scientists dealing with the issue of poverty and income inequality, has dedicated himself to the study of global inequalities. Milanovic explores inequalities globally (within and between countries) and the uneven spread of wealth around the world, today and throughout history, talking about the main social division into those who have and those who do not (Milanovic, 2010).

Milanovic (2011) states that technological progress, globalization, and politics contribute to global inequality as the number of middle class members increases. Similar to Milanovic, Anthony Atkinson (2015), a well-known British economist who studied income inequality, states that the following factors contributed to growing inequality: globalization, technological change (growth of the information and telecommunications technology sector - ICT), growth of the financial sector, change in payment norms, redistributive, tax and social policies. In this research on income inequality, Atkinson often used the index, which was named after him, the so-called Atkinson index. It is the only measure of inequality that uses the assumptions about the propensity of equality, which is expressed in the value of the parameter  $\epsilon$ . The higher he is, the more society values equality. In research, this measure is rarely used due to its complexity and very strong assumptions used in modeling related to the shape of the well-being curve and standardization in relation to it (Bićanić, Ivanković and Kroflin, 2018). Angus Deaton, the winner of the Nobel Prize in Economics (for the analysis of consumption, poverty and well-being) in 2015, has a different opinion. Deaton in his 2013 book *The Great Escape: Health, Wealth, and the Origins of Inequality* points out that the lives of most people today are better than ever in history, although some groups have been left out of that trend. Deaton agrees that inequality is growing, but believes it is a rather complicated phenomenon, both good and bad at the same time. He believes that poor countries should be helped in economic development, but not in the way that rich countries provide them with direct financial assistance, which he considers useless, because the money inevitably goes to the ruling elites, who can direct funds elsewhere, such as the army. International organizations such as the International Monetary Fund (IMF) and the Organization for Economic Co-operation and Development (OECD), former proponents of neoliberalism and the market economy in recent years, are also becoming aware of the problems of economic and social inequalities and their effects on economic growth. They are all often will empirical studies with conclusions that greater inequality diminishes economic growth (OECD, 2014) and that neoliberal economics creates inequalities (IMF analysts: Ostry, Loungani, Furceri, 2016). According to OECD data, the gap between rich and poor is growing: the richest 10% of the population in OECD countries in 2017 earn 9.5 times higher income than the poorest 10% of the population, while in the 80s the richest 10% of the population earning 7 times higher income than the poorest 10% which means that statistics show inequalities growing despite economic development (OECD, 2017) IMF researchers Dabla-Norris, Kochhar, Rick, Suphaphiphat, Tsounta reject the concept of trickle-down as an assumption of the neoliberal economy according to which an increase in income inequality is desirable. The cited researchers in an IMF study entitled *Causes and Consequences of Income Inequality: A Global Perspective* confirm a negative link between growing inequality and economic growth. Joseph Stiglitz, a well-known American theorist, has been discovering the gap between rich and poor for many years. In his book *The Price of Inequality How Today's Divided Society Endangers Our Future* (2012), he examines how monetary policy, fiscal policy, and globalization have contributed to the growth of inequality. The great division in society brings together Stiglitz's most provocative thoughts on inequality. It also explains reforms that would encourage greater growth, more opportunities and greater equality. (Stiglitz, 2016) In 2019, Stiglitz in his book *"People, Power and Profits"* points out that too many people have gained wealth by exploiting others. If there is no policy change in this area, new technologies can significantly worsen the situation by increasing inequality and unemployment. It identifies the true sources of wealth and increasing living standards, based on learning, advances in science and technology, and the rule of law. An authoritative account of the foreseeable dangers of free market fundamentalism and the foundations of progressive capitalism *"People, Power and Profits"* shows us America in crisis, but also illuminates the path through this challenging time.

### 3. BASIC CHARACTERISTICS OF THE CHOSEN RESEARCHED COUNTRIES

The inequality can have many dimensions. The economists particularly deal with the monetary dimension of an individual's or household's income and consumption. However, this is only one side since the inequality can be linked to inequality in skills, education, opportunities, happiness, health, life expectancy, well-being, wealth and social mobility. The analysis includes nine countries, which in relation to other countries of the European Union, looking at the indicators on the basis of which the selection was made, are characterized by a lower level of economic and social development. The selected countries, shown in Table 1, are at the lowest level of economic and social development in the European Union, as shown by the Human Development Index (HDI), Inequality-adjusted Human Development Index (IHDI), and social justice indices (SJI), as well as global competitiveness indices (GCI).

*Table 1: Researched countries by indices of social development, social justice and competitiveness*

Cluster countries	Country code	HDI 2017.	IHDI 2017.	SJI 2017.	GCI 2018. (rank)
1. Bulgaria	BG	0,813	0,710	4,19	63,6 (51.)
2. Estonia	EE	0,871	0,794	6,19	70,8 (32.)
3. Croatia	HR	0,831	0,756	5,07	60,1 (68.)
4. Latvia	LV	0,847	0,759	5,46	66,2 (42.)
5. Lithuania	LT	0,858	0,757	5,61	67,1 (40.)
6. Hungary	HU	0,838	0,772	5,18	64,3 (48.)
7. Poland	PL	0,865	0,787	5,79	68,2 (37.)
8. Romania	RO	0,811	0,717	3,99	63,5 (52.)
9. Slovakia	SK	0,855	0,797	5,91	66,8 (41.)

*Source: UNDP (2019), Schraad-Tischler i Schiller, Bertelsmann Stiftung (2016), World economic forum (2018)*

The economic inequality expressed by the Gini coefficient of equivalent disposable household income in these countries in 2015 ranges from 26% to 35% (based on Eurostat methodology where the Gini coefficient is shown on a scale from 0 – 100.). The highest inequality is expressed in Bulgaria, Romania, Lithuania and Latvia, and the lowest in Slovakia. Looking at the average annual rate of change of the Gini coefficient in the period from 1995 to 2015, it can be concluded that in six out of nine countries the inequality increased and in only three countries decreased: Estonia, Hungary and Slovakia (shown in Table 2). Looking at the average of all nine countries, the average rate of change is 0.32% per year. Thus, it can be generally concluded that there is a growing trend of economic inequalities.

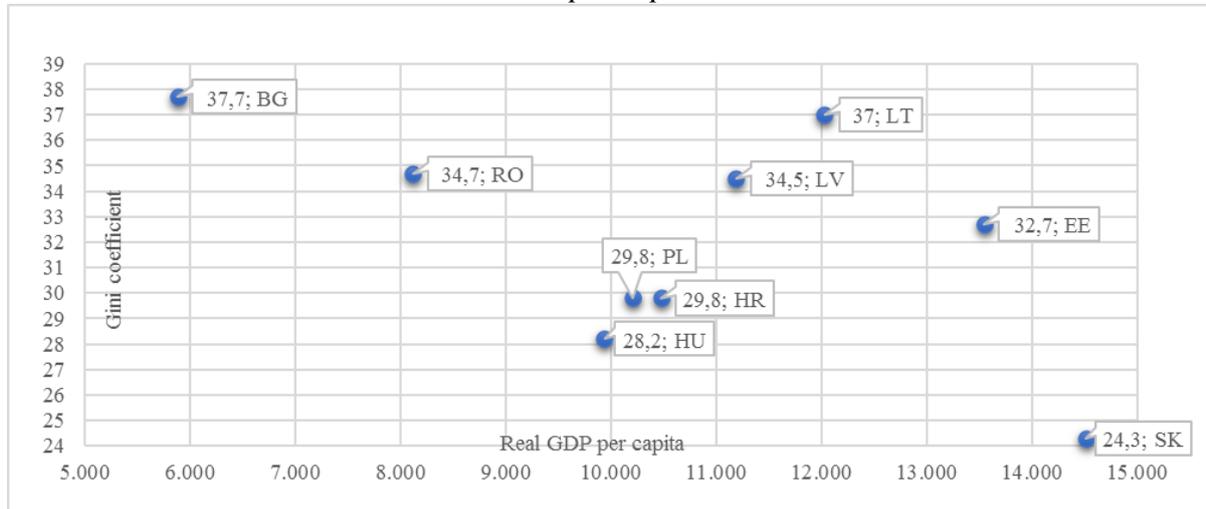
*Table 2: Average annual rates of change of the Gini coefficient for the period: 1995 – 2015*

Cluster countries	Average rates of change of Gini coefficient (%)
Bulgaria	1,233
Estonia	-0,298
Croatia	0,328
Latvia	0,733
Lithuania	0,023
Hungary	-0,213
Poland	0,042
Romania	1,015
Slovakia	-0,294
<b>Cluster level</b>	<b>0,320</b>

*Source: Author's calculation*

Graph 1 shows the relationship between the Gini coefficient and real GDP per capita, which shows that in 2016 the level of real GDP per capita in these countries ranges from EUR 5,800.00 to EUR 14,600.00 (Eurostat, 2018). Countries with low levels of real GDP per capita have high inequality: Bulgaria and Romania.

*Graph 1: Relationship between economic inequalities expressed by the Gini coefficient and real GDP per capita, 2016*



*Source: Author's draft according to Eurostat data (2018)*

#### 4. DATA AND METHODOLOGY

The survey is conducted on the basis of annual data for the period from 1995 to 2015, collected from Eurostat databases and consists of three econometric analyses: (1) regression analysis of the individual countries, (2) panel regression on cluster level, (3) panel cointegration analysis on cluster level. The first difference in real GDP (GDPd) as a measure of economic growth (dependent variable) and Gini coefficient of equivalent disposable household income (INEQG) as a measure of economic inequality (independent variable) are used. Although the main goal of the research is to determine the interdependence between two basic variables: economic inequality and economic growth, additional independent variables are included in the empirical analysis in order to obtain realistic results. This is due to the fact that economic growth depends on many factors that need to be taken into account when interpreting the data. Since it is impossible to include in the research all the factors that affect economic growth, in the models, due to their importance for contemporary globalized economy, are included: investment in education (EDUEXPPPS), investment in research and development (GERD), and foreign direct investment (FDIRES). All variables are expressed in their natural logarithm form, which means that the estimated coefficients represent partial coefficients of elasticity, and can be observed the relative relationships between the selected variables, which allow easier interpretation of the data. Dummy variables were also included in the analysis to construct a structural break in the models, which is visible in the analyzed variables, and is a consequence of the economic crisis in European countries in 2008 and 2009. The models include two intercept dummy: dummy\_crisis and dummy\_after, and three slope dummy variables: dummy\_before\_t, dummy\_crisis\_t and dummy\_after\_t. This way, to include a broken trend in the models, consisting of three parts, was achieved: before the crisis, during the crisis and after the crisis, which allows changing the intercept of regression functions (constant term) as well as changing slope of the linear trend before, during and after the crisis. This way was modelled the impact of the crisis of 2008 and 2009 on the observed variables of different countries that reacted differently to the economic crisis.

Based on descriptive statistics of variables used in the empirical analysis of this paper for the time period 1995-2015, it can be concluded that the variables show marked oscillations, which is a consequence of numerous turbulences during the long-run process of transition to a market economy.

## **5. RESEARCH RESULTS**

A regression analysis for each country individually and a panel analysis for the all countries included in the cluster was performed. The regression analysis of individual countries could not draw a general conclusion for all countries on the relationship between economic inequalities and economic growth, so a panel analysis was additionally applied.

### **5.1. Regression for individual country**

Econometric analysis of selected countries begins with a regression analysis of each country separately using the ordinary least squares methodology (OLS). The dependent variable is the growth rate of real GDP and independent are: Gini coefficient as a measure of economic inequality, investment in education, investment in research and development, and foreign direct investment. Based on VIF (Variance Inflation Factors) test, some independent variables, for some countries, were excluded from the models due to problem with multicollinearity. In the models are also included five dummy variables for modelling the economic crisis in 2008 and 2009. Tests for autocorrelation, heteroskedasticity, and normality of distribution of residuals are also performed. The results of the regression analysis could be seen in the Appendix A, Table A1. The regression analysis on individual countries shows:

- in four countries out of nine cluster countries a statistically significant (10% level of significance) relationship between GDP and economic inequalities was found
- of which in one country: Romania, a positive statistically significant relationship was found, from which it follows that in Romania an increase of the Gini coefficient of 1% will affect the growth of real GDP by 2.44%.
- a negative statistically significant relationship was found in three countries: Lithuania, Estonia and Croatia, which means that an increase in economic inequality measured by the Gini coefficient of 1% will affect the reduction of growth of real GDP, namely: in Lithuania by 0.33%, Estonia by 0.31% and in Croatia by 0.15%
- the regression model for Croatia shows that real GDP depends on economic inequality (which reduces real GDP) and foreign direct investment (which has a positive effect on real GDP), while the variables: investment in education and investment in research and development do not show a statistically significant impact on real GDP.

Based on the regression analysis, a general conclusion about the relationship between economic inequalities and economic growth cannot be made on individual countries, and further research is needed. However, studying the direction of movement of the basic research variables shows that there is mostly a negative relationship between economic inequalities measured by the Gini coefficient and economic growth measured by real GDP. Likewise, it can be concluded that the lower the level of economic and social development of individual countries, the more pronounced will be the negative impact of economic inequalities (measured by the Gini coefficient) on economic growth (measured by the first difference of variable real GDP).

### **5.2. Panel analysis**

The variables used in the panel regression analysis are the same as in the previous regression analysis for separate countries. The panel data include 9 observation units, i.e. nine cross-sectional units for 21 time periods. Based on the Hausman test fixed effects panel models are chosen.

Table 3: Fixed effect panel analysis with *t* values in the parenthesis

Dependent variable: lnGDPd			
Dependent variable	Model 1-FE	Model 2-FE	Model 3-FE
<b>lnINEQG</b>	<b>-0,743**</b> (-2,130)	<b>-0,759 **</b> (-2,175)	<b>-0,813**</b> (-2,223)
<b>lnEDUEXPPPS</b>	-0,209] (-1,299)	-	-
<b>lnGERD</b>	0,489*** (4,317)	0,410*** (4,240)	-
<b>lnFDIRESd</b>	0,401*** (5,014)	0,383*** (4,853)	0,335*** (4,096)
<b>dummy_before_t</b>	-0,107*** (-5,187)	-0,109*** (-5,340)	-0,056*** (-3,302)
<b>dummy_crisis_t</b>	-0,090 (-0,503)	-0,090 (-0,502)	-0,136 (-0,720)
<b>dummy_after_t</b>	-0,049 (-1,514)	-0,041 (-1,305)	-0,013 (-0,393)
<b>dummy_crisis</b>	-1,171*** (-2,971)	-1,212*** (-3,078)	-0,342 (-0,971)
<b>dummy_after</b>	-1,330*** (-4,658)	-1,351*** (-4,74)	-0,557** (-2,488)
<b>Constant</b>	9,481*** (5,857)	8,467*** (5,967)	10,799*** (7,891)
<b>Adjusted R<sup>2</sup></b>	0,87	0,87	0,86

Coefficient's level of significance: \*\*\* $p < 0,01$ , \*\* $p < 0,05$ , \* $p < 0,10$

Source: Author's calculation

The 1-FE, 2-FE and 3-FE models (shown in Table 3) are panel models with a fixed effect and are formulated in such a way that the real GDP, i.e. the variable lnGDPd, is considered as a dependent variable. The 1-FE model includes all variables, while the 2-FE model is formulated with one independent variable less (the variable lnEDUEXPPSS is excluded) in order to avoid multicollinearity. The lnGERD variable was additionally excluded from the 3-FE model due to the high correlation coefficient with the lnFDIRESd variable, which is 0.86. From all the three models it can be concluded that there is a statistically significant negative correlation between the variables lnGDPd and lnINEQG at the significance level of 5%, i.e. the partial coefficients of elasticity indicate that:

- in the 1-FE model, a 1% increase in economic inequality leads to a 0.74% decrease in real GDP growth rate
- in the 2-FE model, a 1% increase in economic inequality leads to a 0.76% decrease in real GDP growth rate
- in the 3-FE model, a 1% increase in economic inequality leads to a decrease in real GDP growth rate by 0.81%.

Other observed independent variables (lnEDUEXPPSS, lnGERD and lnFDIRESd) have, as expected, a statistically significant positive impact on real GDP, while dummy variables reflecting the economic crisis show two statistically significant jumps in the constant term (parallel regression line shifts before and after the crisis) and one shift in the trend of regression line due to the crisis.

After the panel regression analysis determined that there is a negative interdependence between economic inequalities and economic growth, further empirical research sought to determine whether there is a long-run stable relationship between the variables. Long-run relationship is investigated using panel vector error correction model (panel VECM).

### 5.3. Panel VECM

The stability of the VAR/VECM model depends on the stationarity of the processes that enter it. By testing the stationarity of a process, it should be determined whether time series are characterized by a tendency to return after a shock to the mean value and whether a particular process can be put in stationary form by its differentiation. In this research, an augmented Dickey-Fuller test (ADF test) is used, which tests whether it is a process a random walk with drift, i.e. a process with a unit root or a stationary process. Based on the conducted ADF test, it can be concluded that both variables in the level have a unit root ( $p > 0.05$ ), which means that they are not stationary in the level. The stationing of the process is achieved by differentiating the variables, i.e. the ADF test shows that the processes are stationary in the first difference. Therefore, it can be concluded that these are two I(1) processes. Accordingly to Akaike information criterion (AIC), Hannan-Quinn information criterion (HQ) and Schwartz information criterion (BIC, SC), two time lags are chosen for the Vector error correction model. To select the correct vector error correction model, it is necessary to determine the number of cointegration vectors (rank of matrix  $\Pi$ ) between variables, using a test called Johansen Fisher Panel Cointegration test, which tests whether there is a cointegration long-run relationship between the variables  $\ln\text{GDPd}$  and  $\ln\text{INEQG}$  (Johansen, 2002). Based on the Lambda max and Lambda Trace tests (Table 4), it can be concluded that there is one cointegration (long-run) relationship between the variables  $\ln\text{GDPd}$  and  $\ln\text{INEQG}$ .

Table 4: Tests for cointegration rank with p-values in parenthesis

Rank of $\Pi$	Lmax test	Trace test
<b>0</b>	18,72323 (0,0175)	24,75650 (0,0112)
<b>1*</b>	6,033267 (0,1881)	6,033267 (0,1881)

Since the variables do not show any trends the constant term is restricted to the cointegration space. Accordingly, a panel VECM model, with 2 lags, one cointegration vector and constant term restricted to cointegration space is estimated.

Table 5: Estimated cointegration vector ( $\beta$ ) and loadings ( $\alpha$ ) with t-values in parenthesis

	<b><math>\ln\text{GDPd}</math></b>	<b><math>\ln\text{INEQG}</math></b>	<b>Constant</b>
$\beta$	1,0000	5,6468** (2,273)	-30,945*** (3.632)
$\alpha$	-0,019371*** (-3,65168)	-0,009648** (-2,13867)	

Level of significance: \*\*\* $p < 0,01$ , \*\* $p < 0,05$

The estimated cointegration vector ( $\beta$ ), normalized for GDP (Table 5) shows that there is a statistically significant long-run negative relationship between GDP and Gini coefficient in cluster countries that can be written in the equation form:

$$\ln\text{GDPd} = -5,6468 \ln\text{INEQG} + 30,945$$

(-2,273)                      (-3,632)

Based on VECM model, it is possible to estimate the measure of the average speed of convergence towards the long-run equilibrium (cointegration vector) which is called the loading ( $\alpha$ ). From estimated loadings (Table 5) it was found that both variables statistically significantly adjust (converge) to the long-run equilibrium cointegration relationship as follows:

- the growth rate of real GDP adjusts to long-run relationship by approximately 1,9% per quarter until equilibrium is re-established
- the Gini coefficient adjusts to long-run relationship by approximately 1% per quarter until equilibrium is re-established.

Decomposition of forecast error variance of the variable  $\ln\text{GDPd}$  shows that after twenty quarters economic inequality explains 23,37% of movement in growth rate of real GDP and growth rate in real GDP explains 4,56% of movement in economic inequality. Based on the conducted analysis, it can be concluded that in cluster countries there is a strong statistically significant long-run interdependence between the variables of growth rate of real GDP and economic inequality measured by the Gini coefficient. The research found that there is a long-run relationship in both directions of influence, i.e. from the variable  $\ln\text{INEQG}$  to the variable  $\ln\text{GDPd}$ , and from the variable  $\ln\text{GDPd}$  to the variable  $\ln\text{INEQG}$ .

## 6. CONCLUSION

Growing and immoderate economic inequality that can no longer be ignored is becoming a new global challenge of the modern age. This raises general concerns among the international community and international organizations, which are seeing a paradigm shift towards increasing conclusions about the need to combat the further growth of inequality. Starting from the significance of this topic and the assumption that in the modern world, growing economic inequalities affect economic growth, the subject of research in this paper was focused on the analysis of the interdependence between economic inequalities in household income distribution and economic growth. The analysis covers nine countries of the former planned economy from 1995 to 2015, which have undergone numerous structural changes since the 1990s, which has also affected their growth and development. These are the countries that are on average at the lowest level of economic and social development in the European Union, as shown by social development indices (HDI, IHDI) and social justice indices (SJI). The average Gini coefficient of equivalent disposable household income in the countries of the observed cluster is 31.3%, with a median of 31.2%, which proves that a high level of economic inequality is present. Furthermore, economic inequalities expressed by the Gini coefficient at the cluster level are growing on average, at a rate of 0.32% per year. Based on the results of the econometric panel regression analysis and cointegration testing conducted using the VECM model, it can be concluded that there is a negative relationship between economic inequalities in the distribution of household income and economic growth, in short-run as well as in long-run period. Therefore, further increases in inequality should be prevented, primarily through investment in education, research and development and foreign direct investment. Inequality is becoming one of the most controversial and present issues in the modern economy has been much debated in recent years, the issue of economic inequalities and economic growth leaves a lot of room for new researches.

## LITERATURE:

1. Atkinson, A. B. (2015.) *Inequality: What Can Be Done?*, Harvard: University Press
2. Bićanić, I., Ivanković, Ž. i Kroflin, M. (2018.) *Nejednakost plaća u Hrvatskoj 2003. – 2016.* Politička misao, 55, Fakultet političkih znanosti Zagreb (3), str. 43-81

3. Dabla-Norris, E., Kochhar, K., Ricka, F., Suphaphiphat, N., Tsounta, E. (2015.). Causes and Consequences of Income Inequality: A Global Perspective. International Monetary Fund Research Department, IMF Staff Discussion Note 15/06. Washington: IMF – International Monetary Fund. Dostupno na: [www.imf.org](http://www.imf.org)
4. Deaton, A. (2013.) The Great Escape: Health, Wealth, and the Origins of Inequality, Princeton: Princeton University Press
5. Eurostat (2018). General database. Available at <https://ec.europa.eu/eurostat/data/database> [accessed: October 2020]
6. Eurostat (2018). Database Income and Living Conditions ilc. Eurostat database on income and living conditions - EU-SILC. Compiling agency: Eurostat, the statistical office of the European Union. Available at <http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/database> [accessed: November 2020]
7. Eurostat (2018). Annual national accounts (nama10). Data base. Available at [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama\\_10\\_gdp&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_gdp&lang=en) [accessed: November 2020]
8. Galbraith, J. K. (2012.). Inequality and Instability: A Study of the World Economy Just Before the Great Crisis. New York : Oxford University Press
9. Heshmati, A., 2004. Inequalities and Their Measurement, Discussion paper No. 1219, IZA Institute of Labor Economics, Germany
10. Johansen, S. (2002). The interpretation of cointegration coefficients in the cointegrated vector autoregressive model. Reprints of Department of Theoretical Statistic. University of Copenhagen. Available at <http://web.math.ku.dk/~sjo/papers/coefficients.pdf> [accessed: October 2020]
11. Kuznets, S. (1955.). Economic Growth And Income Inequality. The American Economic Review, 1(45). Dostupno na: [www.aeaweb.org](http://www.aeaweb.org)
12. Milanovic, B. (2010.) The Haves and the Have-Nots: A Brief and Idiosyncratic History of Global Inequality. New York: Basic Books
13. Milanovic, B. (2011.) Global inequality: from class to location, from proletarians to migrants (English). Policy Research working paper, No. WPS 5820. Washington DC : World Bank. Dostupno na: [www.worldbank.org](http://www.worldbank.org)
14. OECD – Organisation for Economic Cooperation and Development (2014.). Trends in Income Inequality and its impact on Economic Growth. OECD Social Employment and Migration Working Papers. No. 163. OECD Publishing, dostupno na: [www.oecd-ilibrary.org](http://www.oecd-ilibrary.org)
15. OECD - Organisation for Economic Cooperation and Development (2017.) Understanding the socio – economic divide in Europe Background Report. COPE – Centre for Opportunity and Equality 26 January 2017. OECD Publishing, Dostupno na: [www.oecd.org](http://www.oecd.org)
16. Okun, A. M. (1975.). Equality and Efficiency: The Big Tradeoff. Washington D. C.: Brookings Institution
17. Ostry, J. D., Loungani, P. i Furceri, D. (2016.). Neoliberalism: Oversold?. International Monetary Fund, Finance & Development, 53 (2), str. 38-41. Dostupno na: [www.imf.org](http://www.imf.org)
18. Piketty, T. (2014.). Kapital u 21. Stoljeću, Profil, Zagreb
19. Piketty, T. and Saez, E. (2003.). Income Inequality in The United States, 1913-1998. The Quarterly Journal of Economics, 118. str. 1-41, dostupno na: [www.scirp.org](http://www.scirp.org)
20. Schraad-Tischler, D. and Schiller, C. (2016). Social Justice in the EU - Index Report 2016. Social Inclusion Monitor Europe, Bertelsmann Foundation. Available at [https://www.social-inclusion-monitor.eu/uploads/tx\\_itao\\_download/Studie\\_NW\\_Social-Justice-Index\\_2016\\_02.pdf](https://www.social-inclusion-monitor.eu/uploads/tx_itao_download/Studie_NW_Social-Justice-Index_2016_02.pdf) [accessed: January 2021]
21. Stiglitz, J.E. (2012.) The price of inequality – How today’s Divided Society Endangers Our Future. New York: W. W. Norton & Company

22. Stiglitz, J.E. (2016.) *The Great Divide: Unequal Societies and What We Can Do About Them*. New York: W.W. North & Company
23. Stiglitz, J.E. (2019.) *People, Power and Profits: Progressive Capitalism for an Age of Discontent*, New York: W.W. North & Company
24. World Economic Forum (2018). *Insight Report The Global Competitiveness Report 2018*. Editor Schwab K., Coligny / Geneva, Switzerland, ISBN-13, 978-92-95044-760. Available at <http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf> [accessed: February 2021]
25. UNDP - United Nations Development Program (2019). Database. Available at <http://hdr.undp.org/en/content/human-development-index-hdi> [accessed: January 2021]
26. Williamson, L. E. (1965.) Seasonal and regional characteristics of acoustic atmospheres. *Journal of Geophysical Research*, 70(2.) str. 249-255

**APPENDIX**

*Table A1: Regression analysis on individual countries with t values in parenthesis*

Dependent variable: lnGDPd

Independent variables	BG	EE	HR	LV	LT	HU	PL	RO	SK
lnINEQG	0,066 (0,458)	-0,312* (-2,085)	-0,147* (-1,835)	-0,0071 (-0,035)	-0,328*** (-3,0845)	0,388 (1,326)	-0,589 (-1,380)	2,442** (2,705)	-0,226 (-0,769)
lnEDUEXPPPS	-	0,095 (0,556)	0,004 (0,098)	0,127 (1,754)	-	0,478* (1,877)	-	-0,634** (-2,713)	-
lnGERD	0,107 (0,900)	0,109* (2,116)	0,153 (0,958)	-	-	-	-	0,090 (0,635)	0,566*** (5,429)
lnFDIIREsd	0,071 (1,508)	-	0,171 (2,420**)	0,413 (4,32***)	0,098 (1,394)	-	-0,041 (-0,186)	-	-
dummy_before_t	0,008 (0,546)	0,036 (2,337**)	-0,012 (-0,717)	0,049 (5,29***)	0,076 (5,144***)	-0,024 (-1,187)	0,041 (0,986)	0,006 (0,628)	0,031*** (5,570)
dummy_crisis_t	-0,045 (-0,587)	-0,142 (-3,82***)	-0,102 (-2,197*)	-0,114 (-1,725)	-0,151 (-3,752***)	-0,150 (-1,227)	-0,189 (-1,881*)	-0,104 (-0,883)	-0,005 (-0,062)
dummy_after_t	-0,012 (-0,554)	0,035 (3,72***)	-0,030 (-1,691)	0,021 (1,741)	0,030 (3,102***)	-0,018 (-0,799)	0,021 (0,800)	-0,039 (-1,603)	-0,063*** (-3,225)
dummy_crisis	-0,238 (-0,989)	-0,524 (-2,032*)	-0,006 (-0,026)	-0,295 (-2,005*)	-1,180 (-6,662***)	-0,003 (-0,011)	-0,919 (-1,789*)	-0,333 (-1,334)	-0,504*** (-3,325)
dummy_after	0,156 (0,679)	0,208 (0,888)	-0,127 (-0,619)	0,410*** (3,656)	0,860*** (5,152)	-0,251 (-1,140)	0,626 (1,220)	0,169 (0,871)	0,443*** (3,674)
constant	8,878*** (16,542)	9,165*** (8,177)	8,731*** (8,048)	7,234*** (5,575)	9,623*** (16,134)	6,234** (2,515)	14,62*** (4,617)	7,757*** (3,697)	8,065*** (6,709)
Adjusted R <sup>2</sup>	0,94	0,99	0,98	0,97	0,99	0,18	0,89	0,48	0,98

*Coefficient's level of significance: \*\*\*p<0,01, \*\*p<0,05, \*p<0,10*

*Source: Author's calculation*

## THE PUBLIC LIBRARY AS HEALTH INFORMATION RESOURCE

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### **ABSTRACT**

*Due to the situation caused by the coronavirus pandemic health matters have become a very sensitive subject to the society. The existing issues motivate researchers and specialists to look through the documents and archives describing the historical development of Bulgarian healthcare and medical and social activity, focusing on the activity of Bulgarian healthcare institutions and professional medical organizations, as well as mentioning them in specialized medical publications. Even more – these issues prioritized the matters related to the implementation of rules, norms and regulation in the field of healthcare.*

**Keywords:** *Public libraries, Management, Healthcare, Information, COVID-19*

### **1. INTRODUCTION**

Public healthcare having generalized historical and sometimes political reality may clarify the principles of management, organization and tendencies in the development of a healthcare system of the state itself and healthcare issues represent a true level of public and political development of a given country. Public libraries in Bulgaria are first open consumer health information centres that collect, store and provide necessary health information to specialists and general public. Specialized medical publications are an integral part of the processes aimed at distribution of knowledge about health and development of health awareness of specialists and local community. Due to the situation caused by the coronavirus pandemic health matters have become a very sensitive subject to the society. The existing issues motivate researchers and specialists to look through the documents and archives describing the historical development of Bulgarian healthcare and medical and social activity, focusing on the activity of Bulgarian healthcare institutions and professional medical organizations, as well as mentioning them in specialized medical publications (Bozhilova, 2012). Even more – these issues prioritized the matters related to the implementation of rules, norms and regulation in the field of healthcare. Although in different forms, with different subjects and from different point of view – this proves to be a leading issue in every era and time. For this reason, the relevance of the publications in each field has a leading role in selecting a title in the development of library collections, especially when it comes to publication in healthcare sphere. Only the funds that are relevant in terms of the needs and interests of the target groups and are up-to-date can provide access to reliable and latest information with the help of which, on the one hand, different groups of users can be better informed about their own health and, on the other hand, based on reliable and latest information – promote "healthy" doctor-patient relationships. In this sense, libraries have the potential to become part of the processes of developing health awareness of the population, to provide opportunities for exchange of knowledge, experience and skills between specialists and last but not least – to evolve from just being a place for storing information to an active participant in the process of development and provision of knowledge, incl. about health.

Considering the issue of public libraries as an information centre for knowledge, the retrospective review of periodicals helps us see how these processes took place in the past, but at the same time gives us “hints” as to how to apply them nowadays, thus rediscovering the possibilities of the libraries in healthcare.

## **2. THE PUBLIC LIBRARY AS HEALTH INFORMATION RESOURCE**

“Lyuben Karavelov” Regional Library of Ruse stores more than 10 000 medical publications and the thematic variety and time range are extremely wide. The collection has been collected consistently and methodically throughout the 130-year history of the cultural institution. Health periodicals from the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century are of particular interest. They reveal the scope of medical research of the period, the interests of consumers, as well as the regulatory mechanisms that are an integral part of every activity. The choice to analyse periodicals from this period is also determined by the fact that they represent an authentic reflection of both modern scientific achievements – they contain the newest research and current practices, and the interests of ordinary readers of health related topics. In this article we will focus on some of the oldest medical periodicals that are stored in the Regional library of Ruse that help us follow the processes of development of health awareness, distribution of medical and health knowledge and implementation of uniform legislation in the Bulgarian healthcare system.

### **2.1. Public health and health literacy**

The pandemic caused by COVID-19 has changed many things in our lives. Uncertainty and ignorance of how to react in a situation like this scared a large number of people. However, the initial fear and stress gave way to the more important matter of health literacy of every member of the local community – from a child to its oldest members, of a pupil, but also of their teacher. Health literacy as a right and obligation of each of us appears to be one forgotten, but still a relevant issue (Flaherty, 2013) and public libraries with the power of knowledge stored in their funds and open access are one of the opportunities to provide this right to everyone. Health literacy is the capacity to obtain, process and understand basic health information and services in order to make appropriate health decisions. It manifests itself in various forms – from the ability to understand instructions on prescription drug bottles to the ability to fill in the vaccination consent form (Centers for Disease Control and Prevention, 2020b). A brief review of the stored in the “Lyuben Karavelov” Regional Library of Ruse literature of the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century, especially the periodicals, gives us an idea of how all this happened in the past. The retrospective review reveals the scope of medical examinations of that period, as well as the interests of the consumers. The preserved editions are worn out from being used and read a lot. As for the development of health literacy among the population we will focus on two publications aimed at completely different target groups – the first one is “popular science”, as we would call it today, and the second one is strictly specialized. Except for having a common topic, the two publications are published outside the capital. “Zdrave” or “Zdravie” [Health – translator’s remark] is an open public medical journal, which began to be published in 1902 in Vidin and had been publishing until 1924. The name of the edition coincided with the name of a journal published at the end of the 19<sup>th</sup> century in Varna, which stopped its activity in 1887 and later renewed it under the name “Mind and health”. The editors of the journal “Zdrave” were Dr Iv. Nenov, Dr I. Petkov, I. Pushkarov, D.S. Balev and others. The Regional library of Ruse stores the issues of the first five and the last two years. The journal maintains several regular sections, such as: General hygiene and sanitation, School hygiene, sanitation and pedagogy, Personal hygiene, Diseases – their essence and treatment, Natural sciences, anatomy and physiology, Psychology, etc.

Articles of the section Various useful tips, where we could find information about the benefits of sport, about facial skin care, as well as useful advice on how to provide first aid treatment for a gunshot wound. The editors of the journal, making it comprehensible to the specialists, as well as to the readers without medical knowledge, skilfully use the names of prominent personalities to promote their ideas among the readers. The examples of such articles are “Memoirs of L. N. Tolstoy. How he quitted smoking” and “Hygiene of Alexandre Dumas-son”, etc. A review “de visu” of the annual volumes of the journal helped us identify most popular topics of those years. In 1906 the leading one was definitely tuberculosis – a disease that in the beginning of the century became real scourge for the population not only in Bulgaria, the proof of which is also the frequency with which it was mentioned. The introductory article by Prof. Gransche – one of the followers of Pasteur – describes the strategy of fighting tuberculosis in England, Germany and France. Apart from this, Dr Iv. Nenov was one of the editors of the journal – author of one of the most detailed research of tuberculosis published in 1930 in his work under the same name. Advice on good personal hygiene and healthy lifestyle including the matters related to mental health are written in a popular and comprehensible language, which makes the journal “Zdrave” one of the most widely read periodicals in Bulgaria from the beginning of the 20<sup>th</sup> century. Another journal that we will discuss and that is stored in the Regional library of Ruse is “Medicine. Monthly scientific medical journal”. Its first edition was published in 1894 in the town of Lovech and it was the first monthly scientific medical journal in Bulgaria. Its editors were two doctors from Lovech hospital – Dr Petar Orahovats and Dr Stefan Vatev. Their goal was to publish “information related to medicine in Bulgaria”, therefore doctors from all over the country share their experience of treating patients with cholera, diphtheria, tuberculosis, etc. – the most widely spread diseases in Bulgaria at that time. The specialized nature of the journal determines its regular sections, mainly Bulgarian medical dictionary, which contains names of organs of the human body; names of different diseases (in Bulgarian and in Latin), medicinal herbs, etc. Bibliography – a section where readers can find information about the newly published medical literature, incl. publications that could be found in the editorial office itself. Special attention is paid to the new drugs available for sale in pharmacies. The publishers` desire to provide modern and up-to-date information to their readers can also be seen in the section Statements from different journals. It describes diseases that are not typical for our region. The section ‘Others’ contains news in medicine in the country and abroad. There the readers could find information about the upcoming and past scientific medical forums, as well as topics discussed by their foreign colleagues. These, as well as the publications of the previous journal let us conclude that the biggest medical threat of those years was cholera. Numerous articles are devoted to it, like “A new explanation of the natural immunity against Asian cholera” by Dr Klemperer, “Cholera and measures” by Dr M. Ivanov, which was published in the last two issues of the journal, the information about the spread of the disease in Constantinople and others. The very first issue of the journal was devoted to the topic of influenza. The authors noted that the disease had become permanently present in Europe for the last 4-5 years and “since the spread of the disease caused increase in deaths, we believe it deserves our attention” – they concluded. The data from some European countries follow. Unfortunately, the journal had been published for one year only in seven issues (the first issue – February – March 1894, the last issue – January 1895) and the Regional library of Ruse is one of the places where the journal can be found. In her research Radka Rasheva, a librarian in the Local history department of the Lovech library, writes that the main reason why the journal terminated its activity was the departure of the two doctors from the town: Dr Orahovats was hired as a head of the Plovdiv hospital and Dr Vatev went to work in Sofia where he later became a professor (Rasheva, 2021d).

## **2.2. Health awareness – shared knowledge, experience and practices**

The pandemic situation has definitely made the issue of health awareness of the population our main priority in everyday lives and special attention shall be paid to the reliability of this information. It turns out that it is of paramount importance for the right people and teams to be in the right place, to cooperate and provide high quality and effective care for their patients and this is where I am referring to all experts at forefront of protecting our health (Alexander, 2021a). But this is not enough. It is essential for them to use the proper knowledge and evidence at the right time. This is achieved by sharing knowledge, experience and practices that would improve the results of each person's activity, irrespective of their specialty or interests. This is where libraries come to the fore, as places of stored knowledge and a window for open access to the latest and up-to-date information. A role that has a long history. A brief overview of this topic in the past makes it easier and possible to rediscover the potential of the libraries to provide knowledge today. "Medical and pedagogical journal for health, social and educational care for children and adolescents" receives a permission to be published by the Directorate of the social renovation on December 8, 1934. It had been published without interruption from 1935 to 1944. Its editors were Dr V. Shumanov and Angel Petrov. The editorial office of the journal invited 70 specialists from all over the country: doctors, teachers, psychologists, sociologists, prominent public figures and others. With its main focus being out on health and educating the adolescents of our country, the journal aims to "fight for a healthy generation and a healthy nation", which according to the editorial team was a "main motto of every modern country". Although the sections were not strictly separated, the materials were structured in a way so that there was always an article of a leading Bulgarian or foreign health professional addressing issues of physical and mental health of children and adolescents. Examples of such articles include: an article of Dr M. Geraskov "Social importance of a child", Dr D. Garvalov "Anxiety in school aged children" and others. School and students' hygiene ("Vacation and hygiene of the mind" by Prof. Dr Asen Zlatarov, "Hygienic and educational importance of school canteens" by Dr Hristo Draganov), "defective" children and special medical and pedagogical institutions ("Children with disabilities at home and in school" by Geno Dochev, "What to do during the first speech therapy of mentally retarded children" by St. Traykov), legal care ("Compulsory health insurance for schoolchildren" by Dr Zah. Bochev), medical and pedagogical practices ("Social welfare in Germany" by Rayna Petkova), bibliography of new useful publications on health issues, reviews and short scientific communications were also of particular importance. The journal could also boast to have worked with Stiliyan Chilingirov – Deputy Director and Director of the St. Cyril and Methodius National library and today's patron of the Regional library in the town of Shumen. The Regional library of Ruse stores 6 annual editions of the journal – from 1935 to 1939/40. The books were bound specifically for the library that is evident from the gilded inscription on the cover „P.T.O.B.“ – abbreviated in Bulgarian for 'Ruse Town Municipal Library' and the stamp of the library on each issue. The back of the cover contains the text "37. Simeon Simeonov Bookstore Ruse", which suggests the way the library received the publications, as well as the subscription number. Even though in just a few sentences, it would be proper to honour one of the editors – Dr V. Shumanov. He was a leading specialist of the first half of the 20<sup>th</sup> century in school hygiene and devoted a large part of his life to working with children from auxiliary schools or "special schools", as they were called in Public Education Act of 1989. Except "Medical and pedagogical journal" he edited "Medical and pedagogical library", "Our child" journal, as well as "School hygiene – a short guide for doctors, teachers and students" that in 1942 was published in 6 vol. of "Medical and pedagogical library". A wide variety of specialists, as well as topics discussed are an undeniable proof of the importance of the hygiene and health education from an early age and the role of each person in building a healthy society.

The statements of the editors in the preface to the second anniversary of the journal sound extremely relevant nowadays: “The fight for healthy children, healthy generations and fully developed individuals should take place in our country too. It is high time. All competent authorities of the country should mobilize for this fight. They should be called to the front line, to form a powerful army to stop the devastating march of death and degeneration of the Bulgarian people. To conduct a general sanitation and healing of the family and life of the Bulgarian child, adolescent and people through organized health and social activities; by creating recovery and capacity-building organizations, establishments and institutions; by directly involving in this struggle the state machine itself with its institutes that interact with the Bulgarian child”. “Medical collection. Journal of the Bulgarian doctors” also contains materials aimed at sharing knowledge about health. Its editors were Dr Georgi Zolotovich, one of the pioneers in the sanitation and hygiene in Bulgaria, who published over 80 works in the field, and Dr Marin Rusev, who began the fight with tuberculosis in Bulgaria and was one of the authors of the Public Health Protection Act 1903. The journal had been published every month from 1895 until 1899 and the Regional library of Ruse stores four of the annual editions of the journal – from 1895 to 1898. From the text on the cover “Annual subscription. For Bulgaria 7 l[evs]. For abroad the postage cost is added” we can conclude that the ambitions of the editors were not limited to the territory of Bulgaria only. It is no coincidence that along with the articles with observations and practices of native medical workers the works of leading specialists from different countries were also published. The publications covered a wide range of diseases, predominantly tuberculosis, diseases of the respiratory system, nervous system, cancer, influenza, eye and dental diseases and others. A special place is devoted to information about drugs and remedies. Materials on conventional and forensic medicine can also be found. The target group of the journal explains the specialized statistical data and information that could be found on its pages. Those are “Antidote chart” (antidotes), approved by the Supreme Medical Council, statistical data of “births and deaths in the towns of the Principality”, the number of “outpatients examined by state and municipal doctors”, as well as the “regularly and irregularly practicing prostitutes that could be found on the territory of the Principality”. The matter of vaccination, which is so relevant nowadays, is also discussed in the journal. The vol. 5 of the second anniversary of the journal contained an article devoted to the 100<sup>th</sup> anniversary of smallpox vaccine discovery by the father of modern immunology – Edward Jenner. The library also stores the first year’s issues of one of the oldest Russian popular science medical journals “Medical chat. Journal of public medicine and hygiene”, founded on April 2, 1887. The journal was published twice a month and focused on describing the matters of public medicine and hygiene. Its editors were A.H. Sabinin and V.I. Miropolski, whose purpose was through the published materials to introduce the society to the newest achievements in medicine. According to them, the basic means to achieve the goal were popular articles on local sanitation and hygiene, information about local health institutions and doctors and many other thematic chats presented in an accessible language. The periodical maintained a medical chronicle and had a special section for conventional medicine. In 1906 the editors changed the name to “Doctor’s assistant”. The journal was published until 1908 and in 1893 it was rewarded a gold medal at the First All-Russian Hygienic Exhibition, held in Saint Petersburg, for its role and importance in the field of hygiene and healthcare.

### **2.3. Relevance of medical periodicals**

Together with the scope of medical research and the interests of consumers from the end of the 19th and the beginning of the 20th century the issues of that period stored in the Regional library of Ruse reveal the processes of introduction of unified regulations, rules and acts in Bulgarian healthcare, that would engage everyone in the protection of public health.

The study of health information resources and documentary is a source of knowledge about management practices in the young Bulgarian state. Analysing the collection of medical periodicals in the “Lyuben Karavelov” Regional library of Ruse we can claim that the healthcare is a knowledge-based industry (Alexander, 2021a). The management system of this valuable knowledge, both literally and figuratively, can create a more effective information flow between all participants, which will consequently lead to increased efficiency. And what better place to manage the information flow and resources than public libraries, that keep the memory of the past years and can provide conditions for sharing of knowledge, processes, procedures and latest information. An example of this are two of the publication involved in the dissemination and promotion of regulation and rules in healthcare. „Public Health Directorate Publications“ is a printing office of the Central Health Administration, represented by the General Directorate of Public Health. The monthly bulletin marks the beginning of the official health publications in our country and with certain interruptions and under different names it had been published from 1903 until 1947. The Regional library of Ruse stores the incomplete collection of 1925, 1926 and 1927 issues. The initial name of the publication was “Civil Sanitary Directorate Notices”. Dr Marin Rusev, Deputy director and director of the Civil Sanitary Directorate, edited the journal. He was also one of the authors of the Public Health Protection Act 1903 that for the first time helped establish a clear structure and regulate work of medical institutions in the country protecting access to them and their democratic nature. Dr Marin Rusev was a holder of a doctor’s degree in medicine who graduated in Geneva. He is considered to be a founder of Sanatorium village in the country. During one of his tours in Bulgaria he stated the devastating consequences of tuberculosis, which killed 12 000 people each year, and brought before the Supreme Medical Council the need to build a sanatorium for treating the sick people. Due to his efforts, sanatoriums in Troyan, Varna, Burgas, village of Iskra, etc. were built. He was a remarkable physician, a founder of the Association against tuberculosis and a member of its Board of directors for more than 20 years. Moreover, he contributed to the opening of Faculty of Medicine at the University of Sofia in 1918. From 1904 to 1909 and in 1911 the journal was published under the name “Notices of the Directorate for Public Health Protection”, after that with the name “Notices of the Directorate for Public Health” and from 1911 – “Notices of the General Directorate for People`s Health”. In 1929 and in 1930 both publications were released simultaneously. A leading role in the journal belonged to materials reflecting the activity of the Supreme Medical Council, the most important legal acts published and informative data. Due to the information published, a large part of the activity of the higher health administration: General Directorate for People`s Health, the Supreme Medical Council and some of its branches, was made public to the medical community and the society. Dr Kamelia Bozhilova in her doctoral dissertation “The documentary heritage of the health administration and health professional organizations in the central state archives (1879-1944)” considered “Notices of the Directorate for Public Health” as a public archive that documented and preserved the work and development of the health institution during that period. Each issue contained district regulations, ordinances and other regulatory documents and instructions. It regularly published statistical data of declared highly contagious infectious diseases, movement of the Bulgarian population before, during and after the wars, changes in medical personnel, decisions of the Supreme Medical Council, etc. Of particular interest nowadays is a report of Prof. Dr T. Petrov about tuberculosis vaccination of children with BCG vaccine published in volumes 7 and 8 of 1926 and contraindications for the first and second vaccination by Dr A. Groth of the Bavarian National Vaccination Institute. On the pages of the “Notices of the Directorate for Public Health” we can trace the proposals for exemption of the poor from the payment of health care, the provision of free treatment of certain infectious diseases. The first steps were taken to exempt categories of employees from paid medical care.

“Notices of the Directorate for Public Health” journal was published until 1947 and it reflected the attitude of the management of healthcare system and nowadays it can be seen as a public archive where the development and activity of the Directorate for Public Health and the Supreme Medical Council were documented. “Public health” is a monthly journal about “public health matters and public medicine”. It had been published from 1907 until 1915. The editor of the journal was Dr Dimo Todorov Burilkov, brother of Vladimir Burilkov – a Bulgarian journalist, historian and lawyer of the first half of the 20th century. He studied natural sciences in Odessa and medicine in Lausanne. Dr Burilkov worked as a physician in Sofia and devoted himself to health education and social activities. He was chairman of a Union of healthcare workers (1919 – 1939), chief secretary of the Association against tuberculosis (1932 – 1938), chairman of the Bulgarian Abstinence Federation (1933 – 1941). Dr Burilkov, a physician and also a public figure, was a member of a Radical party and together with purely medical matters and issues he was engaged in initiating unified state policies in the young Bulgarian healthcare system some of which include: organization of maternity care, sanitary policy, public fight against venereal diseases, organization of the health service in villages, etc. “Public health” journal became a stage for public and civic positions of a number of Bulgarian physicians of the beginning of the 20th century. Without strictly defined sections, the leading article was most often by Dr Dimo Burilkov himself. In his works he presented and discussed the proposed normative and legal changes related to public health, such as the issues of decentralization of hospital care, a bill for food products, law for public health protection, draft law on sanitary, regulations for the internal order of the administrative and household service in hospitals and shelters, organization of courses for midwives and many more (Bilyarski, 2021c). Physicians from all over the country published their strictly specialized studies in the journal, shared their experience in treating patients with cancer, jaundice, tuberculosis and other most common during that period diseases in Bulgaria. Dr Burilov being an active supporter of sobriety and a chairman of the Bulgarian Abstinence Federation published a number of his own as well as translated materials about sobriety, a few examples of which include “The effect of tobacco on healthy and damaged organs”, “Problematic drinking and alcoholism”, etc. Another interesting section is “Our opinion on medical disputes” where the editors, without taking the role of judges, present various legal cases. And these go with clarification that “All medical disputes are based more on personal rather than fundamental considerations”. Unlike “Notices” a journal “Public Health” did not reflect the structural changes and management decisions of the health administration, however it gave an idea to the reader about professional requirements and scientific interests of the medical community. Its main advantage was that it published independent critical remarks and opinions on upcoming health bills. Like most specialized medical publications of that period, it served as a stage for professional debates among members of the medical community and let them freely express their thoughts and criticise health bills and laws. The journal contained documents of historic value for the medical community, opinions and criticism against the official sanitary authority and health bills. The word “public” became more widely used even in the names of strictly specialized publications. However, in this case, the objectives set by different journals were to increase one common health culture and to integrate the Bulgarian healthcare system of the beginning of the century in accordance with the European requirements (Bozhilova, 2012). With clear realisation of the responsibility and duty before the society, the editors published a number of articles on the topic. The following is just a short excerpt from the article “Are the business trips of district doctors in the interest of public health?” published in vol. 5 of the first year’s issues of the “Public Health” journal: “The prosperity, the progress and the viability of one nation mostly depend on health of its members. The nation whose healthcare system is neglected or unreasonably organized or whose people entrusted with the task prioritize their own or class interests over the interests of the public health, then such nation does not develop, yet lags behind; its future then becomes

degeneration and depersonalization and not progress and prosperity”. It further states: “This is why culturally developed states strive to provide fast and easily accessible medical care ..., to improve hygiene (public and personal)..., to inform about the essence and the way of spreading of infectious and other diseases...” and all these efforts so that “the urban and rural population could acquire hygiene and healthy habits”.

### 3. CONCLUSION

A brief review of a small number of publications stored in the library, aimed at raising awareness of different groups and communities on health issues, reveals the importance of seeking knowledge in the library archives, a place where it is tested and preserved, even today. Trust in the documents stored there as well as in the trained staff is precious capital that is worth being “utilized”, especially when it comes to health of people. Because health is both public and personal, common and individual responsibility of each of us and the matters of its protection have been and will be our priority in any time and era.

### LITERATURE:

1. Alexander, R. (2021a). 5 Reasons Knowledge Management Is Crucial in the Healthcare Industry, <https://bloomfire.com/blog/3-reasons-knowledge-management-critical-health-care-industry/#:~:text=It%E2%80%99s%20clear%20that%20healthcare%20is%20a%20knowledge-driven%20industry.,can%20ultimately%20lead%20to%20increased%20efficiency%20and%20productivity>, (05, 2021).
2. *Centers for Disease Control and Prevention*, (2021b), <https://www.cdc.gov/healthliteracy/learn/index.html>, (05, 2021).
3. Flaherty, M. G. (2013). *The Public Library as Health Information Resource?: Dissertation*.
4. Bilyarski, Ts. V. (2021c). Dr Vladimir Burilkov – the most prominent journalist and publicist among the Tracian Bulgarians, [http://www.sitebulgarizaedno.com/index.php?option=com\\_content&view=article&id=463:2012-09-18-18-24-58&catid=29:2010-04-24-09-14-13&Itemid=61](http://www.sitebulgarizaedno.com/index.php?option=com_content&view=article&id=463:2012-09-18-18-24-58&catid=29:2010-04-24-09-14-13&Itemid=61), (05, 2021).
5. Bozhilova, K. K. (2012). *The documentary heritage of the health administration and health professional organizations in the central state archives (1879 - 1944): Abstract*. Sofia: St. Kliment Ohridski Sofia University.
6. Rasheva, R. (2021d). *Lovech today.eu*, <https://lovechtoday.eu/prez-1894-g-v-lovech-izliza-parvata-knizhka-n/>, (05, 2021).

