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Polytechnic of Medimurje in Cakovec



# Economic and Social Development

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

## Book of Proceedings

Editors:

Vlatka Ruzic, Branislav Sutic, Dean Uckar



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## **Economic and Social Development**

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## INFLUENCE OF FAMILY UPBRINGING ON FINANCIAL LITERACY OF SECONDARY SCHOOL STUDENTS

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### ABSTRACT

*Successful management of personal finances requires developing financial literacy of young generations from an early age in order to increase their financial literacy and ensure the achievement of financial competencies. Significant efforts have been made through the education system in the last five years to raise the level of financial literacy in Croatia. Responsibility for the financial education of young people is placed mostly on the regular and formal education system, while parental education is to some extent neglected. Parental conversation, setting an example, rewarding or punishing children are just some of the educational factors. This paper investigates the financial literacy of high school students as well as the impact of parental involvement on their financial competencies. The aim of this paper is to examine whether family factors, such as parents' conversations with children, their personal examples and financial behaviour influence the child's financial literacy and which components of financial literacy are affected the most. In the empirical part of the paper, the survey method is used, while statistical methods are used to process the research results, from which we single out Spearman's rank correlation coefficient and two-sample t-test with (approximately) equal variances. This methodology determined the positive influence of parents as educational factors on the financial literacy of high school students in the observed research sample, especially on the component of financial behaviour. We can conclude that it is desirable for parents to discuss financial topics. In addition to the conversation, it is necessary that they show their responsible financial behaviour to the child by their own example. For example, it is desirable to involve the child in financial decisions, show him the bills, not fulfill every whim of the child and reward him financially when he deserves it.*

**Keywords:** *financial literacy, family factors, personal example, responsible behaviour, training*

### 1. INTRODUCTION

The concept of financial literacy is commonly defined by the Organization for Economic Co-operation and Development (OECD, 2011) as a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. Interest in this interdisciplinary topic has grown since the 2008 financial crisis. It was a crisis of debt loans in the United States that spread intensively to the rest of the world, dragging other nations into financial difficulties (Barbić, 2018). After conducting global research on this topic, it was found that the trigger of the financial crisis was also the lack of financial literacy of most citizens (Chlouba et al., 2011). "With their insufficient interest, superficial knowledge of financial products/services or even ignorance, they contributed to the emergence and spread of the crisis" (Tomčić, 2020, 4).

Sources available to us show that the largest number of previous studies on financial literacy relate to the adult population, followed by research among high school students and finally less often to students. In different countries the same or similar sets of questions are applied. They serve as a basis for the overall assessment of financial literacy (Atkinson & Messy, 2012). Previous research in the field of financial literacy shows significant differences between countries, regions (Vehovec et al., 2015; Erceg et al., 2018), genders, (Škreblin Kiriš et al., 2017; Bahovec et al., 2017), ages, levels of education (Bujan et al., 2016) as well as other characteristics. Research conducted among young people reveals an important channel through which young people acquire financial knowledge, and that is their parents. In particular, those whose mothers had higher education or whose families had shares or retirement savings were more financially literate, especially on issues related to advanced financial knowledge such as risk diversification (Lusardi et al., 2010, according to Krmpotić, 2020, 22). The results of the PISA tests from 2012 and 2015 testify to the fact that parents are a key factor in the children's acquisition of financial literacy. The results of the assessment clearly indicate the connection between the financial literacy of high school students and the financial background of their families. It is these facts that lead to the creation of differences among high school students. Therefore, this situation is preventable by introducing new school subjects and financial content in curricula in order to provide students with equal opportunities to acquire financial knowledge when they are not able to get it at home (OECD, 2012, 2015). In the educational process we strive for the activities of both educands and educators because "in modern society they are members of different social groups, different subcultures, and their personal interests are divergent only if education is less family oriented and more publicly organized activity" (Lukaš & Mušanović, 2020, 3). Extensive student research conducted by Chen & Volpe (1998) confirms that the right financial decision will be made by those students who have a higher level of financial knowledge. This hypothesis was confirmed by Peng et al. (2007), pointing out that completed financial courses have a positive effect on students' financial knowledge, but not on high school students. This research found that university students are a better audience for financial literacy education because they are more aware of personal responsibilities for financial management compared to high school students. The most significant Croatian research included citizens aged 18 to 79. The study was structured according to the OECD test methodology and carried a maximum of 21 points. In this research, Croats achieved an average of 11.7 points, with the younger population (under 19) receiving the worst results and achieving only 9.3 points (HANFA, 2016). The obtained results showed the need for the organization and implementation of comprehensive financial education for all citizens, from children to the oldest ones. The Ministry of Finance has drafted the National Strategic Framework for Consumer Financial Literacy for the period from 2015 to 2020 with the aim of achieving financial literacy of the citizens of the Republic of Croatia through formal and non-formal education (OG, 11/2015, 224). Upon the completion of this project, a new study was conducted; it found that the level of financial literacy recorded a slight increase. The average grade of citizens in the new results was 12.3. In order to provide a satisfactory level of financial literacy for the entire population, the global interest in financial literacy is supported as one of the key life skills that today's generations must have (OECD, 2012, 140).

## **2. THE IMPORTANCE OF FAMILY UPBRINGING ON FINANCIAL LITERACY OF SECONDARY SCHOOL STUDENTS**

From birth, every person is open to acquiring knowledge throughout life, from parenting, formal and compulsory education to non-formal and informal education (Ribić & Pleša Puljić, 2018). Therefore, it is necessary to establish how education can encourage successful financial education and thus raise the level of financial literacy. Despite the lack of research on this topic, there is a general perception today that these skills and knowledge can be acquired in everyday



life during childhood and adolescence. Barbić (2018) discusses this topic and states that there are reasons that show the need for the highest quality financial education for children and adolescents:

- Young people easily acquire skills and knowledge compared to the older population,
- Younger children become consumers and thus affect family expenses,
- Children and adolescents are a significant target group for marketing advertising,
- Older high school students should be able to consider the financial aspects of continuing their education,
- Young people are increasingly making financial decisions that may affect their well-being,
- All pupils and students in the future will be consumers who need financial education to help them make good financial decisions,
- If good habits, behaviors and attitudes are acquired in childhood or adolescence, they are less likely to fall into financial difficulties later and are more likely to achieve financial well-being in the future (Barbić, 2018; according to Tomčić, 2020,41).

For these reasons, it has become crucial today to teach children and young people to manage money and property from the earliest days, because in this way their financial difficulties will be reduced. The greatest impact on children and young people in their families are primarily parents, and then educational institutions. Lusardi et al. (2010) agree with this emphasizing that education on basic financial concepts, financial decisions, and responsible money management is primarily acquired within the family. Accordingly, children need to be financially literate from an early age. From this knowledge, conclusions are drawn that a very important task of social institutions is to adjust the way of teaching financial literacy to a particular age. Nowadays, social development significantly depends on the knowledge and competencies of young people, so there is a need for even better connection of educational institutions, business communities and the state (Bilić & Jukić, 2014, according to Pleša Puljić, Viličnik, 2021). "Financial education is more useful and has longer-term effects if conducted continuously at each stage of a child's development than with one course or subject in school" (Fernandes et al., 2014, according to Pavlin-Bernardić, 2015, 3) therefore the role of parents is very important. Each period of a child's development poses a challenge on how to teach the child finances. Thus, young children often have certain misconceptions, such as: "coins are worth more than banknotes because they are heavier, an unlimited amount of money can be taken at an ATM and it does not depend on salary, money is only used to buy specific things in the store and not for, for example, paying bills" (Pavlin-Bernardić, 2015, 3). These misconceptions indicate the need for parental intervention and education in the financial literacy of their own children. The Romo & Vangelisti study (2014) indicates that only 35% of parents of children aged eight to seventeen practice open conversation about money and family finances with children, and 33% of parents do not want to share salary or loan information with children, although that would be very useful for their financial education. Pavlin-Bernardić (2015) points out that high school students learn the most through parental imitation. Therefore, it is obvious that it is not enough just to talk about finances, but it is also necessary for parents to show a responsible attitude towards money by their example. Likewise, financial rules should not be imposed authoritatively, but should be agreed with the child and all family members should be involved in larger financial decisions. It is emphasized that it is very important to encourage financial independence of high school students and develop their responsibility. It is not necessary to fulfil all the child's wishes, because in that way their independence is hindered. These are just some of the guidelines that every parent should follow. As already mentioned, methods of financial education depend on the age of the child. Since this paper explores the financial literacy of secondary school students, we are focused here on the knowledge and skills children should have at that age.

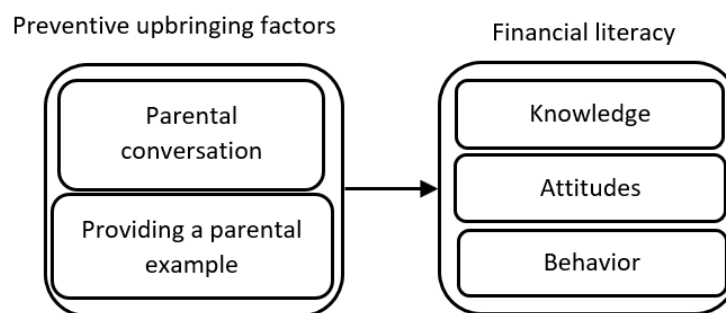
Namely, children aged 14 to 18 should be able to anticipate additional costs in case they need loans in the near future (for example, for studies), which they must enter with a plan and all the necessary information. They should know what taxes are and why we pay them and what is the purpose of insurance and how it works. In enriching the knowledge and skills of secondary school students, it is primarily necessary for parents to carry out certain activities, such as:

- Involve the child in joint family cost planning, for example for buying clothes, paying for holidays, buying cars, furniture, etc.
- If the parents have a loan, it is necessary to explain to the child everything about repayment, instalments, interest rates and the terms of the loan.
- Explain to the child what taxes are on the example of their salary and show what percentage of the salary goes to taxes.
- If the parents have insurance (e.g. for a car), it is necessary to explain its purpose and how much money is allocated for it.
- Together with the child discuss and agree upon a certain amount of his/her pocket money or savings that he/she may spend without parental interference (e.g. on clothes of his/her choice). It is important to know that the amount of pocket money depends on the child's age and parenting abilities. As a rule, the pocket money in preschool should be symbolic, in the younger school age it should cover the cost of snacks with the possibility of leaving a smaller amount that could be saved, while later on the pocket money should be increased so that the child can save something for toys, clothes or something else. In high school, the allowance must be enough to cover snacks, occasional outings with friends, clothes, but also a small amount left for saving. It is harmful to give a child an unreasonably large pocket money and it is helpful to talk to the parents of child's peers to be aware of the amount of pocket money their friends have. In this way, the setting of priorities and responsible attitude towards money is encouraged (Pavlin-Bernardić, 2015).

### **3. RESEARCH METHODOLOGY**

Theoretical review reveals that upbringing and education play a key role in raising the level of financial literacy. In the Republic of Croatia, significant efforts have been made within the education system in the field of financial literacy since 2015, but the field of upbringing has remained marginalized. In the existing research on the topic of upbringing, parents' education level and family income were examined mainly as influencing factors on the level of children's financial literacy (Barbić, 2018; Lusardi et al., 2010; Romo & Vangelisti, 2014). Financial parenting can be preventive and corrective in nature. Corrective actions seek to suppress undesirable behavior (e.g. rewarding the child for cessation of undesirable behavior, supervising the child, interpretation and counselling) while preventive actions seek to encourage desired behaviour, e.g. education, conversation, setting personal examples, because children learn from parental role models (Delale & Pećnik, 2010). Since this paper seeks to encourage financial literacy through family upbringing, the aim of this paper is to examine the relationship between two preventive methods of upbringing - parental conversation with the child and setting personal examples of responsible financial behaviour - on the child's financial literacy. According to the relevant research listed here, the main and auxiliary hypotheses have been formed:

- H 1: Elements of family upbringing (conversation and setting personal examples) contribute to the financial literacy of secondary school students.
- AH 1.1.: Conversation as an element of financial upbringing has a positive relationship with the financial literacy of secondary school students.
- AH 1.2.: Setting a personal example to a child as an educational factor has a positive relationship with the financial literacy of secondary school students.



*Figure 1: A research model of the relationship between preventive factors and financial literacy*  
(Source: Authors)

Virovitica high school students, soon-to-be independent individuals, were selected for a suitable sample. In addition, in earlier life they were all influenced by parenting factors that were planned for analysis. The basic set in this research is limited to high school students of the fourth - final grades in three high schools located in the city of Virovitica, namely: Vocational School, Petar Preradović Gymnasium and Technical School. According to the data of the Administrative Department for Education and Demography of Virovitica-Podravina County, in 2021, 297 students attend the 4th grade of secondary school in the area of the City of Virovitica. The research was conducted on a convenient sample of 122 students, which makes the sample size of 41.07% with a confidence level of 95% and with the possibility of error of 6.82%. Primary data were collected by a questionnaire consisting of 5 sets of questions. The first set deals with socio-demographic issues. The second, third and fourth sets of questions are adapted according to the internationally comparable OECD methodology for measuring financial literacy, which is publicly available (OECD INFE, 2011). The second set of questions examined the knowledge component of financial literacy. The third set of questions relates to the component of attitudes, beliefs and behaviors of respondents. The fourth set of questions includes the awareness component of financial literacy. The fifth set of questions was created by the author and related to the elements of financial upbringing (conversation and example setting). The five-point Likert scale was used throughout the questionnaire. The survey was conducted during the month of May 2021. The distribution of the questionnaires to students was carried out by their high school teachers, who were also present during the survey taking. Univariate and bivariate statistics were used for data processing, and Spearman's rank correlation coefficient and t test for two samples with (approximately) equal variances were used to prove the hypotheses. All data are processed in the Excel software package.

#### 4. RESEARCH RESULTS AND DISCUSSION

The results of the research are presented in tables, graphs and descriptive form. The first part of the presentation of results shows socio-demographic data, financial literacy of respondents as well as the difference between respondents who acquire knowledge at home or at school. The second and third part of the paper analyse and present the elements of upbringing – the second one covers conversation, while the third part presents data on personal example setting for children. In the fourth part of the research results, the correlation of dependent and independent variables is presented and the connection of individual factors of financial upbringing to all subcomponents of financial literacy is examined.

##### 4.1. Socio-demographic data and financial literacy of respondents

122 respondents participated in the research, of which the largest part of 35.25% (N = 43) refers to high school students of the Technical School Virovitica, then 32.79% (N = 40) students of

the Vocational School Virovitica, and a slightly smaller number, 31.97% (N = 39) refers to students of Virovitica Gymnasium. The sample by gender turned out to be mostly male - 59.84% (N = 73). Only 40.16% (N = 49) of participants in the survey were female. It is evident that males predominate in the sample and that out of the total number of respondents (N = 122), 79.51% (N = 97) of them are 18 years old. The majority of respondents (58.20%) have so far had some form of work experience for which they received monetary compensation. These sample characteristics are shown in *Table 1*.

<i>Sample characteristics, N = 122</i>	<i>%</i>
<b>School</b>	
Vocational School Virovitica	32,79
Virovitica Gymnasium	31,97
Technical School Virovitica	35,25
<b>Gender</b>	
Female	40,16
Male	59,84
<b>Age</b>	
18	79,51
19	19,67
20	0,82
<b>Work experience</b>	
Yes	58,20
No	41,80

**Legend:** *N* – number of respondents, % - percentage of respondents

*Table 1: Socio-demographic data of respondents*  
(Source: Authors)

The first part of the questionnaire checked the knowledge of financial literacy, examined the attitudes and financial behaviour of the respondents. In the category of financial knowledge it was possible to achieve a maximum of 8 points, in the category of attitudes 5 points, and in the category of financial behaviour 9 points. The achieved results are shown in *Table 2*.

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>P<sub>min</sub></i>	<i>P<sub>max</sub></i>
Financial knowledge	122	6,20	1,55	0	8
Attitudes and beliefs	122	3,21	0,56	2	4.8
Financial behavior	122	6,32	1,14	3,4	9
Total number of financial literacy points	122	15,73	2,25	8,6	21,6

**Legend:** *N* – number of respondents, *M* – arithmetic mean; *SD* – standard deviation; *P<sub>min</sub>* – achieve a minimum; *P<sub>max</sub>* – achieve the maximum

*Table 2: Knowledge of financial literacy*  
(Source: Authors)

Respondents achieved passing grades in all three categories, i.e., the achieved results were higher than the arithmetic mean of the maximum number of points that could be achieved. Thus, in the category of knowledge, the average number of points was 6.20, in the category of attitudes 3.21, financial behaviour 6.32, while the total level of financial literacy averaged 15.73 out of a possible 22 points. It can be established that the best results were achieved in the category of knowledge, while the worst results were achieved in the category of attitudes, which somewhat coincides with the previous research conducted in the Republic of Croatia (HANFA,

2016). With the obtained indicators, it is possible to conclude that the implementation of various financial literacy projects within schools has resulted in a satisfactory number of knowledge points, which indicates the effectiveness of such projects. The education system in the Republic of Croatia has taken over the responsibility for acquiring the financial knowledge of secondary school students. The rest of the research will analyze how much and whether parents have taken on this type of responsibility and how they can influence the improvement of their children's attitudes and financial behaviour.

#### 4.2. Conversation as an element of financial upbringing

Respondents were able to express their agreement with the statement using Likert's five-point scale, where 1 meant completely disagree, 2-disagree, 3-neither agree nor disagree, 4-agree while 5 meant I totally agree. In *Table 3*, it can be noticed that parents most often discuss the cost of living with their children, advise their children in various ways to manage their finances, while families talk the least about acquiring sources of income, i.e. salaries.

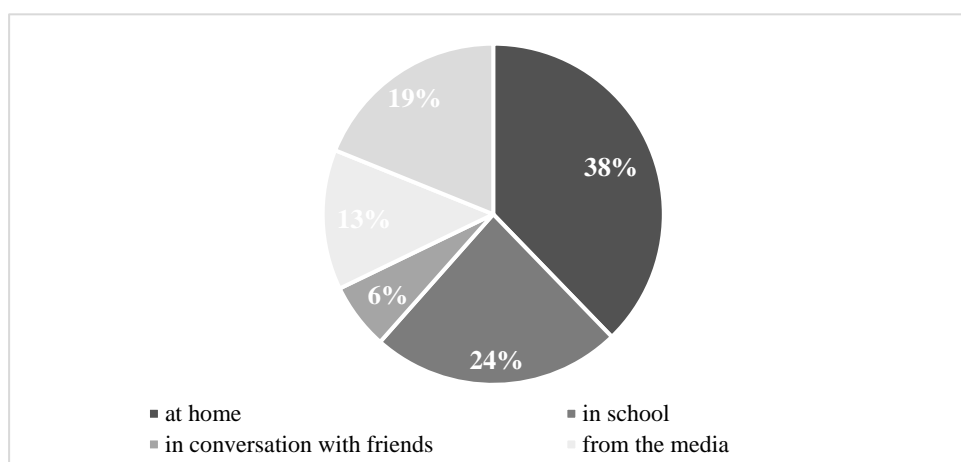
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>P<sub>min</sub></i>	<i>P<sub>max</sub></i>
I talk to my parents / guardians about their salaries.	121	3,07	1,039	1	5
Parents / guardians advise me on how to properly manage personal finances.	120	3,29	1,111	1	5
My parents / guardians introduce me to the cost of living in the family through conversation.	121	3,42	1,031	1	5

**Legend:** *N* – number of respondents, *M* – arithmetic mean; *SD* – standard deviation; *P<sub>min</sub>* – achieve a minimum; *P<sub>max</sub>* – achieve the maximum

*Table 3: Conversation as an element of financial upbringing  
(Source: Autors)*

Since it was necessary to compare these data with the achieved points in financial literacy, Likert's measurement scale was converted into points from 0.2 to 1, where number 5 on the scale carried 1 point, number 4 - 0.8 points, number 3 - 0.6 points, number 2 - 0.4 points and number 1 - 0.2 points). In this way, a correlation was made between the total points from the interview category (max. 3 points) and the total points of financial literacy (max. 22 points). Spearman's rank correlation coefficient tested *AH 1.1. Conversation as an element of family upbringing has a positive relationship with the financial literacy of high school students*, i.e., the relationship between the two variables was examined and it was found that  $\rho = 0.99$ , which confirms a very high correlation. This confirmed that conversation as an educational factor has a positive effect on the financial literacy of high school students. Confirmation that respondents actually talk to their parents about financial topics is evident from *Figure 2*, which shows the way secondary school students acquire knowledge about financial topics the most. The graph illustrates how respondents state in 38% of cases that they acquire the most knowledge on finance topics at home, 24% of respondents believe that they have acquired the necessary knowledge of financial management in school and 19% state that it is from their own experience. To a much lesser extent, 13% of financial knowledge is acquired from the media, while only 6% of respondents say that it is from friends or peers. The school is recognized by profession as a factor that has the task of directly influencing the financial literacy of children. This research, however, has put the family in the first place as a fundamental factor.

Family upbringing should not be neglected since financial parenting creates an excellent educational channel for providing financial knowledge presuming, of course, that the parents themselves are financially literate.



*Figure 2: Sources of acquiring knowledge about money management and personal finance (Source: Autors)*

In order to determine whether there is a difference in financial literacy of respondents between those who stated that they acquired the most financial knowledge at home compared to those respondents who acquired their knowledge exclusively at school, t test for two samples with (approximately) equal variances was used.

Variable	<i>M</i>	<i>SD</i>	<i>N</i>	<i>t</i>
Source of information - parental upbringing	15,54	0,337	41	0.251
Source of information - school	15,89	0,415	34	

**Legend:** *M* – arithmetic mean; *SD* – standard deviation; *N* – number of respondents, *t* – t-test -  $p \geq 0,05$

*Table 4: Results of t-test for comparison of financial literacy of respondents according to the source of acquisition of financial knowledge (family education / school) (Source: Autors)*

According to the analysis, it can be concluded that there is no statistically significant difference in financial literacy between the two observed variables. That is, respondents scored an equal number of points in financial literacy regardless of whether they acquired knowledge mainly at home or at school. This confirms once again that family education must not be marginalized in financial literacy projects for young people because it has the same importance as learning about financial literacy in schools.

#### 4.3. Setting personal examples as an element of upbringing

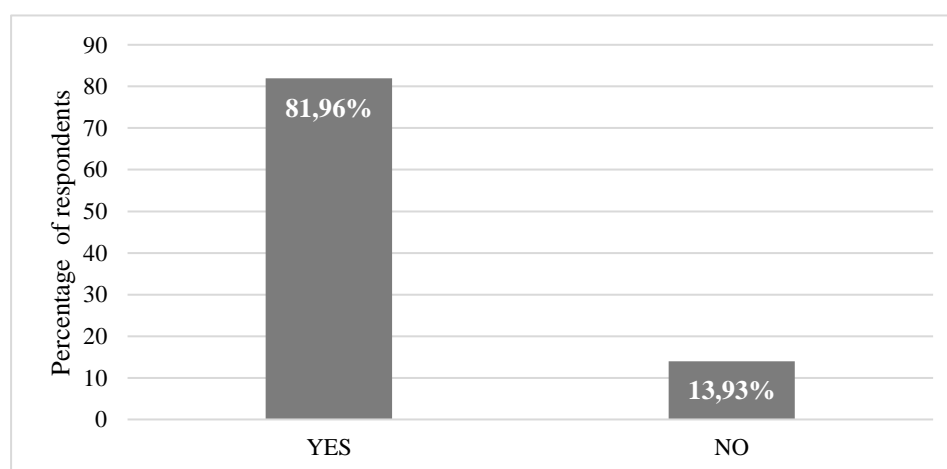
In the next set of questions, respondents were able to score 6 points depending on whether it is desirable or undesirable to set an example to the child. Using the Likert scale, they evaluated the frequency of each pattern of parental behavior in the range of 1 to 5 (1 almost never, 2 - rarely, 3 - sometimes, 4 - often, 5 - almost always) which can be seen in *Table 5*.

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>P<sub>min</sub></i>	<i>P<sub>max</sub></i>
My parents / guardians buy me whatever I want	121	2,83	1,019	1	5
My parents / guardians make a grocery list before buying	121	3,55	1,310	1	5
I do the shopping for my parents / guardians	120	2,64	0,896	1	5
My parents / guardians give me the freedom to do what I want with my pocket money	121	4,20	0,954	1	5
My parents / guardians are saving	120	3,63	0,971	1	5
My parents / guardians know how to reward me financially when I do some more demanding housework	121	2,40	1,069	1	5

**Legend:** *N* – number of respondents, *M* – arithmetic mean; *SD* – standard deviation; *P<sub>min</sub>* – achieve a minimum; *P<sub>max</sub>* – achieve the maximum

*Table 5: Setting a personal example to a child as an educational factor*  
(Source: Autors)

The table shows that parents often give children the freedom to spend money, which indicates their positive behavior, because at that age it is desirable for children to acquire knowledge and skills of spending and managing their money, even when it involves learning from their mistakes. Even though financially rewarding a child is considered a desirable way of financial upbringing, it is, unfortunately, rarely present as a parenting method in this age group. Giving in to the children's shopping whims happens rarely or only occasionally, which indicates that parents want to teach children to distinguish between more and less needed products. Rarely or only occasionally do children make purchases for their parents, which indicates that children are not fully involved in managing the family budget. Respondents think that their parents sometimes or often make a grocery list before buying and feel that they are sometimes or often frugal. The next question made it possible to achieve a maximum of 1 point since the affirmative answer was considered a desirable pattern of parental behavior. To the question "Have your parents ever shown you a bill for electricity, water or other household utilities", 81.96% of respondents answered in the affirmative, while 13.93% of respondents answered in the negative, which can be seen in *Figure 3*.



*Figure 3: "Did your parents show you a bill for electricity, water or some other household utilities?"*  
(Source: Autors)

Likert's measurement scale was transformed into a scoring system to correlate the educational process - providing their own examples of behavior (6 points and 1 point on the question of home utilities, which is max.7 points) with the achieved points of overall financial literacy (max.22 points), where the statement "Parents / guardians buy me whatever I want" is considered undesirable behavior and is scored from 0.2 to 1 (with 5 - 0.2 points, 4 - 0.4 points, 3 - 0.6 points, 2 - 0.8 points and 1 - 1 point). Other statements indicate desirable behavior and are accordingly scored (5 - 1 point, 4 - 0.8 points, 3 - 0.6 points, 2 - 0.4 points and 1 - 0.2 points). Auxiliary hypothesis *AH 1.2., Setting a personal example to a child as an educational factor has a positive relationship with the financial literacy of secondary school students*, was tested with Spearman's rank correlation coefficient which determined that  $\rho$  - is 1.00, which indicates a high correlation between the two variables and the hypothesis is fully accepted.

#### 4.4. Correlation of preventive upbringing to subcomponents of financial literacy (knowledge, attitudes, behaviour)

The results presented above have already established that the elements of family upbringing (conversation and setting personal examples of behaviour to the child) affect overall financial literacy, but it is necessary to specify the exact components: knowledge, attitudes and behaviour of financial literacy have the most significant influences. This was tested by the Spearman rank correlation coefficient shown in *Table 6*.

	<i>Financial knowledge (r)</i>	<i>Attitudes (r)</i>	<i>Financial behavior (r)</i>	<i>Financial literacy - total (r)</i>
Parental upbringing factor-conversation	0,970	0,988	0,991	0,992
Parental upbringing factor-providing your own example	0,972	0,993	0,994	0,996
Upbringing-total	0,974	0,992	0,995	<b>0,997</b>
<b>Legend:</b> <i>r</i> - Spearman rank correlation coefficient				

*Table 6: Correlation analysis results  
(Source: Authors)*

It can be concluded from the obtained results that family conversation has less connection with specific financial knowledge ( $\rho$  - 0.970), which was expected given that it is unlikely that parents in the family practice financial literacy with their children on concrete examples. A more significant connection is noticed between the conversation and children's financial behaviour ( $\rho$  - 0.991), which means that parental conversation with the child and giving advice on financial topics affect child's financial behavior and attitudes. If we compare the elements of parental involvement, it can be concluded that setting a personal example in the family has a high connection in all subcomponents of financial literacy compared to the educational factor-conversation. The example has a particularly high correlation to the financial behavior component ( $\rho$  - 0.994), which confirms the fact that children behave the way their parents do, and that includes the area of financial literacy as well. The above once again confirms the fact that high school students learn the most from the model of parental imitation, i.e., if a parent gives them a positive example of responsible financial behaviour, it is very likely that they will



behave the same way, which is equivalent to research (Pavlin-Bernardić, 2015). The researched preventive elements of financial upbringing show a positive association with financial literacy, which allows us to accept the main hypothesis which states that *H1: Elements of family upbringing (conversation and setting personal examples) contribute to the financial literacy of secondary school students*. Factors indicate the highest connection with children's financial behavior, followed by their attitudes, while the connection is the least related to specific financial knowledge. If we assume that specific financial knowledge (mathematical and financial tasks) is acquired in schools, and financial behaviour and attitudes are acquired through family upbringing, it can be concluded that the latter form can significantly affect the growth of financial literacy. In this conclusion, it is very important to emphasize the fact that it is necessary that parents are also financially literate in order to be able to transfer these skills to their children. For this reason, various financial literacy projects must involve older age groups as much as possible, not just young people, as they are key actors in the transfer of knowledge to their offspring. Otherwise, despite all the efforts of the education system in teaching financial literacy, parents will set the wrong or bad parenting example and thus impede or hinder the development of their children's financial literacy or even introduce them to financial difficulties they will not be able to deal with in the future. The limitation of this research refers to the sample that is limited to the area of the City of Virovitica. Therefore, it is desirable for the future research to include a larger number of respondents who will be a representative sample for analysis at the national level. The second limitation refers to the limited number of examined preventive elements, which leaves room for future researchers to include a larger number of factors in the future. We also recommend that it would be desirable to compare the results of this and similar researches with the results of the Member States of the European Union. Also, within the field of financial literacy, it would be useful to make a meta-analysis that would include all relevant elements of financial parenting and thus facilitate the process of creating a conceptual model for future researchers.

## 5. CONCLUSION

Significant efforts have been made through the education system over the past five years to raise the level of financial literacy. The responsibility for the financial literacy of young people is placed mostly on the regular and formal education system, while family or parental upbringing is to some extent neglected. This empirical research determined the level of financial literacy of high school students and examined preventive elements of upbringing that have a positive effect on financial literacy. Talking, educating, setting an example, rewarding or punishing children are just some of them. The paper analyses two selected preventive elements of family upbringing (conversation and setting personal examples) that have been identified in previous research as having a significant impact. Based on the results of the research, it can be concluded that it is desirable for parents to discuss financial topics such as family expenses, salaries, loans, insurance and the likes with their children. In addition to the conversation, it is necessary that they show their responsible financial behavior to the child by setting personal examples. It is desirable, for example, to involve the child in the process of financial decisions making, to show them the utility bills, not to indulge their every whim, to reward them financially when they deserve it and to apply other patterns of desirable behavior. T-test found that there is no statistically significant difference in financial literacy among respondents who acquire their knowledge through financial education at home or school, and Spearman's correlation coefficient found that both educational factors have a high correlation with financial behaviour, which is a subcomponent of overall financial literacy which testifies to the fact that children learn according to the model they see in their family. It is noticeable that both educational factors have the least connection with specific financial knowledge. Therefore, it can be concluded that members of the middle-aged population, i.e., parents must be intensively

involved in financial literacy projects, and not only emphasize the importance of financial literacy of young people and shifting responsibility to the school system. Each parent should take responsibility for improving personal financial literacy with the ultimate goal being raising financially literate offspring.

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## IN THE QUEST OF SUSTAINABILITY PRINCIPLE “REUSE”: AWARENESS OF ADULT POPULATION

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### ABSTRACT

*The objective of the paper is to investigate the awareness of the Northern Croatia population on the possibilities to reuse certain items (furniture, cars, clothing, everyday items etc.) before disposing them, and which of these possibilities they are using in their everyday practices. The questionnaire was constructed based on literature review with practical examples from different countries. The primary data from 102 respondents were collected online during two-week-period in September 2021 and analysed by descriptive statistics methods. The results indicate high awareness of the people and widespread everyday reusing practices in the sample. The majority of the respondents are aware of the possibilities and motivated by ecology and their inner altruism motivation, but the behaviour is also lead by cost effectiveness. The previous studies have been conducted in other, more developed economies, whereas research in Croatia was mostly focused on recycling, whilst reuse was only tackled by national level agencies by describing a few examples of good practices. The consumers' role in general reusing behaviour still hasn't been researched*

**Keywords:** 3R Principles, Awareness, Circular economy, Reuse, Second-hand, Sustainability

### 1. INTRODUCTION

The world spins ever faster and economies produce ever more, which causes the consumers to spend more money and buy more products and services than ever before. This process, today known as consumerism, is seen as economically beneficial, because companies earn more, people earn more and the standards of living increase. But this process cannot go on forever. We only have one Earth and it has limited resources in comparison with what the people would like to use. Sustainability of the environment is bitten by recklessness of many, but recently the other side also raises critical voices. As Stahel (2016) states, people still function contrary to the nature – in the linear way – “make, use, dispose”. The consumerism approach supports this way and there is a widespread belief that the economy moves forward only by immanent growth driven by infinite desires of consumers (Rojek, 2004). But there are some critical voices who point out the social role of entrepreneurship (Zahra & Wright, 2016). These imply that the entrepreneurship can benefit from lessening of their environmental impact (wasteful resource usage), thus also resulting in personal and societal benefits, beside the pure creation of the economic value. This concept is known as 3P – profit, people, planet, also sometimes referred to as the triple bottom line (Klarin, 2018). Including the wellbeing of the buyers and overall population together with the environmental needs in economic equation also spurs emerging of new business opportunities (Korhonen et al., 2018). As Zahra and Wright (2016) develop it further, the businesses have to “move from ‘do no harm’ to ‘do good’”. One of the ways to mitigate the impact of consumerism on resources and waste creation is to apply the concept of the circular economy (CE) in practice by adhering to its principles (3R – Reuse, Reduce, Recycle). Since CE and its 3R principles represent a multidimensional phenomenon, in this paper the focus of research is on the “Reuse” principle by the consumers. Being part of the European union (EU) Croatia has agreed to comply with its directives, and in the field of Waste management the directive in the article 29 mentions waste prevention measures that can be applied in the stage of consumption (Directive 2008/98/EC of the European Parliament and of

the Council of 19 November 2008 on Waste and Repealing Certain Directives, 2008). Additionally, in the annex IV of the mentioned directive, the EU encourages reuse and repair of items that were intended for disposal, or extraction of their still usable parts. To make it easier, they support setting up repair and reuse-centres, as well as the networks and communities that connect people with these centres, particularly in regions with many inhabitants. In Croatia 4 northern Counties (Varazdin county, Medimurje county, Koprivnica-Krizevci county and Krapina-Zagorje county) are small in terms of area, but are densely inhabited and they contribute significantly to industrial production and total exports. As an economically strong region we used the population in these counties as the piloting sample because people in more developed regions tend to be more ecologically aware (see in Iizuka, 2016; McSweeney, 2015; Rahman, 2020). In the first part of the paper literature review of latest research in the field of sustainability is presented, it shows the concept of the circular economy (CE), values it represents (3R – Reuse, Reduce, Recycle) and the awareness of the consumers about their role in the circular economy "game". This also shows the results of the research on consumer reuse practices in other countries (e.g. Germany, UK, USA, Italy, Spain etc.). The practices of reusing are also promoted by the steep rise of sharing economy in recent decades due to the development of ICT and the emergence of the different online platforms. Next part of the paper presents the results of the study of the attitudes towards using of second-hand goods among the adult population in northern Croatia. The research deals with the awareness of the possible practices of reusing the consumer goods, and if the respondents are motivated and engaged in reusing practices. This is of vital importance because it can help Croatia achieving the waste management objectives (Spasić, 2021; WB, 2021) set by the EU. At the moment Croatia is still struggling in reaching the objectives and Northern Croatia is one of the economically advanced regions and can become a leader and an example for the other regions in this process.

## 2. LITERATURE REVIEW

Sustainable development, as we understand it today, was first described in the Brundtland Report as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). If we take care of the way we use resources to be able to leave enough for the needs of people that will come after us, we should be focused on the three pillars: economic, societal and environmental pillar (triple bottom line). These three dimensions are in continuous and complex relationship where one affects another, providing mutually positive feedbacks (Geissdoerfer et al., 2017; Purvis et al., 2019). Economic performance regards satisfactory income that can ensure standard of living, societal dimension takes care of human rights and inclusivity of the system, whilst in environmental part satisfying our needs should take into account preserving the earthly resources from degradation to enable future generations to use them as well. Keeping the balance between the three dimensions proves not to be easy and the concept is today included in the policies of most of the world countries (Klarin, 2018). Although the definitions clearly rely on the actions of the producers (e.g. companies), we cannot forget the market pull factor and the role of consumers (Shen et al., 2013). Therefore, the focus of our investigation is directed towards consumers. Sustainability can be promoted by the circular economy (CE). CE is a concept in which instead of linear flow, outputs from one part of the economic process are kept in this part longer (reused, repaired, refurbished) and are eventually recycled as the input for the next step of the process. This reduces the waste for the landfill disposal and the need for resources. (Geisendorf & Pietrulla, 2018; Korhonen et al., 2018; Stahel, 2016) Raising awareness of the consumers about the consequences of their actions can be an important factor for speeding up the introduction of the CE principles, and especially increased reusing and recycling in their everyday operating practices (Abe et al., 2014).

As Thungren and Zargari Zenouz (2017) noted, recycling and reusing behaviour in practice depend on reasoning of particular people. It relies on their individual characteristics, attitudes, experiences and behaviours and thus has to be studied within multiple disciplines, such as economics, sociology, psychology and marketing. CE as a driver for achieving sustainability is in focus of European policies as well (European Commission, 2020, 2022), and Croatia which is the part of EU since 2013 has to comply to the directives and objectives set by EU. The directive on waste and repealing certain Directives in the article 29. deals with Waste prevention programs, where the Annex IV calls for reusing and/or repairing of certain products that are to be disposed by educating people, organizing logistic support for this process or forming repair or reuse-centres to ease peoples reusing and repairing practices. The planned research will look into the awareness of Croatian people about the possible reusing practices and sticking to these practices in their everyday lives.

### **2.1. Circular economy**

When looking into practical manifestations of the "Reuse" principle, there is an ample evidence from different studies done worldwide and some of them are here presented in four strands: clothes, electrical and electronic equipment, packaging and advertising of reuse principle. A study of American student population indicates that consumers, even though they know about the vintage (second-hand, reused) clothes, they are not very familiarized with all the types of sustainable fashion. Young people usually take the price as more important factor when considering buying clothes than its sustainability, in spite of expressing willingness to buy ethically (Shen et al., 2013). Newer study (Granskog et al., 2020) on German and UK consumers shows that COVID-19 crisis induced raising interest in purchasing second-hand fashion, particularly among younger consumers (about half of them expect to buy more second-hand clothes than before crisis). The same research showed that about 57% of the respondents are now more prone to repair their clothes to be able to wear them longer. Our research will look into clothing buying and reusing patterns of Croatian consumers.

### **2.2. Reuse principle in practice**

A Spanish case showed that only a very small number of consumers are willing to repair small household EEE - electrical and electronic equipment (9.6%) while only 0.75% of them are willing to buy these as a second-hand goods (Pérez-Belis et al., 2017). Ireland's Environment Protection Agency ran a pilot project to develop a functional preparation of the waste collection system to reuse waste consumer laptops, tablets and smartphones (WEEE). It was done through 10 collection events where they provided free data destruction service, and they managed to collect about 280 kg of WEEE, with 21% reuse rate, whilst the rest was directed into recycling (Coughlan & Fitzpatrick, 2020). The questionnaire also comprises the questions considering repairing and reusing of electronic equipment. Coelho et al. (2020) performed an extensive literature review of the reusable packaging and identified current international developments. In B2B markets reusable packaging systems are more often used than in B2C, but some B2C segments (e.g. drinks) have long and successful history of reusable containers. They also offered a classification for reusable packaging systems and gave an overview of the future potential developments. Another study of UK consumers on possibilities for reusable packaging (refill, repurpose and return) Their findings suggest that, even though consumers want to reuse packaging, and they are motivated for that (85%), this willingness is rarely turned into practice (only in cca 20% of cases). (Greenwood et al., 2021) The most influential factors for actually reusing packaging were material (glass over plastics), type of packaging (jars, bottles and cardboard boxes), and the closure mechanism (lids and dispensers). So they wanted to use the packaging that was resistant to change, durable and easy to clean. In Italy Rizzi et al. (2020) made an in-situ experiment on how to increase motivation of customers for reused, e.g. second-

hand goods, in a local main shop of the social cooperative. They found out that emotional and combined advertising engages customers more than the functional advertisements. The survey included investigation of the packaging reuse practices and motivations of the respondents to do so. When considering the different trends in reuse practices that were recognized from the literature review and the obligations of Croatia to reduce waste disposal in years to come, this research raises the following research questions: 1) What is the level of awareness of Northern Croatia population on the possibilities to reuse certain items (furniture, cars, clothing, everyday items etc.) before disposing them? 2) Which of these possibilities are the part of their everyday routines?

### **3. RESEARCH METHODOLOGY**

The research objectives of this paper are twofold: a) to identify whether the adult population in northern Croatia region is aware of possibilities of reusing of the consumer goods, and b) are they motivated and engaged in reusing practices in their everyday life. This region was chosen because it is economically developed, with higher contribution of the manufacturing industry to the GDP compared to the rest of the country. 4 northern Counties (Varazdin county, Medimurje county, Koprivnica-Krizevci county and Krapina-Zagorje county) make only 12.4% of total Croatian population, while contributing to the manufacturing industry by 24.2% and to total exports by 17.2% (CBS, 2021a). This shows their economic strength and indicates that the inhabitants could be fertile soil for growing awareness of the researched Reuse principle since people in more developed regions tend to be more ecologically aware due to their education, social status and some other determinants (Iizuka, 2016; Rahman, 2020).

#### **3.1. The questionnaire**

The questionnaire has been developed based on the literature review and similar research done in other settings mentioned in the literature review. The survey was carried out through online google forms tool which is acceptable due to targeted adult population and the rapid increase of remote working during the COVID lockdowns and falling of reluctance of the people to engage online (Koeze & Popper, 2020). Based on Eurostat's data, in Croatia daily internet users rose from 58% to 78% share of population from 2017 until 2020, in the year 2020 the following 20%) (making altogether cca 99% respondents) use internet at least once a week and 85% of all households has internet access in 2020 (Statista, 2021a, 2021c, 2021b). This is why it is expected that the internet survey was a plausible tool to examine the research question. The questionnaire was shared through personal email contacts who were asked to send it further (snowball sampling) and was also shared and re-shared online on social networks (Facebook, LinkedIn and Forum.hr) in groups/topics for students and researchers who are collecting research participants. The adult population of the mentioned four counties which we took as a basis for our pilot analysis totals about 304 thousand inhabitants aged 20-65 (CBS, 2021b) that are most likely to respond to our survey. It consists of 5 sections intended to collect data for a more elaborate analysis. The first section comprises general participant data. The second one is about their attitudes about altruism and ecological awareness which is seen as a prerequisite for a person to be willing to engage in sustainable and responsible activities. Three remaining sections were dedicated to 3R principles Reuse, Reduce and Recycle. Topics Reduce and Recycle will be further analysed in the next papers.

#### **3.2. The sample descriptive statistics**

Women make 81% and men 19% of the sample. Mode age is in range 36-45 years (40% of the sample) with slight inclination towards younger side where 75% of the respondents are between 18 and 45. The data collection procedure was done in an online questionnaire form, and all the respondents were also surveyed according to the categories of age groups, employment status

and income height. The distribution over the encompassed 4 counties is on the Varazdin county side which makes about 71% of the sample, Medimurje and Koprivnica-Krizevci counties make 11% and 13% respectively, while Krapina-Zagorje county here makes only about 5%. This is not in line with the geographical dispersion of the population (CBS, 2021a), therefore we cannot straightforward generalize the results to the whole population. However, it offers useful insights into the topic and can serve as basis for fine tuning the proceeding research activities. The majority of respondents are employed (84%) and 4% of them are self-employed, the others are still studying, are unemployed or retired, therefore not earning. 48% are paid above average Croatian salary, 13% receive average, and 30% less than average, the rest don't earn income (because most of them are still studying) or they didn't want to answer.

#### 4. RESULTS AND DISCUSSION

The aim of this paper was to examine people's attitudes towards the motivation of using the second-hand items or willingness to repair items instead throwing them away in relation to the above characteristics of groups of respondents. We can see that the respondents find all the said characteristics (to help others, to serve the mankind, share that you have and give to others) as applicable to their behaviour in the percentage of 60-75% who agree to some extent or totally agree. The most pronounced are to help others and to be unselfish. At the beginning we have checked what are the motives of our respondents to practice reuse, reduce and recycle concepts. It depends a lot on their altruism characteristics. They were asked to agree with a set of claims (from 1 Totally disagree to 5 Totally agree). The results are presented in the following Figure 1.

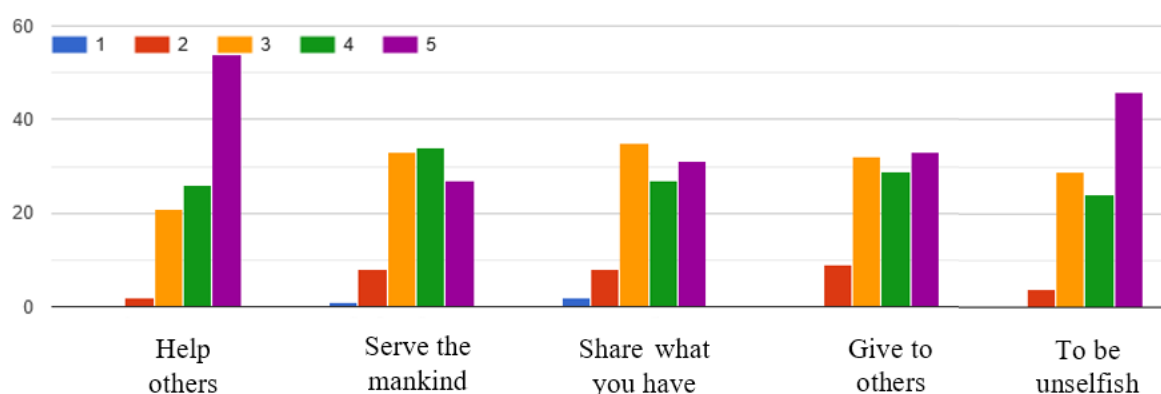


Figure 1: Altruism characteristics of respondents  
(Source: Author's research)

In part of ecological awareness, the biggest concern is for losing planet's resources (about 80% mostly agree or completely agree) and they are the least likely to change purchasing habits and accept inconvenience to take more environmentally friendly actions (cca 50%). This is in line with study of UK consumers considering packaging reuse.

##### 4.1. Items that are most commonly reused and repaired and reasoning for that

In reusing behaviour, the respondents mostly reuse different kinds of packaging (75-90%), such as glass jars, plastic containers with lids, paper bags, plastic bags and cardboard boxes. After the clothes are worn out almost 90% of respondents repurposes, or donates, or sells them, they try not to throw it away. Clothing, footwear and dishes are reused on lesser extent (about 45-60%) mainly for the hygienic reasons and people are more prone to use them when their acquaintances or relatives dispose these items and not buying them in second-hand market.



Items in categories furniture, cars and consumer electronics are more often bought through online classifieds, cars leading the list with above 40%. Items in categories clothes, footwear, electronics, furniture and cars are considered to be repaired before the disposal in 80-95% of cases, and when it comes to dishes or packaging, only about 30% our respondents repair them. They are more likely to dispose of them in the waste containers. These behaviours are motivated by both: cost effectiveness and ecological awareness. When asked for other possible reasoning for such a behaviour, the respondents cite the following: I am generally taking care of things; I rarely buy and tend to use things for a long time; I don't like to pile up things; I love our planet and I love a simple life. The interesting quotation is the one that says that the respondent adopted such an attitude it from grandma, grandparents and parents, who never threw the items away before they were maximally utilized. That's why they were often ridiculed, but today they are hard to throw anything without first trying to find a new purpose for an item. Besides, that's why they learned numerous skills. One of them says that they always think of future generations and their influence and how to reduce their impact on the Earth. One of the respondents also likes the antiques and likes to be creative to take advantage of things that are often waste for others. The other is very involved in sustainable waste management and their wish is to motivate more people about the Zero Waste concept. There is another one that only uses what is hygienic, and they can save that way. Some other reasons name practical reduction in resource consumption and use the existing goods, they do not have to buy the new ones.

#### **4.2. Differences in reuse and repair behaviour**

Considering the Reuse behaviours, the responses were classified on a scale of 1 to 3 with meaning: 1 - I do not use second-hand items; 2 – I use some used items but only from people I am familiar with, and 3 - I use used items. These answers for multiple items were summed to a reusing score. The empirical range for the use of second-hand items was in the range of 11 and 31, while the repairing was 13 to 33. The differences of different groups of respondents in relation to attitudes towards second-hand items usage were examined by applying the analysis of the variance, while the motivation was assessed by Pearson's correlation coefficient (Chi-square test). All measures had Skewness values within the eligibility limits for normal distribution ( $\pm 1$ ), indicating an almost symmetrical dispersion of the examined dimensions. Kurtosis indicators suggest that the distribution of scores on scales do not deviate significantly from normal. The application of the variance analysis determined that there are no significant differences in the attitudes towards using of second-hand items between the different age groups of respondents ( $F = 1.87$ ;  $P = 0.105$ ), while the attitude towards repairing of the used items confirmed the difference according to the age of the respondents ( $F = 111.9$ ;  $p = 0.000$ ) (Tables 1 and 2). By analysing the average values in relation to the empirical range, it is concluded that the respondents above 46 years of age practice the repair of used items the most. Statistically significant differences ( $P = <0.001$ ) in case of repair practices were confirmed between the age of 46-55 compared to 18-25; 26-35; 36-45, between 56-65 compared to 18-25; 26-35; 36-45, as well as between respondents over 65 years of age compared to all the other age groups.

*Table following on the next page*

Attitudes	Age	Mean	Std. Dev.
Using of second-hand items	18-25	16.60	3.09
	26-35	18.53	4.92
	36-45	16.47	4.14
	46-55	15.25	2.46
	56-65	14.85	2.91
	over 65	19.33	10.11
Practice of repairing the used items	18-25	16.50	2.06
	26-35	16.69	2.27
	36-45	16.72	2.27
	46-55	31.25	1.23
	56-65	28.42	6.37
	over 65	31.33	1.52

*Table 1: Descriptive indicators considering the attitudes towards used items  
(Source: Author's research)*

ANOVA		Sum of Squares	df	Mean Square	F	p
Using of second-hand items	Between Groups	167.31	5	33.46	1.87	0.105
	Within Groups	1709.36	96	17.80		
	Total	1876.67	101			
Practice of repairing the used items	Between Groups	3739.28	5	747.86	111.9	0.000
	Within Groups	641.394	96	6.68		
	Total	4380.67	101			

*Table 2: Statistical differences of age groups in relation to attitudes towards used objects  
(Source: Author's research)*

The practice of using of second-hand items is most evident among employed respondents and students, while the practice of repairing items is most common among retired respondents. Analysis of variance did not confirm significant differences between these groups of respondents in relation to both attitudes ( $F = 0.854$ ,  $p = 0.494$ ;  $F = 2.420$ ,  $p = 0.054$ ) (Tables 3 and 4).

Attitudes	Status	Mean	Std. Dev.
Using of second-hand items	I still go to school/study	16.25	2.98
	Unemployed	11.50	0.70
	Employed by someone	16.96	4.14
	Self-employed	17.00	7.00
	Retired	15.66	3.78
Practice of repairing the used items	I still go to school/study	17.75	2.62
	Unemployed	17.00	2.82
	Employed by someone	20.01	6.47
	Self-employed	20.28	8.03
	Retired	31.00	1.00

*Table 3: Statistical differences of age groups in relation to attitudes towards repaired items  
(Source: Author's research)*

ANOVA		Sum of Squares	df	Mean Square	F	p
Using of second-hand items	Between Groups	63.864	4	15.966	0.854	0.494
	Within Groups	1812.812	97	18.689		
	Total	1876.676	101			
Practice of repairing the used items	Between Groups	397.510	4	99.377	2.420	0.054
	Within Groups	3983.167	97	41.064		
	Total	4380.676	101			

Table 4: Statistical differences of age groups in relation to attitudes towards used items  
(Source: Author's research)

Tables 5 and 6 present the values of the variance analysis according to the income level relative to the attitudes according to used objects. The respondents had to indicate to which income level they belong compared to the average monthly net salary (HRK 6,700 in the year 2020). No significant differences were observed between groups ( $F = 0.865$ ,  $p = 0.488$ ;  $F = 0.337$ ,  $P = 0.852$ ).

Attitudes	Income level	Mean	Std. Dev.
Using of second-hand items	No regular income	15.00	3.56
	Below-average income	16.58	5.15
	Average income	18.43	4.27
	Above-average income	16.76	3.85
	I don't want to say	15.00	3.16
Practice of repairing the used items	No regular income	18.50	2.38
	Below-average income	20.65	7.06
	Average income	18.86	4.90
	Above-average income	20.29	6.85
	I don't want to say	22.25	8.96

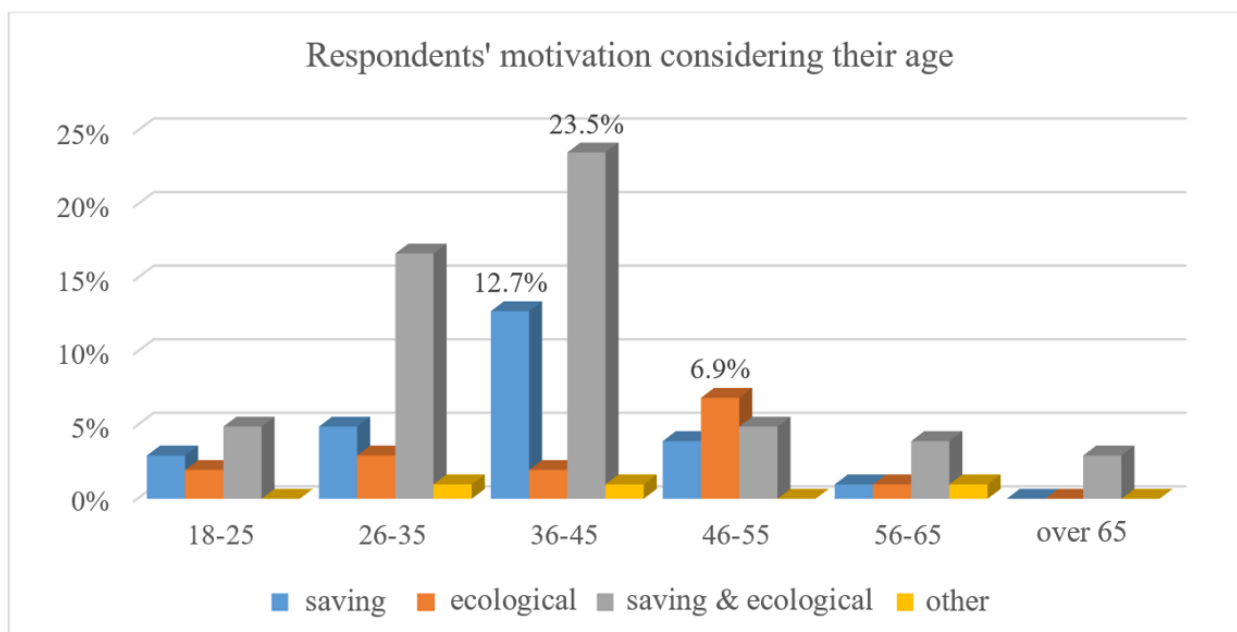
Table 5: Descriptive indicators of respondents in relation to attitudes toward used items  
(Source: Author's research)

ANOVA		Sum of Squares	df	Mean Square	F	p
Using of second-hand items	Between Groups	64.63	4	16.160	0.865	0.488
	Within Groups	1812.03	97	18.681		
	Total	1876.67	101			
Practice of repairing the used items	Between Groups	60.11	4	15.029	0.337	0.852
	Within Groups	4320.56	97	44.542		
	Total	4380.67	101			

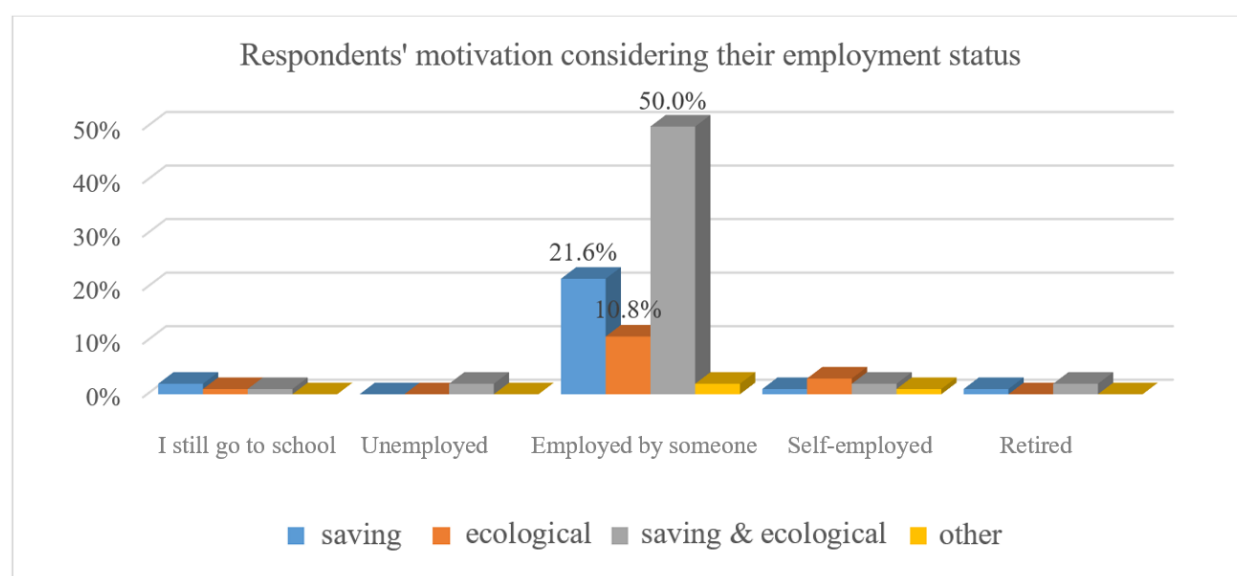
Table 6: Statistical differences of respondents according to the income level in relation to attitudes towards used items  
(Source: Author's research)

#### 4.3. Motivation for reusing

The motivation of the subjects in relation to the age, status and income level was analyzed by Chi-square test in relation to the age, status and level of receipt. The biggest motivation with an aim to save and ecological approach have the respondents of the age of 36 to 45, employed by the employer and those who receive above-average income (figures 1, 2 and 3). The Pearson correlation coefficient was not significant.



*Figure 2: Respondents' motivation considering their age  
(Source: Author's research)*



*Figure 2: Respondents' motivation considering their employment status  
(Source: Author's research)*

## 5. CONCLUSION

After presenting the results of this study the preliminary analysis shows that the most of the respondents are very ecologically aware and have inner motivation often based on altruism motives. They are aware of the possibilities of reusing of the consumer goods which is the answer to the first research question. The other one, questioning their motivation to engage in practicing Reuse in everyday life, was also supported by the answers to the questionnaire. Majority of our respondents apply the Reuse principle in their everyday life in terms of different categories of products. These findings can be used in educational system in all levels (primary, secondary and tertiary) as well as in the lifelong learning programs. This should in turn induce more reusing behaviour in Croatian citizens and help Republic of Croatia achieve the set targets of reduced landfill waste disposal to comply with the EU directives in line with the UN

development goals. There are no significant differences in using second-hand goods between the age groups, but the practice of using of second-hand items is most evident among employed respondents and students, the practice of repairing items differs among age groups being most common among retired respondents. Other practices show no significant differences. Even though, the biggest motivation with an aim to save and ecological approach have the respondents of the age of 36 to 45, employed by the employer and those who receive above-average income. The limitations of the study lie in the small sample based on non-probabilistic sampling methods (convenience sampling supported by the snowball sampling) which means that the representativeness of a sample is compromised to some extent. But this flaw can be overcome if we consider this as a pilot study which will be used to refine the questionnaire and then would be followed by another round of data collection. This might engage more respondents, to achieve better representativeness in the future research direction.

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## LEVEL OF DIGITALIZATION AND HUMAN CAPITAL IN THE SLOVAK REPUBLIC

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### ABSTRACT

*In each country, there is an increasing emphasis on the level of digitalization, which has enabled organizations to adapt more quickly to the changing environment. The change in the environment in recent years was related to the advent of COVID-19, when digitalization in individual countries became a more discussed topic. This is because thanks to digitalization, individual organizations, such as companies, schools, or public institutions, have been able to adapt more quickly to the changing environment. Since 2014, the Digital Economy and Society Index (DESI) has been calculated annually within the countries of the European Union. It determines the level of digitalization in EU member states. The article aims to characterize the essence of the DESI index, to analyze its development in SR for the period 2018-2021 and to compare these results with the average values of the EU. The article consists of an analysis of documents issued by the European Commission and the Government of the SR for the period from 2018 to 2021 because the frequent change in the content of dimensions and the scale of the final score of the DESI index. The most important finding is that the values of the DESI index in Slovakia are below the European Union average every year, even though its values within the Slovak Republic are increasing every year. It is important that the curriculum in Slovakia changes so that school graduates are sufficiently qualified and prepared for the internship that currently requires highly qualified professionals in the period of Industry 4.0.*

**Keywords:** Digitalization, Human Capital, Index DESI, Slovak Republic

### 1. INTRODUCTION

At present, great emphasis is placed on using modern digital technologies, which are elements of Industry 4.0. Countries want to remain competitive, and therefore they support digitalization in businesses, education, health, and other public services. Digitalization is one of the main pillars of Industry 4.0, which is changing the world and is associated with the concept of digital transformation. It represents changes related to the implementation of digital technologies in business processes. It can also be called the process of converting products into their digital variants, which offer customers several benefits (Parviainen et al., 2017). Friedrich et al. (2013) perceive digitalization as a process of using digital technologies thanks to interconnected devices. Pfeiffer and Jarke (2017) defined digitalization as a technical-technological process, in which digital elements and technological objects are interconnected. Digitalization affects various areas of social life. It affects schools, businesses, but also the public sector (Juríková et al., 2021; Tokarčíková et al., 2016). The high demands of the environment have made students in schools, as well as the principals or teachers, find working with modern digital technologies very demanding. This perception may increase the lack of interest in ICT disciplines (Olofsson et al., 2011). It is necessary to ensure access to such technologies in all schools to increase the motivation to work with modern digital technologies. Principals and teachers are aware of the need to have digital knowledge and skills to use these technologies in schools (Lindqvist & Pettersson, 2019; Lojda et al., 2020; Hitka et al., 2021).



Modern digital technologies represent a combination of computing, information, communication and connective technologies (Bharadwaj et al., 2013). Digitalization also brings changes in the business environment, at the process level through streamlining processes, which is achieved by reducing manual work; at the organizational level by offering new services; at the level of the business domain changing roles and the supply chain throughout the system and finally at the level of the company, where the structure of the company is changing (Parviainen et al., 2017; Malichová et al., 2018). Markovitch and Willmott (2014) argue that companies should use digitalization to change their business model by re-analyzing it, reducing its complexity by eliminating unnecessary and lengthy steps that have generally been associated with administrative tasks (Blštáková et al., 2020). Digital technologies can help this change, according to the author Wautelet (2017), including cloud computing, social media, mobile technologies, Big Data, and connectivity of all devices. Veit et al. (2014) state that modern digital technologies, on the one hand, are changing the business and competitive environment, thus jeopardizing the sustainability of companies. However, on the other hand, these technologies offer several opportunities that can help companies grow. The growth can bring them additional revenue. Within companies, digitalization brings cost savings by reducing administrative tasks, shortening turnaround time, or minimizing manual work. Thanks to digitalization, the company also acquires real-time data, which increases its competitiveness (Kelchevskaya et al. 2019; Ďurišová et al., 2019; Lorincová et al. 2020). Modern digital technologies are also used in eGovernment, which is a service provided by the public sector. Thanks to digital technologies, these services are provided more efficiently (Stachová et al., 2020) and at the same time more accessible to the population because they can handle the administration electronically, no matter where they are (Dovhanyk, 2015). Jeong (2007) defined three basic types of eGovernment services that use modern digital technologies. It is the G2G such as an exchange of data between state institutions; G2B represents state services intended for the business environment and G2C, which is state services intended for the inhabitants of that state. In the field of employment and working with people, digitalization will change the habits of workers, but also a change in the nature of work (Stachová et al., 2020). Employees may be afraid of new technologies and their impact on their jobs. In addition, the recruitment process needs to be constantly innovated to avoid possible discrimination. The number of HR professionals who hire new employees will be reduced, as modern technology will be able to do their job (Vetráková et al., 2018). Digitalization will also cause the loss of some jobs, especially in administration and production (Radosavljević et al., 2020). Assessing the level of digital literacy and digitalization in the country itself is challenging. However, since 2014, the European Union has had the opportunity to monitor and compare the development of digitalization in individual countries. It is served by the Digital Economy and Society Index (DESI). Through the index, EU member states can analyze their development over time and also reveal their weaknesses. The Slovak Republic (SR) has been a part of the European Union since 2004. As Slovakia is considered an automotive power within Europe, the issue of digitalization is more relevant. Processes are automated and digitalized much earlier in the automotive industry than in other industries. The digitalization of business processes has also been accelerated by COVID-19. And therefore, digitalization and people's knowledge, knowledge and skills (components of human capital) are the most important areas that countries should focus on today. The area of human capital is also included in the DESI index within a separate dimension. Thanks to the score achieved in the human capital dimension, the government can make better decisions that will move the country forward.

## **2. THE DIGITAL ECONOMY AND SOCIETY INDEX**

The Digital and Society Index (DESI), published by the European Commission since 2014, is a comprehensive indicator that can be used to compare the level and development of

digitalization in the member states of the European Union (EU). It identifies areas where a country is lagging and needs to improve. This index consists of five dimensions - connectivity (25%), human capital (25%), use of Internet services (15%), digital technology integration (20%), digital public services (15%). Each of the dimensions forms part of the digital policies that are adopted in each country as part of the digital transformation. Each dimension has specified sub-dimensions and indicators that have been assigned weights (percentage in parentheses for dimensions) representing the importance of a given index area. The data sources from which the European Commission compiles and calculates the DESI index are secondary nature. The data is processed mainly by Eurostat and the European Commission, which submits their requirements to external suppliers (consulting companies). Questionnaires sent by Eurostat obtain data, especially from statistical offices in individual EU member states. Connectivity is a dimension that measures the availability of the Internet among the people of a given country. It examines the level of internet use, the coverage in individual areas of the country or the readiness for 5G. The European Commission emphasizes human capital (HC) because, in a rapidly changing environment and the dynamic development of new technologies, it is necessary for someone to master these technologies. Emphasis is placed, especially on education as a form of HC investment, through which it is possible to improve and enhance the individual components of human capital, e. g. knowledge, knowledge, skills. The DESI index measures the level of digital skills of the population of the EU countries. Indicators in this dimension are the level of elementary digital and software skills or advanced digital skills. The use of Internet services indicates the level of Internet use for predefined activities in a country. The dimension is very closely linked to the previous two dimensions, as it is necessary to have at least basic ICT knowledge and skills to master the Internet. Internet use selected types of online activities are sub-dimensions of using Internet services. How companies in the country use modern digital technologies finds out the dimension of digital technology integration. This dimension consists of two sub-dimensions, namely business digitalization (Big Data, Cloud, social media) and e-commerce. The use of digital technologies by public institutions examines the dimension of digital public services. The benefits of the dimension are the saving of time, costs and workload of employees in public administration. The only sub-dimension is e-government, which monitors the level of online service provision (MIRRI, 2021).

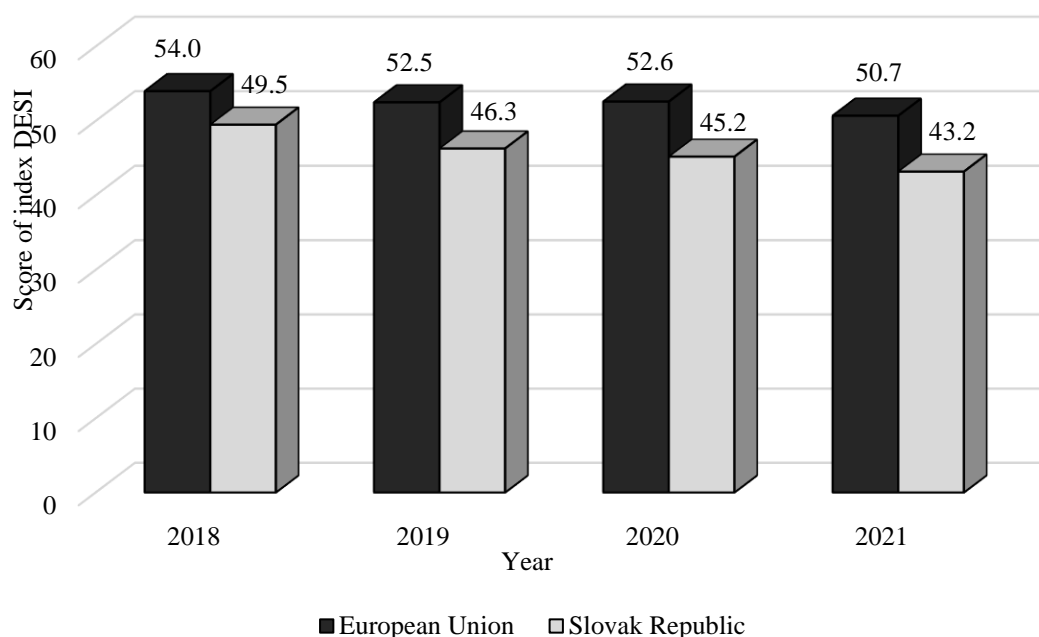
### **3. METHODOLOGY**

The article aims to analyze the essence of the DESI index and its development in SR for the period 2018-2021 and to compare these results with the EU average. The DESI index was chosen because the SR is a member state of the European Union. Within it, the European Commission calculates this index, which includes data on member states only and addresses an important issue today - digitalization and human capital. In the article, we identify and analyze the position of Slovakia within the European Union for the entire index of digital economy and society, but also individual dimensions of the DESI index for the period from 2018 to 2021. Other scientific methods used in the article include synthesis, comparison, induction, and deduction.

### **4. RESULTS**

In the article, we analyze the development of the DESI index for SR in comparison with the average values of the EU for the years 2018 to 2021 (Figure 1). In 2018, 2019 and 2020, the ranking consisted of 28 member states of the EU. In 2021, the United Kingdom withdrew from the EU, so the ranking consists of only 27 member countries. Slovakia's score values did not exceed 50.0 in any of the analyzed years. On the contrary, the EU average was significantly higher each year (values above the mentioned limit of 50.0).

It is not surprising that SR has always been at the bottom of the DESI index. In 2018 it finished in 20th place, in 2019 in the 21st place and in 2020 and 2021, the SR was in the 22nd place in the ranking.

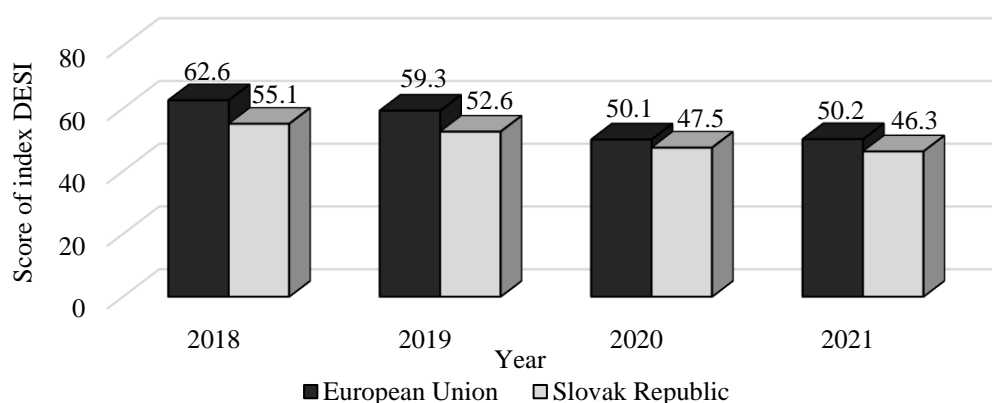


*Figure 1: Index DESI – Slovak Republic and average of EU  
(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)*

It is striking that the SR shows declining score values in the overall DESI index. Even the difference between the average of the EU and the SR is increasing year-on-year in the observed period. In 2018 it was a difference of 4.5, and in the last year, this difference was up to 7.5. Many expected that the corona crisis would move the level of digitalization in SR forward. Finally, digital transformation is also one of the EU's goals and priorities and is also part of Slovakia's Recovery Plan. According to the Industry4UM platform, the Slovak government is not taking enough necessary steps, as the companies themselves do not feel the support of the government. A possible reason is an unnecessary administration, which prolongs and makes the whole process of implementing digital technologies more expensive. Despite these negatives, the number of companies using some digital technologies is growing from year to year, but the values of the DESI index dimensions are not increasing anyway. One of the problems is also finance. Only 5% of small and medium-sized enterprises owned and financed by Slovaks digitize their processes. These companies do not even invest in HC through education. At the same time, the increase in digitalization in SR can bring our country up to 21.7 billion euros in the additional gross domestic product by 2025. The second major problem is education, which is one form of investment in human capital. Schools in SR are insufficiently technically and technologically equipped, which is associated with insufficient knowledge and skills of teachers and students (Žuffa, 2021; EC, 2021).

#### 4.1. Conectivity

The first dimension of the DESI index monitors the connectivity of people in the country to the Internet. Although the ranking is gradually increasing, within this dimension, the values of the SR are still below the EU average (Figure 2) throughout the period under review.



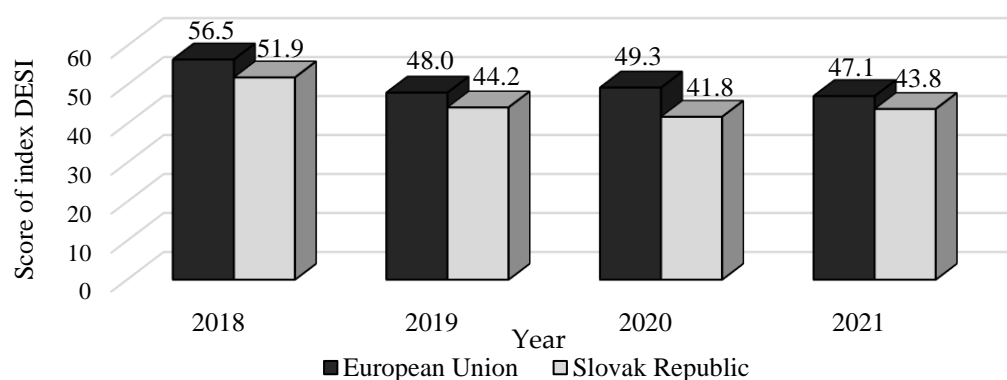
*Figure 2: Index DESI – Connectivity*

(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)

The difference between the EU average and the values of SR within the analyzed dimension is significant. However, it is possible to evaluate the reduction of this difference positively (from 7.5 points to 2.6). The largest decline occurred in 2021 in the coverage and use of 5G networks. The difference between SR and the EU average was up to 14 %. However, it is interesting that in the readiness for the introduction of 5G networks, the SR gained up to 67 %, which is even higher than the EU average (51%). The second most significant indicator, in which the difference is higher than 10%, is the coverage of high-speed broadband internet. Within it, the SR reached 75% in 2021, which is 12% less than the EU average (87%). The Slovak government originally planned to introduce a 30Mb/s internet in all areas of the country by 2020. But this has not been achieved, and only 75% of the population has access to such an internet. The problem again lies in the administration, which unnecessarily prolongs the deployment of 5G networks directly to the country's population. At present, this goal has increased, and the government wants to ensure by 2030 that all residents have access to the Internet at speeds of up to 100Mb/s. Support for internet access also consists in the introduction of free Wi-Fi zones, thanks to funding from the European Fund. (EC, 2021; EC, 2020).

#### 4.2. Human Capital

Human capital is the most important dimension for the SR because, as a country, we are considered an automotive power in Europe. So, we will be significantly affected by automation and digitalization, especially in the automotive industry. While other countries are introducing digital technologies and investing in HC through education, the SR is declining in the DESI index (Figure 3).



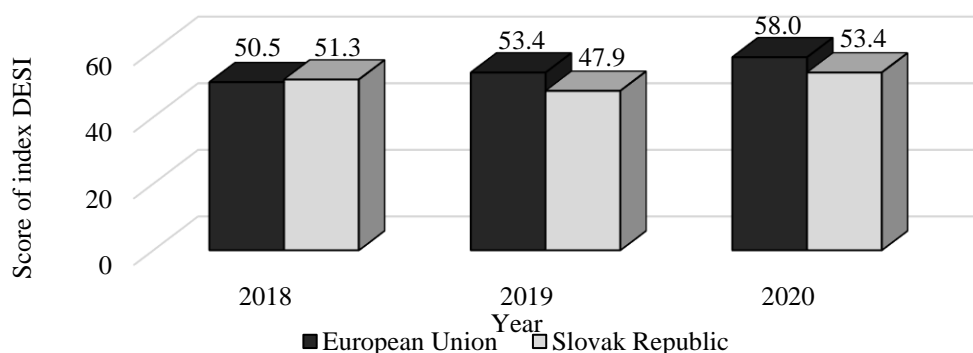
*Figure 3: Index DESI – Human Capital*

(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)

In 2018, the SR ranked 16th out of 28 member countries. However, it still meant values lower than the EU average. In 2020, it was up to 20th place. It was possible to see a decrease in the difference between the EU and Slovakia average in the first two years monitored. However, this positive phenomenon was influenced by the corona crisis, which in 2020 caused the descent of Slovakia to 20th place in the ranking and widened the difference between the values. A slight improvement occurred in 2021, when the SR improved by one place, and the difference between the compared data was only 3.3. The largest decrease was observed in the indicator monitoring the percentage of companies providing their employees with ICT training. In 2021, only 16% of businesses provided such courses. The number of people with only a basic knowledge of ICT is related to this in 2021 it was at 54%. In 2018 and 2019, this value was at the level of 59%. The decline may be due to the ageing of the SR population. Only 27% of the population in SR has more advanced digital skills, which is still below the EU average (31%). Although the level of ICT graduates is at the EU average (3.9%), most of the graduates go abroad to work. Therefore, it is extremely important to pay attention to how to keep young and graduated people in SR. Up to 45% of schools in SR in 2020 do not have a computer science teacher who would study the given field. It means that the subject is taught by a layman. Therefore, only 17% of primary schools in SR have the necessary digital equipment and internet connection. To support the development of teachers was launched program in the same year. It aims to increase teachers ICT knowledge and skills and make them more qualified as teachers of IT. The implementation of 60 modernized subjects at five Slovak universities is also positive (EC, 2021; EC, 2020). With the Industry 4.0, the demands on people are changing significantly. For the SR to withstand solid competition within the EU, people must have the skills such as analytical thinking, active learning, solving complex problems, critical thinking and creativity, which are defined in the document “The Future of Occupations”, prepared by the World Economic Forum (Mat’o, 2021). Employers in SR have started to emphasize on basic programming skills and demand universalism from candidates. It means that employees should have as much experience as possible from different job positions, which will improve their adaptation to the new environment. A course called “Skills for Success” is taught by representatives of various companies, such as IBM, Dell Technologies Slovakia, PwC, or AT&T. It aims to teach people to communicate, think critically, work in a team, or the way to resolve conflicts. These skills are among the components of HC that artificial intelligence cannot yet use (Trend, 2021). The rule should apply, if a company wants to use modern technologies effectively, it must also develop human capital. Emphasis should be placed on digital and soft skills. However, there is a shortage of people with these skills, so it is essential to change the curriculum (MIRRI, 2021). At the end of 2017, “the Digital Coalition” program was launched in SR to support and develop human capital. It focuses on people’s digital knowledge, and skills and it aims to support digital literacy in the country. Despite the support of the development of digital skills by the government of the SR through various projects, SR fails to get in the DESI index within the human capital dimension, not even to the EU average (EC, 2018).

#### **4.3. The Use of Internet Services**

The dimension of Internet use was not monitored in 2021. Therefore, only the period 2018-2020 is compared. It monitors the purpose for which the inhabitants of a given country use the Internet. The development of this indicator fluctuates (Figure 4). In 2018, the SR reached the value of 51.3 points, which is 0.8 more than the EU average (50.5). It is the first indicator of exceeding the EU average. A year later, the SR fell below the EU average, and the difference between the stated values was up to 5.5 points. A slight improvement in values occurred in 2020 when the SR had a difference from the EU average of 4.6 points. In 2021 the European Commission excluded the dimension from the analyzes.

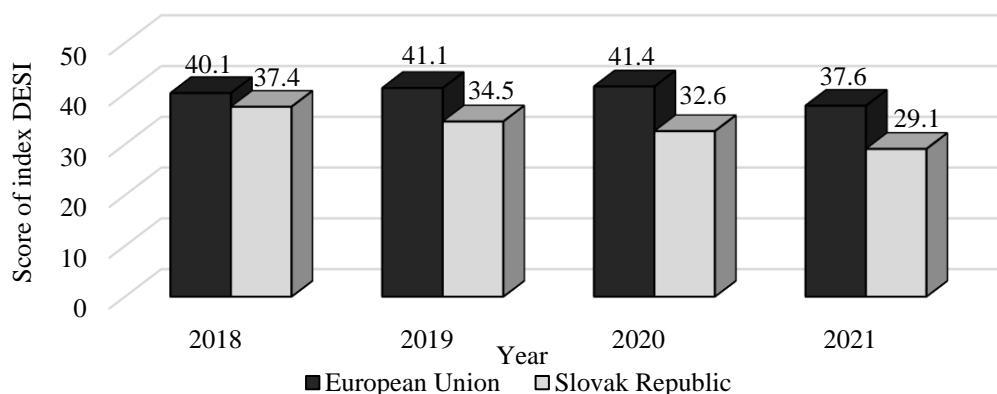


*Figure 4: Index DESI – the Use of Internet Services*  
(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)

The SR showed depressed values when monitoring the number of inhabitants who have never used the Internet. The value recorded a declining trend, from 14% (2018) to 12% (2020). However, it was still a few percentage points higher than the EU average. The SR recorded a substantial drop compared to the EU average (11%) in the indicator of online exchange rates, where only 6% of the population in 2020 used the Internet for this purpose. In the previous two years, this value was at the level of 4 %. On the contrary, Slovaks used the Internet in 2020 the most for news (72%), social networks (72%) and shopping (71%).

#### 4.4. Digital Technology Integration

This type of dimension points to the integration of modern digital technologies into enterprises. It is one of the most updated dimensions in the period under review, as the European Commission has changed the individual indicators. In the period under review, there was a decrease in the ranking of 3 places. The values of this dimension are declining, and all below the EU average (Figure 5).



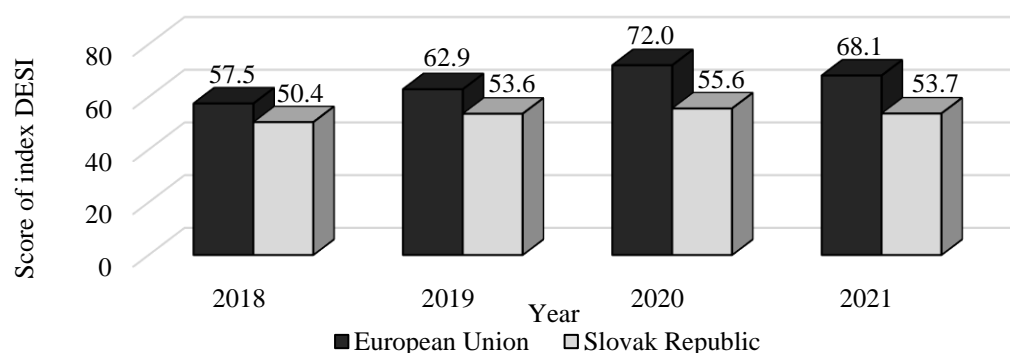
*Figure 5: Index DESI – Digital Technology Integration*  
(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)

Based on the deepening difference between the values of Slovakia and the EU average, it is possible to state a deterioration of the situation. The corona crisis could have caused a decline in values on the part of the SR and the EU average. Initially, companies began to use various digital technologies. Over time, however, some companies may find that the technology is not sufficient for them, so they have eliminated or replaced it. As the DESI index shows, Big Data is much less used in Slovak companies than the EU average (14%). Also, the cloud is not widespread among businesses.

Only 18% of companies used it in 2020. Businesses could also use electronic invoices to speed up work, but only 16% of companies did so last year, which is half the EU average (32%). In 2022, the government plans to introduce digital archiving in the field of accounting, which may increase the values of the whole dimension. It is appropriate to monitor in 2021 indicators relating to the use of digital technologies in SMEs or the introduction of ICT for environmental reasons. It has been found that only 52% of SMEs use digital technologies. The EU average was 60%. Conversely, with environmental sustainability, up to 76% of businesses use digital technologies for this purpose. It is higher than the EU average (66%). From this, it is possible to conclude that companies in the SR think about the environment and its protection and adapt their business activities accordingly.

#### 4.5. Digital Public Services

The last dimension of the DESI index examines how digital technologies are used in the public sector. In all years, the score of the SR below the EU average was obtained (Figure 6).



*Figure 6: Index DESI – Digital Public Services*  
(Source: EC, 2018; EC, 2019; EC, 2020; EC, 2021)

From 2018 to 2020, Slovakia dropped by six places. The situation has improved a bit in the last year, and SR has reached 23rd place. Although SR had a higher score in this dimension in 2020 than the year before, it ranked 26th, followed only by Greece and Romania. Given the differences between the values of SR and the EU average, this is a dimension in which Slovakia achieves the worst values within the entire DESI index, as the difference has increased every year. The Ministry of Investment, Regional Development and Informatization is defending these bad results with the findings of the Supreme Audit Office. He found that increased funding for the digitalization of public administration does not lead to increased use by the country's population. In 2020, only 52% of the population used online public services, which are 15% lower than the EU average. This fact may be due to mistrust in modern technology and insufficient knowledge and skills (EC, 2020). Despite the efforts of the ministry and the government of the Slovak Republic, within this indicator, the SR cannot keep up with other European countries, and so it finds itself at the bottom of the ranking every year.

## 5. DISCUSSION AND CONCLUSION

The analysis showed that Slovakia was always at the bottom of the rankings between 2018 and 2021 and rarely approached the EU average. In our opinion, Slovak Republic can improve its position in the DESI ranking shortly, but the emphasis must be placed on the values of critical indicators. Therefore, public institutions must understand the given indicators that affect the country's success. It is helpful to know the essence of digital transformation, which lies in the availability of 5G network.

Its advantage is that it provides various benefits to the economy throughout the EU. 5G networks and other modern digital technologies have a very significant impact on the labor market, where they can cause relevant changes, such as job transformation or job loss. If Slovakia wants to move up the rankings, it must improve the values related to 5G networks. In 2021, SR was ready to introduce 5G networks up to 67%. In fact, in Slovakia, the areas covered by this modern digital technology were 0% of the region. Therefore, it would be helpful to find out where the error occurred (MIRRI, 2018; EC, 2021). Based on the unfavorable values in the development and state of the DESI index in all five areas, the Slovak Republic plans to propose a strategy for improvement. Improving the performance of the communication infrastructure and the related changes in legislation are connectivity goals. Concerning human capital, it focuses on the lifelong learning of people with an emphasis on digital skills and knowledge for all ages. It is also important to keep school graduates focusing on IT and ICT in Slovakia and prevent their significant outflow abroad. If Slovakia wants to increase the values of dimension using Internet services, it is necessary to increase its credibility with the population. Within digital technologies, the Slovak Republic undertakes to help increase the knowledge and skills of entrepreneurs. The last fifth area is digital public services, within which the Slovak Republic wants to improve and especially modernize public administration processes and increase the share of digital services in public administration (MIRRI, 2021).

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## CONTRIBUTION TO TESTING THE EFFICIENCY OF THE CROATIAN CAPITAL MARKET

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### ABSTRACT

*The research conducted in this article analyzes the Efficient Market Hypothesis (EMH) on the Croatian capital market for a period of one year. Data on a weekly basis from March 2021 to March 2022 from the Zagreb Stock Exchange for 47 liquid shares were used. In order to prove the hypothesis, the Security Market Line (SML) model was used, which was calculated in three different variants: general model with coverage of all shares, sector model with coverage of shares in sector indices, and branch model with coverage of shares depending on the companies primary activity. Through the implementation of ANOVA analysis and F test, deviations of the realized yield rates from the theoretical yield values that should be achieved using the SML mode were analyzed. In all three cases, the statistical insignificance of the SML model was proven, ie. its inapplicability. This also proves the existence of a weak form of EMH, since the impossibility of applying the SML model also indicates a position in which no investor can develop a strategy in which he/she can continuously achieve above-average returns.*

**Keywords:** *Croatian capital market, Efficient Market Hypothesis, Security Market Line*

### 1. INTRODUCTION

The Zagreb Stock Exchange was founded in 1991, and as the only organized securities market in the Republic of Croatia, it is justifiably considered a representative of the capital market. However, not all principles related to the specific functioning of developing capital market are yet known. Therefore, developing markets are an inexhaustible source of new scientific discoveries that in some cases are in direct contrast to established theoretical concepts known from developed financial markets. This paper will review the efficiency of the Croatian capital market, ie. the Efficient Market Hypothesis (EMH) will be tested using a methodology different from the one used in previous research. Specifically, the market is considered to be efficient if all the information is available to all investors at the same time, and thus built into the market price of securities. Depending on what information (past, present or future) is embedded in the price of the security, there is a weak, semi-strong and strong form of the hypothesis. At its core, all three forms of hypothesis have their origin in the fact that no investor can continuously achieve above-average returns. Namely, a strategy (or model) that would enable an individual investor to continuously achieve an above-average return would indicate a situation in which all information are not available to all investors but only to some. This is an excellent position for those investors who are in a privileged position, however such trading is illegal. What this research deals with is a position in which there is a certain model that can successfully identify undervalued and overvalued shares, and thus (legally) provide an above-average return to the investor who uses it. Numerous contradictory examples of empirical research can be found in the current economic literature. In this paper, the focus will be on the results of the Croatian capital market research on the degree of its efficiency. This will be discussed in more detail in the next chapter, followed by a chapter with a methodological description of the research, as well as chapters that present the results obtained and interpret them.

## 2. LITERATURE REVIEW

A review of the general literature reveals a wealth of empirical research conducted in a number of countries and at different time periods. However, in this research, the focus will be on the Croatian capital market, so that the literature review will be limited to research conducted only on the efficiency of the Croatian capital market. Through the analysis of previous empirical research on the efficiency of the Croatian capital market, it is not possible to reach an unambiguous conclusion on whether the Croatian capital market is efficient or not in terms of confirming the EMH hypothesis. In his study of 15 European emerging stock markets for the period 2000 – 2009, Smith (Smith, 2012) is by the usage of fixed-length rolling sub-period windows identified different levels of efficiency of the analyzed countries. As for the results for Croatia, they showed a lack of weak-form efficiency due to the possibility of return predictability and achieving above-average results. Although this was not their primary area of research, Čondić Jurkić and Dadić (Čondić Jurkić, Dadić, 2008) came to the same result. Namely, among other things, they tested CROBEX index on a weak-form of efficiency using the autocorrelation test for the analysis period from 1999 to 2007. Their results point to the absence of a “random walk” in returns, but also state that the result could be a consequence of illiquidity and market fragmentation, discontinuity of trading, delayed reporting and high transaction costs. Barbić (Barbić, 2010) came to the same result and conclusions using the same methodology, analyzing the Croatian stock market for the period from 1997 to 2007. To determine the impact of the global financial crisis on capital market efficiency, 11 markets were analyzed in South East European countries for the period 2005 – 2015 (Tsenkov, Stoitsova-Stoykova, 2017). The analysis period was divided into subperiods that covered the period before, during and after the crisis. Using multiple methodologies, namely autocorrelation analysis, the Run test and the GARCH family models, heterogeneous results were obtained. However, the results related to Croatia indicated that a weak form of efficient hypothesis was rejected for the entire period. In addition, research conducted on the Croatian stock market for the period from 2000 to 2019 using the quantile unit root approach showed that there is no evidence for a weak form of the efficient market hypothesis (Novak, 2019). Namely, the research showed that CROBEX’s yield is significantly influenced by the previous day’s return, and such predictable behavior of CROBEX can enable investors to achieve a continuous above-average return, which is contrary to the EMH hypothesis. Such research can be contrasted with research in which the results showed the existence of a weak form of capital market efficiency in the Republic of Croatia. One such study is the one conducted on 20 post-communist stock markets for the period from 2008 to 2010 (Dragotă, Țilică, 2014). The research was conducted using several approaches: unit root test, runs test, variance ratio test, filter rules test and January Effect test. The obtained results in some countries prove the existence of a weak form of efficiency (among them in Croatia), while in other countries the results indicate the opposite and the possibility of successfully formulating and active trading strategy. Second comprehensive survey was conducted on 11 Central and Eastern European countries for the period from 2010 to 2018 (Levent Erdas, 2019). By applying linear and nonlinear unit root tests, the results showed support for the validity of the random walk hypothesis in all analyzed markets (including Croatian), which is also evidence of the existence of a weak form of efficient market hypothesis. Additional research on the financial markets of four developing countries (including the Croatian financial market) confirmed the existence of a weak form of efficient market hypothesis (Tokić, Bolfek, Radman Peša, 2018). The research was conducted for the period from 2006 to 2016 using various statistical tests: serial correlation test, runs test, Augmented Dickey-Fuller test, unit root test, variance ratio test and test of January effect. Finally, it may be interesting to mention as well a study conducted comparing Croatian and US share market for the period 1997 – 2010 (Šonje, Alajbeg, Bubaš, 2011).

Namely, in the pre-crisis period (before 2008), by comparing monthly data, both the Croatian and American markets showed a certain level of efficiency. However, using daily data, the US market showed a high degree of efficiency, while for the Croatian market the results are not consistent, and it is impossible to conclude with a satisfying level of confidence that the Croatian market was inefficient in that period. From this brief overview of the conducted research on the EMH hypothesis, the duality of the obtained results and the resulting conclusions are visible. Accordingly, further research of the EMH hypothesis on the Croatian stock market, as an example of a developing market, is justified. This justification is especially important because the existence of a weak form of market efficiency will be tested by applying a new methodology that has not been used before. For this purpose, the Security Market Line (SML) will be used here, as a special variant of the Capital Asset Pricing Model (CAPM) that allows the recognition of undervalued and overvalued shares. SML is a linear line that shows the average expected return on securities for each level of risk. Thus, any statistically significant deviation of the return on securities from the SML line would indicate the possibility of achieving above-average returns, and this would also be evidence of the inefficiency of the share market.

### 3. RESEARCH METHODOLOGY

For the purpose of empirically testing the hypothesis of the Croatian capital market efficiency, it was necessary to define a sample consisting of ordinary shares classified in the segment of liquid shares (model CT) from the Zagreb Stock Exchange. The analysis period is one year, and therefore the data were taken on a weekly basis from March 1, 2021 till February 28, 2022, that is, during 52 weeks. The share price represents the veighted average price on every Monday, and the closing values of stock exchange indices were read with the same dynamics. In the event that an individual share has not been traded on the specified day, the value realized on the previous trading day has been taken into account. In two cases, there was a split and merger of shares, and in these cases price adjustments were made to calculate the rate of return. Specifically, first is the case of CKML share where there was a split of the share in the ratio of one old for 98 new shares on October 08, 2021, and second is the case of DLKV share where 100 old shares were merged into one new share on July 29, 2021. In addition, six shares were removed from the sample which were only recently included in the segment of liquid shares (model CT), while they showed illiquidity for most of the analyzed period. The final sample consists of 47 shares shown in Annex 1. The next step in the analysis was determination of the risk-free rate of return. For this purpose, the rate of return realized on Croatian National Bank treasury bills with a maturity of 364 days was used, which best corresponds to the time period of the analysis (Croatian National Bank, 2021). According to numerous studies, short-term securities issued by the government (or in this case the central bank) are considered a good approximation of the risk-free rate of return. Finally, to test the SML model, it was necessary to determine the average market rate of return, and for this we used the values of the CROBEX index for the same time period, or sector indices in further analysis (Zagreb Stock Exchange).

### 4. MODEL FORMULATIONS

For each share in the sample, the rate of return on a weekly basis was calculated, not taking dividends into account. Furthermore, the values of the beta coefficient were calculated using the following equations (Vidučić, 2006, 71):

$$\beta_i = \frac{\text{COV}_{iM}}{\sigma_M^2} \quad (1)$$

$$\text{cov}_{iM} = \frac{\sum_{t=1}^n (R_{i,t} - \overline{R_i}) * (R_{M,t} - \overline{R_M})}{n} \quad (2)$$

$$\delta_M^2 = \frac{\sum_{t=1}^n (R_{M,t} - \overline{R_M})^2}{n} \quad (3)$$

where:

$\beta_i$  - beta coefficient of the share  $i$ ;

$\text{cov}_{iM}$  – covariance of share  $i$  with market M;

$\delta_M^2$  - market M variance;

$R_{i,t}$  - return on share  $i$  at time  $t$ ;

$\overline{R_i}$  - average return on share  $i$ ;

$R_{M,t}$  - return on market M at time  $t$ ;

$\overline{R_M}$  - average return on market M;

$n$  - number of observations (52 readings).

As equations (2) and (3) used data on a weekly basis, the obtained results were converted to an annual level before inclusion in equation (1) for the calculation of the beta coefficients.

#### 4.1. Setting up the basic model

The SML line equation is a linear equation of known shape:

$$R_i = R_f + \beta * (R_M - R_f) \quad (4)$$

Using previously collected data on risk-free rate of return and general market rate of return (according to the CROBEX index), this equation takes the following form:

$$R_i = 0,0017 + 0,08704 * \beta \quad (5)$$

Table 1 shows the values of beta coefficients, as well as values of realized rates of return compared to the theoretically expected values of return obtained using equation (5). If it is assumed that the SML model is applicable in the Croatian stock market, then most of the values of real returns should be at or near the SML line. This would be a sign that the market has valued shares correctly, while for extreme deviations above or below the SML line, a strategy can be formed that will constantly achieve above-average returns by recognizing undervalued or overvalued shares.

*Table following on the next page*

<i>Symbol</i>	<i>Beta</i>	<i>Theoretical return</i>	<i>Real return</i>	<i>Symbol</i>	<i>Beta</i>	<i>Theoretical return</i>	<i>Real return</i>
ADPL	2,09686	0,18420	-0,43433	KODT	0,75410	0,06733	0,31601
ADRS	0,35815	0,03287	0,00221	KOEI	0,86998	0,07742	0,26768
ARNT	0,69261	0,06198	-0,15159	KOKA	0,55195	0,04974	0,02703
ATGR	0,78736	0,07023	0,14264	KRAS	0,04473	0,00559	0,10096
ATPL	2,49196	0,21859	0,79648	LKPC	1,33122	0,11757	0,28552
CIAK	0,20369	0,01943	0,25961	LKRI	0,56979	0,05129	-0,07082
CKML	0,40200	0,03669	-0,01150	MAIS	0,22961	0,02168	0,00000
CROS	0,16187	0,01579	0,08560	MDKA	0,44996	0,04086	0,38777
DDJH	0,90245	0,08025	-0,53160	OPTE	-0,13196	-0,00979	-0,21876
DLKV	2,27188	0,19944	-2,92492	PLAG	0,33322	0,03070	0,03922
ERNT	0,55523	0,05003	0,15986	PODR	1,61650	0,14239	0,15280
GRNL	-0,46236	-0,03854	-0,04783	PTKM	0,76089	0,06793	-0,97606
HPB	1,06477	0,09437	0,48649	RIVP	1,16788	0,10335	0,01879
HT	0,18289	0,01762	0,01595	SAPN	1,13129	0,10016	0,52592
IGH	1,90706	0,16768	-0,39455	SUKC	0,35015	0,03218	0,00234
IKBA	0,38440	0,03516	0,27029	TPNG	0,49221	0,04454	-0,09212
ILRA	0,23800	0,02241	0,26826	TUHO	0,07832	0,00852	0,22591
INA	0,32200	0,02973	0,17387	ULPL	1,29150	0,11411	1,04755
INGR	1,33889	0,11823	-0,18606	VART	0,17760	0,01716	-0,46373
JDGT	0,59210	0,05323	0,03574	VIRO	1,72065	0,15146	0,32830
JDOS	0,44097	0,04008	0,27971	VLEN	1,09092	0,09665	-0,06945
JDPL	2,02132	0,17763	1,36629	ZABA	0,69189	0,06192	0,20699
JDRN	0,24698	0,02320	-0,03820	ZB	0,58282	0,05243	-0,28970
JNAF	0,03987	0,00517	0,13697				

*Table 1: Formulation of a basic model for EMH testing  
(Source: Author's calculation)*

Testing of statistical significance of the model was performed by ANOVA variance analysis, and by calculation of F test. This method was used to analyze the deviation of real returns from theoretical returns, ie. those calculated by the SML equation. This leads to the conclusion about the reliability of the SML model, ie. whether the deviations of the real from the theoretical returns are random or statistically significant. Deviation testing was performed by the following equations (Harnett, Murphy, 1985, 609-612):

$$SST = \sum_{i=1}^n R_{R_i}^2 - \frac{1}{n} * \left( \sum_{i=1}^n R_{R_i} \right)^2 \quad (6)$$

$$SS_X = \sum_{i=1}^n R_{T_i}^2 - \frac{1}{n} * \left( \sum_{i=1}^n R_{T_i} \right)^2 \quad (7)$$

$$SC_{XY} = \sum_{i=1}^n R_{T_i} * R_{R_i} - \frac{1}{n} * \left( \sum_{i=1}^n R_{T_i} \right) * \left( \sum_{i=1}^n R_{R_i} \right) \quad (8)$$

$$SSR = b * SC_{XY} \quad (9)$$

$$SSE = SST - SSR \quad (10)$$

$$S_e = \sqrt{\frac{SSE}{n-2}} \quad (11)$$

$$r^2 = \frac{SSR}{SST} \quad (12)$$

$$MSR = \frac{SSR}{1} \quad (13)$$

$$MSE = \frac{SSE}{n-2} \quad (14)$$

$$F = \frac{MSR}{MSE} \quad (15)$$

where:

SST – variation of real returns, total variation;

SS<sub>X</sub> – variation of theoretical returns;

SC<sub>XY</sub> – covariation of real and theoretical returns;

R<sub>Ri</sub> – real return of share *i*;

R<sub>Ti</sub> – theoretical return of share *i*;

SSR – explained variation;

b – direction coefficient from the SML equation;

SSE – unexplained variation;

S<sub>e</sub> – standard estimation error;

r<sup>2</sup> – coefficient of determination;

MSR – mean square regression;

MSE – mean square error;

F – F test value.

It is necessary to explain equation (13) where the denominator is equal to one. In this particular case, this denominator represents the number of degrees of freedom applicable to regression with one independent variable, while (n – 2) degrees of freedom are used to estimate the mean square error. Due to space constraints, Table 2 presents only summarized results of the conducted analysis. There can be seen that the total variation is  $SST = 15,66021$ , of which only  $SSR = 0,01127$  was explained by the regression model. The coefficient of determination measures the strength of the relationship between real returns and theoretical returns obtained using the model, and it is a weak  $r^2 = 0,00072$ . Finally, the F test measure the ratio of the variance explained by the regression model with the variance of the residues unexplained by the model. The following hypothesis are tested:

- H<sub>0</sub> : b = 0 – independent variable does not contribute to the prediction of the dependent variable
- H<sub>1</sub> : b ≠ 0 – independent variable contributes to the prediction of the dependent variable

The calculated values of the F test are smaller than critical values with the usual 5% and 1% of significance, which confirms the final conclusion on the statistical insignificance of applying the SML model in the Republic of Croatia.



SST	SSR	$r^2$	F	F critical values	
				5% sig.	1% sig.
15,66021	0,01127	0,00072	0,03236	4,05661	7,23387

Table 2: Analysis of the basic model for EMH testing  
(Source: Author's calculation)

#### 4.2. Setting up sector models

A further step in the analysis of the efficiency of the Croatian capital market consisted of repeating the entire previously described procedure, but using sectoral indicators. For this purpose, sectoral stock exchange indices formed on the Zagreb Stock Exchange were used, which replaced the indicator of average market return. As they are composed of a different number of shares, the CROBEXkonstrukt index was excluded from further analysis as it consists of only two shares. Thus, the following four indices shown in Table 3 were included in the analysis.

Index name	Index symbol	Number of shares	Shares in the composition
CROBEXindustrija	CBXIN	6	ADPL, DDJH, ERNT, KOEI, SAPN, VLEN
CROBEXnutris	CBXNU	4	ATGR, CKML, KRAS, PODR
CROBEXtransport	CBXTP	7	ATPL, JDGT, JDPL, LKPC, LKRI, TPNG, ULPL
CROBEXtunist	CBXTU	5	ARNT, HTPK, MAIS, PLAG, RIVP

Table 3: Composition of sector indices from the Zagreb Stock Exchange  
(Source: Zagreb Stock Exchange, at [www.zse.hr](http://www.zse.hr) (March 28, 2022))

The basic idea when setting up sectoral models was that sectoral indices should better represent the branch of industrial activity, and that they should get less scatter of individual values of realized returns from average returns represented by SML line. Thus, for each sector index, the average market return was calculated, and the new SML equation for each sector was recalculated accordingly. The risk-free rate of return remained unchanged compared to the basic model. Table 4 provides an overview of each sectoral model.

Symbol	Beta	Theoretical return	Real return	Symbol	Beta	Theoretical return	Real return
<b>CBXIN: <math>R_i = 0,00170 + 0,07932 * \beta</math></b>							
ADPL	0,96436	0,07819	-0,43433	KOEI	0,37118	0,03114	0,26768
DDJH	2,96430	0,23683	-0,53160	SAPN	0,56727	0,04670	0,52592
ERNT	0,09351	0,00912	0,15986	VLEN	0,73379	0,05990	-0,06945
<b>CBXNU: <math>R_i = 0,00170 + 0,14115 * \beta</math></b>							
ATGR	0,95762	0,13687	0,14264	KRAS	0,11871	0,01846	0,10096
CKML	0,26360	0,03891	-0,01150	PODR	1,93788	0,27523	0,15280
<b>CBXTP: <math>R_i = 0,00170 + 0,12423 * \beta</math></b>							
ATPL	1,52317	0,19092	0,79648	LKRI	0,26046	0,03406	-0,07082
JDGT	0,12208	0,01687	0,03574	TPNG	0,27858	0,03631	-0,09212
JDPL	1,17135	0,14722	1,36629	ULPL	0,95142	0,11989	1,04755
LKPC	-0,04665	-0,00409	0,28552				
<b>CBXTU: <math>R_i = 0,00170 - 0,03953 * \beta</math></b>							
ARNT	1,02210	-0,03870	-0,15159	PLAG	0,43125	-0,01535	0,03922
HTPK	-0,30518	0,01376	-0,29040	RIVP	1,36760	-0,05235	0,01879
MAIS	0,35479	-0,01232	0,00000				

Table 4: Formulation of a sectoral models for EMH testing  
(Source: Author's calculation)

Testing the statistical significance of the above models was performed by the previously described methodology, ie. by calculating the values represented by equations (6) to (15), and the abbreviated results are presented in Table 5. Although sectoral models should better represent the market movements of the sector in question, and thus be a better indicator of the overall rate of return in that sector, the results of the analysis show that the SML model is still not statistically significant. The calculated F values are lower than the critical values here as well, so hypothesis  $H_0$  is accepted, ie. we conclude that there is no significant linear relationship between the independent and dependent variable.

Index	SST	SSR	$r^2$	F	F critical values	
					5% sig.	1% sig.
CBXIN	0,84874	0,00978	0,01153	0,04559	7,70865	21,19769
CBXNU	0,01698	0,00252	0,14811	0,34773	18,51282	98,50251
CBXTP	2,07369	0,02634	0,01270	0,06433	6,60789	16,25818
CBXTU	0,07971	0,00031	0,00386	0,01161	10,12796	34,11622

Table 5: Analysis of the sectoral models for EMH testing  
(Source: Author's calculation)

### 4.3. Setting up branch models

The final step in the analysis was the formation of new indices that would be formed in a way that consolidates the shares of companies depending on the primary activity in which they are engaged. For this purpose, the classification of shares from the Zagreb Stock Exchange was used, according to which the shares from the sample are classified into five branches as shown in Table 6. This distribution of shares will serve to form new, so-called branch indices, which will further serve to determine the overall average return for each branch. The methodology used for the calculation of branch indices is identical to that used by the Zagreb Stock Exchange for the calculation of previously analyzed sectoral indices (Zagreb Stock Exchange, Decision on the CROBEXplus index and sectoral indices).

Index name	Index symbol	Number of shares	Shares in the composition
Nutrition	CBX-CA	5	CKML, GRNL, KRAS, PODR, VIRO
Transport	CBX-H	8	ATPL, JDGT, JDPL, JNAF, LKPC, LKRI, TPNG, ULPL
Catering	CBX-I	8	ARNT, ILRA, JDRN, MAIS, PLAG, RIVP, SUKC, TUHO
Finance	CBX-K	6	CROS, HPB, IKBA, JDOS, ZABA, ZB
Management	CBX-MA	4	ADRS, CIAK, DDJH, INGR

Table 6: Composition of branch indices from the Zagreb Stock Exchange  
(Source: Zagreb Stock Exchange, at [www.zse.hr](http://www.zse.hr) (March 28, 2022))

In accordance with the logic presented in the previous chapter, the average market return was calculated for each branch index, and new SML equation was recalculated accordingly. The risk-free rate of return remained unchanged, and the presentation of newly formed branch models can be seen in Table 7. The results on the statistical significance analysis of models are shown in Table 8.

Table following on the next page

<i>Symbol</i>	<i>Beta</i>	<i>Theoretical return</i>	<i>Real return</i>	<i>Symbol</i>	<i>Beta</i>	<i>Theoretical return</i>	<i>Real return</i>
<b>CBX-CA: <math>R_i = 0,00170 + 0,20472 * \beta</math></b>							
CKML	0,19652	0,04193	-0,01150	PODR	0,33566	0,07041	0,15280
GRNL	1,98735	0,40854	-0,04783	VIRO	2,55833	0,52543	0,32830
KRAS	0,03048	0,00794	0,10096				
<b>CBX-H: <math>R_i = 0,00170 + 0,52737 * \beta</math></b>							
ATPL	2,15328	1,13726	0,79648	LKPC	0,45504	0,24167	0,28552
JDGT	0,26169	0,13971	0,03574	LKRI	0,34368	0,18294	-0,07082
JDPL	2,69865	1,42487	1,36629	TPNG	0,51157	0,27148	-0,09212
JNAF	-0,12680	-0,06517	0,13697	ULPL	1,44141	0,76185	1,04755
<b>CBX-I: <math>R_i = 0,00170 + 0,06690 * \beta</math></b>							
ARNT	0,75202	0,05201	-0,15159	PLAG	0,62733	0,04367	0,03922
ILRA	1,69617	0,11517	0,26826	RIVP	1,12005	0,07663	0,01879
JDRN	0,74921	0,05182	-0,03820	SUKC	2,26157	0,15299	0,00234
MAIS	0,21015	0,01576	0,00000	TUHO	0,56328	0,03938	0,22591
<b>CBX-K: <math>R_i = 0,00170 + 0,18756 * \beta</math></b>							
CROS	0,50201	0,09586	0,08560	JDOS	1,12257	0,21225	0,27971
HPB	1,76722	0,33316	0,48649	ZABA	0,83495	0,15830	0,20699
IKBA	0,88347	0,16740	0,27029	ZB	0,85070	0,16126	-0,28970
<b>CBX-MA: <math>R_i = 0,00170 - 0,00348 * \beta</math></b>							
ADRS	0,01460	0,00165	0,00221	DDJH	3,16746	-0,00932	-0,53160
CIAK	0,09247	0,00138	0,25961	INGR	0,55709	-0,00024	-0,18606

Table 7: Formulation of a branch models for EMH testing  
(Source: Author's calculation)

<i>Index</i>	<i>SST</i>	<i>SSR</i>	<i>r<sup>2</sup></i>	<i>F</i>	<i>F critical values</i>	
					<i>5% sig.</i>	<i>1% sig.</i>
CBX-CA	0,08909	0,01102	0,12366	0,42334	10,12796	34,11622
CBX-H	2,17740	0,99330	0,45619	5,03318	5,98738	13,74502
CBX-I	0,13271	0,00057	0,00428	0,02576	5,98738	13,74502
CBX-K	0,34202	0,01229	0,03592	0,14905	7,70865	21,19769
CBX-MA	0,33267	0,00002	0,00005	0,00010	18,51282	98,50251

Table 8: Analysis of the branch models for EMH testing  
(Source: Author's calculation)

## 5. CONCLUSION

After the overall analysis of all shares from the Zagreb Stock Exchange, and further analysis of subdivisions into sectors and branches of activities, the conclusion that is imposed is unique and unchangeable. The conducted ANOVA analysis and F test, in all cases, reject the hypothesis that the independent variable contributes to the prediction of the dependent variable. This proves that the SML model is not statistically significant and cannot be applied in the Republic of Croatia for the recognition of undervalued and overvalued shares in the analyzed period. The same has been proven even in cases where the analysis was done on sectors and branches of activities, which by their nature should better represent the average of that market segment. On the other hand, the obtained results in a specific way prove that during the analyzed period in Croatia it was not possible to form a strategy by which an investor could continuously achieve above-average returns, which would be the case if the SML model proved statistically significant. The obtained results suggest that share prices are formed in accordance with the "random walk" hypothesis, which is one of the characteristics of the weak form of the efficient market hypothesis.

This result also represent the scientific contribution of this research. Although there are previous research that has proven the existence of a weak form of the efficient market hypothesis in the Croatian capital market (as shown in the literature review), this research contributes to proving the hypothesis using a new methodology that has not been used before. This puts this research alongside those that contribute to resolving the dilemma of the efficiency of the Croatian capital market as a specificity of the developing market. It is necessary to think critically as well, and direct further research in terms of increasing the analyzed period, as well as the use of some new methods that may lead to the final resolution of the dilemma around the subject of research analyzed here.

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**APPENDIX***List of shares included in the sample*

<i>Symbol</i>	<i>Company</i>	<i>Sector</i>	<i>Symbol</i>	<i>Company</i>	<i>Sector</i>
ADPL	AD Plastik	CL	KODT	Končar - transformatori	CJ
ADRS	Adris grupa	MA	KOEI	Končar	CJ
ARNT	Arena Hospitality Group	I	KOKA	KOKA	A
ATGR	Atlantic grupa	G	KRAS	Kraš	CA
ATPL	Atlantska plovdba	H	LKPC	Luka Ploče	H
CIAK	CIAK grupa	MA	LKRI	Luka Rijeka	H
CKML	Čakovečki mlinovi	CA	MAIS	Maistra	I
CROS	Croatia osiguranje	K	MDKA	Medika	G
DDJH	Đuro Đaković grupa	MA	OPTE	OT - Optima telekom	JB
DLKV	Dalekovod	F	PLAG	Plava laguna	I
ERNT	Ericsson Nikola Tesla	CI	PODR	Podravka	CA
GRNL	Granolio	CA	PTKM	Petrokemija	CE
HPB	HPB	K	RIVP	Valamar Riviera	I
HT	Hrvatski telekom	JB	SAPN	Saponia	CE
IGH	Institut IGH	MB	SUKC	Sunce hoteli	I
IKBA	IKB Umag	K	TPNG	Tankerska next generation	H
ILRA	Ilirija	I	TUHO	Turisthotel	I
INA	INA industrija nafte	CD	ULPL	Alpha adriatic	H
INGR	Ingra	MA	VART	Varteks	CB
JDGT	Jadroagent	H	VIRO	Viro tvornica šećera	CA
JDOS	Adriatic osiguranje	K	VLEN	Brodograd. Viktor Lenac	CL
JDPL	Jadroplov	H	ZABA	Zagrebačka banka	K
JDRN	Jadran	I	ZB	Zagrebačka burza	K
JNAF	JANAF	H			

(Source: Zagreb Stock Exchange, at [www.zse.hr](http://www.zse.hr) (March 28, 2022))

## WOMEN'S INEQUALITY IN THE LABOR MARKET IN CROATIA

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### ABSTRACT

*As society has evolved throughout history, so has the position of women in society. There are more and more successful women in the business world in high managerial positions. Despite possessing some anteriority in management and leadership, women in high positions in the administration are found in a much smaller number than men. Women encounter various obstacles during their business careers. Certainly, men are the ones who encounter obstacles too, but these constraints are much more pronounced in the employment of women. Awareness of gender equality is growing, but the situation is still much sanguine in theory than in practice. The subject of research in this paper relates to the analysis of women's inequality in the labor market during employment and during career. This paper will present an analysis of research conducted through surveys, which interviewed women' experiences during employment and later in their careers.*

**Keywords:** *Women's inequality, Labor market, Survey, Croatia*

### 1. INTRODUCTION

One of fundamental human rights is gender equality. It is also the right to work. "Gender gaps and structural barriers continue to exist in many areas which limit women and men to their traditional roles and hamper women in their ability to exercise their fundamental rights." The European Union has adopted a number of regulations, strategies, policies, conventions and, directives on gender equality. The Republic of Croatia has been a member of the European Union since July 2013, therefore, these provisions should also apply to Croatia. The Union has 28 members, and thus serious promotion of gender equality is needed. Already, in the founding treaties, the European Union touched on labor rights, social policy, and gender equality as in a chapter on Social Policy in the Treaty establishing the European Economic Community in 1957. A few years later, the need for change arises. Thus, the directives of the European Union on the prohibition of sex discrimination, payment of wages, working conditions, etc., were adopted. The Charter on Fundamental Social Rights of Workers from 1989 was also signed by the Republic of Croatia. The last significant chapter was issued is 2001, the one on fundamental labor rights. The Council of Europe's Gender Equality Strategy 2018-2023 "builds on the extensive legal and political acquis as well as the achievements in the implementation of the

Council of Europe's Gender Equality Strategy 2014-2017. The aim is to achieve gender equality by empowering women and men in the member states of the Council of Europe through existing instruments and by strengthening the *acquis* in the field of gender equality." The position of women has changed throughout history. Despite the fact that women's conditions have improved, it is still not satisfactory. In December 2019, the total number of employees in the Republic of Croatia was 1 540 084 of which 723 525 were women. Compared to November 2019, the number of total employees decreased by 0.2%, and the number of employed women by 0.1%. Compared to the same month of the previous year, the number of persons in paid employment in December 2019 increased by 1.0%, and the number of women by 0.4%. In the period from January to December 2019, as compared to the same period of the previous year, the number of persons in paid employment increased by 1.0% and the number of women by 1.3% (Centar Bureau of Statistics, 2020). The following Table 1 is a tabular presentation of the active population of the Republic of Croatia by administrative sources and sex in 2019 and a comparison with 2018.

	XI. 2019.		XII. 2019.		Indexes Indices					
	in total	women	in total	women	XII. 2019. XI. 2019.		XII. 2019. XII. 2018.		I. - XII. 2019. I. - XII. 2018.	
					in total	women	in total	women	in total	women
Active population	1,671,541 th most common	795,339 th most common	1,671,837 th most common	796,160	100.0	100.1	99.9	99.0	99.4	99.2
Total employees	1,543,091	724,549	1,540,084	723,525	99.8	99.9	101.0	100.4	101.0	101.3
Employees in legal entities	1,335,964	637,886	1,334,369	637,224	99.9	99.9	100.9	100.3	101.0	101.5
Employed in crafts and trades and free lances	187,908	80,437	186,502	80,082	99.3	99.6	102.0	101.4	100.9	99.9
Employed insured farmers	19,219	6,226	19,213	6,219	100.0	99.9	98.8	97.7	99.0	98.0
Unemployed	128,450	70,790	131,753	72,635	102.6	102.6	88.5	87.1	83.8	82.1
Registered unemployment rate,%	7.7	8.9	7.9	9.1						

*Table 1: Active population of the Republic of Croatia by administrative sources and sex, 2018 and 2019*

*(Source: Central Bureau of Statistics.hr, Available at:  
[https://www.dzs.hr/Hrv\\_Eng/publication/2019/09-02-01\\_12\\_2019.htm](https://www.dzs.hr/Hrv_Eng/publication/2019/09-02-01_12_2019.htm))*

Next, Figure 1 displays is a graphic presentation of employees in legal entities from December 2018 to 2019. In December 2019, the number of persons in paid employment in legal entities in the Republic of Croatia was 1 334 369 out of which 637 224 were women. Compared to November 2019, the number of persons in paid employment in legal entities decreased by 0.1%, as did the number of women in paid employment, also by 0.1%. The number of persons in paid employment in legal entities in December 2019 increased by 0.9%, as compared to the same month of the previous year, and the number of persons in paid employment by 0.3%. In the period from January to December 2019, as compared to the same period of the previous year, the number of persons in paid employment in legal entities increased by 1.0%, and the number of employed women by 1.5%” (Centar Bureau of Statistics, 2020). There is still a significant difference between men and women in the labor market. As a result, women become more dependent on men, which puts them at a disadvantage.

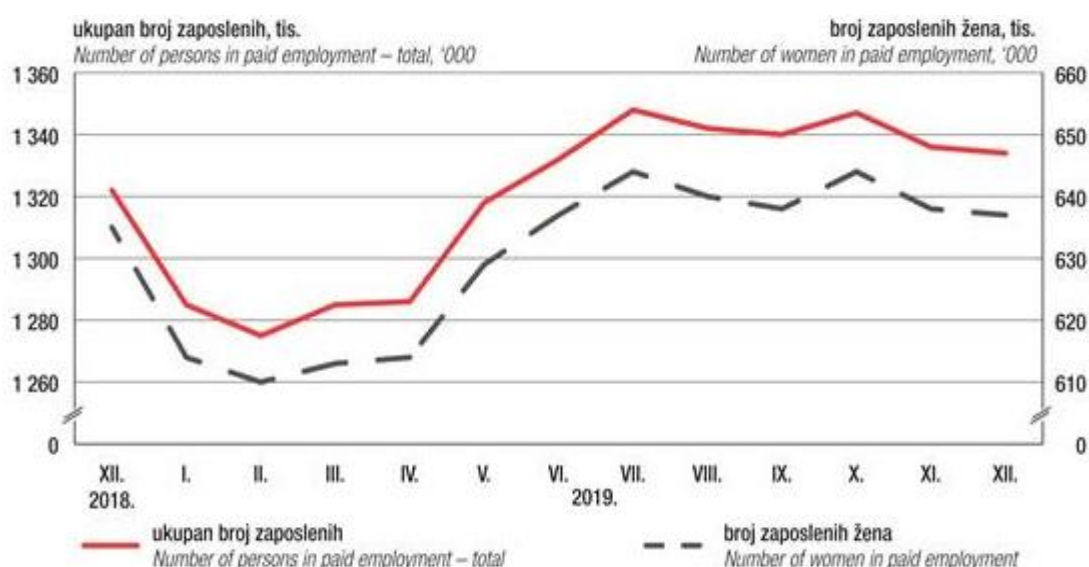


Figure 1: Employees in legal entities from 12.2018. to 12.2019.

(Source: Central Bureau of Statistics.hr, Available at:

[https://www.dzs.hr/Hrv\\_Eng/publication/2019/09-02-01\\_12\\_2019.htm](https://www.dzs.hr/Hrv_Eng/publication/2019/09-02-01_12_2019.htm))

Discrimination against women in the labor market is part of general discrimination against women. In developed economies, women make up almost half of the workforce, and women's participation in the labor market is constantly increasing. Despite significant positive developments, the position of women in the labor market remains worse than that of men. Opinions are divided, but it is certainly harder for women than for men due to distinct objective problems. First of all, they are sometimes insufficiently informed, mostly possessing fewer funds and real estate and other elements to start a business or advance in their current job. They are often forced to choose only a job that they can adjust to family obligations. Also, women find it harder to get certain information needed for work because they spend more time with family and taking care of the household. These circumstances represent objective limitations imposed on women through the patriarchal arrangement of the system and society. Under the Labor Act, employers must not refuse to hire a woman because of her pregnancy. However, in practice, women face various awkward issues regarding family planning when hiring. Although women do not have to answer such questions, it is rare for a woman to exercise this right because they want to get a job. Also, employers should not offer a lower salary and a new job under less favorable conditions due to pregnancy, i.e. upon return from maternity leave. In addition to the Labor Act, there is also the Maternity and Parental Benefits Act, which imposes rights to financial benefits. Also, there are time grants to which a woman is entitled. For example, an employer in Croatia must provide a woman with two hours a day to breastfeed a child until the first year of life. Although there are many legal provisions, the practice is often different. Women generally do not complain, to keep their jobs and have at least a small portion of their income. As long as the situation is such in the market by the employer, women will always be discriminated against. Since practice exhibits a different pattern of behavior from theory, the idea of this paper is to accentuate the differences that are in practice and which do not exist in theory. The economic opportunities of women are conditioned by gender segregation. Gender segregation refers to the concentration of women and men at different types and levels of activity and employment. It can be horizontal or vertical. Horizontal segregation represents the division of women and men in employment into certain types of occupations. Vertical segregation represents the distribution of women and men in different hierarchical positions within occupations, ie it refers to the fact that a small percentage of women are in positions of power because their professional advancement is limited.



This phenomenon is known as the ‘glass ceiling effect’ or the underrepresentation of women in management positions. The share of women in governance structures, both globally and domestically, is growing slowly but surely.

## 2. LITERATURE REVIEW

There is a very large number of researches being conducted on the topic of labor market inequalities. Inequalities in the labor market have always existed, but over time, market participants are becoming more aware of the importance of this topic. Among all inequalities, gender inequality, which represents the cultural heritage of society, stands out. Burdened with this legacy, society is entering the market today, but with visible positive shifts over time. Women's subordination in the labor market has become more evident over the years of women's struggle for their freedom and greater equality with men, Actepe (2021) and Carlsen (2020). As a result of this long struggle, a great deal of research has shown inequality and inequality towards women in the labor market. One such study is the study of Tirbach and Chaban (2021), which presents the gender characteristics of the Ukrainian *vis-à-vis* world labor markets. The purpose of this paper was to study and present gender issues in the labor market, describe the causes of female unemployment and inequality at work, conduct a structured assessment of the Ukrainian labor market based on gender and compare with the experiences of women from around the world. When we look at the whole world and the situation in the entire labor market, we can see the structure of employees, and the problems that exist in the labor market (Gamez and Angeles, 2019). This paper provides a comprehensive overview of the situation of women and inequality and the structure of the labor market worldwide. One of the sources of inequality in the labor market is the traditional position of women in a predominantly patriarchal society that has shifted to the labor market. Chuanchuan and Jingwen (2021) and Zur and others (2021) are just looking at the impact of the traditional position of women in society on the Chinese labor market. This research showed the existence of a negative correlation between employment and inequality of women in the labor market and the traditional role of women in society. However, it also showed the connection between different women's movements in the fight for women's freedom and better conditions in the women's labor market. Through the time of pandemics implied digitalization of business was believed to be one of the forms of helping women to reduce inequalities in the labor market, Kilari and others (2020), Kim and others (2021). Digitalization of business and work from home, the existence of digital nomads, etc., in theory, should have reduced the inequality and unemployment of women since they provide equal conditions for everyone in the market. However, a study by Ilimbetova (2021), which deals with the impact of digitalization on the labor market in Russia, came to completely opposite conclusions. In this research, it is shown that women in the vast majority of cases are only users, while men are developers who are also the owners of IT and other companies. Bergmann (2005), shows the situation of women in the American labor market and their problems and the inequality that arises from these problems. This research shows a situation from the second half of the twentieth century in which a large number of women in America decide to get a job and seek employment. The labor market absorbed the entire number of women who were looking for work, but did not place them in jobs at all levels of structures, with a precedent that women were employed only in jobs that predefined through social views belonged to women or "women's" jobs, Kostiuik and others (2020). The general situation of women in the world labor market is analyzed by Kamasheva et al. (2013), in which they present the world labor market and various inequalities by gender, age, health status, etc. The conclusion of the paper is common to other studies as it reveals inequality towards women in the labor market, in the form of discrimination, lower wages for equal jobs compared to men and employment in lower government structures within companies.

### 3. DATA AND ANALYSIS

The research was conducted on the problems faced by women in employment and during employment in Croatia. The research aims to find out whether the respondents have encountered discrimination, feelings of inferiority, or abuse during their work experience. In addition, it is intended to investigate whether the respondents were asked questions about pregnancy, marital status, and children at the job interview and what the return to work was like if the respondents were on maternity leave. The research was conducted through surveys. The survey consisted of 18 questions and was conducted on a sample of 100 female respondents. The survey was conducted using a survey method developed using the Google form. The survey is anonymous and could be accessed by anyone. Most of the respondents are between the ages of 21 and 35 (Chart 1) with completed undergraduate studies. As far as marital status is concerned, most of the respondents are in a relationship, and most of the monthly income in the household is from HRK 5 001 to HRK 8 000.

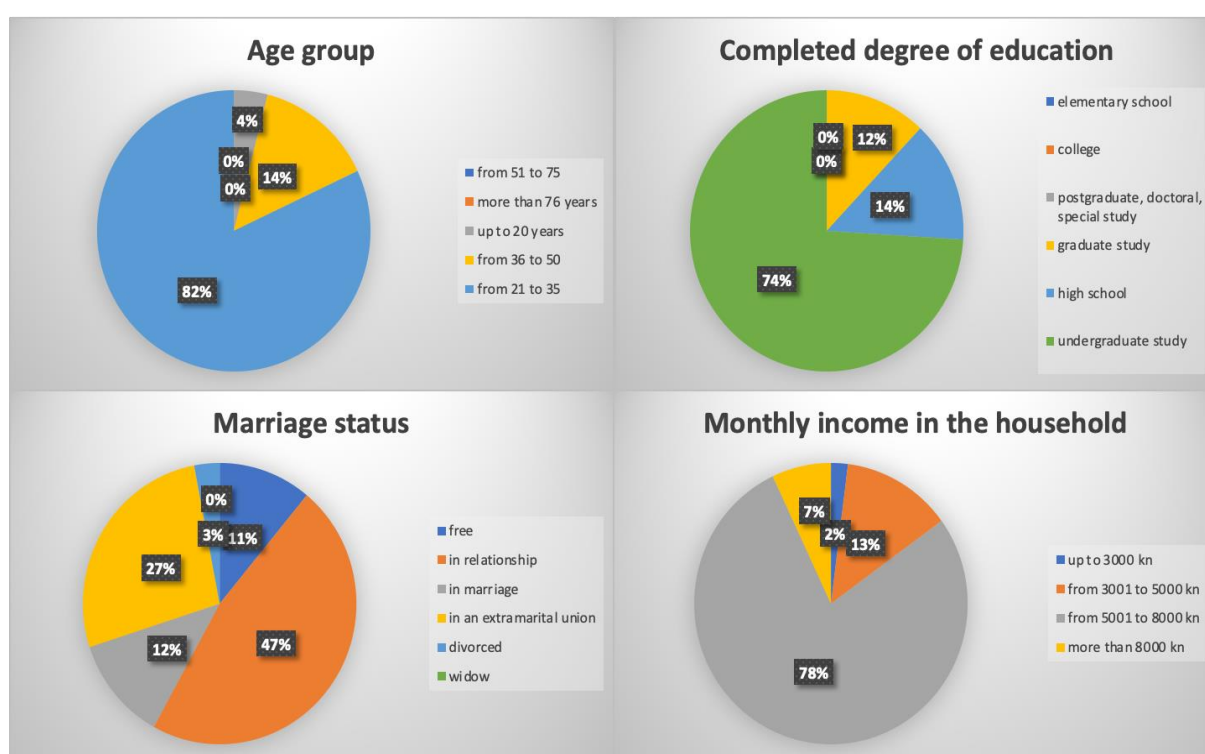
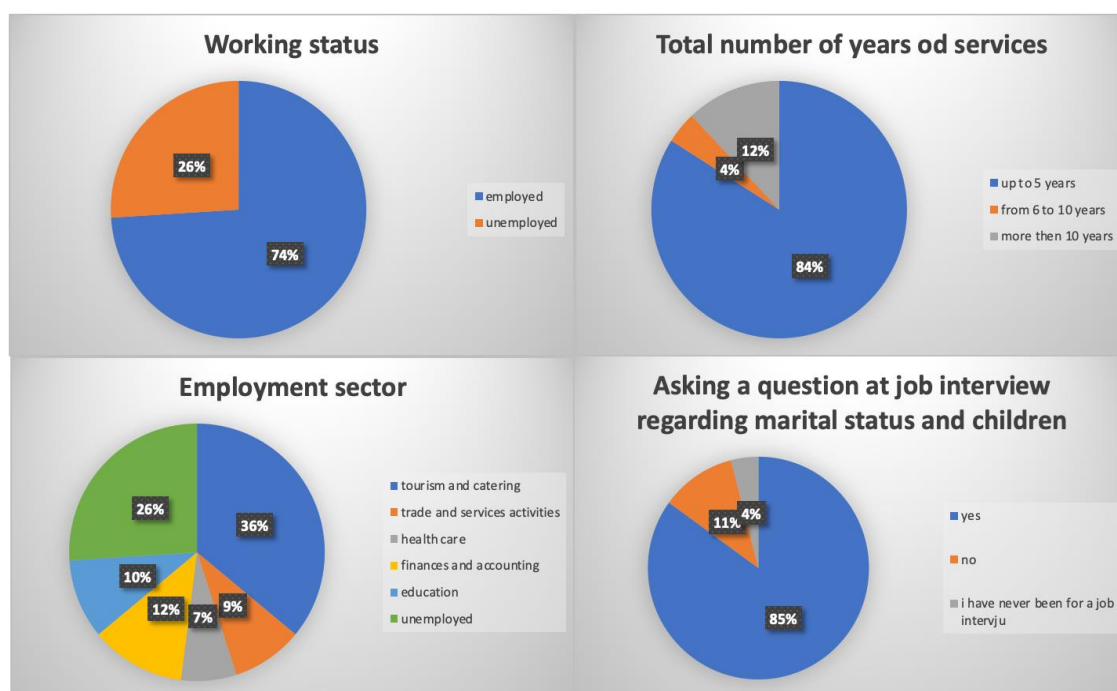


Chart 1: Age group, Completed degree of education, Marriage status, and Monthly income in the household

(Source: Authors' calculation)

In Chart 2, we can see that most of the respondents are currently in the status of an employed person. The total number of years of work experience for as many as 84% of respondents is up to 5 years, while according to the sector in which they perform their work, they are relatively evenly distributed among different sectors, with the tourism sector being particularly emphasized, which is not surprising given that the Croatian economy oriented to tourism as the main activity.

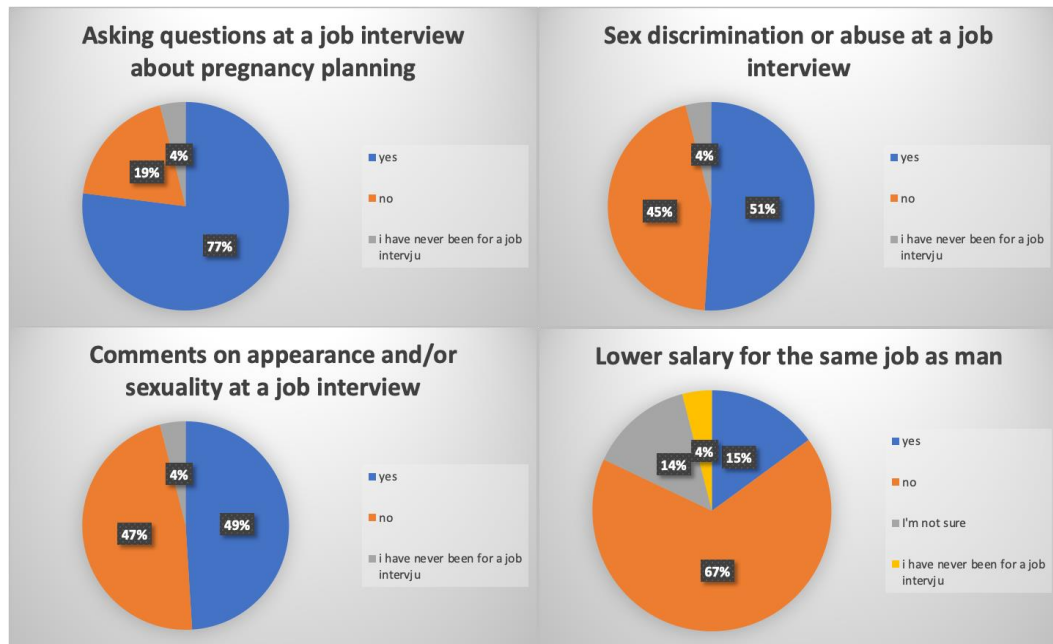
Chart following on the next page



*Chart 2: Working status, Total number of years of services, Employment sector and Asking a question at job interview regarding marital status and children  
(Source: Authors' calculation)*

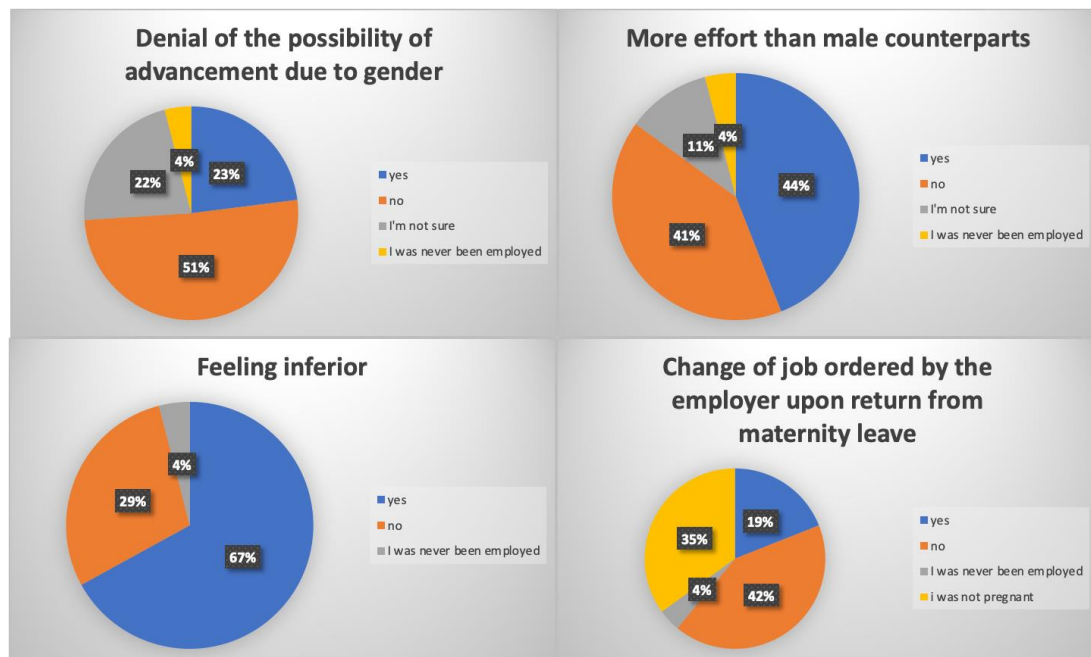
Furthermore, Chart 2 indicates that most of the respondents answered with an affirmative answer to the question of whether they were asked a question related to marital status and status with children during the job interview. In Chart 3, we see that when interviewing for a job, the vast majority of employers ask women if they are planning a pregnancy in the future, which is forbidden. This question also implies a limitation in the employment of women in relation to men in the case of a positive response related to future pregnancy. Sexual discrimination and inappropriate sexual comments at work among the surveyed women are in the ratio of half to half. While the answer to the question about salary for the same job as with male colleagues is interesting, women answered in the vast majority that they have the same salary for the same job, which is progress in relation to women.

*Chart following on the next page*



*Chart 3: Asking a question at a job interview about pregnancy, Sex discrimination, or abuse at a job interview, Comments on appearance and/or sexuality at a job interview and Lower salary for the same job as a man  
(Source: Authors' calculation)*

In Chart 4, we see that the possibility of advancement in relation to male colleagues is not as pronounced, nor is the investment of more effort in the same job as male colleagues. However, the feeling of less value in the workplace compared to male colleagues is very pronounced among women. Table 2 displays descriptive statistics related to the survey that was conducted as part of the research, as to summarize the characteristics of the data set.



*Chart 4: Denial of the possibility of advancement due to gender, More effort than male counterparts, Feeling inferior, Change of job ordered by the employer upon return from maternity leave  
(Source: Authors' calculation)*

Column1		Column2		Column3		Column4	
Mean	33,3333333	Mean	33,3333333	Mean	33,3333333	Mean	33,3333333
Standard Error	25,91224507	Standard Error	22,2585814	Standard Error	14,7685853	Standard Error	14,6780259
Median	11	Median	19	Median	45	Median	47
Standard Deviation	44,881325	Standard Deviation	38,5529938	Standard Deviation	25,5799401	Standard Deviation	25,4230866
Sample Variance	2014,333333	Sample Variance	1486,33333	Sample Variance	654,333333	Sample Variance	646,333333
Skewness	1,684771136	Skewness	1,44177286	Skewness	-1,6254618	Skewness	-1,7199994
Range	81	Range	73	Range	47	Range	45
Minimum	4	Minimum	4	Minimum	4	Minimum	4
Maximum	85	Maximum	77	Maximum	51	Maximum	49
Sum	100	Sum	100	Sum	100	Sum	100
Count	3	Count	3	Count	3	Count	3

Column1		Column2		Column3	
Mean	25	Mean	25	Mean	25
Standard Error	14,2185325	Standard Error	9,703951085	Standard Error	10,2225242
Median	14,5	Median	22,5	Median	26
Standard Deviation	28,437065	Standard Deviation	19,40790217	Standard Deviation	20,4450483
Sample Variance	808,666667	Sample Variance	376,6666667	Sample Variance	418
Kurtosis	3,47815776	Kurtosis	1,807870624	Kurtosis	-5,3203567
Skewness	1,81178496	Skewness	0,755097956	Skewness	-0,0819094
Range	63	Range	47	Range	40
Minimum	4	Minimum	4	Minimum	4
Maximum	67	Maximum	51	Maximum	44
Sum	100	Sum	100	Sum	100
Count	4	Count	4	Count	4

*Table 2: Descriptive statistics  
(Source: Authors' calculation)*

#### 4. CONCLUSION

This paper analyzes the position of women in employment and during work in a particular job. The idea of work stems from the long-standing existence of inequality in the employment of women and sexually inappropriate behavior or discrimination during work in a particular workplace. In the paper itself, analyzed data were obtained from the conducted surveys. The survey consisted of eighteen questions conducted via a google form, where one hundred women answered the questions asked. Based on these answers, we can conclude that there is still a large proportion of discrimination against women both in employment and employment decisions and during the work itself in various forms of sexual discrimination. What we can further conclude is that there is a shift in that part when we talk about the payment of women in the same job as men, where a significant positive shift and much less inequality in wages is seen. What is perhaps most worrying and what is perhaps the biggest problem we have discovered are the issues of pregnancy and planned pregnancy in the future, where this is a delayed circumstance for women to enter the labor market (Sharma and Tomić, 2012). Due to changes in society, faster and more intense lifestyle, fewer and fewer women decide to become pregnant and have children, which consequently leads to a decrease in the young population or aging population, as this problem becomes an additional burden. What is needed is not only to legally protect women in employment in principle, but it is also necessary to further tighten the supervision and punishment of those employers who are proven to have such a form of discrimination in employment. If we look only from an economic point of view and ignore other negative impacts, population aging and the lack of younger population has an extremely negative impact on the pension system, labor shortages, and other negative connotations that pass from it. In addition to the observed problems in employment, the next very big problem is sexual and other forms of discrimination that women experience in the workplace.

Altogether, it is necessary for the state to get involved, that is, to additionally supervise employers and to tighten the system for punishing proven violators. The advantage of our research and contribution is that these topics should be discussed and accentuate the existence of 'women' problems in society as a whole. Companies and employers who have approve women discrimination should be condemned by society and ultimately by end-users or consumers. The disadvantage of our research is in the way of data collection that was conducted through surveys which implicate different sample vs. population shortcomings. Also, the sample of one hundred observed women and their experiences is very small, and it would be preferable in future researches to increase the number of surveys or increase the sample. Also, it would be desirable to increase the number of questions and further clarify certain situations when there is discrimination in employment and when there is discrimination in the performance of work in the workplace. Reducing inequality and increasing equity in every system and company is very important both for the functioning of the company itself as efficiently as possible and for society as a whole. However, regulation and condemnation, and ultimately just punishment, are needed from two different directions. One direction is by the state, which must legally regulate permissible and impermissible behavior, but must also ensure the implementation of the law and its observance through various forms of supervision and penalties. On the other hand, a direction that is just as important as the state direction is the attitude of every individual in society who should not behave tacitly when witnessing discrimination and who should actively and not passively observe discrimination. The development of an individual that leads to the development of society and a change in the general attitude towards discrimination starts from personal development and a personal attitude that needs to be changed. Only progress in society can we eradicate discrimination against women, but also various forms of discrimination in society in general.

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# BRAND NAME IN THE SLOGAN! A SIMPLE AND EFFECTIVE WAY TO CREATE A SLOGAN

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## ABSTRACT

*The slogan is one of the most important elements in the marketing communication toolbox. A good slogan can highlight the brand's most important advantage to consumers, position the brand, stimulate sales, and even provide a talking point, generating word of mouth. Yet despite the importance of the slogan, many brands have a meaningless motto that no one knows, or even if they do, they cannot associate it with the brand. In this paper, we will look at the techniques and methods that can help you create a good slogan. As it turns out, it is of paramount importance for a slogan to be memorable, and in this context, not only the meaning of the words but also the way they sound is important. In connection with this, we present five methods for creating an effective slogan: rhyme, alliteration, repetition, reversal and double-entendre. But what kind of slogan should you avoid at all costs? Well, avoid the "more than" formula! And what is the easiest way to ensure that consumers not only remember the slogan, but also identify it with the brand? Put the brand name in the slogan!*

**Keywords:** branding, marketing, positioning, slogan, battle cry, rhyme, alliteration, repetition

## 1. INTRODUCTION

The slogan is one of the most important elements in the marketing communication toolbox. A good slogan can highlight the brand's most important advantage to consumers, position the brand, stimulate sales, and even provide a talking point, generating word of mouth. Yet despite the importance of the slogan, many brands have a meaningless motto that no one knows, or even if they do, they cannot associate it with the brand. In this paper, we will look at the techniques and methods that can help you create a good slogan. As it turns out, it is of paramount importance for a slogan to be memorable, and in this context, not only the meaning of the words but also the way they sound is important. In connection with this, we present five methods for creating an effective slogan: rhyme, alliteration, repetition, reversal and double-entendre. But what kind of slogan should you avoid at all costs? Well, avoid the "more than" formula! And what is the easiest way to ensure that consumers not only remember the slogan, but also identify it with the brand? Put the brand name in the slogan!

## 2. LITERATURE REVIEW

It may seem somewhat simplistic, but a brand has three main identity elements: the brand name, the logo and the slogan (Galí, Camprubí, Donaire 2017). Each of these is of paramount importance and each has a slightly different function. The slogan is to convey the main message, if you like, the essence of the brand in a few words. "Battle cry". First of all, it is good to remind ourselves that this is the original meaning of the word slogan. That is, when it is heard, soldiers give their lives and blood for a common cause. When we see (and hear) scenes from the film "Braveheart", we are not far wrong. Of course, for the Celts and Gauls, the word was different: 'sluaghghairm' first entered the English language as 'slughorn', then 'sluggorne', and became a 'slogan' after many centuries (Healey 2009, Ries 2015). However, what is still true of its original meaning is that it is good if a slogan can get people lined up and enthusiastic about a brand, whether they are customers or employees. Although the word "battle cry" is less used today, the world's most famous marketing textbook, Kotler's Marketing Management, also states that the slogan is very important in creating brand equity.



It says that the slogan's "function is to provide the consumer with a useful handle or clue to understand what lies behind the brand and what makes it special". (Kotler - Keller 2006, 378-379). Other authors mention the same point, emphasising that the slogan is a kind of hook that conveys the message and uniqueness of the brand (Kohli – Leuthesser – Suri 2007). While the replacement of a brand name or a logo is difficult and usually slow, there is no such barrier in the case of a slogan. Thus, the slogan is the most dynamic and flexible part of the brand, which can create a bridge between the brand's heritage and its evolving, modern image (Kohli - Leuthesser - Suri 2007, 416). It is also worth quoting Ildikó Sárközy (2009), who argues that a slogan is a sentence that contains the brand's textual message. In the case of a good slogan, the unique product promise is articulated in the brand message. The slogan is a mandatory part of brand communication – serving as its foundation and peak at the same time. This has been confirmed by research by Kovács (2019, 20-21), who writes that the impact of marketing communication can be detected in associations, and that in most cases a well-defined element of the marketing communication mix – such as an image or a slogan – is responsible for these associations. As he explains, "Associations can be positive or negative for the brand, or they can be incorrect, for example, if one brand is associated with another brand's slogan" (Kovács 2019, 29.). Furthermore, according to Rosengren and Dahlén (2006), the slogan can also play an important role in building a brand's prestige. While the logo is a less human, visual, graphic element that captures people (rather than making them think), the slogan is a specifically human interaction, since it mostly uses common language to communicate its values, the authors argue. The importance of the slogan or motto is therefore undeniable. However, the question of what makes a slogan really good is not easy to answer. There are many approaches in the literature on what makes a slogan successful and effective. In his book "The power of brand names" (2013), Papp-Váry summarised these aspects as follows:

- a good slogan "captures" the positioning of the brand;
- it has a clear message, conveys the product/brand "story";
- it is attractive, it has the "consumer, customer" advantage;
- it has a positive connotation (or at least it is not negative);
- it inspires us to buy it or learn more about it;
- it is relatively short (5 words or less);
- it is distinctive: unique, original, different from competitors;
- it is long-lasting, sustainable, there is no need to replace it;
- it is easy to remember and repeat;
- it works well with the logo;
- it is catchy;
- it appeals to customers – and staff as well.

### 3. FAMILIAR OR UNKNOWN

Checklists like the above can be found at almost every marketing company, branding consultant or advertising agency. Yet very few brands have a slogan that consumers know – or even if they do know the slogan, they may not be able to associate the brand name with it. And the most surprising thing is that this is true even for large international companies that can work with the most professional marketers in the world with huge communication budgets. Let us give it a try! What is Nike's slogan? Is that an easy question? Yes, their slogan is "Just do it". What does it mean? Very briefly, it means that you should not make excuses, just put on your running shoes and run. (Or play any other sport.) Okay, now for the next question. What is Adidas' slogan? It is not so easy, is it? In the world, the two brands are essentially neck and neck with similar sales, both spending a lot on advertising. By the way, their slogan is "Adidas is All In", and before that it was "Impossible is nothing".

It should be noted that neither of these slogans is bad, in fact. After all, “All in” also means that it is worth giving your all when you play sport. Yet fewer people know these slogans than Nike’s slogan. True, the comparison is unfair in the sense that according to Advertising Age, “Just do it” is the second best slogan of the 20th century. Which comes first will be revealed at the end of the study. But we can also look at other industries. What is the current slogan for Coca-Cola? This one might even be recalled: ‘Open happiness’. And what is Pepsi’s? Probably not so memorable: “That’s what I like”. Or think about it: how many car brand slogans can you say? And they are among the biggest advertisers in the world! And you as a reader are not even the average person, but a professional interested in marketing, in the world of brands. But let us face it, even advertising agencies are not good at slogans. How many agency slogans do we know? If they cannot create a slogan that their clients and potential clients know, it is no coincidence that so many of their slogans for product and service brands fail. One reason for this may be that marketing and business speak is full of abstract words. In meetings, we hear terms such as consumer centricity, quality service, modern technology, management excellence, customer experience, or even innovative products. (Adams 2010, Trout – Rivkin 2009) In fact, while the innovation is indeed useful, or even essential in business and marketing, the word innovation is almost useless in marketing communication. It is concrete words that people know what to do with – something that they see in their minds, something that appears in front of them.

#### **4. FIVE TECHNIQUES FOR CREATING SLOGANS**

This prompted Laura Ries, daughter of Al Ries, author of *Positioning*, and one of the leaders of their joint consultancy company, to summarize what it takes to create a successful slogan. According to her book *Battlecry* (2015), the main goal is to make the slogan memorable and of course identifiable with the brand – the key to which, if the slogan is positioning, is to include a unique selling proposition, USP. (It is no coincidence that she is the daughter of the author of *Positioning*.) Of course, this in itself is nothing new for a marketer. What is new is that, as she points out in the book, the way words sound is also important besides their meaning. In fact, the latter is more important. Just think of how much more likely it is that people will talk about it afterwards, resulting in word-of-mouth advertising. According to Laura Ries, there are five methods, or verbal techniques, for creating such slogans: rhyme, alliteration, repetition, reversal and double-entendre (Ries 2015). These are summarised below.

##### **4.1. Rhyme**

Nowadays, this may be the most outdated method, considered by many advertisers and agencies to be downright awkward. But these slogans cannot be all bad if you remember them decades later. How much more memorable, for example, is it for Pepsi to replace “That’s what I like” with “Pepsi-Cola hits the spot. Twelve full ounces, that’s a lot. Twice as much for a nickel too. Pepsi-Cola is the drink for you.” The popularity of Timex watches was also boosted by the slogan: “It takes a licking and keeps on ticking.” – the watch was shown on people doing hard physical work or extreme sports. Or there is the slogan of the Paul Masson wine brand: “We will sell no wine before its time”. Yahoo’s legendary slogan also included a rhyme: “Do you... Yahoo!?”

##### **4.2. Alliteration**

Alliteration is not only common in slogans, but also in brand names, whether there are two words or syllables. Coca-Cola or Dunkin’ Donuts are examples of the former, while PayPal or Blackberry are examples of the latter. But it is also used in the titles of TV shows, such as *Big Brother*. It is important to note that, in Laura Ries’ interpretation (2015), alliteration does not necessarily mean that the two words are consecutive, but that the initial letter of the brand name

is used somewhere in another word. Staying in the world of reality television, examples include the title *Keeping up with the Kardashians*. Back to the topic of alliterations and slogans: in the case of the original English version of the M&M's slogan, there is an alliteration, "Melts in your mouth, not in your hands." Its words melt and mouth also alliterate with the brand name M&M's. The phrase is also one of the best positioning slogans, as it was a real innovation at the time to have a hard layer of sugar surrounding the chocolate and not melting. Although it has not been the brand slogan for a long, long time, many consumers still associate the product with it. Or we could mention a similar example from another industry, Esso petrol stations, referring to their mascot animal, the tiger: 'Put a tiger in your tank'. Alliteration is an easy choice when creating a slogan in the sense that – as Laura Ries writes (2015) – you only need to open a dictionary at the letter that begins your brand name.

### 4.3. Repetition

"To be or not to be, that is the question." William Shakespeare and perhaps the most famous lines in world literature use repetition. But the question could also be asked in the form "To be or not?" But the repetition reinforces the text. The US Army could have used "Be all you can", but "Be all you can be" is much stronger and more memorable. We could also use the Papa John's slogan as an example: "Better ingredients. Better Pizza." Or there is the case of Walmart: "Always low prices. Always." where the second 'always' confirms our choice. Max Factor's example is not just a slogan, but an excellent case of positioning: "The Make Up of Make Up Artists" – it is hard to think of a better way to describe the unbeatable quality. The slogan of Dollar Shave Club is also particularly witty: "Shave Time. Shave Money." KitKat chocolate's popularity is greatly enhanced by its slogan and the advertising that demonstrates it: "Have a break. Have a KitKat." i.e. take a break and eat a KitKat. Energizer used a drumming bunny to demonstrate how durable its batteries are, and products using them just go on and on and on: "It Keeps Going, and Going, and Going..." Last, but not least: perhaps the most famous repetition can be found in an international city slogan. "What happens here, stays here", says the slogan of Las Vegas, which could only be better if the brand name, that is, the city name, was included. Of course, it is no coincidence that people automatically use the phrase "What happens in Vegas, stays in Vegas."

### 4.4. Reversal

Few speeches by politicians are remembered decades later, but US President John F. Kennedy's speech is, saying "Ask not what your country can do for you – ask what you can do for your country". It is a classic reversal, offering a reversed perspective. A similarly famous saying in the business world is Peter F. Drucker's thought "Management is doing things right; leadership is doing the right things." (Drucker 2003) But the name of the world's most famous motorcycle club, Hells Angels is also a reversal. It was an example of repetition, but perhaps even more of a reversal, when Holiday Inn chose the slogan "The best surprise is no surprise", referring to the consistently high quality and service found in Holiday Inn hotels, telling it in a much more creative way. The case of the Residence Inn is also similar – they said that what you can rent is not a room, but a residence: "It's not a room, it's a residence." The Volkswagen Beetle campaign, voted by Advertising Age as the best advertising campaign of the 20th century, also used a reversal. Just when everyone in America seemed to be looking for a big car, VW came out with the "Think small" ad. And the headlines unfurled the slogan: "Live below your means", said one ad. "And if you run out of gas, it's easy to push," demonstrated another. They also provided a very particular perspective on why it makes sense to choose a small car: "It makes your house look bigger" (Imseng, 2018). And we could list several further examples of successful reversals. "It takes a tough man to make a tender chicken." – said owner Frank Perdue in his Perdue Farms commercials.

A similar solution was used by Secret deodorant when it advertised using the slogan “Strong enough for a man, but made for a woman”. 7-UP created one of the most famous positioning examples to date when it launched in the market with the slogan “The Uncola”. Finally, there is the case of the jam producer Smucker’s. Here the name sounds rather odd, different from the word ‘suckers’ only by one letter. This situation was also reversed by a slogan: “With a name like Smucker’s it has to be good”.

#### **4.5. Double-entendre**

There is a famous political example of the last category, namely when the future Iron Lady Margaret Thatcher campaigned for the Conservative Party against the Labour Party. The message was ‘Labour isn’t working’, which implied not only that the Labour Party and the government was not working well, but also that unemployment was rising. The latter was demonstrated by the queue for unemployment benefit displayed on the poster. Demonstration is important in other cases too. Morton salt, known to many for its packaging, where a little girl with an umbrella over her head pours salt in the rain, used the slogan “When it rains, it pours.” for decades. In doing so, the company reinforced both visually and verbally that this salt does not stick in water, thanks to the added magnesium carbonate, a huge innovation a hundred years ago. Merryll Lynch’s slogan is also playing with the meaning of the words, referring to the stock market and the bull market: “Merryll Lynch is bullish on America.” Examples also include the John Deere tractor and its slogan “Nothing runs like a Deere.”, the ambiguity of which is reinforced by the deer in the logo. Now, if it is true that it is much easier to get into people’s heads with slogans created in the five ways described above, one would think that advertisers and their agencies would be wise enough to use these solutions. However, only a very few of them do that. A survey of 266 advertising slogans found that only 19 of them fell into any of the five categories above. And even of those 19, several of them were really meaningless, concluded Laura Ries (2015).

#### **5. THE WORST CHOICE OF SLOGAN: “MORE THAN ...”**

Considering that according to Laura Ries, many advertising slogans are meaningless, it is worth looking at the phrase that is the worst of all options, although it is still used by many. This is none other than “More than ...” – followed by the name of the product/service category. “More than” may seem like a good idea, as it suggests that the brand stands out in the category because it is doing something else. But that is exactly the problem. What is the brand actually doing then? In his book “Brand a lelke mindennek” (“It is all about brands”) (2021, p. 94), Róbert Mészáros sums it up with irony: “‘More than...’ Wow, that is the worst choice! I want to make you believe that I am more than something, but what I am actually is obscure – so I go on using the same expression. More than insurance, more than business, more than slogan, more than bullshit. More than everything, more than embarrassing. More than branding... erm, you would not buy anything from us this way, would you?! :)” A well-known Hungarian professional forum of online advertising, Addict Blog, dedicated a special post to this topic in 2013, entitled “More than just an embarrassing advertising slogan”. It argues against ‘More than ...’ “is the most mannered, yet the most meaningless variation, which seems to say something, to send a message, while having the opposite effect and immediately becoming an object of ridicule.”

#### **6. THE BEST CHOICE OF SLOGAN: BRAND NAME IN THE SLOGAN!**

Now we know what the worst choice of slogan is, in the words of Róbert Mészáros (2021). But which one is the best? How can a slogan become immediately associated with a brand? Well, there is a method of common-sense (Papp-Váry 2009): simply include the brand name in the slogan. The author of this article already wrote about this topic quite extensively in 2013 in his book „The power of brand names”.

Since then, more recent examples have only confirmed that you cannot make a big mistake if you include the brand name in the slogan. In fact, you can usually achieve your aims. Just have a look at a few examples! What is Gösser's slogan? Yes, „Gut, Besser, Gösser”! (And how much better it sounds than the original: Gut, Besser, Paulaner). What is the slogan for Calgon? “Washing machines live longer with Calgon” What is the slogan of Red Bull? “Red Bull gives you wings.”) It is no coincidence that David Ogilvy wrote in his book *Ogilvy on Advertising* (2001) that, if possible, the brand name should be included in the headline of the advertisement. Paul Arden (2003), former creative director of the advertising agency Saatchi & Saatchi, has suggested the same. Although they wrote this about headlines, their findings are equally, and perhaps even more, valid for slogans. Pike (2004) points out that the inclusion of the brand name in a slogan clearly links the values and associations to be communicated to the brand, and creates a unique, unmistakable slogan. In fact, if a brand is not yet known, it can be particularly important to integrate the name into the slogan, as this can introduce both the brand name and the brand message to the public (Ortega – Mora – Rauld, 2006). But let us look at examples from the world of brands! “Today, Tomorrow, Toyota” says Toyota’s slogan, which is also a triple alliteration. “Have you ever seen a Corolla broken down?”, they said of one of their models. “The Coke Side of Life” was Coca-Cola’s slogan a few years ago. “You’ve been Tangoed” – the advertisements of the Tango juice (mainly orange juice) brand featured a big orange man who regularly surprised unsuspecting people. ‘A Guinness a day is good for you’, and later ‘A Guinness is good for you’ – if the slogan says it is good for you, then it is certainly worth drinking. (Especially as Guinness, like Coca-Cola, was originally a medicine.) “Australians Wouldn’t Give a XXXX For Anything Else”, says the slogan of the Australian XXXX beer, playing on the phrase “not give a f...”. “Citi never sleeps”, says Citibank’s slogan, a reference to the hard work and dedication of the company. It also evokes a well-known saying: ‘The City That Never Sleeps’ is one of New York’s nicknames, and the company’s headquarters are located here. “Have you met life today?” is how Metlife Insurance hid its brand name in the question. “No FT, No comment” – the slogan of the Financial Times financial newspaper also uses a witty solution. “Come to Marlboro Country” – we saw the cowboy enjoying freedom on cigarette ads for decades. It was the longest running advertising campaign of all time, and the slogan played a big part in that. “Winston tastes good ... like a cigarette should”, sang Fred and Barney, two Stone Age pros, when tobacco product placement was still allowed in cartoons. “Every kiss begins with Kay” was not a bad choice for a jewellery brand. “America Runs on Bulova” – the humble phrase from the Bulova watch brand also suggested that they were behind the world’s first TV ad, which of course featured a watch. “Why Slow-Mow When You Can Flymo” – the Flymo mower brand wittily alluded to the fact that it cuts lawns faster than other brands. “Fly the friendly skies of United” – if it did not include the term „of United”, it would be much harder to identify the airline. “There’s Hertz and not exactly.” – i.e. there is Hertz car rental and there are those that are not exactly like them. Of course, the slogan was backed up by the fact that for quite some time Hertz was the market leader. “Beanz Meanz Heinz” – that is, Heinz means beans, or more precisely canned beans. True, since then it has also meant ketchup and many other things. “The Few. The Proud. The Marines.” is the most famous motto of the U.S. Marine Corps. „Intel Inside” is not only an excellent alliteration, but it has also taught consumers to know and appreciate the internal components of their computers and laptops that they essentially never encounter physically. The examples go on and on. “It’s not TV, it’s HBO.” displays perfect positioning against the rest of the industry, also implying that there are no commercials here, as with a classic television channel. Another ad says, pointing to a nice sweater: „New? No, washed in Perwoll.” As for pets, the US brand Meow Mix showed cats meowing in the ad, followed by the tagline, pointing out that the Meow Mix brand is what cats ask for by name: “Tastes So Good, Cats Ask For It By Name.”

“The best part of waking up is Folgers in your cup,” said the Folgers coffee ad, beating its competitors by a good margin. (Smart readers will also spot the rhyme in the slogan.) “You work hard, you need Right Guard” recommends Right Guard deodorant for those who work hard. “If it’s Madewell, it’s well made” is a great message for women's clothing. “Bubble Yum. Number yum in bubble gum.” referred to being the first among inflatable bubble gums, spelled as “number yum” instead of “number one”. “Marmite – My Mate” was a great choice for a food product with a very special flavour. “Maybe she’s born with it. Maybe it’s Maybelline.” – said the excellent slogan of Maybelline cosmetics, meaning that either she was naturally beautiful to begin with, or Maybelline made her naturally beautiful and thus confident. “Do you...Yahoo!?” – i.e. “Do you use Yahoo search?” – and the rhyme made it sound even more witty. “Happiness is a cigar called Hamlet.” suggested happiness was based on a Hamlet cigar. “Don’t just book it. Thomas Cook it.” – i.e. do not just book the trip, use the Thomas Cook travel agency. “Life is Good” – this one is special in that the full brand name does not appear directly, it only features the initials, LG. However, when you switch on your LG branded phone, you see the slogan as well. Finally, let us examine three more interesting examples. “There are some things money can’t buy. For everything else, there’s MasterCard.” – although it is a rather long slogan, it has been successfully introduced to consumers’ minds by the corresponding commercials, which are always based on the same pattern (product X and its price, product Y and its price, product Z and its price, followed by something that is not a product – priceless). There was even an advertising competition by them (Newman 2008): several films were shot without text, so applicants had to name the 3 products and 1 sentiment. But people also started to create such films for their own entertainment, viral films if you like – before the advent of social media! In fact, the Mastercard campaign started in 1997 and is now a quarter of a century old. Of course, along with the long slogan, we should not forget the word “Priceless” at the end, which is a perfect example of a tagline attached to a slogan. “Nobody was ever fired for buying from IBM” was IBM’s slogan at one time. True, it never existed in any official form, and it was never included in any of their advertising. But their salesmen spread the slogan by word of mouth, or persuaded customers using it – we could say they used a kind of guerrilla marketing. And the argument was good enough to make purchasing professionals responsible for IT investments choose IBM. Last but not least, “Nothing sucks like an Electrolux”. The interesting thing about this slogan is that, of in the US it can also be interpreted as “Nothing fails as much as an Electrolux”. There was a belief that an Electrolux translator had made a blunder, which was not noticed by anyone else in the company until the posters were out. Recently, however, a former Electrolux marketer has come forward to claim that the slogan was used deliberately to provoke the audience and make the advertisement memorable. Of course, it is possible that the person was only trying to defend their reputation in hindsight.

## 7. CONCLUSION: FOREVER AND EVER

At the end of this article, let us return to an earlier question. If we are so unfamiliar with the slogans of even the largest multinational companies, whose products we consume every day and whose advertisements we regularly see, do slogans have any importance at all in the case of small companies? Do we need to spend any time on this, or can we just use the services of one of online slogan generators like Slogangenerator.org, Slogangenerator.co, Procato, Oberlo, Shopify, or Getsocio? Well, if we assume that a small or start-up company has a much smaller marketing communication budget, then strong positioning and a slogan that communicates this is all the more important. If a company cannot create a memorable slogan, it will find it extremely difficult to build a brand. And if it cannot build a strong brand, it will find it extremely difficult to make money. Of course, a good product is important. You cannot win in the market with a bad product and a good slogan. But you can lose with a good product and a bad slogan, as Laura Ries points out (2015).

And if consumers remember nothing of our advertising but the brand name and the slogan, we may already be ahead of many of our competitors. Moreover, if we choose a good slogan, we can use it for years or even decades. You may recall from the previous paragraphs that Advertising Age named Nike's "Just do it" as the second best slogan of the 20th century. But what advertisement came first? Well, the slogan of jewellery manufacturer De Beers: "A Diamond is Forever". The ambiguity of the slogan captures both the high quality and durability of the product and includes what customers really want: a relationship, love or marriage that lasts forever. In fact, a good slogan should also be one that lasts forever. What the chapter has not mentioned is that it is always better to choose a slogan and use it consistently for years or even decades, than to invent a new slogan every year, however brilliant it may be. Consistency always pays off in the world of marketing.

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## THE IMPACT OF TOURIST ARRIVALS ON RETAIL TRADE TURNOVER IN CROATIA

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### ABSTRACT

*The share of tourism in the Croatian economy has been growing over the years whereby Croatia has one of the largest shares of tourism in Gross domestic product (GDP) in Europe. Therefore, tourism can be considered as one of the most important driver of the Croatian economy. The number of tourist arrivals affects many economic variables such as industry, retail trade, service activities, construction, employment, prices etc. In this paper, the focus will be on the impact of tourist arrivals on retail trade turnover in Croatia. By definition, retail trade is the sale of goods to final consumers for personal consumption or use in households and like tourism, retail trade is also very important component of Croatian GDP. For the purpose of the analysis, monthly data on the number of tourist arrivals and retail trade turnover (in real terms) are used. To determine the relationship between the variables the bounds testing (ARDL) approach for cointegration is applied. The results indicate the existence of stable cointegration relationship between the variables. In the long-run, an increase in tourist arrivals increases retail trade turnover in Croatia whereby in the short-run there is no impact. The error correction coefficient is highly statistically significant, has the correct sign and suggests slow speed of adjustment to the long-run equilibrium.*

**Keywords:** ARDL approach, Cointegration, Croatia, Retail trade turnover, Tourist arrivals

### 1. INTRODUCTION

Tourism as a complex set of different economic activities has a number of direct and indirect, both positive and negative effects on individual economies. Among the positive effects of tourism are the inflow of foreign currencies, increased tax revenues, increased employment, innovation, competitiveness, increased quality of management, increased industrial production and demand for many services related to tourism. On the other hand, there are certain negative effects of tourism, primarily related to its numerous negative effects on the environment and local population, as well as the potential deindustrialization of the economy. Due to the importance of tourism for individual economies, and especially small and service-oriented ones like Croatian, there is a need for more detailed research into its impacts.

The importance of tourism for the Croatian economy is perhaps best illustrated through the share of tourism revenues in GDP. Although it was reduced to 8,9% in 2020 (as a result of the COVID-19 pandemic), the 2019 results, which are commonly considered the reference year for the pre-pandemic period, indicated that tourism accounts for 19,5% of total Croatian GDP. To this should be added the data on 8,2% of the total employed work force in tourism (Ministry of Tourism of the Republic of Croatia). Both data are quite sufficient illustrative indicators of the importance which tourism have on the Croatian economy. On the other hand, the share of retail trade in gross value added in 2020 was 16,7% with a total of 15,5% of the employed workforce (Anić, 2021). Furthermore, such a significant real turnover in retail trade is actually a decrease of 5,5% compared to the previous year. These data are also sufficient to illustrate the importance of retail trade for the Croatian economy. However, what is interesting to note is the somewhat parallel movement of the share that tourism and retail trade have in the overall economic and financial trends. As a consequence of the COVID-19 pandemic, both variables showed a decline in their values during the pandemic years, still retaining their absolute significance. This kind of movement has motivated authors to research this issue, ie. to determine the impact that tourism (specifically tourist arrivals) have on retail trade turnover. In this sense, the article is organized in such a way that after this introductory part which explains the subject of research, there are chapters that provide an overview of previous research, a chapter that methodologically describes the empirical research, and presents the results of the research. The article ends with a concluding considerations, citing recommendations for further research.

## 2. LITERATURE REVIEW

Although tourism and retail trade are important economic activities in today's economies, especially in small countries such as Croatia that are service-oriented, their interdependence at the macroeconomic level has not been sufficiently researched. In fact, in past research tourism and retail trade have been mostly considered separately as dependent variables, in respect of which impacts of other economically relevant variables have been investigated, such as prices, currency exchange rates, consumer income, etc. For instance, previous research on tourism from the macroeconomic perspective investigated the tourism impact on the economic growth and international economy (Song, Li, Dwyer and Cao, 2012). In general, research focused on the impact of tourism on economy can be divided into different groups, namely research that considered tourism as an economic activity affecting economic growth, research that identified the impact of economic growth on tourism, research that identified a neutral impact of tourism on economies and lastly, research that analyze the reciprocal impact of tourism on economic growth (Kum, Aslan and Gungor, 2015). Accordingly, Aslan (2013) applied panel Granger causality test for Mediterranean countries in the period from 1995 to 2010 and determined that economic policies and consequential growth influenced the growth of tourism in Spain, Italy, Tunisia, Cyprus, Croatia, Bulgaria and Greece, a one-way impact of tourism on growth was found in Turkey and Israel, whilst a mutual impact between tourism and economic growth was identified in Malta and Egypt. Using panel analytic estimation methods based on fixed effects and system generalized method of moments for 144 countries in the period from 1975 to 2010, Fawaz and Rahnama (2014) found that tourism industry significantly impacted GDP and economic growth levels. Furthermore, Pavlič, Svilokos and Tolić (2015) applied Johansen's maximum likelihood cointegration technique and VECM for Croatia in the period from 1996 to 2013 and found that there was no short-run causal relationship between tourist arrivals and GDP, thus supporting the hypothesis of neutrality of tourism impact on economic growth. Finally, using panel cointegration technique for N11 countries, Kum, Aslan and Gungor (2015) demonstrated the existence of mutual impact between tourism and economic growth. In their analysis of tourism impact on international trade, a number of studies using Granger causality test found bidirectional causality between tourism and international trade (Wong and Tang,

2010, Santana-Gallego, Ledesma-Rodriguez and Perez-Rodriguez, 2011). Likewise, studies on retail trade are focused on looking for correlation between retail trade indicators and individual economic variables. For instance, Anić (2002) applied the OLS method to annual data and found that growing GDP rates and salaries contributed to the growth of consumption and retail sales. On the other hand, Benazić (2014) using the bounds testing approach (ARDL) showed that in the long-run, an increase in retail prices and short-term interest rate led to a reduction in nominal retail trade. However, in the short-run, a change in prices had a positive effect on retail trade, as opposed to salaries and short-term interest rate. Lastly, a few studies investigated the relationship between tourism and retail trade from the macroeconomic perspective using more complex econometric models. Saayman and Saayman (2012) used Granger causality test taking tourist arrivals as indicators of tourism activity and found a link and a one-way impact of tourism on trade (export/import between South Africa and neighboring African countries was taken as indicator) in three African countries, namely Kenya, Mozambique and Zimbabwe. In Malawi they found a bidirectional relationship, a one-way impact of trade on tourism was identified in Angola and Zimbabwe, whilst in Nigeria there was no connection between trade and tourism. However, authors pointed out the connection between tourism and trade claiming that tourism influences trade through corporate purchase of capital goods and goods for resale, in which occasion the way is paved for later private travels as tourists and, in addition to that, South Africa is a shopping mecca for tourists that want to buy consumer and luxury goods. Based on a descriptive analysis and correlation between distributive trade and tourism, Javor (2007) found the existence of a significant positive connection. Finally, by using descriptive statistics and analyzing direct and indirect tourism added value, Vuković and Luković (2018) identified three times higher indirect impacts of tourism on Croatian economy compared to direct impacts. According to authors' analysis for 2005, tourism consumption in the retail trade sector amounted to 4,5% of the tourism consumption value in GDP. Similar results, but for years 2005, 2011 and 2013, were achieved by Ivandić and Šutalo (2018) by using the input-output method. According to authors, tourism consumption impacts more non-tourism sectors, such as production and agriculture, than traditional tourism activities. However, wholesale and retail trade industry was third in the tourism's share in the creation of gross added value in 2013 with 10,9%, thus suggesting an indirectly significant impact of tourism on trade. The following sections present the methodology and the results of the research of impact of tourism - measured on the basis of tourist arrivals - on retail trade in Croatia.

### 3. DATA, METHODOLOGY AND EMPIRICAL RESULTS

The main goal of this paper is to test the impact of tourist arrivals on retail trade turnover in Croatia by using the bounds testing (ARDL) approach for cointegration of time series. The data on the number of tourist arrivals (*ARR*) and retail trade turnover (in real terms) (*RTRADE*) in Croatia are obtained from the Croatian Bureau of Statistics (2022) database and are analyzed on a monthly basis from January 2005 to December 2019. To eliminate the influence of seasonal factors both series were seasonally adjusted using the ARIMA X-12 method<sup>1</sup>. Their movements are shown on Figure 1.

*Figure following on the next page*

<sup>1</sup> In the analysis, EViews (IHS Global Inc., 2019) econometric software is used.



*Figure 1: Retail trade turnover (in real terms) and the number of tourist arrivals (indices 2015=100, seasonally adjusted)*

*(Source: Croatian Bureau of Statistics, 2022)*

It is visible that both series achieve very similar movements in the observed period. After the growth of both series until 2008, there was a decline and stagnation. Decline and stagnation were caused by the spill over effect of global crisis on the Croatian economy. Due to the recovery of countries affected by the global crisis, during 2011 the number of tourist arrivals began to grow again. Recovery and growth in retail trade turnover followed later. Also, it is evident that the growth of the number of tourist arrivals is higher than the growth of retail trade turnover. The ARDL model (Pesaran and Shin (1995) and Pesaran, Shin and Smith (2001)) is performed in two steps. The first step implies the bounds test for cointegration. In the second step, if cointegration is found, the long-run relationship and the associated error correction model (ECM) are estimated. Before proceeding with the bounds test, it is necessary to determine the degree of integration of time series. As to avoid spurious results, it is quite important to identify whether the variables are integrated of order  $n=0, 1, 2$ . In the presence of  $I(2)$  variables the computed  $F$ -statistic is not valid because the bounds test is based on the presumption that the variables are  $I(0)$  or  $I(1)$ . To do so, the augmented Dickey-Fuller ADF (Dickey and Fuller, 1979), Phillips-Perron PP (Phillips and Perron, 1988) and Kwiatkowski, Phillips, Schmidt and Shin KPSS (Kwiatkowski, Phillips, Schmidt and Shin, 1992) tests are considered and presented in Table 1. Additionally, for the purposes of stabilization of variance, both series are expressed in logarithms.

*Table following on the next page*

Variables and test	Level		First difference	
	Intercept	Intercept and trend	Intercept	Intercept and trend
<i>ADF test</i>	<i>t</i> -Statistic			
LRTRADE	0,7662	0,9798	0,0003	0,0000
LARR	0,9996	0,9905	0,0001	0,0000
<i>PP test</i>	Adjusted <i>t</i> -Statistic			
LRTRADE	0,7466	0,9597	0,0000	0,0000
LARR	0,7561	0,0000	0,0001	0,0001
<i>KPSS test</i>	<i>LM</i> -Statistic			
LRTRADE	0,401210	0,355705	0,267382	0,126022
LARR	1,587235	0,375036	0,215156	0,234216

Table 1: Unit root tests

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

(Source: Research results)

Obtained results indicate that both series are integrated of order  $I(1)$  meaning that they become stationary after differencing. The first step of ARDL approach starts with conducting the bounds test for cointegration. Since the observations are monthly given, the maximum order of lags in the ARDL model is 12. The model also includes several dummy variables to eliminate the non-normality in residuals. For the model selection criteria the Akaike criterion is selected whereby regarding deterministic trend specification, the restricted trend case is estimated. The comparison of the information criteria (Akaike, Schwarz and Hannan-Quinn) show that smaller values of the criteria achieves the model with the restricted trend specification. As well, the estimated standard errors obtained using the model selected by the Akaike criterion are smaller compared to the model selected by the Schwarz criterion. The long-run relationship is tested by computing the  $F$ -statistic for testing the significance of the lagged levels of the variables in the error correction form of the underlying ARDL model. The results are summarized in Table 2.

Test Statistic	Value	Signif.	$I(0)$	$I(1)$
			Asymptotic: $n=1000$	
$F$ -statistic	7,988402	10%	4,05	4,49
$k$	1	5%	4,68	5,15
		2,5%	5,3	5,83
		1%	6,1	6,73
Actual Sample Size	172		Finite Sample: $n=80$	
		10%	3,113	3,61
		5%	3,74	4,303
		1%	5,157	5,917

Table 2: Testing for the existence of a level relationship among the variables in the ARDL (8, 0) model ( $F$ -Bounds test)

Note: “ $k$ ” – regressors. “ $I(0)$ ” – lower critical value bound assuming that all the variables in the model are  $I(0)$ . “ $I(1)$ ” – upper critical value bound assuming that all the variables in the model are  $I(1)$

(Source: Research results)

The computed  $F$ -statistic exceeds the upper bound at all levels of significance and therefore the null hypothesis of no long-run relationship between the retail trade turnover and the number of tourist arrivals can be rejected irrespective of the order of their integration. In the second step, the ARDL long-run model is estimated. Table 3 summarizes the diagnostic tests of the selected ARDL (8, 0) retail trade turnover equation.

<i>Serial correlation: Breusch-Godfrey</i>	F-statistic=1,250710, Prob. F(12,144)=0,2546 Obs*R-squared=16,23476, Prob. Chi-Square(12)=0,1807
<i>Normality: Jarque-Bera</i>	JB=1,871870, Prob. = 0,392219
<i>Heteroscedasticity: Breusch-Pagan- Godfrey</i>	F-statistic=1,222979, Prob. F(15,156)= 0,2599 Obs*R-squared=18,09798, Prob. Chi-Square(15)=0,2575 Scaled explained SS=17,17527, Prob. Chi-Square(15)=0,3085
<i>Stability: Ramsey RESET</i>	t-statistic=0,014055, df(155), Prob.=0,9888 F-statistic=0,000198, df(1,155), Prob.=0,9888 Likelihood ratio=0,000219, df(1)=0,9882

*Table 3: Diagnostic tests of the ARDL (8, 0) retail trade turnover model  
(Source: Research results)*

Diagnostic tests suggest that the model is adequately estimated. As well, additional stability tests (CUSUM and CUSUM of squares) of the ARDL (8, 0) model are shown in the Figure 2 and Figure 3 in the Appendix. The results of these tests also indicate the stability of the estimated model. The estimated long-run coefficients and the underlying ECM form of the ARDL (8, 0) retail trade turnover equation is presented in Table 4.

*Table following on the next page*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>Levels equation</i>				
LARR	0,741210	0,110719	6,694501	0,0000
@TREND	-0,003232	0,000504	-6,417076	0,0000
<i>ECM form</i>				
C	0,175437	0,035552	4,934637	0,0000
D(LRTRADE(-1))	-0,559830	0,061994	-9,030343	0,0000
D(LRTRADE(-2))	-0,188040	0,066348	-2,834135	0,0052
D(LRTRADE(-3))	0,091720	0,063943	1,434391	0,1535
D(LRTRADE(-4))	-0,034461	0,064389	-0,535195	0,5933
D(LRTRADE(-5))	0,157074	0,064194	2,446869	0,0155
D(LRTRADE(-6))	0,248099	0,066469	3,732556	0,0003
D(LRTRADE(-7))	0,132356	0,063278	2,091659	0,0381
DUMM2008	0,069772	0,013273	5,256530	0,0000
DUMM2008A	-0,064986	0,014655	-4,434387	0,0000
DUMM2012	0,029343	0,013119	2,236685	0,0267
DUMM2012A	-0,060556	0,012987	-4,662759	0,0000
DUMM2018	0,051362	0,013234	3,881177	0,0002
CointEq(-1)*	-0,107132	0,021745	-4,926708	0,0000
R-squared	0,564293	Mean dependent var		0,000460
Adjusted R-squared	0,528444	S.D. dependent var		0,018584
S.E. of regression	0,012762	Akaike info criterion		-5,806873
Sum squared resid	0,025731	Schwarz criterion		-5,550681
Log likelihood	513,3910	Hannan-Quinn criter.		-5,702929
F-statistic	15,74070	Durbin-Watson stat		1,821462
Prob(F-statistic)	0,000000			

Table 4: Estimated long-run coefficients (levels equation) and ECM form of the ARDL (8, 0) retail trade turnover model

Note: "D" indicates first difference, "L" indicates logarithm of the variable while "DUMM" indicates dummy variable. \* p-value incompatible with t-Bounds distribution  
(Source: Research results)

Estimated long-run coefficient is highly statistically significant, indicating that an increase in the number of tourist arrivals increases retail trade turnover in the long-run whereby in the short-run there is no impact. In addition, it is visible that the long-run coefficient is less than one (0,74) indicating that the number of tourist arrivals must increase by more than one percent to increase retail trade turnover by one percent. The error correction coefficient is statistically significant, has the correct negative sign and suggests a slow speed of adjustment to the long-run equilibrium. Nearly 11% of the disequilibria of the previous month's shock adjust back to the long-run equilibrium in the current month.

#### 4. CONCLUSION

The main goal of this study was to analyze the impact of tourist arrivals on retail trade turnover in Croatia considering that tourism and retail trade as part of consumption are significant drivers of the Croatian economy. In order to analyse this impact, monthly data on the number of tourist arrivals and retail trade turnover (in real terms) are used. The relationship between the variables is tested with the bounds testing (ARDL) approach for cointegration. Obtained results indicate the existence of stable cointegration relationship between the variables. In the long-run, an increase in tourist arrivals increases retail trade turnover whereby in the short-run there is no

impact. The error correction coefficient suggests slow speed of adjustment to the long-run equilibrium. In addition, the long-run coefficient is less than one indicating that the number of tourist arrivals must increase by more than one percent to increase retail trade turnover by one percent. Finally, it is necessary to mention the main limitation of the analysis because it does not take into account other variables that affect retail trade turnover in Croatia. However, obtained results contribute to the existing literature and to further research on the relationship between these very important variables for the Croatian economy.

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## APPENDIX

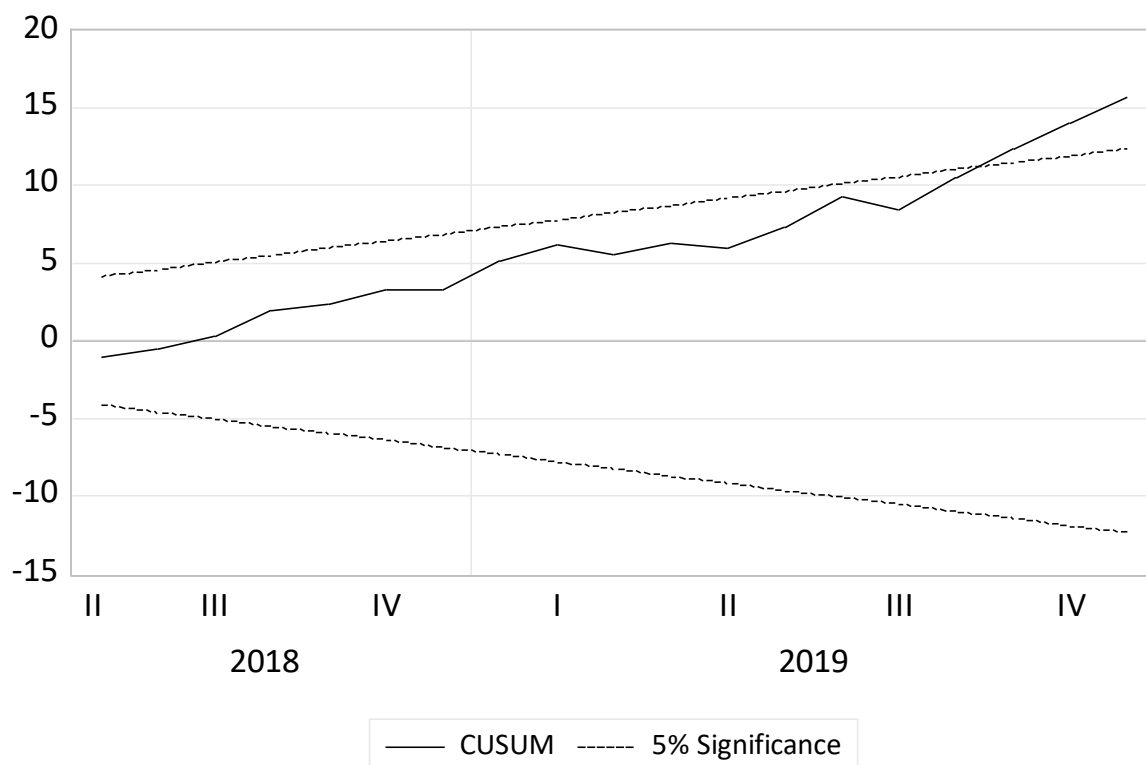


Figure 2: CUSUM test  
(Source: Research results)

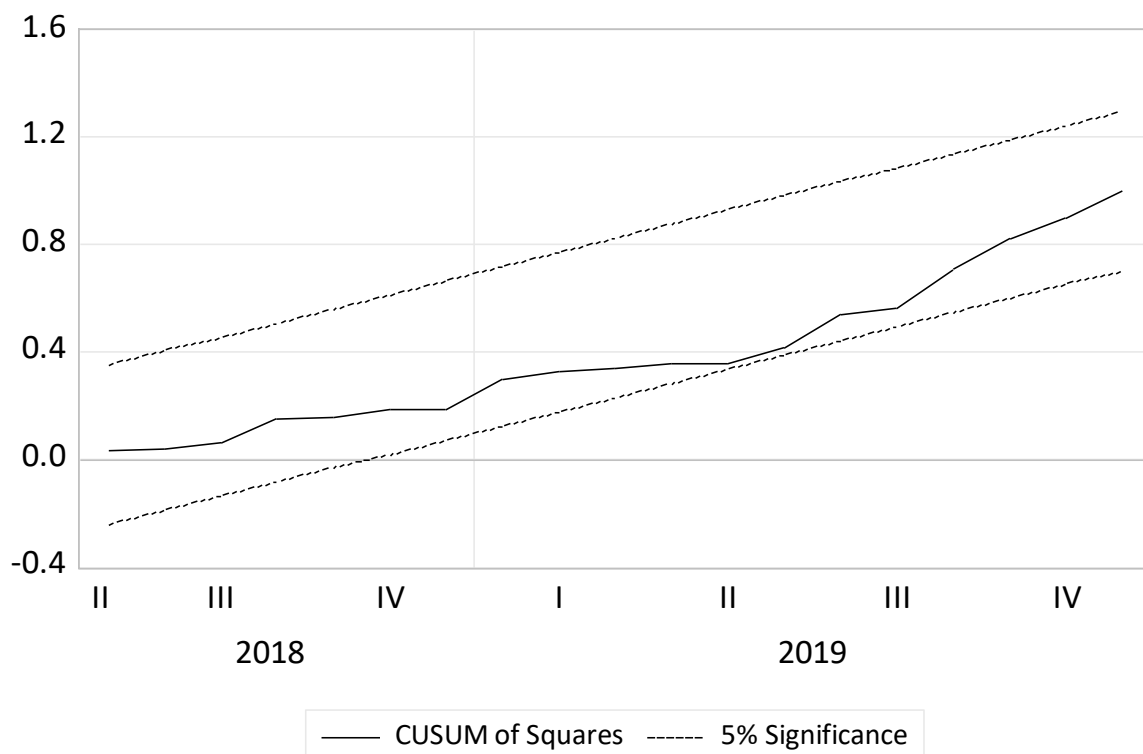


Figure 3: CUSUM of squares test  
(Source: Research results)

# THE IMPACT OF THE COVID-19 PANDEMIC ON THE FINANCIAL PERFORMANCE OF ENTERPRISES IN THE TRADE SECTOR IN MONTENEGRO

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## ABSTRACT

*The aim of this paper is to analyze the impact of the Covid-19 pandemic on the financial enterprise performance in Montenegro. The analysis was conducted on a sample of 124 enterprises (small, medium and large) in the trade sector that has the largest share in the creation of Montenegrin gross domestic product (GDP). As the trade sector includes wholesale and retail trade, this paper focuses on the wholesale sector. The research compared the period before Covid-19, i.e. years: 2018 and 2019, and the period during Covid-19, year 2020. The financial enterprise performance is discussed on the basis of analysis of liquidity, solvency, efficiency and profitability. The results showed that the Covid-19 pandemic had negative impact on business operations of the enterprises in terms of profitability and efficiency, while solvency and liquidity were almost unchanged. The results showed that the Covid-19 pandemic had bad consequences for the company's business in terms of profitability and efficiency, while solvency and liquidity were almost unchanged. The contribution of this paper consists in assessing the impact of the health crisis on the operations of business entities in the trade sector, based on the ratio analysis of the financial statements of this sample. In addition to the above, the paper provides an overview of available data related to the analysis of the structure of the Montenegrin economy. This research emphasizes that more attention needs to be paid to the risks that external environmental uncertainty brings to small, medium and large enterprises and to help these enterprises anticipate risks when making business decisions.*

**Keywords:** Covid-19 pandemic, financial enterprise performance, trade sector

## 1. INTRODUCTION

At the beginning of 2020, Montenegro, like most other countries in the world, faced the corona virus. More precisely, the first case of Covid-19 appeared on March 17, 2020, and thus Montenegro was ranked as the last country in Europe to register the appearance of this virus. The corona virus showed that international organizations, as well as national governments, were not ready to effectively prevent the spread of the deadly virus infection, that is, to suppress the already registered threat of a global pandemic. Unfortunately, the previously mentioned threat has quickly become a reality. What was in the power of national governments were the measures that have been introduced, and they refer to various social and economic sanctions that have left consequences on the economy of each individual country. For example, it is quite clear that the outbreak of a pandemic has a significant impact on the company's operations (Shafi et al., 2020, p.1). After the second year of the pandemic, it can be concluded that the Covid-19 pandemic has serious negative effects on employees, customers, supply chains and financial markets. In short, it is likely to cause a global economic recession (Açikgöz & Günay, 2020, p. 520).

## 2. MONTENEGRO DURING THE COVID-19 PANDEMIC

### 2.1. Gross domestic product

Economic growth of the Montenegrin economy, in the five years before the Covid-19 pandemic, averaged 4% and was driven by large public and private investment activities (25.6% of GDP on average), construction of transport infrastructure, various tourist facilities, as well

as the implementation of projects in the energy sector (Privredna komora Crne Gore, 2021, p. 12). In the first year of the Covid-19 pandemic, Montenegro's gross domestic product amounted to 4,186 million EUR, while in 2019 it amounted to 4,951 million EUR. According to the structure of GDP per production method, the largest share in the past years had the wholesale and retail trade and repair of motor vehicles and motorcycles.

## **2.2. Trade sector**

In the past, trade was considered a classic intermediary between manufacturers and consumers, while today it takes an active role, establishing strong relations of cooperation with both parties (Cuzovic & Mladenovic, 2011, p.450). Although the dominant part in the literature is occupied by retail trade, due to its role wholesale trade is also of great importance. Effective and efficient wholesale is a vital prerequisite for the prosperity of any other industry (Coughlan et al., 2006, p.490). Wholesale trade has the role of intermediary in the economy. In Montenegro, the turnover of goods in wholesale trade in 2020 amounted to 1,927 million EUR, which is a decrease of 16.7% compared to 2019. Turnover recorded a significant decline in 2020, which can be attributed to a significant reduction in tourism, as well as increased savings due to the economic situation. The trade sector contributes significantly to the economy as a sector that employs a large number of people and to a large degree influences the integration within an economy (Raharja et al., 2021, p.19).

## **2.3. Employee structure**

As a result of economic activities in 2020, the average number of employees decreased to 176,639, compared to 2019 when the average number was 203,545 (Privredna komora Crne Gore, 2021, p. 15). According to MONSTAT data for 2019, the sector with the largest share of employees in the Montenegrin economy is the trade sector (20%), followed by the state administration and defense sector (11%). In this regard, as another reason for sampling this sector is that according to the structure of activities, it recorded the largest number of employees in the period before the pandemic, more precisely in 2019.

## **3. THE IMPACT OF THE COVID-19 PANDEMIC ON ENTERPRISE PERFORMANCE**

### **3.1. Globally**

Shafi et al. in 2020, they examined the impact of Covid-19 on the enterprise performance in Pakistan. The research started from the claim that the main victims of the Covid-19 outbreak are micro, small and medium enterprises (MSMEs) because MSMEs, compared to large enterprises, usually do not have enough resources, especially financial and managerial ones. They conducted a survey based on a questionnaire. The results show that many MSMEs were severely affected by the Covid-19 outbreak or quarantine. Consequently, these companies face various problems such as financial (67.93%), supply chain disruption (47.83%), demand reduction (44.02%), sales and profit reduction (38.04%, 41.85%). Moreover, three quarters of companies expect sales to fall by more than 60%, while over two thirds of participating companies expect profits to fall by more than 60%. Shen 2020, in its research, examined the impact of Covid-19 on enterprise performance and showed that there is a negative impact. The analysis was done on a sample of Chinese companies, and this is also one of the first empirical studies linking the Covid-19 pandemic to enterprise performance. Mirza et al. 2020 states that the trade sector belongs to the group of endangered sectors due to the new pandemic and predicts that companies in this sector will experience failure to meet obligations with a probability of 24% and 57% in the worst case, as well as revenue reduction of 50% -70%.

### 3.2. Montenegro

During 2021, several studies were conducted related to the impact of the Covid-19 pandemic on the business operations of the companies. The Position document of the Montenegrin Employers Federation (Pozicioni dokument, 2020) states that the unity and affiliation of the Government, the Montenegrin Employers Federation and the syndicate to the same team requires a responsible attitude and cooperation in finding solutions that are timely, adequate and aimed at a common goal: preserve the liquidity and business continuity of the business operations of the companies and preserve jobs. Based on the research of Montenegrin Employers Federation, 2020 (Unija poslodavaca Crne Gore, 2020) conducted from 10 to 30 April 2020, the impact of the Covid-19 pandemic on business operation among businesses in Montenegro was assessed. The sample included companies from several sectors of the economy (430 in total), where the trade sector participates with 19% (about 80 companies). The results of the survey show that 70% of business entities have a business continuity plan, while each large company in the sample answered in the affirmative. The trade sector is one of the sectors that has estimated the longest recovery period (over 6 months). The Montenegrin Government has prepared three sets of measures during the Covid-19 pandemic. The first set of measures of the Government of Montenegro included: postponement of loan repayment by the Investment and Development Fund, postponement of payment of taxes and contributions on salaries, new credit lines of the Investment and Development Fund, financial aid to families receiving material security aid, postponement of real estate payments as well as reliefs for settling bills. The total effect of the first set of measures was 280 million EUR. The second set of measures included financial support for the unemployed, payment of premiums to agricultural farms, support for professional fishermen, etc. The total effect of the second package of measures is 39 million EUR, which together with the first set makes 7% of Montenegro's GDP. The third package of measures mostly related to tourism, agriculture and fisheries, as well as vulnerable categories.

## 4. RESEARCH

### 4.1. Sample and data

According to MONSTAT data, in Montenegro the largest share in GDP by production method has the sector "Wholesale and retail trade and repair of motor vehicles and motorcycles" (15%), accordingly we took all active small, medium and large enterprises (hereinafter: "enterprises" or "business entities") from a part of this sector, more precisely from the field of wholesale trade, ie. code 4690, which according to the Central Register of Business Entities of Montenegro has the highest percentage (about 30%) in the trade sector, which consists of a total of 73 codes. For 152 enterprises the analysis period was taken from 2018 to 2020. After the first review of the sample, 17 enterprises were removed (one was liquidated, three are on the blacklist<sup>1</sup>, and 13 enterprises were established after 2017, so they do not have data for the entire research period). After the second sample review, i.e. after reviewing the financial statements, 11 more enterprises were excluded from the sample: four enterprises showed a negative cash balance, while seven enterprises have an empty balance sheet and / or income statement. Therefore, in this paper, 124 companies in the period before Covid-19 (2019 and 2018) and during Covid-19 (2020) were analyzed, which provided insight into 744 financial statements. The website of the Tax Administration of Montenegro<sup>2</sup> was used as a source of data, as well as the Central Register of Business Entities. Half of the sample companies have been operating for more than 18 years, while 89% of the sample companies have been on the market for over 10 years.

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<sup>1</sup> The black list refers to companies that do not pay their tax obligations regularly, so the companies that are on this list have been removed from the sample.

<sup>2</sup> <https://eprijava.tax.gov.me>

Classification of companies into large, medium and small categories was made in accordance with applicable regulations in Montenegro. In accordance with Article 5 of the Law on Accounting<sup>3</sup>, legal entities are classified into micro, small, medium and large, depending on the average number of employees, total annual income and total assets.

	The whole sample			Small enterprises			Medium enterprises			Large enterprises		
	2020	2019	2018	2020	2019	2018	2020	2019	2018	2020	2019	2018
<b>Liquidity ratio analysis</b>												
Current Ratio	1,34	1,32	1,33	1,99	1,93	1,91	1,56	1,59	1,59	0,81	0,82	0,82
Quick Ratio	0,75	0,60	0,72	1,22	1,01	1,14	0,98	0,75	0,93	0,32	0,27	0,33
Cash Ratio	0,12	0,10	0,09	0,18	0,14	0,14	0,19	0,15	0,11	0,04	0,04	0,04
Risky Assets Conversion Ratio	0,42	0,39	0,38	0,32	0,31	0,29	0,35	0,31	0,29	0,57	0,54	0,54
<b>Solvency Ratio Analysis</b>												
Fixed Assets Coverage Ratio	1,01	1,04	1,03	1,46	1,44	1,54	1,28	1,30	1,24	0,56	0,60	0,58
Real Asset Coverage Ratio	0,86	0,83	0,83	1,10	1,08	1,06	0,99	0,95	0,94	0,61	0,55	0,57
Net Working Capital to Inventories	0,61	0,55	0,55	1,30	1,25	1,19	1,02	0,96	0,91	-0,33	-0,35	-0,35
Solvency Ratio	1,92	1,88	1,85	2,32	2,31	2,36	2,24	2,07	1,94	1,49	1,49	1,48
Debt Ratio	1,09	1,14	1,18	0,76	0,76	0,74	0,81	0,94	1,07	2,04	2,03	2,07
Interest Coverage Ratio by Earnings	4,98	6,96	6,51	4,91	9,70	18,46	7,23	8,90	6,28	3,54	4,76	4,09
<b>Efficiency Ratio Analysis</b>												
Assets Turnover Ratio	1,14	1,38	1,42	0,79	1,03	1,11	1,04	1,26	1,27	1,55	1,84	1,83
Fixed asset Turnover Ratio	2,47	3,09	3,22	2,02	2,69	3,10	2,52	3,19	3,22	2,72	3,29	3,29
Capital Turnover Ratio	2,43	3,02	3,67	1,42	1,85	2,91	1,96	2,51	2,80	4,72	5,61	5,62
Current Assets Turnover Ratio	2,14	2,52	2,54	1,30	1,68	1,74	1,80	2,10	2,12	3,68	4,18	4,13
Inventory Turnover Ratio	4,82	5,54	5,75	3,37	4,27	4,36	4,77	5,18	5,36	6,09	6,93	7,37
Accounts Receivable Turnover Ratio	5,22	6,39	6,21	2,72	3,61	3,77	4,01	4,88	4,76	13,80	16,10	13,92
Accounts Payables Turnover Ratio	4,94	5,19	5,62	3,91	4,25	6,18	4,67	5,13	5,32	5,90	5,91	5,56
OPEX Ratio	0,88	0,84	0,82	0,89	0,66	0,60	0,87	0,80	0,79	0,88	0,95	0,96
<b>Profitability Ratio Analysis</b>												
1. Debt level	2,12	2,16	2,58	1,77	1,75	2,59	1,88	2,00	2,21	3,04	3,06	3,08
2. Assets Turnover Ratio	1,14	1,38	1,42	0,79	1,03	1,11	1,04	1,26	1,27	1,55	1,84	1,83
3. Gross Profit Margin	0,04	0,05	0,05	0,06	0,06	0,06	0,06	0,06	0,06	0,03	0,03	0,03
4. Debt-burden Ratio	0,80	0,86	0,85	0,79	0,90	0,95	0,86	0,89	0,84	0,72	0,79	0,75
Return on Equity (ROE)	7,98	11,95	14,69	6,35	9,38	16,19	9,35	12,82	14,93	8,53	14,85	12,77
Return on Assets (ROA)	4,72	6,44	6,70	4,53	5,92	6,59	5,78	7,19	8,02	3,92	6,19	5,53

Table 1: Indicators for measuring enterprise performance  
(Source: author's calculation )

## 4.2. Results

### 4.2.1. Liquidity

In enterprises, liquidity is considered the best measure of short-term risk (Malinić, 2019, p.60). In the sample, the current liquidity ratio is better in 2020 than in 2019 and 2018, and the situation is similar with small enterprises, where the liquidity ratio in the last three years is getting closer to the orientation norm. For medium and large enterprises, the current liquidity ratio decreased in the Covid-19 year, compared to the period before Covid-19, when the ratio for both groups of enterprises was constant and at a higher level. The liquidity problem is further exacerbated by the fact that vendors are unable to meet their obligations to their own vendors, which takes the form of a liquidity spirals (Malinić, 2015, p.45). Also, the decline in economic growth affects the reduction of people's purchasing power. As a result, many receivables of buyers are uncollectible, which reduces the cash of the business entities. On the other hand, the economic crisis has also caused the accumulation of inventory (Devi, 2020, p. 229). One should keep in mind that for certain business entities, a high or rising current liquidity ratio is undesirable and can accompany poor business conditions, while a low or declining ratio may be a sign of financial health and may accompany profitable operations. For example, during a recession, businesses may encounter difficulties in selling inventories and collecting receivables, leading to an increase in the current ratio to a higher level due to an increase in receivables and inventories. During the booming period, the opposite can happen. (Wahlen et al., 2011, p. 296).

<sup>3</sup> "Official Gazette of Montenegro", no. 052/16 od 09.08.2016

We can say that the panic caused by financial shocks has led companies to maintain a high level of liquidity, thus losing investment opportunities (Vintilă & Nenu, 2016, p.6). At the level of the entire sample, and individually for all three types of enterprises, the quick liquidity ratio increased. In this ratio, at the level of the whole sample, as well as in small enterprises, the ratio is higher than one, while in medium ones it is approximately equal to one for the entire analysis period. Large enterprises have a very low level of quick ratio. This indicates that all enterprises, except large ones, have a strong financial structure and contributes to the conduct of adequate credit policy and the creation of other preconditions for providing liquidity (Malinić et al., 2021, p. 89). For our sector, we see that the flow of cash ratio is growing slightly and that this sector in the Covid-19 year did not experience major problems in terms of payment of due liabilities. At the end of the liquidity analysis, we will briefly look back at the risky asset conversion ratio, which includes intangible assets, assets, plant and equipment that are unlikely to be easily converted into cash. In large enterprises, the ratio is quite high (above 50%), which indicates that there is a significant risk associated with the conversion of these assets into cash, so the risk of illiquidity is also high.

#### *4.2.2. Solvency*

The fixed assets coverage ratio is higher than one for all enterprises except large ones. Thus, small and medium-sized enterprises can cover all investments in fixed assets from their own sources, as well as finance working capital (part of inventories) in part from the same sources. This is not the case with large enterprises, so we conclude that it is recording a decline in financial security. The permitted use of long-term borrowed resources to finance not only fixed assets but also inventories is reflected in the real asset coverage ratio. This indicator is even lower than the fixed assets coverage ratio. If this sector continues to record a decline in profitability (which will be explained later) it may have problems in attracting new long-term creditors. Net working capital, which long-term creditors recognize as a margin of security for investments (Malinić et al., 2021, p. 97), from 2019 to 2020 recorded growth (3%), and thus there is an increase in ratio indicators. The ratio of net working capital to inventories is higher than 1 for small and medium enterprises, so it is considered that in the area of long-term financing are created conditions for maintaining liquidity because inventories are fully covered by permanent and long-term funding sources (Mikerević, 2011, p.331). This is not the case with large enterprises. They record a negative amount of this indicator, which is a consequence of a higher amount of fixed assets compared to long-term capital. This is something that is obviously not a consequence of Covid-19, because this indicator has a negative value in all three previous years. We can say that with this we recorded the problem of maintaining the liquidity of large companies in the wholesale sector. As we previously commented on solvency, which is at a satisfactory level, the debt ratio is expected to be lower, which is shown in this analysis. The consequence of higher debt in medium and large companies in 2020, can be attributed to the impact of the Covid-19 pandemic, which disrupted normal business flows. The analysis of the debt ratio can be strengthened by another indicator that speaks of financial leverage, and that is the interest coverage ratio by earnings, where earnings are defined as the sum of net profit, interest expenses and income tax. In all three years, the ratio of interest coverage by earnings is higher than one, however, although it is above the one, from 2018 to 2020, a declining trend is noticeable, except for small enterprises. In general, the values of this ratio are not worrying. We will find out whether there is room for additional borrowing after the profitability analysis.

#### *4.2.3. Efficiency*

At the heart of the report analysis ratio is the efficiency analysis ratio, which is directly related to liquidity, solvency and profitability. More efficient management of current assets results in faster release of funds needed to pay short-term liabilities.

The faster the turnover, it is considered that it is lower the need for debt of the enterprises. The assets turnover ratio, the fixed assets turnover ratio, the capital turnover ratio and the inventory turnover ratio decreased more in 2020 (respectively, 18%, 20%, 20%, 13%), compared to the fall in 2019 as well as in relation to 2018 (respectively, 2%, 4%, 18%, 4%). This implies lower efficiency of asset management, efficiency of long-term investments (which can be attributed to reduced sales, and reduced capacity utilization), efficiency of use of equity capital, as well as efficiency of use of inventories. Here we can notice that the ownership assets turnover ratio is higher than the business assets turnover ratio in the Covid-19 year, which is due to the effect of financing part of the business assets from borrowed sources, which is the effect of financial leverage. The ratio of current assets turnover is lower, but based on previous analyzes, we see that it did not endanger the enterprise's liquidity. Accounts payables turnover ratio decreased for all three categories of enterprises during the analyzed period. The average period in which the company credits customers at the level of the entire sample in 2020 is shorter than the average period in which the company is interest-free credited by the vendors, which goes in favor of maintaining liquidity. OPEX ratio measures the share of operating expenses in operating revenues, which is high in all business entities in the Covid-19 period, and indicates that business efficiency is at the low level.

#### *4.2.4. Profitability*

After the analysis of efficiency, where there is an evident decline, we can expect a decline in profitability, which is proven in this paper. The decrease in profitability is a consequence of the decrease in the net profit of the company in 2020 by as much as 29%, in the small 28%, in the medium 20%, and 39% in the large enterprises. This can be attributed to the impact of Covid-19, in terms of sales decline. The fact is that in these three fiscal years, the growth of operating revenues significantly falls behind, which is particularly worrying and clearly illustrates the inefficiency of the business entities. From the economic point of view, if countries are hit by a sudden and unexpected health crisis, revenues will decline due to the decline of overall economic activities. (Açıkgöz and Günay, 2020, 521). Low level of turnover, as well as low level of revenue, leads to low yield. In the sample, the analyzed sector records a decline in ROA, and a detailed analysis shows that there was a significant decline during Covid-19 period compared to the previous period. The reason for this is the decline in asset turnover, as well as a slight decline in profit margins. The ratio of asset turnover is higher than 1, which can be seen as a good indicator, however, as the decline is evident, the reason may be total revenues that are reduced due to the obvious market situation explained in the first part of this paper. This ratio can also be increased by increasing total assets, which is quite complex in the current circumstances. In the end, what are the consequences for business owners, and for the economy as a whole? The answer is easy to find if we analyze ROE, which measures the profitability of capital owners. Analysis of this indicator leads to the conclusion that there is a decline, and the reason for the decline lies in inefficient asset management (low turnover ratios), low-income profitability (low-income margins), increased debt, and high burden of financial expenditures. Although there is an evident decline, profitability is still not at such a low level that companies cannot additionally indebted in order to improve their business.

## **5. CONCLUSION**

Based on the analysis of the situation in Montenegro at the micro level, which was done on the basis of a sample of business entities from the sector with the largest share in Montenegrin GDP, we came to the conclusion that the Covid-19 pandemic left a mark on enterprise performance and thus to the economy of Montenegro. Based on the ratio analysis of financial statements in the entire sample, as well as in small, medium and large enterprises, there is a decline in profitability, which relies on a decline in efficiency, while liquidity is unchanged.



For the solvency of the enterprises can be said that it is neither endangered nor at a bad level. Only large enterprises showed a problem in maintaining liquidity, and as the results are bad for the entire analyzed period, this is not a consequence of Covid-19, but we can deduce that this analysis addresses the problem of large enterprises that need to be approached in more detail. This research emphasizes that more attention needs to be paid to the risks that external environmental uncertainty brings to small, medium and large enterprises and to help these enterprises anticipate risks when making business decisions. Trade sector enterprises have an impact on other sectors, especially the tourism and related sectors (hotels, restaurants and cafes) as well as vice versa, which further emphasizes the importance of analyzing this sector in countries such as Montenegro. The analysis highlighted the importance of small and medium enterprises, whose joint presence on the regional and international markets strengthens the negotiating position in procurement and placement, and thus is very important in terms of export activities, which would gradually reduce the negative balance of exports and imports as is the case in Montenegro.

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# AIDA BASED MARKETING STRATEGIES OF HOTEL INDUSTRY IN CROATIA

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## ABSTRACT

*To track generic stages of processes that every customer goes through when considering a purchase, the AIDA model, or sales funnel method, is developed in the marketing strategy of organizations that has been valid for more than a century. It is four-step formula useful in assessing the impact of advertising by controlling every step of the psychological transformation of a potential customer in actually becoming one. Given the peculiarity of commodities in the hospitality industry, that can be partly products of physical substance and/or services, customer satisfaction is related to the various factors, so the marketing mix of shareholders needs to adjust accordingly, considering the advent and prominence of sharing economy platforms that suggest the possibility for new business models for accommodation providers. Research conducted in May 2021. on a sample of 140 hotels in the Republic of Croatia, focuses on how, through the various stages of the sales funnel, hotels gain awareness of their products and services, stimulate interest in buying their offerings and convert customers in relation to reservation or booking services on sharing economy platforms. Including the outlets of electronic, or online, and offline media, the paper discusses marketing strategy practices of most represented accommodation establishments in the tourism segment as the main generator of economic activities in Croatia.*

**Keywords:** *AIDA model, Croatia, hotel, marketing, offline media, online media, sharing economy platforms*

## 1. INTRODUCTION

The marketing intention of any organization must be an attempt to influence the attitudes of customers and their behavior towards the organization itself, as well as its market offer (Kotler and Armstrong, 2018). Although it is a very demanding task, understanding customer behavior is a necessity for an organization's success. Its research focuses on the way customers make their purchasing decisions: what they buy, when, where and why they buy, how often they buy, etc. (Doole, Lancaster and Lowe, 2005). Buying decisions can be influenced by various elements: personal, psychological, social and cultural preferences. Also, they can be influenced by interactions between customers and individual customer interactions with the world, elements of the marketing mix; product, price, distribution and promotion, as well as many other factors in the environment in which the customer is located, including those of economic, technological, political nature (Kotler and Armstrong, 2018). Customers go through the buyer's journey process during each purchase, but sometimes they know how to "skip" some steps, depending on the degree of commitment when buying the product and their engagement, which depends on how important the purchase is to the customer. Some purchasing decisions have already become automatic and routinized, and some are impulsive and irregular, while some require more thought and greater engagement (Stokes and Lomax, 2008).

## 2. MARKETING AND AIDA MODEL

In 1898, E. St. Elmo Lewis proposed a theory of communication called the AIDA model, the acronym that refers to Attention, Interest, Desire, and Action, as the four-step formula to get attention from prospects, interest them, create desire for product or service so they take action,

which is making a purchase. This model is very useful in assessing the impact of advertising by controlling every step of the psychological transformation that starts from the individual level to see an advertisement up to the purchase made by the individuals (Kojima *et al.*, 2010). Although the model was introduced more than century ago and it has gone through a variety of modifications, the basic principle of this model remains intact and is still relevant. Despite living in a world of interactive online communication and emerging social networks, users still need to be aware of the existence of a product, show interest in the product based on information obtained related to the benefits of the product, and express a desire to have these products because they meet the needs, wants, and their interests, and take action to make the decision to purchase or other relevant actions (Michaelson and Stacks, 2011).

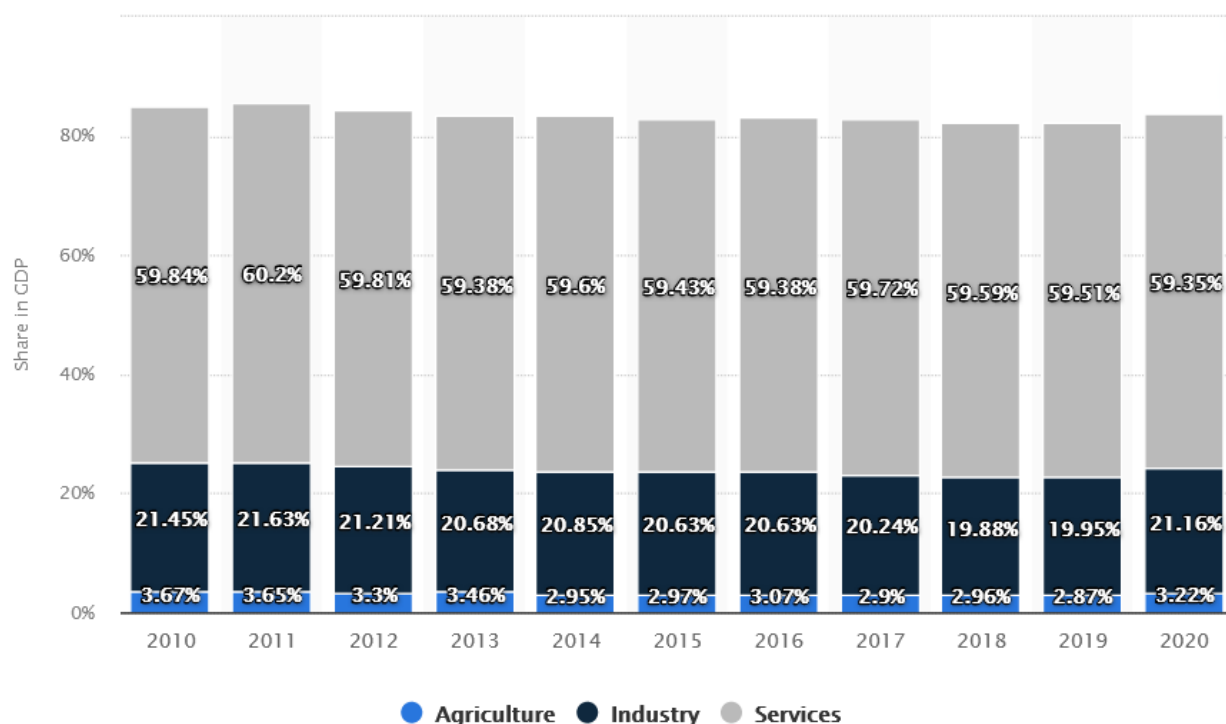
## **2.1. Marketing strategy in era of User-generated content Sub chapter name one**

The hospitality product can be defined as the set of satisfactions and dissatisfaction which a customer receives from his/her experience that is related to the various factors in terms on service quality, perceived value/price (Mim and Ferdous, 2020), geographic location, it's landmarks and atmosphere. So, customer satisfaction is related to the various factors in terms on service. Consequently, marketing mix should be designed to cater this wide spectrum, while emergence of sharing economy platforms has disrupted traditional marketing and sales processes, putting trust in a centre of customer relationship management strategy. As tourists increasingly desire low-cost services and direct interactions with communities and businesses, reputation and service quality factors play a vital role in such access-based service experiences (Ert, Fleischer and Magen, 2016) (Gregory and Halff; Gregor, 2017) (Guttentag, 2015). In fact, Consumer-Generated Media (GCM) or User-Generated Content (UGC) has become very important for the reputation of a destination because it is the opposite of traditional forms of media and marketing since content is generated by the consumer rather than by the marketer (De Ascaniis and Morasso, 2011). One of most important UGCs and knowledge sharing tools in tourism is TripAdvisor, founded in 2000, a travel website that provides reviews and other information for consumers about travel destinations around the world. It serves one of the largest internet collections of travel photos, and featured accommodation in more than 45 countries, with more than 290 million reviews and opinions from travellers around the world (Roblek, Štok and Meško, 2016). But the innovations in digital and web technologies have included also electronic commerce as a new dimension of the business, providing lodging businesses with more simple sales processes and new business model possibilities, changing added value chain, as platforms of sharing economy start to, not only act as an intermediary between accommodation supply and user demand side, but also as a facilitator of other service in terms of contracting, legal issues and even charging renting fees. In such environments, the processes of knowledge management related to marketing strategy of accommodation instances is increasingly becoming dependent on search capabilities, data collection, processing, critical judgment, information and concepts which are located outside the organization, while the users of tourist services disseminate information on the satisfaction or dissatisfaction (word of mouth) on the basis of information received from other tourists or tourist operators, coordinating their behavior and preferences respectively. The workers in the travel and hospitality industry have to accommodate the new technologies in marketing mix, such as mobile applications that enable QR codes, discount coupons, making purchases and transactions through mobile applications, allowing flexibility for users and leading to the growth of interactive marketing services in real time. Electronic commerce today provides an opportunity in the field of tourism, transport and hospitality, because internet technologies reach hundreds of millions of people. With the growing boom of online technologies that occurred in the 1990s and the beginning of the 21st century came an increasing online offer of tourist arrangements.

Such portals have appeared as Booking.com, reservation and information portals, railway portals (e.g., Trenitalia, DB Bahn, etc.) and providers of airline tickets (e.g., Expedia.com), the customers have been given the opportunity to searches online himself and compare the offers from various travel agencies, destinations, hotels, airlines and other providers of tourist services.

### 3. MARKETING STRATEGIES OF HOTEL INDUSTRY IN CROATIA

Services are most represented in the gross domestic product (GDP) structure of Croatia as tourism is a main generator of economic activities.



*Figure 1: Share of economic sectors in the gross domestic product (GDP) of Croatia from 2010 to 2020  
(Source: Statista 2022)*

Most of overnight stays are registered in commercial accommodation facilities, while share of non-commercial accommodation facilities is in rise, due to the emergence of sharing economy platforms. Most total commercial overnight stays is realized in hotel accommodation, that has highest occupancy rates throughout the year. Higher and high category hotels are better filled than medium and especially hotels lower categories, while the most hotel capacities are located in Istria, followed by the Split-Dalmatia cluster, while on third place Kvarner cluster (Hrvatska turistička zajednica, 2020).

#### 3.1. Research methodology

Research was conducted to assess the marketing practices and channels used by the hotels to raise awareness of the product or service they offer, stimulate interest in buying products and services and its “conversion” to reservation as an action of purchase in terms of .

To achieve these goals, following research questions were articulated:

- What are the marketing strategies and practices utilized by Croatian hotels?
- How accommodation rental platforms influence marketing strategies?

The survey, with a questionnaire, was conducted via the Google form, and 140 respondents participated in the survey, including hotel owners, heads of marketing departments or respondents who work in one of the elements of management. The research lasted 15 days, from May 13 to May 28, 2021.

### 3.2. Research results

Most, 54 hotels, participated in survey is located in northern and central Dalmatia. In the city of Zagreb 38 hotels participated in the research, while 24 subjects are located in southern Dalmatia (around Dubrovnik). Finally, 13 subjects from Kvarner, while 11 of hotels from Istria participated. Map of localities is shown in Figure 2.

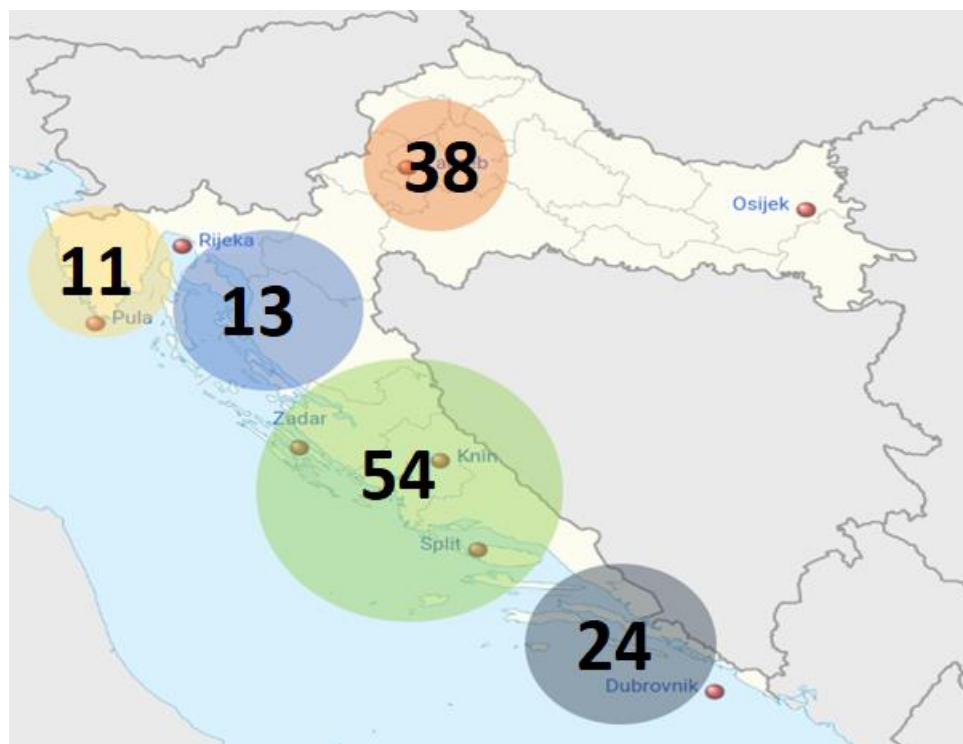


Figure 2: Localities of research hotels

More than half of hotels, ie 72 (51%), belong to the category of medium-sized facilities (between 150 and 299 beds), while 55 (39%) of them fall into the category of small hotels. Finally, 13 (9%) hotels are large hotels. While 70% of subjects (or 98 of 140) reported to use combination of online and offline media in marketing activities, 30% (42 subjects) of them declared solely usage of online media.

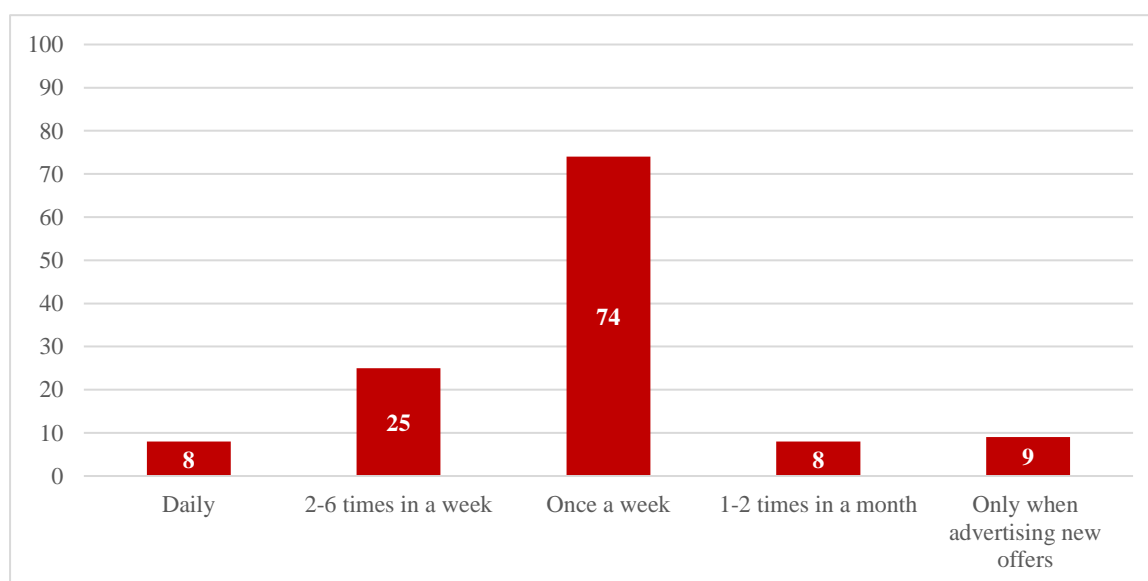
#### 3.2.1. Electronic media marketing strategy

Beside Internet, that is used by all subjects, 17% (24 subjects) also use radio and 9% (13 subjects) use television as electronic media for broadcasting their products and services. Subjects that advertise on radio (N=24) mostly, 79% or 19 of them, use this advertising strategy in less than 25% ratio to other electronic media. Same ratio is most represented also within subjects that use television (10 hotels out of 13; 76%) for advertising. Internet, being most used electronic media for advertising, offers various types of promotions. Social networks are used by 124 hotels (89%), accommodation rental platforms, such as Booking or Airbnb, are used by 130 hotels (93%), while sponsored articles on various websites are used by 15 hotels (10%), shown in Figure 3.



*Figure 3: Internet promotion tools share by number of hotels*

When it comes to social media (N=124), the most popular platform is Instagram, used by 84% of 118 of subjects, followed by Facebook (77% or 108 of subjects), LinkedIn (26% or 33 hotels), Twitter (10% or 14 subjects) and Tik-Tok (6% or 8 subjects). Only 6% of hotels publish content every day, 20% of them 2-6 times a week, while majority (59%) publish once a week. More rarely, once or twice a month, only 6% of hotels update social media status, while 7% do it only to announce new offers. Frequency of social media updates is shown in Figure 4.



*Figure 4: Social media update periodics by number of hotels*

86% of hotels that are present at booking platforms (N=130) use promotional tools on them. Meanwhile, 71% (N=124) of subjects use paid ads on social media. Subjects (N=140) tend to use promotion activities (regardless of the medium) mostly during the date of low demand (70%) or as a result of increasing cancellations (30%). Regarding the promotion features, 69% (N=140) of subjects on the platforms provide information about the allowed stay of pets 71% of them provide information on free overnight stays for children, while 50% provide information on last minute prices. Furthermore, 56% of hotels give the option of free cancellation, 38% provide information on optional advance payment, while 19% offer prices for business users. Statistics by number of hotels is shown in Figure 6.



Figure 5: Promotional features used by number of hotels

In context of message that hotels are prone to advertise in sponsored articles (N=15), 10% of them represent the content of hotel services, 4% assert activities and events, while 3% present nearby attractions. 7% of them focus on media content, emphasizing images of the hotel's exterior and interior in the foreground. To activate audience 4% of hotels offer discounts as a promotional offer and to mark conversion, most of establishments (11%) refer to hotel's website and/or profile on accommodation platform, 7% of them cite contact data, 5% lead customers to social media profiles. Only one percent of them track conversion as a newsletter subscription, a tool for the long-term marketing strategy. Finally, to register acquisition or reservation/booking, 86% of 140 subjects refer users to their profile on booking platforms, while 75% of them refer also to hotel's websites for reservation. Also, 29% of hotels promote e-mail address as a booking channel and 47% support booking through telephone.



Figure 6: Acquisition channel by number of hotels

98 of 140 hotels (70%) generate more than 52% of their turnover through booking platforms, while 19 hotels (14%) generate between 31% and 51% of their turnover through this channel. Finally, 13 hotels (23%) generate less than 30% of their traffic through booking platforms.

### 3.2.2. Offline media marketing strategy

When it comes to offline media, most of hotels, 58% of 140 hotels partner with travel agencies in attracting visitors by offering mainly its accommodation (in 56% of cases) and also by using them as a channel for promotional materials such as leaflets, brochures, etc. in 14% cases.



Only 11% of hotels reported that more than 52% of reservations is booked that way, while majority of hotels (38%) book less than 30% of reservations through travel agencies. Using billboards in offline marketing strategy is effective for 23% of 140 hotels in reaching to the customers with the basic content ie their name, pictures and contact. However, 5% of them put promotions and promotional offers on their promotional boards. Finally, 15% (N=140) of hotels use tourist fairs as a promotion outlet and by doing so they present themselves independently (11%) or with partners (4%). With such focused promotion 10% of them try to attract individual guests with discounts and promotional offerings (in 3% of cases) and with last minute benefits (in only 1% of cases). Besides, 5% of hotels try to attract business partners, also by providing discounts (9%) and last minute offers (2%).

#### 4. CONCLUSION

Perceiving research results through the prism of the sales funnel, it is evident that in attention phase, hotels mainly use social media to raise awareness and encourage potential users to pay attention to the hotel and the products it offers. Also, to a far lesser extent, hotels use sponsored media articles for this purpose. However, as booking platforms have primary role in the next phases of sales funnel, their popularity should not be overlooked in attention phase given that the large number of hotels share content from booking platforms on their social networks. Taking into account that offline media marketing strategy is mostly focused in reaching attention of customers, these so called top-of-funnel marketing channels and strategies are dominating the sales funnel. Furthermore, in the interest and desire phases, hotels connect with potential guests in order to raise interest and create desire for the reservation or booking. In this context, booking platforms influence greatly marketing strategy, enabling various possibilities within paid promotions. Social media likewise. Consequently, there are many promotional features that can be communicated in these phases through various media channels. More tailor-made offers can be made on trade fairs, as offline media, that hotels use in B2C (Business-to-Consumer) and also in B2B (Business-to-Business) capacities. But most influence of booking platforms is shown in action phase, as prevalent number of hotels use them to manage reservations and majority of hotels generate more than a half of their turnover through these tools, supporting the premise that they are powerful enabler of electronic commerce in these business sector.

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## ANALYSIS OF PERCEPTION OF THE ACHIEVED LEVEL OF GLOBALIZATION AND GLOBAL CONNECTION OF THE REPUBLIC OF CROATIA

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### ABSTRACT

*Globalization affects almost all spheres of people's lives, which is why we can look at it from four main aspects - economic, political, cultural and environmental. The paper analyzes four aspects of globalization, as well as the positive and negative impacts of globalization on the wider community. Developed countries are the bearers of the process of globalization and they are the ones who have best used the benefits of globalization. With the development of information and communication technology, the world has become a unique system, and the connection between two entities in different parts of the world is often realized in a few minutes. From another point of view, the process of globalization creates a free market that allows the free movement of people, goods, services and capital, while deepening inequalities between developed and underdeveloped countries with serious threats to the environment. The last few decades have seen the world come together to liberalize and deregulate international trade, reduce international trade and investment barriers, develop information technology and telecommunications, advances in science and the profession, demographic change and many other causes. Globalization represents different things to different people. In the business world, globalization means a "free world" for the flow of money and trade, for political scientists and politicians it means the disappearance or at least the challenge of state borders, while globalization for the average citizen is the same living conditions as in other countries. For these reasons, the analysis of the perception of the degree of globalization of the Republic of Croatia was approached and the research in this paper included 168 respondents. The aim of this paper is to prove that the perception of the degree of globalization of Croatia largely depends on the age group of respondents, which also represents the attitude of respondents to the global position of the Republic of Croatia.*

**Keywords:** *Globalization, aspects of globalization, perception of globalization, degree of globalization of the Republic of Croatia*

### 1. INTRODUCTION

The process of globalization creates a free market which enables the free movement of people, goods, services and capital, while on the other hand it deepens inequalities between developed and underdeveloped countries and seriously threatens the environment. The notion of globalization is causing a lot of controversy around the world, on the one hand supporters and on the other hand critics of globalization. The paper looks at whether the advantages or disadvantages of globalization are more pronounced and how much impact globalization has on the world economy, so there are two poles of opinion such as Thomas Friedman (2000) who believes that the world is fully globalized and Pankaj Ghemawat (2017) who believes that the world is increasingly regionalizing, rather than globalizing.

For any type of activity, which can take place in the domestic or international market, we can determine the share of each activity international. The DHL Global Connectivity Index<sup>1</sup> has been developed and is often used for this purpose. The last few decades have seen the world connect to one interdependent place, exemplified by the liberalization and deregulation of international trade, the reduction of international trade and investment barriers, the development of information technology and telecommunications, advances in science and profession, demographic change and many other causes. The economies of many countries are in globalization and in such an environment there is inevitably an intertwining of economies and markets of different countries, and thus nations and cultures from different parts of the world. Globalization represents different things to different people. In the business world, globalization means a "free world" for the flow of money and trade. For political scientists and politicians, it means disappearing or at least challenging state borders, while globalization for the average man or woman means he or she can eat the same food, wear the same shoes, or watch the same television programs as someone living on the other side of the planet (Dodds, 2000). Freedom of action in the global market has its binding aspects, which means that there are no rights without duties, and powers without personal responsibility. The life of the individual and each social community requires constant satisfaction of a number of needs of participants in mutual relations with the process of consumption of various goods and services (Vinšalek Stipić, 2020). This paper discusses the emergence of globalization, emphasizing the importance of establishing the International Monetary Foundation – IMF, World Trade Organization – WTO and World Bank, as well as the contribution of multinational corporations that connect the world through their business. Globalization affects almost all spheres of people's lives and that is why we look at it from four main aspects - economic, political, cultural and environmental. Developed countries are the bearers of the process of globalization and they have made the best use of current global circumstances. Globalization is often not seen as a positive shift in the national economy, which is also a problem of this research. For these reasons, the analysis of the perception of the degree of globalization of the Republic of Croatia was approached and the research in this paper included 168 respondents. The aim of this paper is to prove that the perception of the degree of globalization of Croatia largely depends on the age group of respondents, which also represents their position on the global position of the Republic of Croatia.

## **2. THEORETICAL OVERVIEW OF GLOBALIZATION**

The concept of globalization is derived from the word "global" which means totality, and "globalism" is a way of looking at events in the global. Globalization would thus imply a social process that strives for the system and uniqueness of the world (Turek, 1999). Ideologically, we associate globalization with the concept of neoliberalism in which the dominant influence is Western civilization, which is based on the values of the doctrine of liberalism. The beginnings of liberal ideas and deregulation are visible through Adam Smith's famous metaphor - the "invisible hand" which, by directing the individual to pursue his own interests, also pursues the interests of society as a whole. In the scientific literature, we come across numerous definitions of globalization of various academics from which two poles of opinion can be clearly seen - the first, led by proponents of globalization and the second, led by critics of globalization. Proponents of globalization welcome the efforts of international organizations to continuously reduce barriers to international trade to create a single world market, while critics believe that the process of globalization exudes more negative than positive externalities (Ritzer, 2010).

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<sup>1</sup> The DHL Global Connectedness Index (GCI) is a thorough examination of the state of globalization. It analyzes trade, capital, information, and people flows at the global, regional, and national levels. The creator of the DHL Global Connectedness Index is Pankaj Ghemawat.

Regardless of the attitude that an individual will take in his own thinking about globalization, globalization certainly means the process of interaction and integration between people, companies and governments of different nations, resulting from international trade and international investment, and supported by information technology (Levin Institute, 2018).

### **2.1. The emergence of globalization**

The process of globalization began a long time ago and can no longer be stopped. There is no single opinion as to what can be considered the beginning of this process in the history of mankind. According to some sources, globalization began in the late 18th century, at a time of great social change in Europe, such as capitalism and industrialization (Hirsh and Thompson, 1999), while other sources state that early forms of globalization date back to the Middle Ages when the Silk Road in Central Asia connected China and Europe in international trade (Levin Institute, 2018). The process of globalization has certainly been favored by post-World War II events in which war-torn countries in Europe and the United States joined forces in an effort to interconnect. The main goals of such connections were to avoid further hostilities and to create a system in which countries would cooperate and help each other. In order to achieve these goals, it is planned to establish three institutions of the global economic system. The first institutions established immediately after World War II were the International Monetary Fund and the World Bank, while the third institution of the new global order, the World Trade Organization, was established only at the end of the millennium (Lazibat et al., 2020). Although the World Trade Organization was established only in 1994 due to a series of objections from signatory countries to certain provisions of the statute that could negatively affect their domestic industries, it is worth mentioning the GATT - General Agreement on Tariffs and Trade signed in 1947 instead of the statute WTO. The signing of the GATT meant a reduction in trade tariffs among the signatory countries, which contributed to their stronger trade interconnection (Lončar, 2005). The creation of supranational alliances, such as the North Atlantic Treaty Organization - NATO, in which nation states must relinquish part of their sovereignty, has also contributed to the process of globalization. NATO is a political and military alliance established after World War II in 1949 that promotes democratic values and provides member countries with advice and cooperation on defense and security issues, all in order to prevent conflict. NATO is committed to the peaceful settlement of disputes, but if diplomatic efforts prove unsuccessful, NATO has the power to undertake military operations (Laffler, 1985). We must not forget the importance of multinational corporations and their contribution to the process of globalization. Multinational corporations such as Starbucks, Sony, Apple, Disney, IKEA, and etc., are creating increasing interaction between participants in international trade by networking various financial markets around the world. The business of multinational corporations greatly generates international trade by contributing to the national economies of not only developed countries but also underdeveloped and developing countries. In this way, multinational companies contribute to the mobility of capital, the mobility of people and the dissemination of information and technology.

### **2.2. Aspects of globalization**

The process of globalization affects various fields of life of today's humanity, and accordingly we can observe it from four aspects: economic, political, cultural and environmental aspects. According to some authors, the economic aspect is the most important aspect of the globalization process, but the remaining three aspects in recent history are becoming increasingly important.

- **ECONOMIC ASPECT** – multinational corporations, as already mentioned, simply connect the world in the course of their business with the aim of gaining profit. Companies increase

their revenues by selling products and services around the world and reduce their costs by locating production in countries with cheaper factors of production (Lazibat et al., 2020). With the free movement of goods, capital and labor as a consequence of the globalization process, combined with the rapid development of technology, there are opportunities to eradicate global problems in the form of poverty and the huge gap between rich and poor countries. This aspect of globalization is focused on increasing productivity and living standards through increased international trade, intensifying foreign investment in the form of acquisitions and mergers, strategic alliances and joint ventures, opening markets in many countries and connecting people around the world with new telecommunications connections. With a positive view of the economic aspect of globalization, more and more emphasis is placed on the negative aspect, which indicates the unequal distribution of wealth and discrimination, which leads to a widening gap between rich and poor. Becker (2005) believes that the profit goals of major market players and the desire to appropriate as much material and financial wealth have nullified the achievement of humane goals and distorted the essence of development, which is to expand and increase the well-being of people around the planet.

- **POLITICAL ASPECT** – world institutions such as the United Nations, the European Union, the IMF and others have a significant impact on the politicization of globalization. Globalization in the political direction is closely connected with economic globalization. The dependence of the national economy on the global one largely deprives local actors of their autonomy in making decisions about their own interests and directly links them to international institutions. Thus, the rules are created and dictated by international institutions, which in any case does not give priority to the local or national economy (Vojnović et al., 2006). Therefore, the political aspect of globalization is reflected in the threat to national sovereignty caused by the involvement of states in international treaties, communities and organizations. In a large number of state companies there were a multitude of problems and policy interference which made the states prove to be bad masters of such companies. For this reason, there has been a process of transition and mass privatizations of state-owned enterprises. In the process, the assets of state-owned enterprises were often sold at symbolic prices that were far below real.
- **CULTURAL ASPECT** – the process of globalization brings with it changes in the field of culture, habits and customs of people. From a cultural point of view, the world is increasingly influenced by the Western world (Americanization) and the creation of global culture. The term "Americanization" means the process of linguistic, cultural and political adaptation to the standards and customs of the United States of America, although the term originally meant the process of assimilation of many immigrants to the United States during the First World War, who were asked to sever ties with the old society, to learn English and acceptance of the American way of life and American nationality. However, not everything is so Americanized. English is not in the first place of the most widespread languages as it seems, but Chinese (Leung et al., 2005). In a globalized or semi-globalized world, different cultures are mixed, its determinants such as religion, social structure, language, political and economic philosophy, are exchanged knowledge, business experience and practice which is a positive side effect of the globalization process. By imposing and accepting any of the more dominant cultures, many cultural peculiarities that make life on Earth interesting and unique disappear.
- **ECOLOGICAL ASPECT** - the consequences of globalization are visible at every step, including from the point of view of the ecological aspect. Growing public perceptions in Western countries about the severity of environmental degradation have led to a shift in emphasis from "ecology as a way of promoting economic development for human well-being" to "ecology dedicated to preserving the natural environment" (Di Castri, 2000).

Data and facts on the non-renewable nature of certain natural resources, biodiversity loss, extinction of certain species, impact of solar radiation, global warming, climate change and even the emergence of new diseases such as COVID-19 and the like are more alarming than ever. Some believe that the main bearers of environmental problems are multinational companies. Others see the cause in the policies of governments and organizations, while others believe that the media and "green lobbies" who distort or selectively present data by placing dramatic scenarios are to blame for the apocalyptic view of the environmental situation. Whoever is to blame, the threat to the environment is evident and a responsible approach to the environmental risks imposed by the process of globalization is necessary to ensure a healthier and better life on Earth.

### **3. PREVIOUS RESEARCH**

Levin (1999) conducted the first empirical study of the impact of global forces on American and Canadian social science colleges. Their missions and structures were examined, noting changes associated with globalization. It was concluded that global forces, such as international economies, international political struggles and their consequences, and global communication systems, affect the work of faculties. Globalization aspects have an impact on changes in college behavior, including changes in institutional mission and institutional structures. That is, faculties are increasingly market-oriented, more sensitive to public demands and preferences, and increasingly focused by provincial governments to serve political and economic priorities. A survey conducted in Wisconsin on a sample of 362 respondents on the perception of a change in ownership of a local paper mill, which was taken over by forest products companies based in Finland. Quantitative and qualitative analyzes revealed that residents expressed sincere distrust of the new global corporate owners. Residents reported that current business owners do not support schools and other social activities as much as previous owners. Globalization has given rise to local contempt for the new global owner (Miller, 2006). Das (2007) in his study of 575 students found that students do not have a positive perception of multinational companies, as assessed by the index of beliefs in unethical business practices of multinational companies and the attitude of respondents to what extent they think multinational companies are opportunistic in their business practices. Based on a focus on economic concerns, research has been conducted to study the relationship between job loss and global outsourcing and global immigration. He concludes that views on foreign trade are highly correlated with the national unemployment rate (Hoffman, 2010). Research conducted on a sample of students from the United States (N = 442), China (N = 516) and Taiwan (N = 164) on the perceived impact of globalization in general and in their own country, global and national affiliation, world value orientation and perceived personal risk to the environment. Perceived personal risk to the environment and global affiliation were significant predictors of sustainable behavior in all three samples. Secularity and ethnicity were additional significant predictors in samples from the United States and China. Global affiliation and perceived environmental risk were positively correlated in all three samples. In all three samples, a stronger sense of global belonging was associated with a stronger perception of the positive impact of globalization in general and locally (Der-Karabetian et al., 2014). Shepherd et al. (2009) suggest that attitudes toward behavior need to be closed to promote sustainable development, and values found in different cultures can be used to strengthen and promote environmentally sustainable behavior.

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

The study of globalization does not mean focusing only on what is explicitly global, but also focuses on the local perception of global dynamics and networking of cross-border economic, social and cultural ties. The population of a national economy does not fully understand the benefits of globalization and the real negative effects of globalization.

Therefore, the key question is what is the national public perception of the depth of globalization? The depth of globalization measures the intensity of globalization, that is, how much of a certain country's activity has an international character. This is considered to be a problem of this research and is defined accordingly the aim of the research. The aim of the research is to draw concrete conclusions about the perception of globalization of the population of the Republic of Croatia and to prove that the perception of the degree of globalization of Croatia largely depends on the age group of respondents. In accordance with the above, the following research hypotheses have been set:

- *Null hypothesis  $H_0$*  – perception of the degree of globalization of the Republic of Croatia from the economic, political, cultural and ecological aspects is not significantly statistically related to the age group of the population
- *Alternative hypothesis  $H_1$*  – perception of the degree of globalization of the Republic of Croatia from the economic, political, cultural and ecological aspects is significantly statistically related to the age group of the population

Empirical research to prove the hypotheses was conducted by a survey in the Republic of Croatia in the period from 15 March to 15 April 2022. Examination of the perception of the achieved degree of globalization of the Republic of Croatia, on a selected sample, was conducted using a survey questionnaire with measuring scale from 1 to 7, where one represents a statement I absolutely disagree to seven I absolutely agree. Survey questionnaire perceptions of the degree of globalization achieved covered all aspects of globalization (economic, political, cultural and environmental) with the following set of questions:

- 1) Economic aspect: The Republic of Croatia trades extensively abroad, exports goods and services abroad; The Republic of Croatia is successful in attracting foreign direct investment into the Croatian economy
- 2) Political aspect: The Republic of Croatia is a member of numerous international organizations and participates in various intergovernmental bodies; The Republic of Croatia successfully pursues foreign policy and actively participates in decision-making on important global issues
- 3) Cultural aspect: A large number of telephone calls and SMS messages in the Republic of Croatia are international calls and SMS messages; A large number of residents of the Republic of Croatia often travel outside the country (students, tourists, etc.)
- 4) Ecological aspect: The environment on the territory of the Republic of Croatia (air, water, soil) is significantly exposed to negative effects due to global climate change; The Republic of Croatia is turning climate and environmental challenges into opportunities and striving for a transition to climate neutrality

To prove hypothesis  $H_1$ , the following regression model was set:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \quad (1)$$

Where is:

$Y_i$  – age group of respondents (Age)

$X_1$  – degree of perception of globalization from the economic aspect (Econo)

$X_2$  – degree of perception of globalization from the political aspect (Politic)

$X_3$  – degree of perception of globalization from a cultural aspect (Cultur)

$X_4$  – degree of perception of globalization from the ecological aspect (Ecolo)

$\beta$  – explanatory variable coefficient (constant)

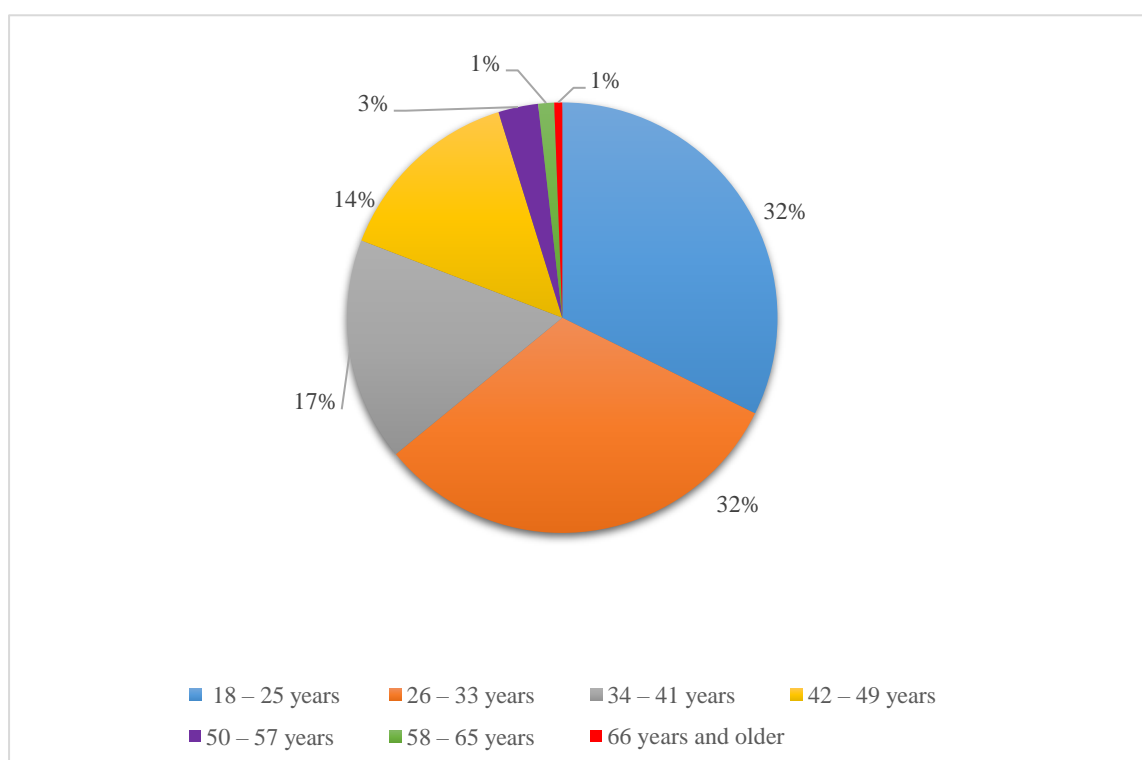
$e_i$  – difference between estimated and observed value (error term)



The dependent variable, the age of the respondents ( $Y = \text{Age}$ ) and the independent variables ( $X_i = \text{Econo}; \text{Politic}; \text{Cultur}; \text{Ecolo}$ ) perceptions of globalization with four aspects of globalization were obtained from a questionnaire on a sample of 168 respondents. The statistical program SPSS Statistics 26 was used to prove the set hypotheses, and first the differences in the answers of the respondents who were the first to fill in the survey questionnaire and those who are in the final stages of the survey were tested. The analysis of the t-test for rejecting the null hypothesis was performed, and Pearson's correlation and multiple regression were used to prove the alternative hypothesis.

## 5. RESULTS OF THE RESEARCH

In order to prove the set hypotheses, the relevant sample obtained by the survey, which was filled out by adult residents of the Republic of Croatia, was processed. The age group of respondents is shown in Graph 1, which shows that the largest group of respondents consists of the younger population aged 18 to 33, while only three respondents aged 58 and older. By analyzing the perception of globalization of the Republic of Croatia on the basis of four aspects, respondents assessed all aspects of globalization on the overall average score of four, and concluded that the degree of globalization of Croatia is relatively unsatisfactory.



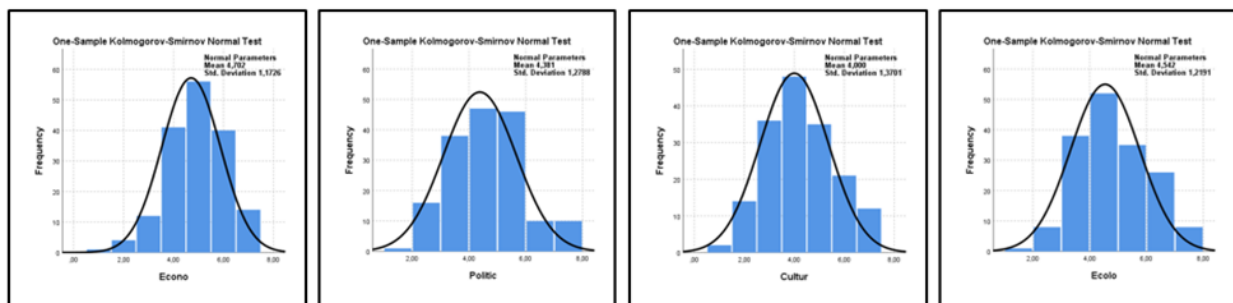
*Graph 1: Age group of respondents  
(Source: Author's own research)*

To prove the set hypotheses  $H_0$  and  $H_1$ , the statistical program SPSS Statistiks 26 was used, and first the differences in the answers of the respondents who first completed the questionnaire and those who completed it later during the research period were tested. A t-test of the equality of the environments of the independent samples, the first and second groups of respondents, was conducted. The null hypothesis according to which the arithmetic means of the analyzed sets are equal was tested. With regard to the procedure of starting the t-test, we conclude that the sample size is suitable for conducting a t-test of independent variables, which is shown in Table 1.

One-Sample Test						
Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Econo	51,979	167	,000	4,70238	4,5238	4,8810
Politic	44,402	167	,000	4,38095	4,1862	4,5757
Cultur	37,840	167	,000	4,00000	3,7913	4,2087
Ecolo	48,286	167	,000	4,54167	4,3560	4,7274

*Table 1: T-test data table of independent variables  
(Source: Author's own research)*

A positive sign of the t-test indicates a higher arithmetic mean of the first group of respondents. The presented P-value (Sig.), calculated significance is an important indicator and should be higher than the specified level of significance (0.05). For all independent variables,  $p < 0.001$ , which concludes that there is no significant difference between the samples, so there is enough evidence to reject the null hypothesis that there is no significant statistical correlation between the perception of globalization of the Republic of Croatia from economic, political, cultural and environmental aspects with the age group of respondents. Based on the results of tests of the normality of the distribution of independent variables (Econo, Politic, Cultur, Ecolo) shown graphically in Figure 1, the assumption of the normality of the distribution of independent variables was confirmed. Thus confirmed normality of independent variables is a precondition for further proof of  $H_1$  hypothesis.



*Figure 1: Graphical representation of the Frequencies procedure and histograms of the normality of the distribution  
(Source: Author's own research)*

Using the Pearson correlation coefficient, shown in Table 2, where \*\* the correlation of statistical significance at the significance level of 0.01 is extremely significant. Pearson's correlation coefficients of variables indicate that there is a statistically significant correlation where the correlation is highest between the variables Econo and Political, and the lowest positive correlation Econo and Ecolo (0.214) with a significance of 0.01. A small but negative correlation coefficient is visible between the variable age of the respondents and other defined variables. All other correlation coefficients also indicate a high correlation ( $r > 0.4$ ;  $p < 0.001$ ) between the independent variables, but predictive analysis using a multi-regression model will certainly be performed to prove the hypotheses.

*Table following on the next page*

		Correlations				
		Age	Econo	Politic	Cultur	Ecolo
Age	Pearson Correlation	1	-,103	-,194*	-,184*	-,279**
	Sig. (2-tailed)		,184	,012	,017	,000
	N	168	168	168	168	168
Econo	Pearson Correlation	-,103	1	,516**	,368**	,214**
	Sig. (2-tailed)	,184		,000	,000	,005
	N	168	168	168	168	168
Politic	Pearson Correlation	-,194*	,516**	1	,530**	,406**
	Sig. (2-tailed)	,012	,000		,000	,000
	N	168	168	168	168	168
Cultur	Pearson Correlation	-,184*	,368**	,530**	1	,328**
	Sig. (2-tailed)	,017	,000	,000		,000
	N	168	168	168	168	168
Ecolo	Pearson Correlation	-,279**	,214**	,406**	,328**	1
	Sig. (2-tailed)	,000	,005	,000	,000	
	N	168	168	168	168	168
*. Correlation is significant at the 0.05 level (2-tailed).						
**. Correlation is significant at the 0.01 level (2-tailed).						

*Table 2: Pearson correlation coefficient  
(Source: Author's own research)*

From the multiple regression model shown in Table 3, the multiple correlation coefficient (R) of 0.301 is visible, which is a moderately positive correlation dependent with independent variables. In fact, the perception of the degree of globalization of the Republic of Croatia is moderately positively related to the age group of respondents. The coefficient of determination is 0.090, from which it cannot be said that the model is well representative, while the adjusted R<sup>2</sup> is an indicator of the predictive ability of the set model. The empirical F ratio (0.055) is less than the theoretical value, based on this given the level of significance 0.05 and the number of degrees of freedom (4.163), due to the above we conclude that hypothesis H<sub>1</sub> is partially accepted. Durbin-Watson has a value of approximately 2 which indicates the absence of autocorrelation of relation errors.

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	,301 <sup>a</sup>	,090	,068	1,21574	,055	4,024	4	163	,817
a. Predictors: (Constant), Ecolo, Econo, Cultur, Politic									
b. Dependent Variable: Age									

*Table 3: Multiple regression analysis  
(Source: Author's own research)*

Statistical analysis, t-test and procedure of Frequencies and histograms of distribution normality, and analysis of multiple regression model, obtained correlation coefficient 0.301, concludes that the perception of the degree of globalization of the Republic of Croatia from economic, political, cultural and environmental aspects is moderately positively statistically related to age group of the population. The limitation of the research is the small representation of respondents aged 58 and older, because in this research this group makes up only 1.79% of respondents included in this research.

In order to see the general picture of the degree of globalization of the Republic of Croatia, it is recommended to repeat the research and conduct future research on a more representative sample.

## 6. CONCLUSION

Numerous changes that have affected the world economy in the last few decades have made it possible to connect the world into one, interdependent place that we now call globalization. The process of globalization indisputably affects various fields of life of today's humanity, and accordingly we observe it through four main aspects of globalization: economic, political, cultural and environmental aspects. Through these, but also through many other dimensions, the effects of globalization are reflected. Globalization is an inevitable process of every advanced civilization and national economies strive to be as globally connected to the rest of the world as possible for the sake of greater progress and development. Therefore, the aim of this paper was to investigate the perception of the achieved level of globalization of the Republic of Croatia, and the extent to which the perception of the degree of globalization is related to the age group of respondents. The implementation of an empirical study on a sample of 168 respondents came to the conclusion that the Republic of Croatia is at a relatively unsatisfactory level of globalization. The analysis of the multiple regression model, obtained with a correlation coefficient of 0.301, concludes that the perception of the degree of globalization of the Republic of Croatia from the economic, political, cultural and environmental aspects is moderately positive statistically partially related with the age group of the population. In order to see the general picture of the degree of globalization of the Republic of Croatia, it is recommended to repeat the research and conduct future research on a more representative sample.

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## INNOVATIONS AND INCLUSIVITY IN TOURISM - PORTUGAL CASE STUDY

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### ABSTRACT

*Tourism is one of the world's largest industries and is experiencing increasing expansion from year to year. In this sense, it is necessary to continuously develop innovations in order to meet the needs of a growing market, but at the same time remain competitive in a dynamic business environment. The truth, however, is the following: innovations in tourism are more numerous and complex than innovations in other sectors precisely because they co-create with consumers and customers. The moment of co-creation begins in the market of supply and demand, and later continues at the time of consumption and after it through leaving its digital mark in the form of a review, review or completed a survey questionnaire on satisfaction. Thus, changes in consumer habits, conditioned lifestyle and market basket, affect the development of supply, and in order to achieve success it is necessary to adjust its supply to demand. The paper discusses existing and potential innovations in the Portuguese tourism market. Special attention was paid to inclusion as an opportunity to expand the market, but also an example of sustainable innovation, especially in the segment of social and cultural postulates. Given that tourism products and services have so far been mainly targeted at the majority of the population, tourism products targeted at people with special needs or mobility are innovative, so this paper aims to identify existing innovations in the Portuguese tourism market in inclusive tourism.*

**Keywords:** *innovation, inclusiveness, Portugal, sustainable tourism, tourism*

### 1. INTRODUCTION

Portugal is one of the leading coastal tourist destinations in Europe. Portugal owes its tourist attractiveness to its favorable geographical position, attractive natural base suitable for the development of bathing and sports tourism and anthropogenic tourist attractions that mainly rely on rich cultural heritage. The growth of international tourism in Portugal was recorded during the 1960s when the number of international flights increased, primarily from the USA and the UK. In parallel, there was a tourist boom in the southernmost region of Portugal, the Algarve, which led to the multiplier effect of tourism. The peak of tourism thinking comes in 2007 when the Portuguese government creates the first comprehensive national tourism development plan, which speaks to the importance of the tourism industry for the country's economy. The main goals of this strategy were to raise the rating, as a leading tourist destination, through the development of competitive products, turning tourism into one of the main generators of growth of the national economy. Almost 20 years have passed since the first comprehensive national tourism development plan, and today Portugal is recording a constant expansion (in volume and value) of tourism and is guided by the new Sustainable Tourism Development Plan 2020-2023. in which they explicitly include disability and people with

disabilities as many as 11 times<sup>1</sup>. Furthermore, the long-term ten-year tourism development strategy 2017-2027 also envisages the development of inclusive tourism and includes it in its vision: "Portugal is an inclusive country, open and connected to the world."<sup>2</sup> The results of tourism investments and organizational efforts in Portugal are reflected in the following facts: The World Economic Forum declared Portugal in 2016 the 14th most competitive tourist destination out of 136 countries. In the same year, tourism accounted for 16.5% of total exports while in 2017 it was 17.8%<sup>3</sup> which represents the largest share in Portugal's total exports of goods and services. In 2016, tourism accounted for 6.4% of Portugal's total GDP, but if we look at indirect and provoked inputs, tourism amounted to 16.6% of GDP. Also, employees in tourism accounted for 8.1% of total employment in 2016, and with indirect impacts, this figure is growing to 19.6%<sup>4</sup>. That Portugal has serious tendencies to strengthen the tourism sector and improve the supply of tourism products is evidenced by the increase in innovation in this area. But in order to talk about tourism innovations, they need to be defined in advance. The definition of innovation is many, but researchers have not yet agreed on the exact definition of innovation in tourism. Nevertheless, innovation can be defined as the use of new knowledge (technological or market) to offer a new product or service that is in demand in the market demand<sup>5</sup>. Distinctive features of a 'new' product can be improved characteristics or the implementation of completely new ones that have not been represented in a given market so far. In this sense, innovations in tourism can represent the use of new knowledge to create a new tourism product and fulfill the market potential that exists in the market demand. Furthermore, innovations work towards improving the competitive advantage of a destination or organization by embracing new and maintaining existing market share resulting in increased profitability in a given market. However, it is important to emphasize that the competitive advantage gained by an innovative product is short-lived as it begins to get duplicated so it is important to maintain the level of innovation over time. Therefore, inclusive tourism is defined as tourism available to everyone regardless of their age and physical status, and the imperative is to enjoy tourist experiences. It is a set of service facilities for individuals with different mobility options, which can be, for example: disabled people, elderly passengers, pregnant women, parents with small children or people who are currently disabled for normal functioning.<sup>6</sup>

## 2. GOAL, HYPOTHESES, METHODOLOGICAL FRAMEWORK AND PREVIOUS RESEARCH

The aim of this paper is to identify existing innovations in the Portuguese tourism market in the segment of inclusive tourism. To achieve this goal, the paper tests the following general hypothesis:

- H0: There is a positive link between the application of innovation and inclusiveness that affects the development of tourism

The general hypothesis was proved by testing auxiliary hypotheses:

- PH1: Innovations in tourism are conditioned by changes in consumer habits, market basket and competition
- PH2: Inclusion in tourism is the backbone of cultural and social sustainability

<sup>1</sup> United Nations website <https://www.un.org/development/desa/disabilities/envision2030.html>, accessed February 11th, 2022.

<sup>2</sup> Tourism Development Strategy Portugal 2017. – 2027. <https://www.turismodeportugal.pt/SiteCollectionDocuments/estrategia/estrategia-turismo-2027.pdf> accessed February 11th, 2022.

<sup>3</sup> Moreira, C. O. (2018). Portugal as a tourism destination, paths and Trends. *Mediterranean* 130/ 2018 : Portugal, a country in transformation prema Banka Portugala. Estatísticas do Banco de Portugal

<sup>4</sup> Ibid.

<sup>5</sup> Afuah, A. (2003). *Innovation Management Strategies, Implementation and Profits*. Oxford University Press

<sup>6</sup> Munch, H. et al. *Inclusive tourism. The Long Tail of Tourism*. Gabler, Wiesbaden, 2011.

Different methods were used in hypothesis testing depending on the phases of the research. In the first phase of the research, the method of collecting and analyzing previously published domestic and foreign scientific and professional literature of correlative sciences on the development of tourist destinations, ie innovations in tourism was used. In the second phase of the research, examples from practice and their application in inclusive tourism in Portugal were approached. The Croatian area is characterized by less research, and there are significant works on the concept, development and concept of a tourist destination and in general the development of innovations and their role in the tourism sector. Tourism development and destination characteristics have been specially researched in several papers, of which stand out: "Tourism development and impacts on the destination", university professors dr. Sc. Jasmine Gržinić, Ph.D. Vanja Bevanda as editor, "Management of selective forms of tourism" by university professor Stanko Geić, and work in the field of innovation: "Drivers of innovation in tourism: some theoretical and practical aspects" of professors from the University of Zagreb: prof. dr. sc. Nevenka Čavlek, doc. dr. sc. Ingeborg Matečić and Associate Professor dr. sc. Danijela Ferjanic Hodak.

### 3. DEVELOPMENT AND CHARACTERISTICS OF INNOVATION IN TOURISM

There are still relatively few scientific and professional papers on the topic of innovations in tourism, especially in the Croatian academic field. Major research began only after Anne-Mette Hjalager's "Dynamic Innovation in the Tourism Industry" has been published in 1994. There are several reasons for this: the prevailing opinion is that the service is standardized and therefore it cannot be innovative, while the product as a physical component is the main generator of economic trends. Also, innovation in services, due to its specifics, is more difficult to detect and research, and its very definitions have not yet been fully established or harmonized.<sup>7</sup> The truth, however, is the following: innovations in tourism are more numerous and complex than innovations in other sectors precisely because they are co-created with consumers and customers. The moment of co-creation begins in the market of supply and demand, and later continues at the time of consumption, and after it, through leaving its digital mark in the form of a review, feedback or completed a survey questionnaire on satisfaction. Thus, changes in consumer habits, conditioned lifestyle and market basket, affect the development of supply, and in order to achieve success it is necessary to adjust its supply to demand. It is important to emphasize that innovations do not arise by themselves, and their realization depends on various internal and external factors. "Such an environment is a set of interactions, ie an innovation system that includes a network of different activities and factors, such as institutional environment (various laws, directives, etc.), political environment, research infrastructure (universities, research institutes), financial institutions, workforce competencies, etc".<sup>8</sup> It can be specified that innovations in services are characterized by the following characteristics: a) The need to understand and incorporate the prerequisites for the provision of services, as well as understanding the service itself; b) Understanding the fact that the development of a new service and existing activities in the destination will be closely linked; c) Incorporating existing knowledge of service providers whereby these stakeholders can push the boundaries and open up to knowledge coming from outside.<sup>9</sup> Due to the increasingly dynamic and demanding demand market, the tourist offer is increasingly personalized, ie it is focused on each individual. As a result of such a market relationship, alternative forms of tourism are created, ie innovative tourist offer that offers unusual experiences, surprises and incentives, which provides tourists with additional emotional benefits in the form of ambience,

<sup>7</sup> Hjalager A-M. (2010). A review of innovation research in tourism. *Tourism Management* 31.1-12

<sup>8</sup> Galović, T. (2016). Uvod u inovativnost poduzeća, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, p. 24

<sup>9</sup> Shaw, G., Williams, A. (2009.), Knowledge transfer and management in tourism organisations: An emerging research agenda, *Tourism Management*, 30(3): 325-335.



experience, fun, adventure, contact with others and the like<sup>10</sup>. Precisely because of the above, innovations in tourism cannot be considered merely a refreshed product or its packaging, as may be the case with physical products. Innovations in tourism are truly fundamentally changed concepts, and in order to be developed and implemented they must be profitable and increase the value of the tourist product or service and increase the experience for the consumer or tourist.<sup>11</sup>

### 3.1. Types of innovation

However, further research on tourism innovation requires a broad theoretical base. Čavlek et. al. in their paper "Drivers of Innovation in Tourism: Some Theoretical and Practical Aspects" cite previous scientific achievements in this field and claim: "Hjalager (1997; 2002; 2010), inspired by Schumpeter's earlier work, divides innovation into several categories: product and service innovation, process innovation, managerial innovation, leadership innovation, logistics innovation and institutional innovation."<sup>12</sup> Innovations in products or services refer to visible changes that customers consider new, and are so relevant that they may change the final decision to buy, ie a visit to a particular tourist destination. Furthermore, process innovations are necessarily technology-related and are reflected in higher productivity and work efficiency. Process innovations in tourism are also linked to information and communication technology - from the newly created digital travel agencies (OTA - online travel agency) to portals exclusively related to reviews of certain tourism products and services. On the other hand, managerial innovations are more focused on certain structural groups, such as strengthening the capacity of the organization, ie career building and the development of a healthy organizational culture<sup>13</sup>. They are close to management innovations that aim to develop communication and cooperation with various stakeholders involved in the tourism market. "Logistic innovations relate to external commercial links and can therefore affect the position of an individual economic entity in the value chain."<sup>14</sup> Institutional innovations stand for new organizational structures or legal forms that contribute to efficient business management in a given segment. Čavlek et. al. further state that: "Hall and Williams identified four platforms necessary for understanding innovation in tourism. The first relates to the organization of work, leisure and absolute and relative distribution of income, the second relates to technology, the third is reflected in the behavior of the economic operator, and the fourth platform is located in the retail sector."<sup>15</sup>

#### 3.1.1. Drivers and sources of innovation in tourism

The four main drivers of innovation in tourism are:

- 1) Tourists - today, they are characterized by different interests and they increasingly want more than a vacation. Travel has become a 'must be', or is incorporated into a part of everyday life and has become part of everyday culture. Therefore, today at the heart of tourist travel is experience, and it has become more important for tourists how to spend an

<sup>10</sup> Vuković, I. (2006): Suvremeni trendovi u razvoju turizma u Europskoj uniji i implikacije na Hrvatsku. *Tourism and Hospitality Management*, vol. 12, No. 1, pp. 35-55, Rijeka.

<sup>11</sup> Weiermair, K. (2004). Product Improvement or Innovation: What is the Key to Success in Tourism", in *Proceedings of the OECD Conference on Innovation and Growth in Tourism*, Lugano, Switzerland, 18-19 September 2003

<sup>12</sup> Čavlek, N.; Matečić, I.; Ferjanić Hodak, D. (2010). „Pokretači inovacija u turizmu: neki teoretski i praktični aspekti“. *Acta Turistica*, vol. 22(2), p. 2

<sup>13</sup> Ottenbacher, M., Gnoth J. (2005) How to develop successful hospitality innovation. *Cornell Hotels and Restaurant Administration Quarterly*, 46(2), 205-222. in Hjalager A-M. (2010). A review of innovation research in tourism. *Tourism Management* 31.1-12 p. 3

<sup>14</sup> Hjalager A-M. (2002) Repairing innovation defectiveness in tourism. *Tourism Management* 23. 465-474. str. 466

<sup>15</sup> Laws, E. (2009) *Tourism and innovation*, C. Michael Hall, Allan M. Williams, 2008. Book review / *Tourism Management*, 30, str. 935- 936. Str 935

unforgettable vacation than where to spend it<sup>16</sup>. Modern tourists are constantly looking for a wholesome product that will justify the value for money, and for this reason they are classified as one of the most important drivers of innovation in tourism.

- 2) Tour operators - in order to survive in a dynamic tourism market, tour operators are forced to be constantly looking for new ways to reduce costs and increase revenue, and the main generator of their activities and innovations are customers, ie tourists, and competition. They are increasingly guided by the personalized offer that individuals require, which is why today's market is characterized by flexibility and uniqueness. Čavlek et. al.<sup>17</sup> conclude that innovations in the business of tour operators appear in four key areas: 1) product and content, 2) distribution and brands, 3) business model and people and 4) growth and allocation of capital.
- 3) Technological changes - the emergence and development of the Internet have greatly influenced the change in the way tourism entities operate. Furthermore, Poon<sup>18</sup> points out that information and communication technologies (ICT) allow for a more flexible and segmented holiday that is cost-competitive with standardized package deals. The development of ICT has undoubtedly changed both business practices and strategies, as well as the structure of the industry<sup>19</sup>, and has significantly affected all aspects of business, especially distribution channels.
- 4) Competition - tourist entities must follow the requirements of the demand market and create a unique offer that will position a particular destination ahead of others and therefore make it recognizable. Also, tourism products and services that are intended for a specific market segment are more difficult to duplicate and therefore more competitive.

Although interconnected, the drivers and sources of innovation are not necessarily synonymous. In his book "Entrepreneurship and Innovation in the Digital Age" Petković<sup>20</sup> states that the main sources of innovation are organizational creativity, research and development, alliance and cooperation, innovation generators where he thinks of the education system and the national system of supporting innovation through various channels, technology clusters and technologies. The role of the source of innovation can be twofold: as an incubator from which innovations that are then placed on the market or as a testing ground for innovation in its users who then use the acquired competencies in future careers and develop innovative tourism and other products.

#### 4. INCLUSIVENESS AS SUSTAINABLE INNOVATION IN THE TOURISM OF PORTUGAL

During the 1980s, a vision of three pillars of sustainability was developed: economic growth, social inclusion and ecological balance. In 1992, during the United Nations Conference on Environment and Development (UNCED), it was decided that these three pillars would represent a paradigm of sustainability. In the autumn of 2002, during the first World Meeting on Culture, an initiative was articulated led by the United Cities and Local Governments (UCLG), which two years later adopted Agenda 21 for Culture. A few years later, UCLG passed a document entitled Culture as the fourth dimension of sustainable development in which they called on local governments to reconsider their cultural policies and include culture in other

<sup>16</sup> Čavlek, N., Matečić, I., Ferjanić Hodak, D. (2010.), Pokretači inovacija u turizmu: neki teoretski i praktični aspekti, *Acta turistica*, 22(2).

<sup>17</sup> Čavlek, N., Matečić, I., Ferjanić Hodak, D. (2010.), Pokretači inovacija u turizmu: neki teoretski i praktični aspekti, *Acta turistica*, 22(2), p. 9

<sup>18</sup> Poon, A. (1993). *Tourism, Technology and Competitive Strategies*. CAB International, Wallingford.

<sup>19</sup> Porter, M. (2001). *Strategy and the Internet*. *Harvard Business Review*, 79 (3), 63-78

<sup>20</sup> Petković, S. (2021). *Preduzetništvo i inovacije u digitalnoj eri*, Univerzitet u Banjoj Luci, Ekonomski fakultet, Banja Luka. p. 338

public policies. In parallel and consequently with the work of world organizations, and in particular UNESCO, the institutions of the European Union have become more active in dealing with the position of culture in sustainable development. Based on previously adopted conventions, primarily the European Cultural Convention (1954) and the Framework Convention on the Value of Cultural Heritage for Society (2005), the Council of Europe adopts the European Cultural Heritage Strategy for the 21st Century as a successor to the accumulated reflections on sustainability and culture.

#### **4.1. Inclusion as a part of sustainable development**

Inclusion is at the heart of cultural and social sustainability. Inclusion can be seen as a value that society nurtures and lives every day through respect for diversity, the development of social justice and the realization of equal opportunities for all regardless of physical difficulties and other possible differences. That is to say, the niche for which inclusive tourism is initially intended is wider than people with disabilities. It opens up other possibilities, including tourists who have no difficulty but have different types of mobility which includes parents with children, parents with children still in wheelchairs, pregnant women and older tourists. In this way, this market niche has a much higher value and must become a priority in tourism and urban policies.

#### **4.2. Inclusive tourism products as an innovation**

Given that tourism products and services to date have mainly been targeted at the majority of the population, tourism products targeted at people with special needs or mobility difficulties are innovative. By definition, the use of new market knowledge offers a new product or service for which there is a real demand in the market. If a destination is promoted as inclusive and the first to market offers products oriented to that market segment, that tourist destination will be more competitive and have a larger market share. Portugal is recognized for this at the world level and in 2019 received the award for the most affordable tourist destination of the year at the 23rd General Session of the WTO in Russia. Special emphasis is placed on inclusive tourism in Portugal in 2016, when the All for All - Portuguese tourism program was launched, which aims to strengthen the national tourism offer, create affordable itineraries across the country, promote affordable offers from north to south, and promote Portugal as an inclusive destination for all. For these purposes, accessible itineraries have been made available on the official website of the Portuguese Tourist Board, and a document with examples of good practice has been produced. So far, 116 projects have been supported, representing an investment of 20m euros and support of 14m euros. Supported projects include, for example, the creation of accessibility in the Convento de Cristo, Castelo de São Jorge, the National Palace of Mafra or Caves Calém in Vila Nova de Gaia.<sup>21</sup> These achievements were preceded by many projects, of which the BRENDAIT project stands out, which had a pilot methodology for the transformation of the territory for an inclusive tourist destination. The project involved several public and private tourism entities as well as the social sector. The aim of the project was to develop a regional network of accessible and inclusive tourism that provides quality services to tourists with special needs.

#### **4.3. Examples of inclusive tourism and related products and services in Portugal**

In the following text, concrete examples of inclusivity through the basic components of tourism will be presented: transport, accommodation, intermediaries, attractions and other services. The destination as a component of tourism has been elaborated before and will not be part of this elaboration.

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<sup>21</sup> Portuguese Tourist Board Website <http://www.turismodeportugal.pt/pt/Noticias/Paginas/portugal-destino-turistico-acessivel-2019.aspx> accessed February 18th, 2022.

Below is one example for each component given the relative limitations of this paper, and they serve as illustrative examples of the overall organizational effort in Portugal to achieve 100% inclusive tourism and repeat the 2019 title when they received the award for the most inclusive tourist destination years.

- **Transport** - all Portuguese airports have customized toilets and transfers for people with special needs. Whenever possible, MyWay, a personalized mobility service for passengers with reduced mobility, may be available. This service includes mechanical means to facilitate mobility, escalators, lifts, adequate signaling and guidance, as well as professionals trained for this purpose, who provide full assistance. MyWay must be requested from the airline or its travel agent at the time of booking the trip or up to 48 hours before the published departure time. The airline will transmit this information to the involved airports providing assistance. Metro do Porto is fully adapted for people with reduced mobility, with entrance ramps and places reserved for people with reduced mobility, sound and light warnings for identification
- **Accommodation** - Hotel Villa Batalha is guided by a policy of inclusion, where you can find excellent conditions for inclusive tourism, including a conscientious, thematically oriented team with training for inclusive service. The Hotel's website also features the following features: full access to all barrier-free areas, entrance hall with no stairs, reception with lowered desk for personalized check-in, lifts with accessible height buttons, spacious enough wheelchair accessible custom showers.
- **Mediators** - Portugal for all the senses is a travel agency that offers travel experiences for people with reduced mobility, impaired vision and difficulty walking, their families and friends. They offer the co-creation of a tourist product based on the wishes and needs of each individual tourist. All experiences, accommodation and equipment have been tested and validated by members of local associations to ensure smooth operation. In addition to tourist tours, the company also offers equipment rental, transfer vehicles and a support network for health professionals through partnerships.
- **Attractions** - as part of the project "Accessible cultural and natural heritage", access to certain heritage sites has been facilitated: Museu Marquês de Pombal, Rota Pombalina, Museu de Arte Popular Portuguesa, Castelo de Pombal and Praia do Osso da Baleia. In terms of cultural heritage, in order to improve and diversify the transmission of information, affordable solutions to support visitors have been implemented, namely: multilingual solutions, in sign language and audio, available in audio guides and smart devices; new technologies to support group visits ("travel guide"); sensory areas, inclusive markings, Braille solutions (subtitles and catalog) and subtitling of exhibitions in Portuguese and English. In the natural heritage, with inclusive solutions for the blind and visually impaired, it has been implemented in color for colorblind people and new equipment has been procured to improve access to sand, beach and bathing for the disabled or handicapped. mobility.

*Based on all the above, it is possible to create a SWOT analysis within this paper.*

*Table following on the next page*

<b>Inclusive tourism in Portugal</b>	
<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Sustainable competitive economic potential</li> <li>• Rich cultural and natural heritage</li> <li>• Knowledge and experience in innovative tourism products</li> <li>• Inclusive tourist infrastructure also serves the domicile population</li> <li>• A safe tourist destination</li> <li>• Developed sets of key competencies for work in inclusive tourism facilities</li> <li>• Formed medium-term and long-term strategies for the development of inclusive tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal attendance</li> <li>• Lack of language competences (orientation to Anglo-Saxon, Spanish and French speaking areas)</li> <li>• Lack of domestic capital to start investments</li> <li>• Weaker socio-economic status of the target group</li> <li>• Financial investments required for equipment and infrastructure that must be linked to the decisions of state institutions</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Increasing regional and cross-border cooperation</li> <li>• Development of information and communication technology</li> <li>• Improving education in tourism and inclusion</li> <li>• New financial perspective of the European Union 2021 - 2027</li> <li>• Tourism as a fast growing economic sector</li> </ul>	<ul style="list-style-type: none"> <li>• Changing demographic trends in the country</li> <li>• Sensitivity of tourism</li> <li>• Climate changes</li> <li>• The COVID-19 epidemic and others</li> <li>• Speed of administrative harmonization of policies and construction of infrastructure with the needs of inclusion</li> </ul>

*Table 1: SWOT table of inclusive tourism in Portugal  
(Source: author)*

## 5. CONCLUSION

Inclusive tourism is a key component of Portugal's tourism market, which is widely represented in strategic tourism plans and policies. Organizational efforts at the destination level have been recognized by the WTO, which is why in 2019 they were awarded the prize for the most inclusive destination, which certainly gives value to their work and motivation for the future. Key tourism entities (tourist boards, hoteliers, carriers) are actively involved in the development of inclusive tourism products and contribute with their inputs through various projects. Given the European tourism market, which so far has not been based on the niche market of tourists with special needs, Portugal as a leader in inclusive tourism creates innovative tourism products that are recognized globally. This is exactly what makes them competitive and different from other destinations with similar natural and anthropogenic attractions. Based on this, hypothesis H0 is confirmed, which reads: "There is a positive link between the application of innovation and inclusiveness that affects the development of tourism " This hypothesis is confirmed by the processed and presented literature, as well as their own theoretical contributions presented in this paper. In the long run, Portugal can realize significant economic benefits and create multiplier effects by investing in inclusive tourism. In proving auxiliary hypotheses PH1 and PH2, the author has studied numerous scientific and professional literature, scientific research and strategies and cases from business practice.

Based on the study, a positive link and high importance between the application of innovation and inclusiveness in the development of tourism was observed. Based on the observations and conclusions presented so far, further directions of research are proposed, which include benchmarking analysis of inclusive products and services within the destination among themselves and analysis of Portugal in relation to another selected destination. This paper also raises questions about the importance of networking of entities in tourism and culture and intersectoral cooperation in general, as well as questions of a holistic approach to the creation of tourism products and services.

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## THE CONCEPT OF SUSTAINABLE DEVELOPMENT IN THE CREATION OF SOCIAL RESPONSIBILITY FROM THE ASPECT OF THE MICRO-LEVEL

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### **ABSTRACT**

*The concept of sustainable development throughout its history has gone through several developmental stages to find a way in its final application. It is a concept of past, present, and future. It is a concept that has its modalities and goals, but also problems in application. Although it is a concept with a global character, the question of its global understanding is resolved by its local application. Often, under the guise of achieving some higher goals, harmony with nature and its laws is neglected and the harmony of social and natural life is disturbed. In rescuing the disturbed harmony, the basis lies in the application of the concept of sustainable development as a means of achieving both development and environmental protection. The paper aims to find out how much the micro-level is aware of the importance and application of the concept of sustainable development and the extent to which the environmental management system is implemented in the management system as the safest contribution of economic actors of micro-sustainable development in accordance with ISO 14001. the desired direction of movement of the actors at the micro-level. Based on the set goal, two scientific hypotheses were set. For data collection, the survey research method was applied, while the set hypotheses were confirmed by applying descriptive statistical analysis using the SPSS software package and Excel spreadsheets.*

**Keywords:** *development, sustainability, the concept of sustainable development, environmental management system, corporate social responsibility, ISO 14001*

### **1. INTRODUCTION**

The concept of sustainable development as a concept is reflected through the relationship between a dynamic economic system created by man and a dynamic ecological system to which man needs to adapt. It is a term that first appeared in the 1980s and was adopted as such in 1992 at a conference in Rio de Janeiro. The success of the concept of sustainable development, both locally and globally, should be encouraged by implementing social change. However, the issue of the global problem of the concept of sustainable development is solved by its local application. One of the most effective contributions of micro-level sustainable development actors, with a global effect, is the implementation of environmental management in the management system in accordance with ISO 14001. Sustainable development as a concept of the future becomes a concept of the present. It strives for some new rules, rules that ensure the synergy of a man with nature. That is why a healthy global planetary environment and quality and fair living conditions for all should be a criterion for the successful development of 21st century civilization (Lay, 2007). This research paper points out the importance of introducing an environmental management system according to the ISO 14001 standard as the simplest statement of micro-level actors about their social responsibility and ethics and one of the foundations of the desired direction of movement. When we take into account the data of HR Survey that the total number of certificates issued in Croatia increases significantly from year to year, it is believed that awareness of socially responsible business, sustainable development, and environmental protection of Croatian companies is awakened. But how much micro-level actors are truly aware of this research shows.



## **2. THE CONCEPT OF SUSTAINABLE DEVELOPMENT**

Sustainable development is a concept that consists of two basic elements of development and sustainability. Without sustainability, there is no development, while without development there is no sustainability (Sachs, 2015). The concept of sustainable development originated in the 1980s. It was first officially presented in a 1987 study by the United Nations Environment and Development Commission entitled "Our Common Future". In that the so-called According to Brundtland's report, sustainable development is defined as development that meets the needs of today's generation without jeopardizing future ones (Črnjar and Črnjar, 2009). This has encouraged today's society to build its future by looking for some new models of development and coexistence with nature. The concept of sustainable development is this new current and future model that implements environmental protection in the process of making developmental and general social decisions, establishing a balance between the environment and the human community. According to Goodstein (2003), sustainable development is the prevention of disruption of the average standard of living for future generations, which is achieved only if poverty is directly attacked because poverty and environmental destruction go hand in hand. The simplicity and complexity of the concept of sustainable development could be discussed. In simplicity, his clear philosophy is evident: you cannot destroy something you benefit from tomorrow. The complexity of the concept comes into question when its application is manifested in behavior change in almost all segments of human activity when it is necessary to change the value system in which tradition and innovation do not conflict, but think together about the same values, ideas, and goals. Thirty years after the first appearance of the concept of sustainable development, there are no unambiguous answers as to whether it is a goal or a standard of development (Kordej-De Villa, 2009).

## **3. SPECIFICITY OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT AND CHALLENGES OF ITS APPLICATION**

As everything is in balance, the concept of sustainable development requires the conservation of natural resources and a fundamental shift in resource exploitation, greater efficiency in resource allocation and redistribution of wealth, introduction of new technologies, and an understanding difference between growth and development, abandoning activities that could jeopardize future generations, the inclusion of the concept of sustainable development as a philosophy in all social, economic and political structures (Črnjar and Črnjar, 2009). The concept of sustainable development seeks to be implemented in institutional frameworks. The challenges of applying the concept of sustainable development are evident in the phase of its implementation. Although numerous documents at the global level define pipes and environmental protection measures, it is the interests that create resistance to the application of the concept of sustainable development. In some cases, the complexity of the challenge of applying the concept of sustainable development exceeds the capabilities of individual micro-level actors, which hinders a new direction of global sustainable development. The concept of sustainable development requires a million small micro-steps that through the same vision based on equal opportunities for all people, states and generations create global care for future generations through the prism of the concept of sustainable development.

### **3.1. Environmental management system ISO 14001 as a basis for the application of the concept of sustainable development**

ISO<sup>1</sup> - International Organization for Standardization began operations in 1948. ISO has the goal and task of developing only those standards that are needed and publishes them as

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<sup>1</sup> ISO (International Organization for Standardization) is a worldwide federation of national standards bodies. ISO is a non-governmental organization consisting of standardization bodies from more than 160 countries, with one standard body representing each member state.

international standards. Special attention from the public and experts was attracted by the standards of the quality management system (ISO 9000) and the standards of the environmental management system (ISO 14000). ISO 14000 is the basis for developing one aspect of organizational management. It is a series of general standards for environmental management systems. The international standard ISO 14001 is defined as a basic standard from the family ISO 14000 - Environmental Management System, which is the basis for the application of the concept of sustainable development.<sup>2</sup> This is another voluntary standard created as a result of new modern market requirements for a new era of eco-quality. In today's business environment, environmental awareness is a competitive advantage. Therefore, there is a need to develop standards that will help all organizational forms in the implementation and management of the environmental protection system, and at the same time protect the interests of organizations and the environment that surrounds them (Kondić and Piškor, 2010). The ISO 14001 standard basically defines what the environmental policy must be as a basis for setting general and individual goals.<sup>3</sup> The number of ISO 14001 certificates in Croatia is constantly growing from year to year, which indicates that the environmental management system has been adopted as a business philosophy and rational approach. This system in organizations around the world is recording increasing implementation in their management system. According to the latest published ISO Survey<sup>4</sup> results for 2019, China, Japan, Italy, Spain, and the United Kingdom of Great Britain and Northern Ireland are the countries with the highest number of certificates awarded. Croatia, on the other hand, ranks 36th out of 176 countries that received ISO 14001 certificates in 2019. In that reporting year, Croatia received 1,182 ISO 14001 certificates, which is 713 more than ten years earlier. This clearly indicates the fact that the number of organizations that implement an environmental management system into a management system that protects the interests of the organization and contributes to micro and macro sustainable development is increasing from year to year. Compared to 2018, the number of certificates for ISO 14001 in 2019 increased by 2% globally. According to data for Croatia, the number of ISO 14001 certificates in 2019 compared to 2018 increased by 15.09%.

Year	2009.	2010.	2011.	2012.	2013.	2014.
Total number of certificates	469	591	410	748	828	951
Year	2015.	2016.	2017.	2018.	2019.	2020.
Total number of certificates	884	984	966	1027	1182	-

*Table 1: Number of ISO 14001 certificates in the Republic of Croatia from 2009 to 2019  
(Source: ISO Survey)*

Acceptance of environmental awareness, fulfillment of environmental tasks, and commitment to obtain certification according to the ISO 14001 standard begins with the company's management (Kostelac and Priskić, 2017). The administrations are responsible for all issues of an organization and are accordingly responsible for the issue of the environmental orientation of their organizations. All administrations should, in part, strive to obtain certification. But regardless of certification, administrations and managers need to strive for excellence and ensure and implement an environmental management system into a management system whether or not they receive a certification of the same excellence by awarding ISO 14001 certification. In the field of environmental protection, today's companies have shaped in terms of companies more responsible for their behavior.

<sup>2</sup> Croatian Standards Institute: HRN EN ISO 140000 - Environmental management. Available at: [www.hzn.hr](http://www.hzn.hr) (13.07.2021.)

<sup>3</sup> What specifically the ISO 14001 standard defines that environmental management policy must include is best described in the Lexicon of Sustainable Development, which is available at <https://www.bib.irb.hr/581489> (14.08.2021.)

<sup>4</sup> Translated ISO research. This survey shows the number of valid certificates according to ISO management standards (such as ISO 9001 and ISO 14001) applied for each country each year. ISO does not carry out certification. Organizations wishing to be certified to the ISO standard must contact an independent certification body.

The environmental management system ensures that organizations improve their environmental performance by defining their mission and objectives and establishing appropriate policies and processes (Kostelac and PriskiĆ, 2017). The ISO 14001 standard requires detailed documentation to ensure the effective implementation of the environmental management system. In this context, the whole process of such a management system should be documented. The environmental management system as an implemented system in the management system with its coordinated action becomes an obvious value of the organization both inside and outside which is reflected in the new market value which is reflected in meeting the expectations and satisfaction of customers and other stakeholders and effectively meeting legal obligations. By introducing an environmental management system, every company proves its social agreement and ethics, and competitiveness. The introduction of the system according to the ISO 14001 standard should be seen as a strategic task of every company. The importance of even the smallest companies in terms of environmental impact is important, which obliges their management to the need for social responsibility and focus on environmental protection. The smallest hardly possess ISO 14001 certificates for their performance, but that does not mean that it is the same and impossible to obtain. Nevertheless, the ISO 14001 standard should be the basis for every company to plan, design, and implement an environmental management system regardless of the success of certification.

#### **4. METHODOLOGICAL FRAMEWORK OF RESEARCH**

The research included the collection of primary data. In the two-month survey, from June to August 2021, out of 88 sent questionnaires, 57 were duly received. The response rate of 64.77% is considered acceptable given the subject of the survey and the time period in which it was conducted.

##### **4.1. The goal of the research**

It is clear that the issue of sustainable development is a global issue. And this has been highlighted on several occasions in the paper. This emphasizes that this paper does not shy away from this, but in order to solve the globalization issue, it is considered necessary to seek answers at the local level. Therefore, the paper emphasizes the micro-level of sustainable development and its effect on the global level. The aim of the research is to give a new insight into the issue of sustainable development from the aspect of micro-level and to establish the awareness of its actors about the importance of environmental management systems as the basis of sustainable development systems today. This research can be seen as raising awareness of the importance and significance of the application of the concept of sustainable development, mostly through the implementation of environmental management systems. In this context, the answer will be given to the question of whether the micro-level has put sustainability first and profit second or are just aware of it, but does not consider it possible to implement it. The research examines whether micro-actors have implemented an environmental management system in the management system and whether the rules of ISO 14001: 2015 are adhered to. At the same time, the question arose as to how much the environmental management system affects the desired direction of the company. Ultimately, the aim of this paper is to find out to what extent the environmental management system has been introduced into the corporate governance system and whether its implementation results in a clear and planned direction of their movement. This is to point out a practical overview of the implementation of the concept of sustainable development.

##### **4.2. Research tasks and hypotheses**

In accordance with the set goal, the following research tasks are set: to determine the importance of implementing an environmental management system in the management system as an aspect

of corporate social responsibility and to claim whether there is a connection between the concept of sustainable development and creating the desired direction. Based on the defined subject, goals, and tasks of the research, the following scientific hypotheses are set:

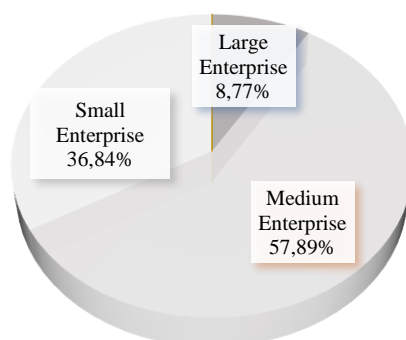
- H1. It is assumed that micro-level actors are aware of the importance of implementing an environmental management system in a management system.
- H2. It is assumed that the application of the concept of sustainable development through the implementation of environmental management systems is significantly related to the development aspect of the company.

#### 4.3. Sample, instrument, and research methods

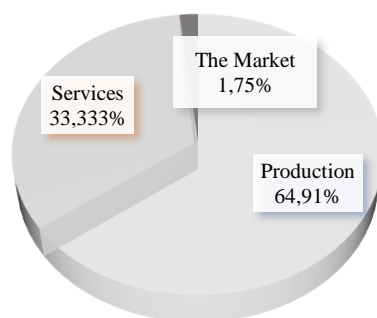
The target population of this research work is Croatian companies regardless of their size, more precisely their managers and directors. The survey questionnaire examined the application of the concept of sustainable development among 57 managers and directors of companies of various sizes. Managers and directors are considered to be key in decision-making and it is they who have made or not yet made the decision to introduce an environmental management system and thus define the long-term development or non-development direction of their company in accordance with nature and laws. By making such a decision, managers and directors point to their voluntary social responsibility and long-term contribution to micro and macro sustainable development. For the purposes of data collection, the survey questionnaire was used as the most used instrument. The focus was on studying the concept of sustainable development through the implementation of environmental management systems. How specific is such a system, how much it contributes to the long-term sustainable development of a company by creating new added value, and how important it is to know and lead to such a system, are key questions of this research and are part of the survey. This research will highlight the awareness at the local level about the importance of resolving the global issue. This points to the fact that the solution is always hidden at the micro-level. In the methodological part of the research, the survey method, statistical method, descriptive method, scaling technique using the Likert scale of 5 degrees of intensity, and correlation analysis were applied.

#### 4.4. Research results

The survey involved 8.77% of directors and managers of large enterprises, 57.89% of medium-sized enterprises, and 33.33% of small enterprises. Among the respondents, the highest percentage is those (36.84%) who have been in these management positions for 5 to 10 years. Most of them are employed in manufacturing companies (64.91%), followed by service companies (33.33%), while only one (1.75%) is employed in a company whose main activity is trade.



*Figure 1: Enterprises by size  
(Source: Created by author)*



*Figure 2: Enterprises by main activity*  
(Source: Created by author)

The first scientific hypothesis, which assumed that micro-level actors are aware of the importance of implementing an environmental management system in a management system, through several questions in the questionnaire such as expressing an opinion on whether an environmental management system is necessary for an enterprise management system. Environment protects the interests of the company and contributes to micro and macro sustainable development and they are aware of the fact that the introduced environmental management system may result in new economic value for the company, confirmed and accepted as true. 47.37% of respondents fully agree that an environmental management system is necessary for an enterprise management system, and 52.63% of them agree with this statement. No respondent was indecisive, just as no respondent had a negative attitude. The largest number of respondents (64.91%) believe that such a system protects the interests of companies and contributes to both micro and macro sustainable development and 73.68% of them believe that the introduction of environmental management system results in greater economic value. In general, all managers and directors who participated in the research have a very positive attitude towards the introduction of environmental management in the management system, aware of its importance, which first affects the company and then long-term global sustainable development. For the purpose of confirming the second scientific hypothesis, a correlation analysis was performed in the statistical package of the SPSS. The correlation analysis was used to verify the existence of a statistically significant relationship between the concept of sustainable development through a positive attitude towards the implementation of the environmental management system and the development aspect of the company in terms of the desired direction of the company.

Correlations				
		system_implem	lower_costs	compet_position
system_implem	Pearson Correlation	1	,732**	,678**
	Sig. (2-tailed)		,000	,000
	N	57	57	57
lower_costs	Pearson Correlation	,732**	1	,512**
	Sig. (2-tailed)	,000		,000
	N	57	57	57
compet_position	Pearson Correlation	,678**	,512**	1
	Sig. (2-tailed)	,000	,000	
	N	57	57	57

\*\*. Correlation is significant at the 0.01 level (2-tailed).

*Table 2: Correlation analysis of set variables*  
(Source: Created by author)

Correlation analysis indicates the existence of a medium-strong correlation between the implemented environmental management system as a basis for sustainable development and all observed developmental aspects of the company. According to the analysis, the second hypothesis H2 is accepted as true. Pearson's correlation coefficient of 0.732 indicates a significant statistical correlation between the implemented system and cost reduction in the long run. The analysis also confirmed the significant connection between the introduced environmental protection system and the improvement of the company's competitive position, and this is confirmed by Pearson's coefficient of 0.678. With this research, two scientific hypotheses were set up and the same was confirmed and proved to be true. It was confirmed that managers and directors are aware of the importance of introducing environmental management systems as the basis for long-term micro and macro sustainable development. And what the research needed to confirm through correlation analysis of the second scientific hypothesis and concluded that the concept of sustainable development has only positive effects on enterprise development. This confirmed the fact that thinking in the direction of development contributes to the development of the company through the direction of its movement, cost reduction, and competitive position. The hypotheses confirmed that companies contribute to the concept of sustainable development with the environmental management system and thus confirm that the implemented system contributes to a different understanding of the use of natural resources and ultimately to balancing environmental protection and profitability and overall development.

## **5. CONCLUSION**

Economic success and social responsibility, on the one hand, and protection of natural and human resources, on the other, are the very concept of sustainable development. The introduction of an environmental management system according to the ISO 14001 standard in the management system is today a strategic goal of every company. It finds application around the world and in various organizational forms due to its adaptability to a wide range of industries, intensities, and activities. Ultimately, the application of the international standard ISO 14001: 2015 meets the requirements for the environmental management system applied by companies in order to improve their environmental impact and is applied by those companies that systematically manage their responsibilities and contribute to environmental sustainability and thus sustainable development. Environmental management according to the requirements of this standard, in addition to reducing the negative impact on the environment, reduces costs, harmonizes business with the legal framework, and achieves a more positive and attractive image of the company in public. Managers and directors are aware of the importance of introducing an environmental management system, but they are also aware of its complexity. The fact is that the environmental management system is necessary for the corporate governance system, to protect the interests of the company and contribute to micro and macro sustainable development, that the implementation of such a system brings greater economic value to the company, to define only the development direction of one company.

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## ECONOMETRIC ANALYSIS OF ASSET PRICE CHANNELS IN MONETARY TRANSMISSION – VECTOR MODELS APPROACH

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### ABSTRACT

*Monetary policy is implemented by central banks. Its primary objective in most central banks, including the Croatian National Bank, is maintaining price stability - the central bank supports low and stable inflation. Given that the monetary policy decisions of the central bank are transferred to the real economy, the bank needs to know the channels of operation of the monetary transmission mechanism. In Croatia, the use of the exchange rate as the operational goal of monetary policy prevails, which is characteristic of less developed and countries in transition with small and open economies. The aim of this research is to determine the statistical significance of the asset price channel in monetary transmission to the total Croatian economy. The impact of monetary measures on the real economy was examined by econometric analysis. An assessment of the corresponding vector models was performed and the existence of cointegration among the observed variables was examined using the Johansen procedure. The analysis was conducted on the basis of quarterly data for the period of twenty years, from January 2002 to January 2022. The real economy is approximated by the consumer price index. In addition to asset prices, the impact of monetary variables such as interest rates and exchange rate on the economy was analyzed. Based on the obtained results, as expected with regard to previous research on monetary transmission in the Republic of Croatia, the exchange rate channel has the most significant long-term impact on the real economy. The analysis of the obtained vector models shows the strengthening of the monetary transmission mechanism through the interest rate channel to the Croatian economy. Also, long-term impact of the asset prices on the growth of the Croatian economy proved to be statistically significant. Additionally, limitations and recommendations for future research were given.*

**Keywords:** *econometric analysis, cointegration, monetary transmission mechanism, vector models*

### 1. INTRODUCTION

Like many post-transition economies, the Croatian economy is small, open and highly euroized. Namely, the Croatian financial system is not sufficiently developed, and since banks are the most active credit institutions in the payment system and in the financial market, it is characterized by a strongly developed banking system. These characteristics of the Croatian financial system and economy in the implementation of monetary policy require stability of the euro/kuna exchange rate as the primary goal of the Croatian National Bank. A review of previous research on the transfer of the Croatian National Bank's monetary policy to the economy has shown that monetary policy measures are predominantly transmitted through the exchange rate channel, while the effect through the interest rate channel is still weaker. The examination of the monetary transmission mechanism through asset channels (stock price, real estate price) will be carried out by estimating vector models while the long-term correlation between real and monetary variables will be examined by Johansen's cointegration testing procedure. Namely, cointegration analysis and VAR models (Vector AutoRegression model) are connected by the Vector Error Correction model (VECM). The operation of the monetary transmission mechanism will be observed through interest rates variables on interbank demand deposit trading, real effective exchange rate index of the kuna and the house price index and



the Zagreb Stock Exchange Equity Index, while the success of the monetary transmission channel will be monitored through the consumer price index.

## **2. LITERATURE REVIEW**

In most research to date the effect of the monetary transmission mechanism has been examined by econometric analysis by vector models approach. In a study of the monetary transmission mechanism in Central and Eastern Europe Ganev et al (2002) stated that the main goal of the monetary policy of most transition countries in the beginning was the stability of national currencies (domestic stability of the national currency refers to the levels and stability of inflation while external stability refers to the adopted exchange rate regime). According to research by Egert and MacDonald (2009), who also investigated monetary transmission channels in Central and Eastern Europe, the transmission of monetary transmission through the exchange rate channel has lost importance over time while the interest rate channel has been strengthening and asset channels and the credit channel are weak. The research on the operation of the credit channel in Croatia was conducted by Ćorić (2008), and the size and ownership structure of banks proved to be limiting factors in the monetary transmission credit channel. Ivanov and Lovrinović (2008) investigated the monetary transmission mechanism through the property price channel (share price, exchange rate, real estate price) in the Republic of Croatia, which has gained significant importance given the strong credit expansion and emerging markets and all as a result of great global liquidity. Benazić (2009) concludes that the interest rate channel of monetary transmission exists, but that it is weak and that there is a significant role of the exchange rate in Croatian monetary transmission. The results of the research by Erjavec and Cote (2003) showed a neutral impact of money supply in the short run on economic activity and that monetary policy does not have a sufficient impact on sustainable economic development and price stability in the Republic of Croatia. In their research, Lang and Krznar (2004) showed that monetary policy in the Republic of Croatia was pro-cyclical, which is a characteristic feature of exchange rate targeting in small and open economies. Vizek (2006) came to the conclusion that the real sector was significantly influenced by monetary policy through regulating the money supply and the exchange rate, while monetary policy through the interest rate channel did not affect real economic activity. The results of Doležal's (2011) research showed that no monetary transmission channel had a strong impact on real economic activity and price levels in the short run, while the exchange rate channel had the strongest impact in the long run, the money supply had a slightly weaker impact and the interest rate had the weakest impact.

## **3. MONETARY TRANSMISSION MECHANISM**

Monetary policy is an integral part of national economic policy and is implemented by the central bank. Monetary policy is determined by its goals (Lovrinović, Ivanov, 2009, 203-204): high employment (when labor demand equals labor supply), economic growth (increase in gross domestic product), price stability (achieving low inflation rates between 2 % to 3% per year in the medium and long term with sustainable economic growth), stability of interest rates (increases transparency and stability of financial markets), stability of financial markets (efficient transfer of funds and avoidance of financial crisis) and stability in foreign exchange market (prevents changes of exchange terms related to the decline or increase in the value of the domestic currency against a foreign currency). Namely, the central bank manages the money supply and interest rates on the market by conducting monetary policy. Therefore, a developed financial system is crucial for the transfer of monetary policy to the economy. The transmission of monetary impulses to the economy takes place through the channels of the monetary transmission mechanism.

According to Benazić (2009, 18) and the specifics of the Croatian financial system, the channels of the monetary transmission mechanism can be divided into the transmission interest rate channel, the property price transmission channel, the exchange rate transmission channel and the credit transmission channel.

A brief description of the mechanisms through which transmission channels operate is given in Table 1.

The exchange rate channel
the effect of the exchange rate on exports and imports $\uparrow M \Rightarrow \downarrow r \Rightarrow \downarrow A \Rightarrow \uparrow E \Rightarrow \downarrow U \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
the effect of the exchange rate on the balance sheet $\uparrow M \Rightarrow \uparrow E \Rightarrow \uparrow D \Rightarrow \downarrow NW \Rightarrow \downarrow L \Rightarrow \downarrow I \Rightarrow \downarrow Y \Rightarrow \downarrow GDP$
The interest rate channel
$\uparrow M \Rightarrow \downarrow r \Rightarrow \uparrow I \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
The credit channel
acting on the balance sheet of economic entities and through bank loans $\uparrow M \Rightarrow \downarrow r \Rightarrow \uparrow K \Rightarrow \uparrow I \Rightarrow \uparrow C \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
The real estate prices channel
acting on the direct effect on household expenditure $\uparrow M \Rightarrow \downarrow r \Rightarrow \uparrow P_h \Rightarrow \uparrow H \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
impact on household welfare $\uparrow M \Rightarrow \uparrow P_h \Rightarrow \uparrow W \Rightarrow \uparrow C \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
acting on the balance sheet of commercial banks $\uparrow M \Rightarrow \uparrow P_h \Rightarrow \uparrow W \Rightarrow \uparrow C \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
The stock prices channel
impact on investment $\uparrow M \Rightarrow \uparrow P_s \Rightarrow \uparrow q \Rightarrow \uparrow I \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
acting on the balance sheet of the entrepreneur $\uparrow M \Rightarrow \uparrow P_s \Rightarrow \uparrow NW \Rightarrow \uparrow K \Rightarrow \uparrow I \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
effect on the population balance (liquidity of the household sector) $\uparrow M \Rightarrow \uparrow P_s \Rightarrow \uparrow \text{value of financial assets} \Rightarrow \downarrow \text{Financial instability} \Rightarrow \uparrow C_d \Rightarrow \uparrow H \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
acting on the well-being of the population sector $\uparrow M \Rightarrow \uparrow P_s \Rightarrow \uparrow W \Rightarrow \uparrow C \Rightarrow \uparrow Y \Rightarrow \uparrow GDP$
$\uparrow M$ – expansive monetary policy, $r$ – interest rate, $A$ – demand for financial assets, $E$ – nominal exchange rate, $U$ – import, $D$ – debts of domestic sectors, $NW$ – net value of domestic sectors, $L$ – loans to domestic sectors, $K$ – loans, $C$ – consumption, $P_s$ – stock price, $q$ – Tobin $q$ , $C_d$ – expenditure on durable goods (long-term expenditure including expenditure on furniture, household equipment and regular maintenance), $H$ – expenditure on real estate (investment in land, flats, houses) or expenditure on housing, $P_h$ – real estate prices (average price of dwellings sold per 1 m <sup>2</sup> ), $W$ – welfare, total disposable income, $I$ – investments, $Y$ – production, $GDP$ – Gross domestic product

Table 1: Transmission channels and mechanisms of action  
(Source: Benazić, 2009., 18-26)

#### 4. REGRESSION MODELS

The first form of VAR (Vector AutoRegression model) model was given by Sims in 1980 (general unrestricted VAR model) which does not assume any restrictions on parameters and treats all variables symmetrically, ie variables are not pre-classified into dependent and independent. Namely, VAR models are generalizations of dynamic models of time group series defined on the basis of one equation.

The analysis of VAR models is used in testing economic theories that assume certain forms of correlation or causality between economic variables and in analyzing the dynamics of phenomena in previous periods. The interpretation of the VAR model uses the results of an innovation analysis consisting of an Impulse Response Function (IRF) and Decomposition of Variance (DVC) analysis. The impulse response function shows the response intensity of each dependent variable to the unit shock of other variables in the model, and is presented with a confidence interval to determine a statistically significant response to shock and the actual sign of the response. Since the variance decomposition represents the variance partition of the individual variable prognostic error into the parts associated with all variables, it is possible to analyze the share of variation in the observed variables of individual variables in the model. (Bahovec, Erjavec, 2009., 339-348, ), Enders, 2010., 299-301, Jovančević, Arčabić, Globan, 2012.) VAR model can be expressed as

$$Z_t = a_0 + \sum_{i=1}^k a_i Z_{t-i} + e_t \quad (1)$$

where  $a_0$  is deterministic term,  $Z_t$  is vector variables,  $e_t$  is error term. Stability VAR model requires that all parameters of the characteristic polynomial be within a unit circle (Bahovec, Erjavec, 2009., 362)

Johansen's cointegration testing procedure examines the long-term correlation between the observed variables. Vector Error Correction Model (VECM) links VAR models and cointegration analysis and can be expressed as (Bahovec, Erjavec, 2009., 370)

$$\Delta Z_t = \sum_{i=1}^{k-1} \Gamma_i \Delta Z_{t-i} + \Pi Z_{t-k} + e_t \quad (2)$$

where  $Z_t$  is vector variables,  $\Delta Z_t$  is vector difference variables,  $e_t$  is error term. By estimating matrix parameters  $\hat{\Gamma}_i$  and  $\hat{\Pi}$  the model connects short-term ( $\sum_{i=1}^{k-1} \Gamma_i \Delta Z_{t-i}$ ) and long-term dynamics ( $\Pi Z_{t-k}$ ).

Vector models require the stationarity of the variables included in the model, and the stationarity test is performed using the Unit Root Test. In this study, the results of the ADF (Augmented Dickey-Fuller test), PP (Phillips-Perron test) and KPSS (Kwiatkowski, Phillips, Schmidt, Shin) tests were used to examine the stationarity of the observed variables. The null hypothesis of the ADF and PP test is about the existence of a single root (non-stationary process) and the alternative hypothesis is about the non-existence of a single root (the process is stationary) while in the KPSS test it is the opposite. The general form of the Dickey-Fuller regression equation is:

$$\Delta Y_t = a_0 + \gamma \cdot Y_{t-1} + \alpha_2 t + e_t \quad (3)$$

where  $a_0$  is constant,  $\alpha_2 t$  is trend, and the test quantity on the basis of which the test is performed is defined by  $t = \frac{\hat{\gamma}}{SE(\hat{\gamma})}$ . (Bahovec, Erjavec, 2009., 262-279, Arčabić, 2022.)

Furthermore, in the application of vector models, it is important to select the offset length  $k$  for the selection of the optimal length using multivariate information criteria that measure how well the model describes the data. The best known are the Akaike criterion (AIC), the Schwarz (SBC) criterion and the Hannan-Quinn (HQ) criterion, and are defined

$$\begin{aligned} AIC &= -2 \ln(L) + 2M \\ SBC &= -2 \ln(L) + M \ln(T) \\ HG &= -2 \ln(L) + 2M \ln(\ln(T)) \end{aligned} \quad (4)$$

where  $L$  is the maximum likelihood function of the estimated model,  $M$  is the total number of estimated parameters ARMA ( $p, q$ ) model and  $T$  is the number of data used in the estimation. If the relation errors are normally distributed then the expression (4) reads

$$\begin{aligned} AIC &= T \ln\left(\frac{2\pi \cdot SR}{T} + 1\right) + 2M \\ SBC &= T \ln\left(\frac{SR}{T}\right) + M \ln(T) \\ HG &= T \ln\left(\frac{SR}{T}\right) + 2M \ln(\ln(T)) \end{aligned} \quad (5)$$

where  $SR$  is the sum of the residual deviations squares of the estimated model. A better model is the one for which the value of information criteria is lower. The mildest information criterion is the AIC criterion because it selects the models with the largest number of parameters while the SBC is the most rigorous because it selects the models with the least number of parameters. The optimal model is considered to be the one with the lowest value of the indicator but provided that it satisfies all diagnostic tests. Namely, choosing too many shifts leads to the loss of degrees of freedom, while choosing too few shift lengths increases the probability of autocorrelation of relation errors. (Bahovec, Erjavec, 2009., 295-296, 380-381)

## 5. RESULTS

The consumer price index was used in the research as an approximation of the real economy. Namely, the consumer price index as a real variable was observed by numerous authors in their research on monetary transmission such as Peersman and Smets (2001), Ganev et al (2002), Erjavec and Cota (2003), Lovrinović and Benazić (2004), Doležal (2011). In the research, interest rates on interbank demand deposit trading, real effective exchange rate of the kuna and the house price index and the Zagreb Stock Exchange Equity Index were taken as monetary variables, ie variables through which monetary measures are transferred to the economy. All indices were taken with the base year 2015. The time period from the first quarter of 2002 to the last quarter of 2021 was analyzed, and all data were taken from the official website of the Croatian National Bank, the Croatian Bureau of Statistics and Zagreb Stock Exchange. Furthermore, all variables are seasonally adjusted to eliminate seasonal effects and they are logarithmic except for the interest rate to stabilize variance. The stationarity of the variables was examined using unit root tests which showed that all variables were integrated of order 1,  $I(1)$ , ie all variables were nonstationary in levels and stationary in first differences. A graphical representation of the original variables and their first differences is given in Figure 1.

*Figure following on the next page*

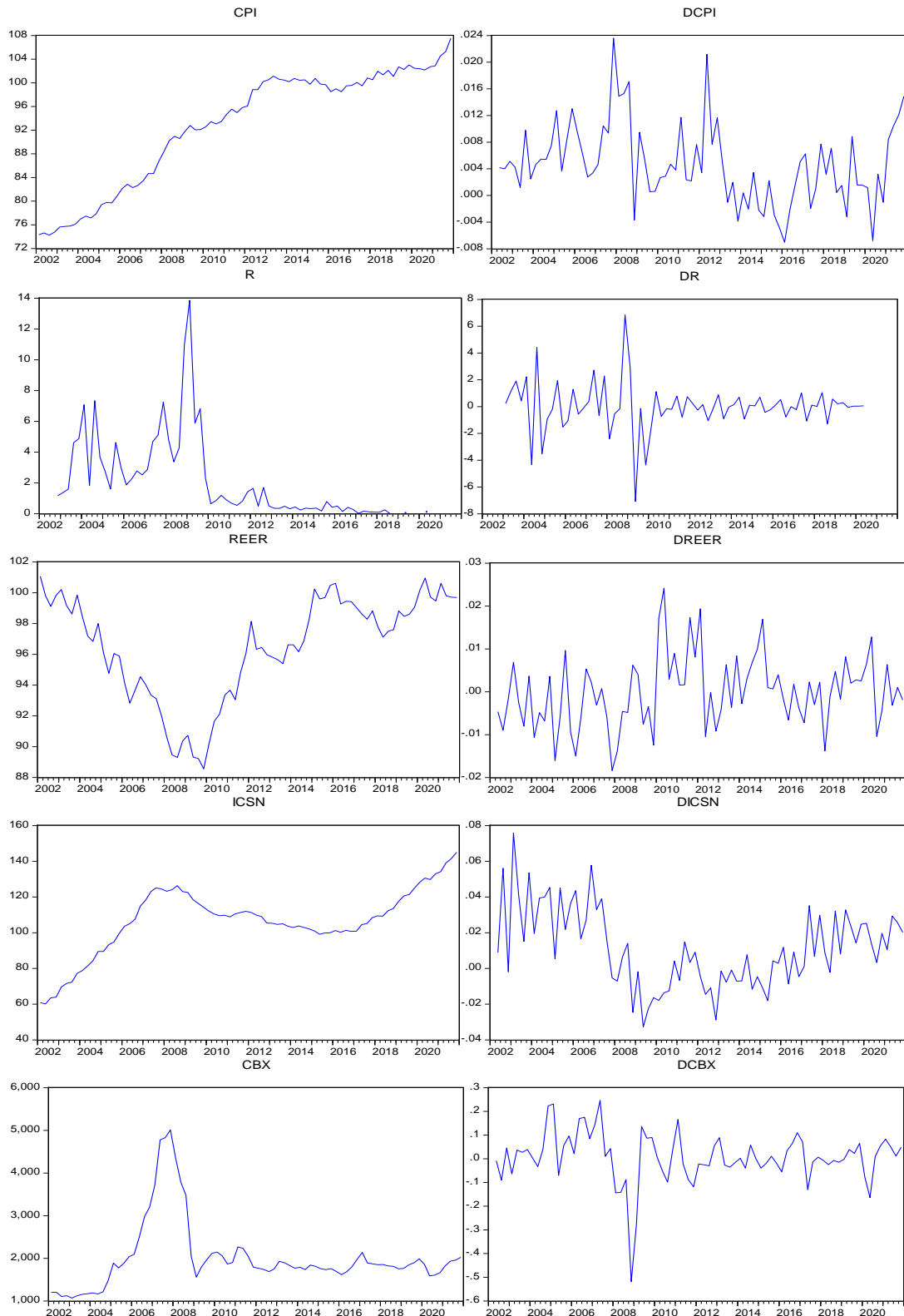
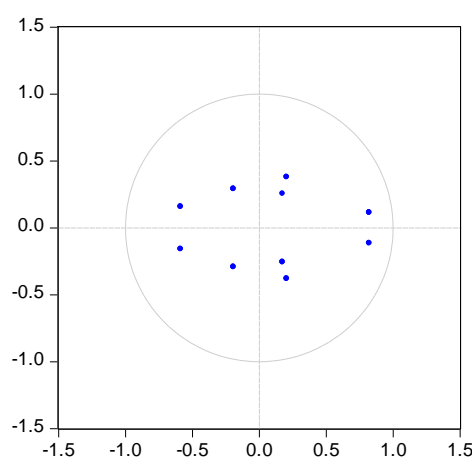


Figure 1: Graphical representation of the original variables and their first differences  
(Source: author's calculation)

Differentiation of variables removed the existence of the trend, so only a constant was included in the model. Based on the AIC information criterion, a two lags VAR model was selected, which proved to be stable. The results of the information criteria are given in Table 2, and the stability of the VAR model is shown in Figure 2.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	547.3846	NA	3.00e-14	-16.94952	-16.78086	-16.88307
1	600.1939	95.71695	1.26e-14	-17.81856	-16.80658*	-17.41989*
2	632.6075	53.68492*	1.01e-14*	-18.05023*	-16.19494	-17.31934
3	653.2537	30.96935	1.21e-14	-17.91418	-15.21557	-16.85106
4	675.5928	30.01824	1.41e-14	-17.83103	-14.28911	-16.43569
5	703.2769	32.87483	1.46e-14	-17.91490	-13.52967	-16.18734
6	728.7519	26.27108	1.75e-14	-17.92975	-12.70120	-15.86996

*Table 2: VAR Lag Order Selection Criteria  
(Source: author's calculation)*



*Figure 2: Roots of Characteristic Polynomial VAR model  
(Source: author's calculation)*

The correlation of variables in the long run was examined by Johansen's procedure since long-term correlation between variables may exist even though the variables in the levels are nonstationary but their linear combination can be stationary. The highest eigenvalue test was used to select the number of cointegration vectors, which showed that the variables were cointegrated with one cointegration vector. The test results are presented in Table 3.

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.498093	46.18578	33.87687	0.0011
At most 1	0.326329	26.46585	27.58434	0.0690
At most 2	0.242594	18.61632	21.13162	0.1085
At most 3	0.153366	11.15462	14.26460	0.1466
At most 4	0.044487	3.048981	3.841466	0.0808

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

*Table 3: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)  
(Source: author's calculation - EViews)*

The cointegration vector is given by the equation:

$$ICP = -0,02 * IR + 0,64 * REER + 0,39 * ICSN - 0,01 * CBX + 0,16 \quad (6)$$

(0,00)                      (0,21)                      (0,05)                      (0,02)  
 [9,27]                      [-3,11]                      [-7,57]                      [0,06]

where the standard errors are in parentheses and the corresponding t-values are in square brackets. Based on the obtained equation, the long-term negative impact of the interest rate realized in the trade of deposits on the interbank market on the consumer price index is visible, which is in line with economic theory. This impact is weak, namely, the growth of interest rates in trade in deposits on the interbank market leads to a fall in consumer prices by an average of 0.02%, ceteris paribus. The exchange rate channel still has the most significant impact in the long run in monetary transmission. Furthermore, the long-term impact of the house price index on real economic activity is statistically significant and positive, which is in line with the theory, while the long-term impact of the Zagreb Stock Exchange index in the model is not statistically significant.

The results of the corresponding VEC model are shown in Table 4. (values in brackets are the corresponding t - values).

Variable	VEC Model
ECT	-0,0489 [-2,70]
$\Delta ICP_{t-1}$	0,4170 [3,21]
$\Delta IR_{t-1}$	0,0004 [0,92]
$\Delta REER_{t-1}$	0,6010 [0,69]
$\Delta ICSN_{t-1}$	-0,0457 [-1,06]
$\Delta CBX_{t-1}$	-0,0131 [-1,82]
C	0,0031 [2,92]

*Table 4: The results of VEC model  
(Source: author`s calculation - EViews)*

According to the theory, ECT, a member of the error correction, is negative and statistically significant in the model, and indicates that the consumer price index corrects 4.89% of the total long-term deviation from imbalance in one quarter. Additionally, two dummy variables were considered in the model to examine the impact of the financial crisis and the Covid-19 pandemic. However, since both dummy variables did not prove statistically significant, they were excluded from the model. The estimated model proved to be adequate since the estimated residual deviations are stationary and there is no problem of autocorrelation. The coefficient of determination  $R^2$  shows that 31% of the dependent variable variance is explained with this model.

## 6. CONCLUSION

A cause-and-effect relationship between the observed variables was performed by estimating the appropriate vector models. The research looked at interest rate variables realized in interbank deposit trade, the real effective exchange rate index of the kuna, the house price index, and the stock exchange index of the Zagreb Stock Exchange as variables through which monetary policy is transferred to the economy while the success of the transfer is observed through the consumer price index. Based on the obtained results, as expected with regard to previous research on monetary transmission in the Republic of Croatia, the exchange rate channel has the most significant impact on the real economy in the long run.

Furthermore, the analysis of the obtained vector models shows the strengthening of the monetary transmission mechanism through the interest rate channel to the Croatian economy. Also, in the long run, the impact of the house price index on the growth of the Croatian economy proved to be statistically significant. Several limitations have been identified in this study, such as the lack of feasibility of all monetary transmission assumptions due to the problem of including a large number of variables, and one of the limitations is the sample size, ie the number of years taken into consideration, which all may result in inadequate estimates. Based on the data (Figure 1), the impact of the financial crisis (2008-2009) and the impact of the COVID economic crisis are visible. Thus, there are structural fractures in time series. In the ECM model, the introduction of dummy variables did not prove statistically significant.

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# ECONOMIC GROWTH IN CORRELATION WITH FOREIGN DIRECT INVESTMENTS AND FOREIGN REMITTANCES

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## ABSTRACT

*Globalisation occupies central research activity. The measuring of globalization is a very intriguing task in International economics (Verde, 2017). World economy develops in liberal surroundings in which foreign direct investments play the lead role in economic growth of every country. Financial flows, apart from foreign direct investments, comprise foreign remittances, foreign import and foreign aid. References point towards the relationship between financial flows and economic growth (Comes et al, 2018) and emphasises its positive role in the growth process, as well as its key role in economic development (Tahir, Khan and Shah, 2015). Increased importance of foreign investments and foreign remittances in its absolute amount in relation to foreign aid has been noticed (Bird and Choi, 2019). The purpose of this paper is to explore the relationship and interconnection between direct foreign investments and foreign remittances, along with their influence on economic development of certain countries on the European, Asian and African continent. The results of the research show that, in the short term, foreign direct investments and foreign remittances have no significant effect on economic growth. The outcome of foreign remittances influencing economic growth can point to a fact that migration is a significant feature of economy and that inflow of foreign remittances helps to minimize unemployment in the country.*

**Keywords:** *developed countries, developing countries, foreign direct investment, economic growth, foreign remittances*

## 1. INTRODUCTION

Globalization is becoming a more controversial phenomenon in economy. It manifests itself in co-dependency of the markets and production of individual countries under a strong influence of exchange of goods and services, as well as their financial and technological flows. World economy has developed in liberalised surroundings in which foreign direct investments play a lead role in economic development of each country (Zardoub, 2021). Foreign direct investments are a part of balance-of-payments, comprising equity investments, retained earnings and relationship debt between ownership related residents and non-residents. Through them, the owner acquires at least 10% share in the nominal capital of the company (Croatian National Bank, 2022). Financial flows, also called external financing or external factors, have recently appeared in world economy. They, aside from foreign direct investments, comprise foreign remittances, foreign import and foreign aid (Sohail and Mirza, 2020; Zardoub and Sboui, 2021). All of them can have a positive role in the process of growth and can be a key factor in economy development (Tahir, Khan and Shah, 2015; Zardoub and Sboui, 2021). Foreign remittances aim to increase the average income of the receiving country, alleviate poverty in the developing countries, stimulate economic growth and boost institutional reforms (Azam, Haseeb, Samsudin, 2016). Foreign import are goods and services brought from one country to another. Alongside to export, import is the backbone of international trade. Countries aim for higher values of export and lower values of import, which increases the trade balance of the country (Jayakumar, Kannan, Anbalagan, 2014). Foreign aid has positive influence on growth and economic growth of the developing countries through fiscal, monetary and trade politics (Easterly, 2013).

A large part of the available literature focuses on the effects of foreign aid. Regrettably so, considering the increased importance of foreign remittances and foreign direct investments in the absolute relation to foreign aid (Bird and Choi, 2019). The literature emphasises the relationships between foreign direct investments and foreign remittances and economic growth (Comes et al., 2018). There are special studies, which present the positive influence of foreign remittances on economic growth, emphasising their importance considering the increased consumption, which in return generates increased demand. This leads to the increase of gross national product (GNP): directing the remittances towards educational sector, healthcare or even business start-ups.

## **2. THE INFLUENCE OF FOREIGN INVESTMENTS AND FOREIGN REMITTANCES ON GNP**

Research related to the correlation of foreign remittances and GNP are two-sided. Some point to co-dependency, claiming foreign remittances lead to a change of domestic consumption (Sith, 2019), while other studies claim there are no relations between remittances and their influence on GNP (Comes et al., 2018; Zardoub, 2021). Regarding foreign direct investments, the situation is similar to foreign remittances. The inflow of foreign direct investments plays a considerable role in raising the level of employment, increases export, and stimulates innovations and business competitiveness (Sith, 2019). However, the experts are divided in three groups: those who acknowledge the positive influence of foreign direct investments on economic growth; those that point to negative relationship between foreign direct investments and GNP; the third group does not connect economic growth to the increased number of foreign direct investments (Comes et al. 2018). The research is furthermore divided into short-term and long-term prospective. In short-term, the foreign direct investments and foreign remittances do not have a significant effect on economic growth (Njangang, 2018), apart from the developing countries, where the effect of foreign remittances is significant for economic growth in short-term (Zardoub, 2021). The outcome of the foreign remittances influencing economic growth can point to a fact that migration is a significant characteristic of the economy (Bird and Choi, 2019) so the inflow of foreign remittances helps to alleviate unemployment in the country. This contributes to foreign exchange, which if used efficiently, lead to increased domestic consumption through multiplier effects (Bird and Choi, 2019). Globally and in long-term, foreign direct investments have a significant positive effect on economic growth (Das and Sethi, 2019). When foreign remittances are concerned, the studies have shown that a large portion of received resources is oriented towards the consumption of imported product. This should not be discouraging and it should not discontinue foreign aid through foreign remittances but rather ask for a better understanding of modality (Das and Sethi, 2019). Governments should establish policies and measures that encourage production and consumption of domestic products. At the macro-level, it is suggested that the countries' policies should continually improve business environment and form a framework along with conditions that attract foreign direct investments and foreign investors, not neglecting domestic investors along the way (Njangang, 2018). At the micro-level, there is a suggestion that tax and repatriation policies should also be designed to consider the effects of foreign direct investments that enable growth (Bird and Choi, 2019). The analysis of the influence of financial flows requires specific periods. It is desirable to use the data acquired through a long-term time span, since the actual shortcoming of the studies is that they cover a relatively short period (Minh, 2020). Asian and African analyses use a time-span of more than 35 years. In Europe, it is around 20 years.

### 3. THE RELEVANCE OF FOREIGN DIRECT INVESTMENTS AND FOREIGN REMITTANCES FOR COUNTRIES

The aims of sustainable development direct attention to different manners of foreign financing to support development. Since there are various motivations and different modalities of development, it could be expected that foreign remittances and foreign direct investments will have diverse consequences on economic growth in different countries (Bird and Choi, 2019). The influence of financial flows on economy can be observed considering a chosen area of research. The results are widely available and the latest works have focused mostly on countries of southern Asia, African developing countries and European countries (Comes at al. 2018, Das and Sethi, 2019; Aloui and Maktouf, 2021).

#### 3.1. Asian countries

Pakistan, Asia is one of the most interesting areas to research the correlation of foreign direct investments and foreign remittances, along with their role in economic growth of the country. Different authors have chosen this country as their field of research because the process of Pakistani economic growth is closely connected to the inflow of foreign direct investments, as well as foreign remittances (Raza et al, 2018; Tahir, Khan and Shah, 2015; Sohail and Mirza, 2020). Pakistan is one of the 10 countries that has received a huge amount of remittances (Raza et al, 2015). Around 7 million Pakistani workers work abroad, mostly in the countries of the Persian Gulf. They send a great amount of remittances that make up to 95% of total foreign trade (Tahir, Khan and Shah, 2015). The results have shown that external factors are important to achieve a long-term economic growth. Foreign remittances and foreign direct investments have improved economic growth of the Pakistani economy (Tahir, Khan and Shah, 2015). The Pakistani example could serve other developing countries as well. Policy creators should be aware of the consumption of this hard-earned money but can also take certain policy measures to attract foreign direct investments and to increase foreign remittance inflow. One of the possible measures that, apart from helping Pakistan, can also help other developing countries to achieve long-term economic benefit and growth is to increase workers' outflow (Sohail and Mirza, 2020). In their latest work, researchers focus on other countries of southern and southeast Asia, such as India, Sri Lanka and Vietnam. The results for India and Sri Lanka differ.

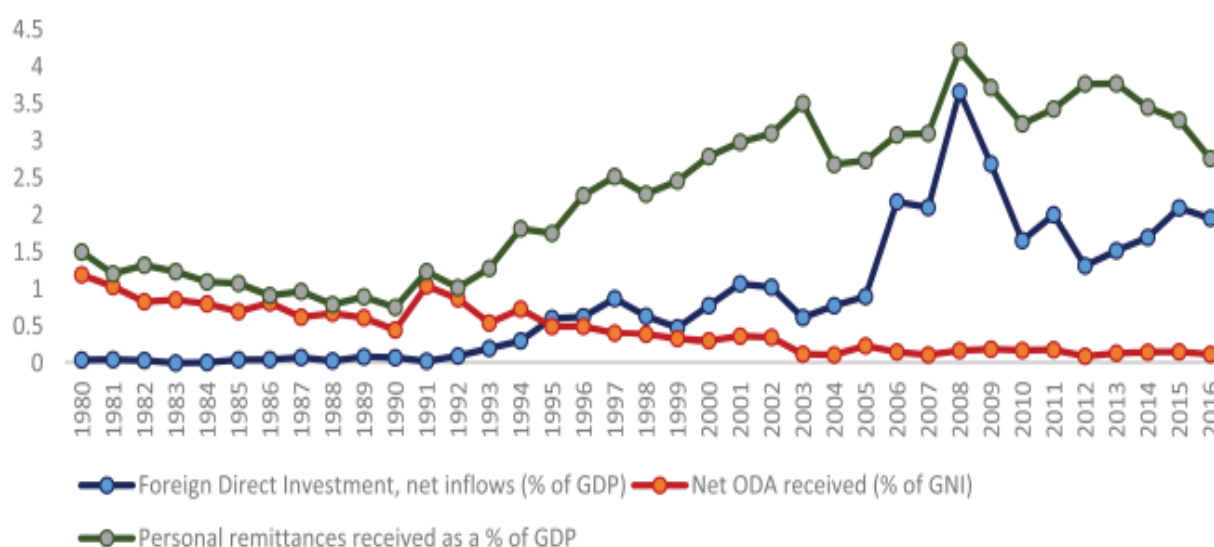


Figure 1: Foreign Financial flows to India – FDI, Remittances, and ODA  
(Source: Das, Nethi, 2019)

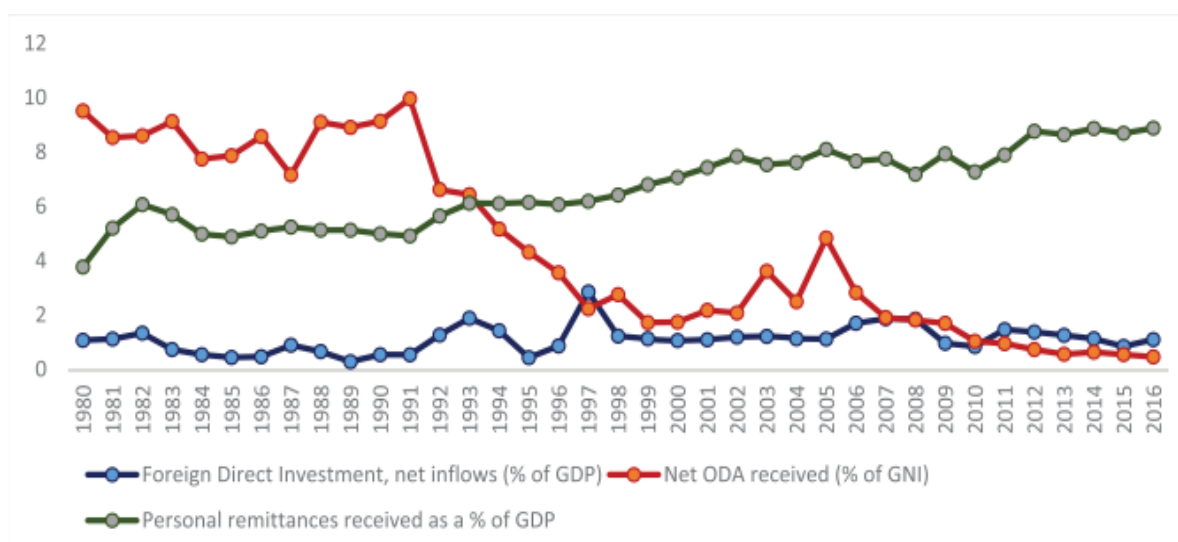


Figure 2: Foreign Financial flows to Sri Lanka – FDI, Remittances, and ODA  
(Source: Das, Nethi, 2019)

They show that foreign direct investments and foreign remittances have significant influence on economic growth in India, while in Sri Lanka foreign remittances play a more important role in economic growth (Das and Sethi, 2019). The research results for Vietnam point out that there is a long-term relation between foreign remittances, foreign direct investments and economic growth (Minh, 2020). Specifically, foreign remittances have significant positive effect, while foreign direct investment negatively affect economic growth. In short-term, the effects of foreign remittance increase and foreign direct investments are similar to those in long-term (Minh, 2020). Consequently, both foreign direct investments and foreign remittances have influence on policy formation. Policy issues in these countries usually address general approach to foreign direct investments, openness, trade, capital account liberalisation and globalization. Sustainable institutional ability along with the political will are two of the most important factors to maintain the causality between the variables (Das and Sethi, 2019).

### 3.2. European countries

The results in Spain show that a large number of immigrants in the country instigates foreign direct investments, remittances sent and received to the countries of origin of the immigrants (Mihi-Ramirez, Sobieraic and Garcia-Rodriguez, 2019). This relation is long-term and confirms the reverse one through emigration from Spain with foreign direct investments and sent foreign remittances. Along with economic decline, foreign direct investments decrease, and the number of migrants from Spain and received foreign remittances starts to increase (Mihi-Ramirez, Sobieraic and Garcia-Rodriguez, 2019).

Figure following on the next page

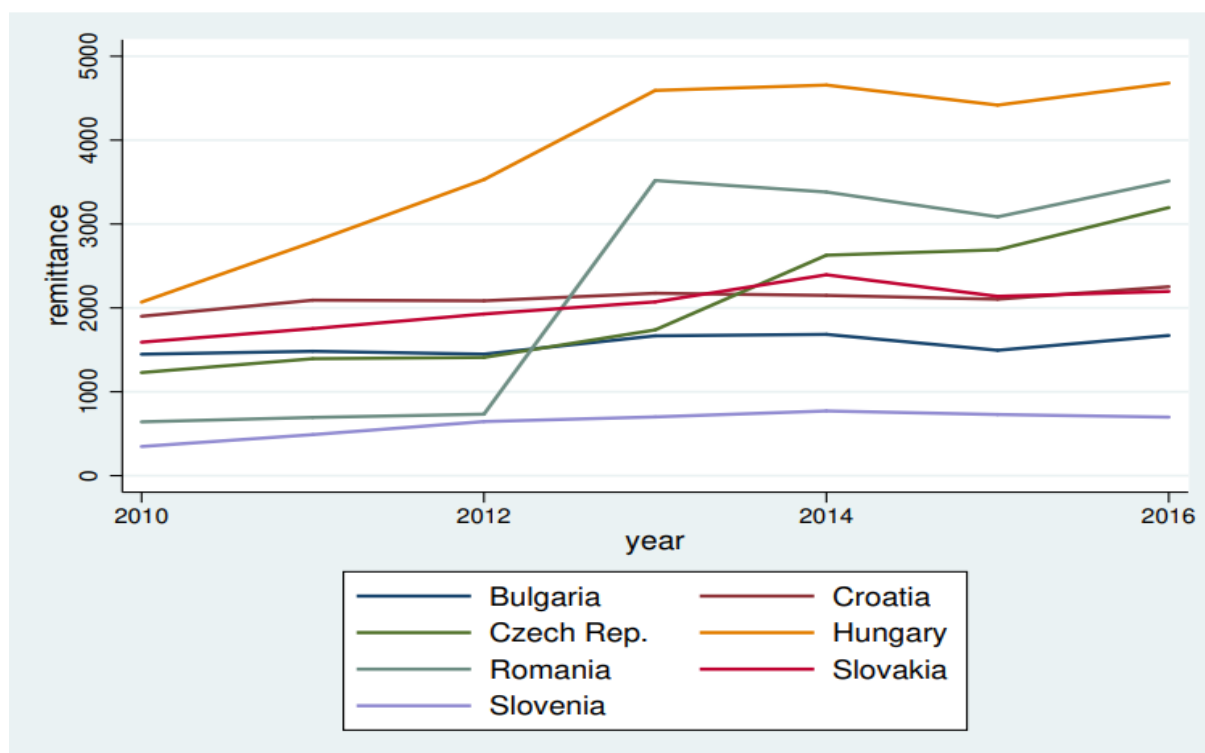


Figure 3: Remittances in CEEC 2010–2016 (billions of \$)  
(Source: Comes et. al, 2018)

Economic analysis of the European area was performed for seven European countries: Romania, Bulgaria, Croatia, the Czech Republic, Hungary, Slovakia and Slovenia (Comes et al. 2018). The Spanish research paper was also pointed out (Mihi-Ramirez, Sobieraic and Garcia-Rodriguez, 2019). The most significant influence of foreign remittances on GNP was spotted in the Czech Republic, Romania and Hungary. As for the foreign direct investments, out of seven analysed countries, the highest degree of influence on GNP was noticed in Romania, followed by the Czech Republic and Hungary (Comes et al, 2018). In relation between foreign direct investments and foreign remittances it is necessary to stress out the importance of foreign remittances not only because they affect migration flows but because they strengthen foreign direct investments. Our results explain the interaction between migration and investment and remittance flows as a chained process (Mihi-Ramirez, Sobieraic and Garcia-Rodriguez, 2019). The creators of the policies should stimulate using foreign remittances along with foreign investments because both financial flows contribute to positive economic growth. Nevertheless, if there is some empirical evidence that proves that foreign remittances contribute to economic growth through their positive influence on consumption, savings or investment, the authors may have reservations regarding the effects of foreign remittances (Comes et al. 2018).

### 3.3. African countries

In Africa, the research has been conducted over long-term and short-term effect of foreign direct investment and foreign remittances of migrants on economic growth in 36 African countries. In short-term there is no evidence of any significant influence of foreign direct investments and foreign remittances on economic growth (Njangang, 2018; Aloui and Maktouf, 2021). However, in long-term, the effects of foreign direct investments and foreign remittances on economic growth depend on the level of incomes. In long-term, while the effect of foreign direct investments and foreign remittances on economic growth is positive and significant in countries with lower middle income, the effect remains irrelevant in countries with low income

(Njangang, 2018). Foreign remittances have positive impact on economic growth in countries with low income, but are not important in countries of lower middle one (Njangang, 2018). In terms of area, the results in sub-Saharan and western Africa have shown that there is a correlation between foreign remittances and poverty, as well as between foreign direct investments and foreign remittances. There is, however, a one-way correlation from foreign direct investments to poverty (Aloui and Maktouf, 2021). In central, eastern and southern Africa, there is also a two-way correlation between foreign direct investments and poverty (Aloui and Maktouf, 2021). Political implications of this study suggest that the key action for the African governments is to pay a lot of attention to the increase of foreign remittances inflow, thus supporting the achievement of the objectives of sustainable development for 2030 (Aloui and Maktouf, 2021).

#### 4. CONCLUSION

All financial flows affect the development of the world economy. Foreign direct investments and foreign remittances, observed in long-term through a period of 30 years, positively affect the growth of the countries' PNG, while in short-term, their role is rather weak. The research has shown how the developing countries on the African continent are the most affected by their positive influence. In Asia, Pakistan benefits most from foreign remittances, since they make up to 95% of the foreign trade. In Europe, among more developed countries, positive influence of foreign direct investments and foreign remittances is somewhat neutral. Foreign direct investments are the most significant for Romania. The lead role is played by governments, their political will and their development policies which should reflect in trade openness, capital account liberalisation as well as in maintenance of the institutional ability. Furthermore, the goals of the government should be to improve conditions for local investors and to create such business environment as to attract foreign investors and their investments.

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## ATTENDANCE AT EDUCATIONS AND SEMINARS OF EMPLOYEES IN PRIVATE AND STATE-OWNED ENTERPRISES IN THE REPUBLIC OF CROATIA AND GENERATION OF EMPLOYEE KNOWLEDGE

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### ABSTRACT

*Attending employee trainings and seminars in companies is becoming an indispensable way of learning and acquiring knowledge in companies. The aim of this paper is to find out whether employees in private and state-owned companies in the Republic of Croatia want to attend seminars and trainings, whether they would go to remote locations and whether the employer employs and encourages employees to attend seminars and trainings. Employees face the challenge of learning all their lives, and acquiring new knowledge and skills, in order to be as competitive as possible in the labour market and so that their work contribute to achieving the business goals of the company in which they are employed. By attending trainings, seminars and courses, employees acquire new knowledge, improve existing ones and are more ready to do all the set tasks on a daily basis. Formal education is very important, but in addition to each employee, personal effort and engagement during each working day, upgrading existing knowledge and acquiring new knowledge and skills are important. The results of the research show that a high percentage of employees are willing to attend trainings and seminars, regardless of their location, but employers should to a greater extent organize trainings and seminars for their employees. Investing in knowledge and personal and professional development of each employee is complex and long-term, life is upgraded and enriched and serves to achieve both personal goals of each employee and acquired knowledge so to help achieve business goals of the company in which they are employed. With a higher level of knowledge, employees can better respond to customer inquiries and with their knowledge contribute to meeting the diverse wishes and needs of the company's customers. The knowledge and skills of employees and managers are an intangible asset that every company needs to gain an advantage over competitors and a positive business result and education and seminars are one of the ways to acquire much-needed knowledge in companies.*

**Keywords:** *trainings, seminars, knowledge, employees, managers, companies*

### 1. INTRODUCTION

Employees can generate knowledge in companies in many ways. One of the ways to achieve a high level of employee knowledge is to attend seminars and educate employees. Knowledge is an intangible resource that is indispensable in all companies, through which the company's business goals are achieved, the company's competitive advantage is achieved and the needs of the company's customers or clients are met. Every employee should be aware that it is desirable to learn and acquire new knowledge throughout their life and working life, for employees to be more competitive in the labour market. The aim of this paper is to find out whether employees in the Republic of Croatia want to attend trainings and seminars in private and state-owned companies, and whether employers encourage employees to participate and whether they organize trainings and seminars and in addition whether location distance is an obstacle for employees not to attend trainings. Without human resources in companies, there is no achievement of business goals, vision and mission of the company or gaining a competitive advantage of the company. Employees are the greatest asset of any company and the bearers of all business activities in the company.

Managers also need to attend seminars and trainings themselves, not just demand the same from their employees. Every employee of the company, be it the owner of the company, manager in the company, head of department or employee should work equally hard and strive and learn every day and also attend trainings, in order to be as productive as possible in the workplace. Human resources are the bearers of all business activities in the company, they are responsible for the growth and development of the company, improving business processes and satisfaction of end customers (Turkalj and Miklošević, 2017). Economists have long known that people are an important part of a nation's wealth (Schultz, 1961: 2). According to Miklošević et al (2022), management in companies is responsible for attracting employees, developing employee competencies, managing employee careers and stimulating employees for further effort and commitment in the workplace. Only a satisfied employee can achieve the maximum during his working life. The sum of the efforts and commitment of each individual employee in companies makes the overall business success of the company. Therefore, it is very important that each employee contributes to the company in which one works, because the positive effects will positively affect the success or profit of the company, the company's reputation and the like, and negative effects will negatively affect the success of the company. Sikavica et al (2008: 35) emphasizes that managers should be continuously educated for new situations. It is for these reasons that the highly developed Western world has long recognized the importance of continuous education of managers. Koleva (2013: 1121) concludes that employee training and development is focused on the organization of skills, employee development through education, individual career goals and employee value. Hagen (2002: 204) states that universities must become targeted organizations for education policymaking and that universities are larger knowledge-based institutions in cities and regions. The role of the university is gaining more and more importance because they are still presented as the main place in the creation of new knowledge (Rapini, 2007). Universities and high schools are a source of knowledge, but in addition to formal education, employees should be aware that every working day is learning, effort and commitment, in individual or teamwork. Every work experience contributes to employee learning and new insights. Trainings and seminars are also a source of knowledge in companies for employees, a way to acquire new skills and a way to renew existing knowledge. For employees to be able to attend trainings and seminars without hindrance, and to do their job every day, it is important that they are satisfied with their workplace. There are several factors of employee satisfaction at their workplaces, working conditions, salary for work performed and intangible factors of employee satisfaction. According to research by Miklošević et al (2022), the most important intangible factor for employees is a good work atmosphere.

## **2. LITERATURE REVIEW**

According to Drucker (1993), human resource management is a major challenge for organizations, which rely on their most important resource: their collaborators who create and disseminate knowledge. Human resources are key components in any organization that represent the total knowledge, talent, attitude, creative abilities and beliefs of individuals (Dhamija, 2012). Employees are the driver of all activities in the company, they are an intangible resource necessary in all organizations and create added value and synergy in companies. (Miklošević et al, 2022). A fundamental concern of organizations is that its HR strategy is aimed at having the right people with the right skills and knowledge in the right positions, so that the company can achieve its strategic goals (Wilton, 2010). Formal education does not mean possessing practical skills, while higher education is accused of dominating theory over practice and low flexibility of adaptation to the needs of the employer. Therefore, the employer is forced to bear all the costs of self-training of employees. (Fedorowicz and Sitek, 2010: 267).

Companies spend a lot of time and resources training employees to work. The problem arises when employees who have learned a job in a company resign, then the company has lost a trained workforce. However, employers should make every effort to keep each employee in working conditions, salary and attitude towards employees, nurturing interpersonal relationships and caring for human resources, which are the invaluable capital of every company and the bearers of all business activities. Employees acquire knowledge through daily learning in their workplaces, share knowledge with each other and create a knowledge base that will also serve newly hired workers. When employees who are full of knowledge and work experience resign, the entire business concept of that particular company is disrupted. Management should therefore be aware of the importance of human resources in companies, encourage employee creativity, reward the effort and commitment of employees and take care of the knowledge base in the company they lead, in which there are leaders. It is also desirable for managers to show by example to their colleagues that they are willing to learn, work hard and work hard every day, so that employees feel that the company where they are employed is optimistic about lifelong learning and that these are the requests and demands of their employers, who also show by their example the importance of lifelong learning and attending trainings and seminars. When managers are not ready to learn all their lives, attend trainings and seminars, then employees will not be largely motivated to do the same, but there are individuals who are self-aware that everyone has to learn all their lives and working lives. Such employees, who are self-aware that progress is only possible with daily effort and commitment, are most desirable to employers and become the knowledge base in the company in which they work and the initiators of all business activities. Lifelong learning is defined as intentional learning to improve quality of life (Dunlap and Grabinger, 2003). Productivity depends on having workers who are educated, safe, healthy, decently placed, and motivated by a sense of opportunity (Porter and Kramer, 2002). The world's leading companies spend hundreds of thousands and even millions of dollars a year educating not only managers but all employees. There are many modalities and ways of conducting that education, among which the so-called "home training", i.e., education within the company through T-groups (training groups) and workshops (Workshops). The following methods of education are also present: conference programs, university seminars, courses or programs for managers, independent study of relevant literature, business incentive programs, special training programs and the like. (Sikavica et al, 2008: 36). The trend shows that a better process of education and training of workers results in lower unemployment, workers become more flexible and better able to cope with their jobs (Kacun, 2002). Koleva (2013: 1115) points out that the acquisition of new knowledge in the company requires employee training that increases potentials and prepares work challenges for the future, and education can improve the company's results. Jurković Majić and Zbukvić Ožbolt (2011) state that the workforce of the new economy consists of millions of educated employees who achieve success when they add value to information. They point out that modern employees collect, process and present information in a way that meets the needs of their workplace. Employee training includes four basic sources: in-house training, training provided by professional organizations, colleges and schools. Working in the information economy requires technical skills that result in a higher level of lifelong learning. Human resources need to invest in their own knowledge and skills, in addition to investment in employees by employers. It is no longer enough for employees to simply carry out the orders of their superiors, but they must act proactively (Miklošević and Turić, 2012: 625). Miklošević et al (2022) point out that, in addition to salary, employees also have intangible factors of satisfaction at their workplaces, and the leading intangible factor of employee satisfaction in the workplace according to employees' attitudes is a good work atmosphere.

### **3. GENERATION OF EMPLOYEE KNOWLEDGE THROUGH EDUCATION AND SEMINARS**

Peter Drucker (2001) defines knowledge as the main resource that differentiates a business and gives it a decisive competitive advantage. According to Seitan (2009: 137), knowledge management is an important tool to support human resource management because it is associated with generating competitive advantage and the ability to create new value. Alavi and Haley (1999) define knowledge management as a systematic process for acquiring, organizing, and communicating employee knowledge so that other employees can use it, and so that they are more efficient and productive in their work. In addition to knowledge as a fundamental determinant of human capital, a crucial factor in development is creativity, i.e., creative application of knowledge in the production of new ideas, knowledge and discoveries, and their application in revolutionizing products, labour and all areas of economic and social life. (Bahtijarević-Šiber, 1999: 48). Competence includes the necessary knowledge and capacities (Scallon, 2004). There are large differences between the capacity, experience and character of employees, which shows that continuous education is needed, depending on the individual abilities of each employee. Training and education of employees can be inside the company and outside the company through the organization of workshops, seminars, conferences, symposia and other forms (Koleva, 2013: 1114). Team coordination and adaptation training helps team members learn specific teamwork skills (Salas, 2007: 485). Knowledge is presented as a way to gain a competitive advantage in organizations (Nonaka and Takeuchi, 1995; Davenport and Prusak, 2000; Goh, 2002; Sharratt and Usoro, 2003; Paswan and Wittmann, 2009). The success of the organization largely depends on the quality of human potential, knowledge and abilities. Quality and capable employees, and especially management, will successfully respond to all challenges from the environment. That is why it is important for every organization to have quality, educated and capable employees. (Sikavica et al, 2008: 123). The skills and abilities of excellent companies lie in the quality (knowledge, abilities and motivation) of their people and the managerial ability to maximally encourage and use them. Excellent companies have been transformed into colleges, they produce and develop the knowledge and potential of all their people. (Bahtijarević-Šiber, 1999: 59). Teamwork contributes to the efficiency of the organization, the dissemination of new ideas and greater synergy within the company (Stanić et al, 2017). Managers have a big task to achieve the set organizational goals at the lowest cost and in the best possible way, with the satisfaction of all employees and customers. (Turkalj et al, 2016: 19). Numerous authors emphasize the importance of knowledge and its connection with gaining a competitive advantage of a company. The goal of every manager should be that every employee in the company he leads acquires the highest possible level of knowledge in order to be able to contribute to the achievement of the company's business goals. With a higher level of knowledge, employees can contribute to the fulfilment of the wishes and needs of clients, and accurately respond to customer inquiries. It takes time for every employee to learn the job and improve their knowledge and skills. The trainings and seminars one attend certainly help employees along the way. Trainings and seminars in the company can be attended online or live. There are internal and external trainings organized by companies and they are the source and way of acquiring knowledge and skills of employees. The worst-case scenario for employees is when the company in which they are employed never organizes seminars or trainings or organizes them minimally. In this case, employees are left to fend for themselves, the necessary amount of knowledge is not accumulated, there is no systematic care for employees and such companies that do not focus on employees and employee education will certainly not gain a competitive advantage over other companies. The knowledge and skills of employees and managers are the intangible wealth of every company and the basis for achieving business goals, a prerequisite for meeting the needs of customers and clients, achieving a positive business result and an

advantage over competitors. By continuously taking care of human resources (which includes acquiring, motivating and educating employees) companies can make progress and gain the knowledge base in the company, necessary for current and future business. Any information can later be turned into knowledge if employees apply it in their work.

#### 4. RESEARCH METHODOLOGY AND RESULTS

The survey was conducted online using GoogleForms, during March and April 2022, on a sample of 273 respondents (employees) employed in private and state-owned enterprises in the Republic of Croatia (N=273, without restrictions on the region, gender and education of respondents). Private companies also include the founders of their own companies. Only employees were examined, regardless of the number of years of age or education. The following scientific methods are used in the research: method of proof, sample method, description, comparison, survey method and statistical methods.

The following research questions were asked:

- RQ1: *Are employees willing to attend trainings and seminars?*
- RQ2: *Does the employer of the employee organize trainings and seminars?*
- RQ3: *Does the employer encourage employees to attend employee training and seminars?*
- RQ4: *Is the location distance of trainings and seminars an obstacle to attending it according to the attitude of employees?*

The following hypotheses have been set:

- H1: *Employees are mostly willing to participate in trainings and seminars*
- H2: *Employers of employees largely organize trainings and seminars for employees*
- H3: *Employees are reluctant to attend remote trainings and seminars*

213 women (78.0%) and 60 men (22.0%) participated in the research. The largest number of respondents have a university degree, 138 respondents (50.5%), 87 respondents have completed high school (31.9%), 40 respondents have completed a master's degree (14.7%) and 8 respondents have completed a doctorate (2.9%). The largest number of respondents, 163 respondents (59.7%) are employed in a state-owned company, 87 respondents are employed in a private company (31.9%), while 23 respondents (8.4%) are founders of their own company. Table 1 shows the respondents by age. The youngest respondent (employee) is 19 years old and the oldest respondent is 63 years old. 25% of respondents are up to 35 years old, 50% of respondents are up to 40 years old, while 75% of respondents are up to 48 years old. The age difference between the youngest and oldest respondents is 44 years.

N	Valid	273
	Missing	0
Mean		41.01
Median		40.00
Mode		40.00
Std. Deviation		8.88
Variance		78.87
Range		44.00
Minimum		19.00
Maximum		63.00
Percentiles	25	35.00
	50	40.00
	75	48.00

*Table 1: Age of respondents*

*(Source: author's work according to research results)*

The length of service of the respondents is shown in Table 2. The minimum length of service of the respondents is one year, while the highest length of service of the respondents is 39 years of service. 25% of respondents have up to 10.00 years of work experience, 50% of respondents have up to 16.00 years of work experience, while 75% of respondents have up to 22.50 years of work experience. The difference between the minimum and maximum length of service of the respondents is 38 years of service and the average length of service of the respondents is 16.31 years.

N	Valid	273
	Missing	0
Mean		16.31
Median		16.00
Mode		15.00
Std. Deviation		8.88
Variance		78.97
Range		38.00
Minimum		1.00
Maximum		39.00
Percentiles	25	10.00
	50	16.00
	75	22.50

*Table 2: work experience of respondents*  
(Source: author's work according to research results)

Respondents were asked whether their employer organizes trainings and seminars (Table 3). One third of the respondents answered that their employer organizes seminars and trainings (35.1%), and a very similar percentage of respondents (35.2%) stated that their employer sometimes organizes trainings and seminars. 29.7% of respondents stated that their employer does not organize seminars and trainings.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	96	35.1	35.1	35.1
	no	81	29.7	29.7	64.8
	sometimes	96	35.2	35.2	100.0
	Total	273	100.0	100.0	

*Table 3: Organization of trainings and seminars by the employer*  
(Source: author's work according to research results)

Respondents were further asked whether their employer encourages employees to attend trainings and seminars (Table 4). 50.9% of respondents stated that their employer encourages employees to go to trainings and seminars, 24.9% of employers sometimes encourage employees to attend trainings and seminars, and 24.2% of employers do not encourage employees to attend trainings and seminars.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	139	50.9	50.9	50.9
	no	66	24.2	24.2	75.1
	sometimes	68	24.9	24.9	100.0
	Total	273	100.0	100.0	

*Table 4: Encouraging employers to attend trainings and seminars by employers*  
(Source: author's work according to research results)

Table 5 shows the willingness of employees to attend trainings and seminars, i.e., employees like to attend seminars and trainings. The answers are shown with grades from 1 to 5 (grade 1 - I don't like it at all, grade 2 - I don't like it, grade 3 - sometimes I like it, sometimes I don't like it, grade 4 - I like it, grade 5 - I really like it). Grade 1 (not liked at all) and grade 2 (disliked) were chosen by a smaller number of respondents (2.2%) and grade 3 (sometimes they like, sometimes they do not like) was chosen by 17.2% of respondents. The largest number of respondents (42.9%) chose grade 5 (very fond), while grade 4 (love) was chosen by 35.5% of respondents. According to the results of the research, employees are willing, i.e., they like to attend trainings and seminars.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	2.2	2.2	2.2
	2	6	2.2	2.2	4.4
	3	47	17.2	17.2	21.6
	4	97	35.5	35.5	57.1
	5	117	42.9	42.9	100.0
	Total	273	100.0	100.0	

*Table 5: The will of employees to attend trainings and seminars  
(Source: author's work according to research results)*

If employees would go to attend location-based trainings and seminars, it is shown in Table 6. A high percentage of respondents (67.8%) would attend trainings and seminars regardless of distance. A smaller number of respondents would attend trainings and seminars located far from workplace only if necessary. Limiting education and seminars to mileage is chosen by a smaller percentage of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes, regardless of distance	185	67.8	67.8	67.8
	yes, up to 200 km distance	6	2.2	2.2	70.0
	yes, up to 50 km distance	26	9.5	9.5	79.5
	yes, up to 500 km distance	10	3.7	3.7	83.2
	not	5	1.8	1.8	85.0
	only if I have to	41	15.0	15.0	100.0
	Total	273	100.0	100.0	

*Table 6: Attending remote education trainings and seminars  
(Source: author's work according to research results)*

Table 7 shows Mann-Whitney Test, which shows that there are statistically significant differences between man and woman in attitudes if they like or dislike attending education or seminars.

Mann-Whitney U	490.000
Wilcoxon W	595.000
Z	-5.663
Asymp. Sig. (2-tailed)	.000

*Table 7: Mann-Whitney Test  
(Source: author's work according to research results)*

According to the results of the research, the first hypothesis (H1: *Employees are mostly willing to participate in trainings and seminars*) is accepted because employees stated that they really like to attend trainings (42.9%) and that they like to attend trainings (35.5%).

The second hypothesis (H2: *Employers of employees largely organize trainings and seminars for employees*) is not accepted, because only 35.1% of employers organize trainings and seminars for their employees. The third hypothesis (H3: *Employees are not willing to attend location-based trainings and seminars*) is not accepted, because a high percentage of employees are willing to attend trainings and seminars regardless of distance (67.8%).

## 5. CONCLUSION

According to the results of March and April 2022 and a statistically processed online survey, employees like to attend seminars and trainings (most respondents chose a grade of 5 - they really like to attend trainings and seminars and a grade of 4 - they like to attend trainings and seminars). Employers could also organize more trainings and seminars (only 35.1% of employers organize trainings and seminars, while 35.2% of employers sometimes organize trainings and seminars). While the organization of education and seminars for employees is realized in a low percentage by employers, employers encourage employees to go to seminars and trainings (50.9% of employers). Furthermore, for a high percentage of respondents (67.8% of employees) remote locations of education and seminars are not an obstacle for attending them. Employees like to participate in trainings and seminars, and are willing to attend remote trainings and seminars, but employers should organize trainings and seminars for employees to a much greater extent. The recommendation to employers in private and state enterprises in the Republic of Croatia is that they should not only encourage employees to attend trainings and seminars but should also organize trainings and seminars for their employees, their most valuable intangible resource, without which they cannot achieve the set goals, mission and vision of the company or attract new customers.

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## THE IMPORTANCE OF VIRTUAL COMMUNITIES ON CONSUMER ATTITUDES ABOUT HEALTHY NUTRITION

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### ABSTRACT

*With the growing consumer awareness of healthy dieting, the interest of consumers for concrete information regarding it is also growing. Therefore, consumers are getting involved in various virtual communities (VC) on social networks through which they receive information from other consumers, share experiences and give recommendations for certain products. This leads to the electronic word of mouth (eWOM), which is influencing consumer attitudes and beliefs. In this regard, this paper aims to explore how VC Low carb high fat (LCHF) and Paleo diets, passed down through eWOM, influence consumer attitudes about dieting and the perception of products they consider healthy. The empirical research was conducted through an online survey questionnaire in VC on Facebook on a random sample of 137 respondents. The results of the study were obtained by a descriptive statistical analysis and indicate that practitioners of VC LCHF and Paleo diet have attitudes consistent with the views of the community, i.e. they adopt attitudes that the community promotes and influence each other by encouraging healthy food purchases through eWOM. The limitation of the study mainly regards the small sample size and possible other factors that influence the attitudes of VC members. Future studies should include a larger number of claims in the verification of respondents' attitudes and, for example, compare them with the attitudes of non-VC respondents. The findings of the study could provide marketers with a better understanding of consumer behavior in VC and provide guidelines for creating an effective marketing mix in the context of healthy dieting.*

**Keywords:** *consumer behavior, eWOM, healthy dieting, LCHF, Paleo, virtual communities*

### 1. INTRODUCTION

Irrational factors influencing food demand, such as fashionable nutrition trends, are increasingly being seen as important issues for contemporary consumer behaviour studies. The question becomes why do people decide to follow a certain trend and whether do they change their attitudes because of the influence of other trend followers? The ubiquitous fast-food trend has in the last couple of years gained a serious rival in the healthy food trend, including raw, eco, organic food etc. (Leko-Šimić, 2002). Today it is commonplace that people due to differing interest gather into virtual communities (VC) so they can through other users obtain information, exchange experiences or even recipes that include healthy ingredients. All of the above can be succinctly called electronic word of mouth (eWOM) whose goal is to exchange information electronically. What is more, people have a sense of belonging with those communities and their attitudes become consistent with the attitudes of the community (Kesić, 2006 according to Schiffman & Kanuk 2004). In this context, the empirical part of the paper will attempt to demonstrate the importance of VC for the shaping of consumers' attitudes with

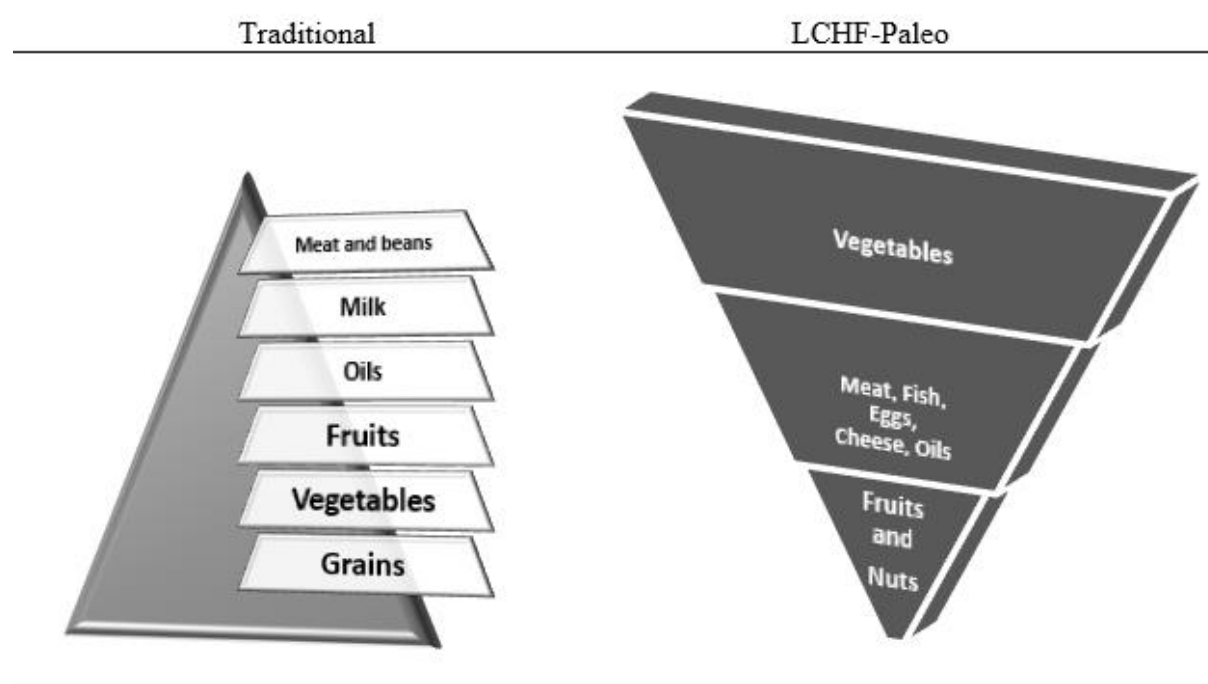
special attention being paid to LCHF and Paleo diets. But before the primary study, it is necessary to determine what is meant by the term healthy nutrition. In actuality, healthy nutrition can be defined in a multitude of ways, and what the term entails for one nutritionist may not be advocated by another nutritionist. The analysis of the literature lends credence to the complexity of this term. On the other hand, Leko-Šimić (2002.) state that when someone says healthy nutrition they are thinking about organic, ecologically produced food and bio food. In addition, there are non-standard criteria on what can be and cannot be given the moniker „healthy food“, and those are (Leko-Šimić, 2002):

- Healthy food is food which ensures a satisfactory energy and biological quality level for all physical and psychological needs of a human being
- Food without any cancerous or toxic ingredients
- Chemically unmodified food
- Food to which no chemicals were added during the growth, processing, storing, and cooking phase.
- Food which is grown on lands far from cities, roads, and other polluters

## **2. THE LCHF AND PALEO DIET CONCEPT VS. THE TRADITIONAL DIET CONCEPT**

While LCHF and Paleo diets are not synonyms, they are quite similar. LCHF entails very little carbohydrates and a lot of healthy fats such as olive and coconut oil, cottage cheese and homemade cream, eggs and even bacon, while for Paleo it means rejecting processed foods and returning to the primordial human nutrition, which is becoming a progressively stronger movement in the world (Šupe, 2015). However, in the distant year 1992, the American Ministry for Agriculture constructed the first food pyramid of correct nutrition in the form of an infographic where ingredients were divided into six groups. Grains belonged to the first and largest group, fruits, and vegetables to the second, milk and dairy products to the third, meat, fish, and eggs to the fourth, fats and oils to the fifth, and salt, spices, and sugar to the sixth group. The same pyramid was modified in 2005 again by the American Ministry for Agriculture from a two-dimensional to a three-dimensional display, while the order of ingredients stayed mostly the same (Alebid, 2008). This traditional pyramid goes against the principles of the LCHF and Paleo diets which advocate a “inverted order” of ingredients. Followers of these diets explain their arguments through the three turnabout phases of human nutrition. The first turnabout happened with the agricultural revolution, whereby people who were up to that point hunters and gatherers realised that they could grow food on places where they moved to, allowing them to settle on a specific area, which consequently caused health deteriorations such as lower life expectancy, an increase in infectious diseases, iron deficiency and similar. The second turnabout happened, as they claim, with the industrial revolution of the 20<sup>th</sup> century, whereby industrially processed foods (sugar, flour, oil, etc.) became widely available. As a consequence, people worked on the land and raised animals less than before and based their diets on industrial products and gradually moving away from traditional diets. And finally, they claim that the last turnabout happened in the late seventies and early eighties when the experts and media proclaimed fats as the leading cause of obesity and increased cholesterol. To prevent this, people started avoiding healthy fats which lead to the obesity pandemic (which are witnessing today), diabetes, heart and auto-immune diseases, allergies, cancer etc. (Šupe, 2015). In the effort to avoid fats came about products with low fat and fat free content, i.e., “products for which the effect of supplements or removed content is scientifically verified, and who have a certificate for the claims they have a specific positive health benefit” (Čalić et al., 2011, 51). In other words, these are products that went through a nutrient substitution process, e.g., fats are substituted with fibres. (Pleša, 2016 according to Čalić et al., 2011). Such modified products are not advocated by LCHF and Paleo diets, rather a consumption of natural products

with real or organic fat content is recommended under the assumption that they are of natural or bio-origin. What else symbolizes this turnabout is the emphasis on healthy fats, one of the first prominent proponents was Uffe Ravnskov, a doctor from Denmark, who in addition to many scientific papers also published two books (*The Cholesterol Myths: Exposing the Fallacy that Cholesterol and Saturated Fat Cause Heart Disease*; *Fat and Cholesterol Are Good for You*) where he emphasises the importance of healthy fats in human diets. His going against the norm was supported by other experts in the field which was passed along from the media to the consumer, which is today visibly but gradually causing a shift in the public's consciousness of fats. What is understood by this are not unhealthy fats such as refined oils or margarines, but rather animal fats such as eggs, plant fats such as coconut, olive, or fish oil, nuts and similar (Ravnskov, 2000). Furthermore, what else is advocated by this diet is the avoidance of gluten since experts claim that "the human body does not have the necessary enzymes to metabolise and break down the gluten chain to individual amino-acids and this is how partially or not at all metabolised proteins or peptides enter the bloodstream and the immune system does not recognise it as a nutrient, but rather as a foreign substance, which leads to the formation of antibodies" (Šupe, 2015, 59). Therefore, the name "inverted food pyramid" symbolizes a modern turnabout in people's eating habits. On one hand, beginning with the agricultural and industrial revolution in grain production to foods rich in healthy fats, and on the other, from conventional food production processes and all the way to organic harvesting and processing of food. " (Pleša, 2016,8 according to Šupe, 2015). In *Figure 1*, the difference between the traditional food pyramid and the LCHF-Paleo food pyramid can be seen, which at the same time represents a new trend in nutrition, and which is followed to by the VC of these types of diets.



*Figure 1: Traditional and lchf-paleo food pyramid  
(Source: prepared by authors)*

For this or any other nutrition trend to be recognised by consumers it is most often promoted through media, i.e., newspapers, magazines, television, radio, internet, and other advertising media whose goal is to propagate the benefits of a certain diet and gain followers who will share their experiences with other.

It has been established that 40% of all advertising messages are connected with food products. (Leko-Šimić, 2002). This is why television has an important role in giving the latest information on trends in nutrition through educational or other promotional programmes (Vehapi, 2014). But what has today become today vital for the transfer of information is the internet and social media. This leads to the creation of third parties who have a larger influence on public consciousness than classical advertising. (Leko-Šimić, 2002). Through social media consumers come into contact with VC where they seek solutions for their problems so they can optimally satisfy their wants and desires (Vranešević et al., 2004).

### 3. VIRTUAL COMMUNITIES

Today, VC are gaining increased importance as predictors of purchasing decisions. When looked at theoretically, they are grouped under reference groups which had already been mentioned first by Hyman in the long-gone year 1942, defining them as groups of people who have a significant psychological impact on attitudes and behaviours (White & Dahl, 2006 according to Turner, 1991), and sometimes provide to consumers a comparison of value and behavioural guidelines (Schiffman & Kanuk 2000). They are frequently observed as sources for the formation of norms, values, and expectations of individuals (Gutić & Barbir 2009). Today there is a variety of reference groups, such as: shopping, workgroups, and increasingly popular VC, which will be the paper's primary focus. VC involves consumers who share their similar interests with other consumers through the internet and are quite common among healthy nutrition groups (Latečki, 2020). The main characteristics of physical communities are face-to-face interaction and the development of social connections with the goal of exchanging information, opinions, experiences, knowledge and establishing relationships, psychological support, entertainment etc. (Dobrinić, 2016 according to Jung & Kang 2010; Koh & Kim 2004). A virtual community has the same characteristics as the physical, the only difference being it occurs online in a virtual environment. (Dobrinić, 2016 according to Ridings & Gefen, 2004). The influence of VC or reference groups in general is looked at in a few categories, and those are: information and experience, the credibility or attractiveness and power of the group, the desired behaviour as expressed by its members, and conformity of the consumers. Namely, an individual who does not have their own experience of the product/service will highly likely find it in a reference group. This is how the consumer identifies with the members of a community and they can even choose a brand of product/service as chosen by the other followers, all so they can have a sense of belonging. (Kesić, 2006). For the individual to change their beliefs or attitudes under the influence of the community, the community needs to inform and familiarise the consumer with the product/service or with their intent. Communities also have to make it possible for consumers to compare their attitudes with the attitudes of other members and influence the individual to accept attitudes consistent with the community, and also positively confirm when the consumer makes a choice that concurs with the community stance. (Kesić, 2006 according to Schiffman & Kanuk 2004). Today all of this is done through electronic word-of-mouth, or eWOM. Namely, VC members read about recommendations and experiences of other members, and this influences their attitudes and purchasing decisions (Akyüz, 2013). The current studies have indicated that societal factors influence the acceptance of eWOM (Hennig-Thurau & Walsh, 2004; Okazaki, 2009), i.e., social norms and thoughts of a community influence the acceptance of eWOM (Huang & Chen, 2006; Kozinets & assoc., 2010). In addition, the expertise and the level of involvement can help individuals evaluate the quality of eWOM (Bansal & Voyer, 2000; Smith et al., 2005). Trust is also extremely important because if an individual believes that the received advice is trustworthy they will then be ready to accept eWOM which will affect their purchasing decision (Cheung et al., 2009, Nabi & Hendriks, 2003).

#### 4. RESEARCH METHODOLOGY

The secondary data overview has established that reference groups such as VC can affect consumer attitudes. For this reason, the paper has the goal of determining whether the attitudes of members of LCHF and Paleo diet VC were consistent with the attitudes enforced by these communities and to what extent was their purchasing of healthy food affected by eWOM. Therefore, the following research question is put forward:

- *Are the attitudes of virtual community members consistent with the attitudes advocated by those communities?*

The empirical research was conducted on a sample size of 137 respondents. The survey was distributed on the social media platform Facebook to a virtual group for exchanging experiences, recommendations, and recipes of LCHF and Paleo diets. The questionnaire was made from closed multiple choice questions and questions where the Likert scale was used with five levels of intensity. Univariant statistics were used in data analysis, after which a sample of respondents who had shown that their attitudes were consistent with the community were isolated from the total sample for further data analysis, i.e., who had agreed with all five statements. In the further analysis the attitudes of this group were examined including the influence of recommendations on their purchasing decisions. All of the data was processed in the Excel programme package and will be shown in the form of tables and graphs.

#### 5. RESEARCH RESULTS AND DISCUSSION

The socio-demographic indicators and the structure of respondents is shown in *Table 1*.

<i>Sample characteristics, N = 137</i>	<i>N</i>	<i>%</i>
<b>Gender</b>		
Female	124	90,51
Male	13	9,49
<b>Age</b>		
15-24	25	18,25
25-34	49	35,77
35-44	43	31,39
45-54	16	11,68
55 and more	4	2,92
<b>Status</b>		
Employed	89	64,96
Unemployed	11	8,03
Student	31	22,63
High school student	1	0,73
Retired	5	3,65
Note: N – number of respondents, % - percentage of respondents		

*Table 1: Sociodemographic characteristics of respondents*  
(Source: prepared by authors)

In the study, for the most part, participated young women aged 25-34, which is 35,77% of female respondents, then women aged 35-44, which is 31,39%, while other age groups were represented less. Furthermore, the largest percentage of respondents, 64,96%, was employed while others were students. The goal of the data analysis was to examine whether the VC members embraced the attitudes advocated by the LCHF and Paleo diets propagated by those communities. The secondary research established that in principle the promoters of these diets do advocate a diet with low carbs and more healthy fats.

In addition, they consider the widely accepted food pyramid to be wrongly structured and that a person's diet should be largely based on vegetables, proteins, and healthy fats, and then fruits and nuts, while the traditional pyramid has the inverted sequence (Šupe, 2015). Therefore, the survey questions were structured in such a way so they could check whether the VC members had consistent attitudes, or if the traditional thought which they had adopted during their earliest school years prevailed, and which is still recommended by multiple nutritionists. Those claims were presented to the respondents in the form of statements where they could express their agreement or disagreement with a Likert scale (from one to five, where one represented complete disagreement, and five complete agreement). The results of the descriptive statistical analysis of the respondents' attitudes are shown in the table below.

<i>Statement</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>P<sub>min</sub></i>	<i>P<sub>max</sub></i>
"Low fat" products are a much better option than classic ones.	137	1,56	0,085	1	5
"Gluten-free" products are healthy and should be consumed.	137	3,13	3,13	1	5
I believe fats (e.g. olive oil, bacon, egg) increase cholesterol and are not good for health.	137	1,44	1,44	1	5
I believe that human nutrition must be based primarily on cereals and cereal products.	137	1,24	1,24	1	5
The human nutrition pyramid should be based on protein, healthy fats and vegetables.	137	4,61	4,61		

Note: N – number of respondents; M – arithmetic mean; SD – standard deviation; Pmin – achieved minimum; Pmax – achieved maximum

*Table 2: Descriptive statistical analysis of respondents' attitudes  
(Source: prepared by authors)*

The results indicate that respondents consider industrial products with low fat content to be unhealthy, as well as diets based on grains and grain products. What they consider to be following the principles of healthy nutrition are diets based on proteins, healthy fats, and vegetables, and with a daily intake of healthy fats (e.g., eggs, bacon, olive oil). On the other hand, their stance on gluten-free products was divided and is slightly above the median level of the Likert scale. In *Figure 2* the previously analysed statements are also presented in the form of the percentage of respondents who agreed or disagreed with a certain statement.

*Figure following on the next page*



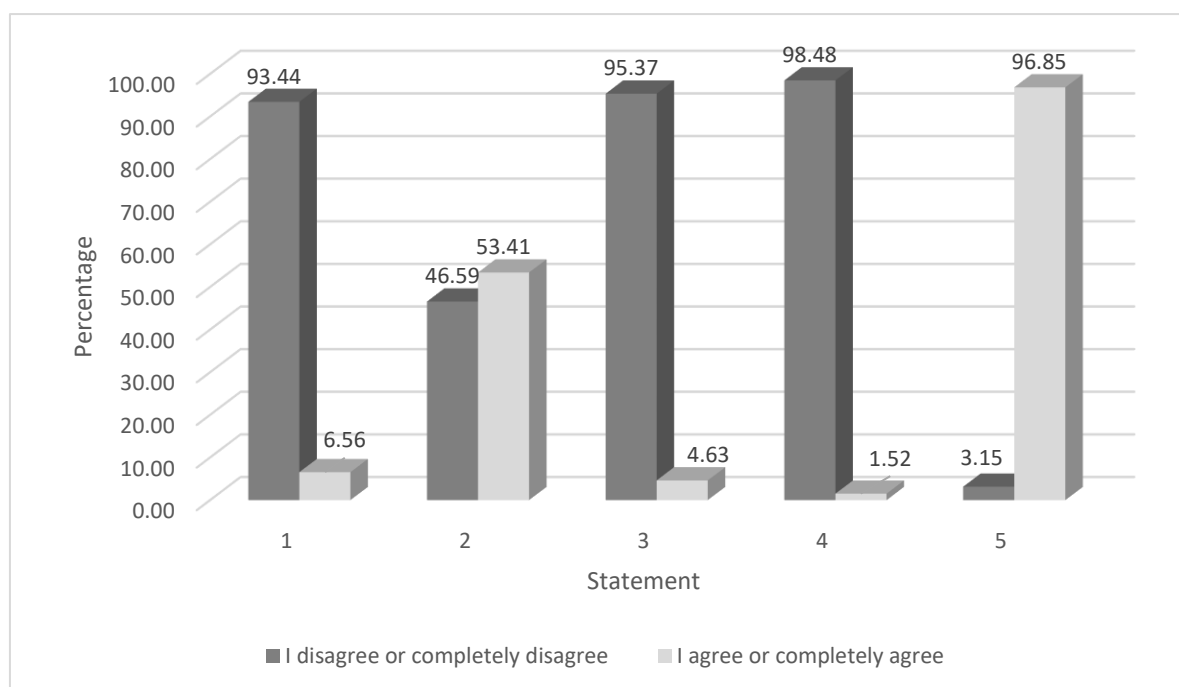


Figure 2: Respondents' attitudes about healthy eating in the form of statements  
(Source: prepared by authors)

With the analysis of the presented data, it was determined that the respondents' attitudes correspond with what is advocated by the LCHF and Paleo diets in all five statements, i.e., the attitudes of VC members are consistent with the attitudes propagated by these communities. This confirms a well-known planned behavioural theory which through subjective norms points to peer pressure as to what encourages the performance or non-performance of certain behaviours. (Ajzen, 1991; Faletar, 2018). On the first question, do they consider products with a low-fat content to be superior, most respondents, a staggering 93,44%, answered they disagree with that statement, which indicates that they have embraced the "inverted" food pyramid, which will be confirmed later in the paper. Fifty-three percent consider gluten free products to be healthy, which was also the only category where there were some deviations in the answers. The reason might be that advocates of LCHF and Paleo diets do not insist on gluten-free products, nor do they recommend them (Šupe, 2015), thereby making the opinions on this topic divisive. Furthermore, 95,37% of respondents disagreed with the statement that fats (such as olive oil, eggs, and bacon) increase cholesterol and are not good for their nutrition. The above is completely against what is recommended by today's nutritionists and doctors, but celebrities and other famous individuals who are advocating for these diets have had a large influence on the forming of attitudes and beliefs among certain people. (Blesso & Fernandes, 2018). The goal of the fifth statement was to examine respondents' attitudes towards the food pyramid. It was determined that 96,85% of respondents agree that a healthy nutrition should primarily consist of proteins, fats, and vegetables, while 98,48% of respondents disagree with the statement that people should base their nutrition on grains. The last two statements present the largest cases of consistency of the attitudes of VC members and the propagated diet. For that reason, for further data analysis a sample of respondents ( $n=33$ ) was selected who had shown that they have formed their attitudes in complete (in all five categories) accordance with the attitudes of abovementioned diets. This sample was segregated so that further analysis can be conducted, i.e., so that an analysis can be conducted on the self-evaluation of their level of knowledge of healthy nutrition, the frequency of their healthy food consumption and adherence to the diet plans, and their willingness to spend money on healthy food.

<i>Statement, n=33</i>	<i>I agree or completely agree %</i>
Rate from 1 to 5 Your level of information and knowledge about healthy eating.	84.85
Once / every day / sometimes I follow a healthy menu.	87.88
I am willing to set aside money for a healthy diet.	81.82
I mostly eat healthy.	72.73
Note: % - percentage of respondents	

*Table 3: Self-assessment of information, frequency of consumption of healthy food and readiness to buy healthy food from a selected sample of respondents*

*(Source: prepared by authors)*

From the data it can be concluded that 84,85% of respondents consider themselves to have a high or very high level of knowledge of healthy nutrition which they are probably prescribing to the LCHF and Paleo diets which they perceive to examples of healthy nutrition. Slightly more than 87,88% adhere to the diet menu daily, sometimes, or adhered to at least once. This shows that these are individuals who not only embraced certain attitudes but are also applying them in their nutrition. The willingness to spend a certain amount of money was shown by 81,82% of respondents, and 72,73% of respondents claimed to eat healthy. For the next statements, the answers from the segregated sample (n=33) were compared with the answers from the remaining sample (n=104) so that the difference can be determined between the frequency of purchases and the purchasing incentives coming from eWOM.

<i>Statement (n=33)</i>	<i>%</i>
I buy healthy food on the recommendation of the virtual community	54.55
I often buy healthy food	51.52
<i>Statement (N=104)</i>	<i>%</i>
I buy healthy food on the recommendation of the virtual community	39.42
I often buy healthy food	59.62
Note: % - percentage of respondents	

*Table 4: Comparison of the frequency of buying healthy food and using eWOM as an incentive to buy*

*(Source: prepared by authors)*

It was determined that there is not a significant difference in the healthy food purchases of both the selected and total sample, but what is crucial is that the selected sample for the most part makes their purchases according to eWOM recommendations, nearly 54,55%, while that percentage is lower in the remaining sample, specifically only 39,42% of respondents make their purchases because of recommendations. This once again confirms the significance of VC for attitude formation of its members as well as the importance of eWOM for healthy food purchasing decisions. For that reason, future empirical studies have to determine the statistical significance of the observed variables.

## 6. CONCLUSION

With the emergence of social media, the significance of VC, where individuals exchange information and experiences and thereby influencing each other, has become more apparent. Today people are constantly on the Internet, and therefore are in constant contact with others.

Physical contact and word-of-mouth are not as necessary as they once were, while eWOM is happening constantly. All of the above influences the attitude formation of consumers in all aspects, including in the context of healthy nutrition or nutrition trends. An individual who is a VC member obtains information of the community's principles, and if they consider them to be trustworthy, they will gradually start to form their attitudes so that they are consistent with attitudes of the community they belong to. All of the above can likewise be looked at through normative beliefs perceived by the individual of the people important to them, and together with how much a person wants to "submit" to certain expectations forms the subjective norm of planned behavioural theory. The empirical part of the research shows that a certain percentage of VC members have attitudes that are consistent with the community. Specifically, what is advocated by the LCHF, and Paleo diets is also advocated by them, or in other words, they completely support the principles of those diets despite some nutritionists recommending a different approach. Moreover, the study has determined that the selected sample is buying more healthy food because of eWOM, while the percentage in the total sample is lower. Conclusively, the indicators of this study could help marketing experts to better understand consumer behaviour in VC, as well as to develop methods which would encourage loyal consumers to spread eWOM in these or similar communities. The research limitations were the small sample size and lack of other possible factors influencing attitudes of VC members, as well as the lack of statistical tests which would have proven the statistical significance of the observed variables. Future studies should include a larger number of statements evaluating the respondents' attitudes and, for example, compare them to the attitudes of respondents who are not VC members.

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## ENVIRONMENTALLY RESPONSIBLE BEHAVIOR OF CAMPING TOURISTS - SCALE VALIDATION

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### ABSTRACT

*This study aims to validate the scale for measuring site-specific environmentally responsible behaviour of camping tourists. The developed measurement scale builds on a scale from the literature and it is adapted to the specific context of the campsites. Validation of the measurement scale includes checking the construct validity, dimensionality and reliability. The dimensionality of the scale was validated by principal component analysis. Reliability analysis was performed using Cronbach's alpha coefficient. The analyses were performed on a convenient sample of 140 camping visitors. Environmentally responsible behaviour of camping tourists is found to be a multidimensional construct. Five factors were extracted that explain 70.335% of the total variance. Reliability analysis showed that four of the five factors have good internal consistency. In contrast, Cronbach's alpha coefficient value for the fifth factor is slightly lower than recommended. Therefore, the scale should be further tested.*

**Keywords:** *Environmentally responsible behaviour, camping tourists, validation, measuring scale*

### 1. INTRODUCTION

Tourism is an important sector of the global economy. It is a generator of economic growth, creates infrastructure and jobs, improves living standard and the quality of life of people. In 2019, the tourism sector generated 10.4% of world GDP, 10.6% of all jobs, created 1 in 4 of all new jobs in the world and employed a larger share of young people than in the total economy (WT&TC, 2021). Although tourist destinations depend on a destination's environmental and cultural attractiveness (Kiatkawsin and Han, 2017; Su, Hsu and Boostrom, 2020), tourism-based activities can negatively impact a destination (Su and Swanson, 2017). Negative impact of tourism occurs when the level of visitor use is higher than the ability of the environment to cope with that use within acceptable limits of change (UNEP, 2001). Uncontrolled tourism growth can result in harmful consequences such as soil erosion, increased pollution, discharges into the sea, loss of natural habitat, increased pressure on endangered species, and increased sensitivity to forest fires (UNEP, 2001). Whether consciously or unconsciously, tourists with their behaviour can contribute to environmental destruction (Su, Hsu and Boostrom, 2020). Systematising the results of previous research Lee, Jan and Yang (2013) pointed out the following undesirable behaviours of tourists: picking flowers; carrying seeds on clothes, equipment, animals, and vehicles; collecting flora and fauna specimens; disturbing the wildlife habitats; polluting, and overcrowding the destination. Naturally, such behaviours concern the tourism experts and scientists. Therefore, it is crucial to determine how to prevent the negative impact of tourist behaviour on the environment.

To do this, it is necessary to determine what is environmentally responsible behaviour (ERB) of tourists and how to measure it. Although there is a plethora of research that focuses on ERB of tourists (Puhakka, 2011; Lee and Jan, 2015b; Han, Lee and Hwang, 2016; Xu *et al.*, 2018; Lee and Jan, 2018b; Su, Hsu and Boostrom, 2020; Cheung *et al.*, 2020), no study, to the best of our knowledge, has examined the ERB of camping tourists. Furthermore, no scales have been found in the literature to measure the specific ERB of tourists in campsites. Therefore, this paper aims to validate the scale for measuring site-specific environmental responsible behaviour of camping tourists.

## **2. LITERATURE REVIEW**

### **2.1. Characteristics of camping tourism**

Camping tourism is one of the fastest-growing segments in the tourism industry (O'Neill, Riscinto-Kozub, and van Hyfte, 2010; Mikulić *et al.*, 2017; Lee, 2020). Camping is historically one of the oldest forms of accommodation. The beginnings of modern camping are related to the use of free time and discretionary income and staying in the nature. Camping tourism became popular in the second half of the 20th century, and due to its mass presence, it became crucial for the development of tourism in Europe (Cvelić-Bonifačić and Milohnić, 2014). It is a global phenomenon that is growing rapidly and, at the same time developing significantly (Rogerson and Rogerson, 2020), and it is still insufficiently researched in the scientific literature. Camping tourism is a form of tourism in which visitors, tourists in camps, stay undoubtedly in nature (Hendija, 2006). It is a form of nature tourism with a special interest (Lee, 2020). Camping in the 21st century is characterised by new trends in the development of camping accommodation, growing demand for camps that allow people to stay in nature and have the comfort of their own home. Camping represents an escape into nature from the pressures and obligations of everyday life and from the dependence on innovative technology that we use in everyday life. By changing people's perception of the environment and the need to return to nature, camping has become an important specific form of tourism precisely because of new and innovative forms of accommodation. Tourists in the camps are environmentally aware, located in the camp and have an active vacation.

### **2.2. Environmentally responsible tourist behaviour**

ERB is described as any behaviour an individual would undertake to conserve personal environment and/or solve environmental problems (Su, Huang and Pearce, 2018 citing Schultz, 2000 and Stern, 2000). Different terms are known in the literature to denote the ERB. For example, Kollmuss and Agyeman (2002) define pro-environmental behaviour as "behavior that consciously seeks to minimise the negative impact of one's actions on the natural and built world (e.g. minimise resource and energy consumption, use of non-toxic substances, reduce waste production)". According to Lee and Jan (2018a) pro-environmental behaviour exists when a tourist attempts to actively reduce negative impact on the environment. ERB of tourists is their action to either reduce or avoid the destruction of environmental resources (Su, Hsu and Boostrom, 2020). Xu *et al.* (2018) conclude that whatever words are used, all signify individual behaviours that help protect the environment. ERB can be classified into general ERB and site-specific ERB (Lee, Jan and Huang, 2015). General ERB represents pro-environmental action on a general level (Cottrell and Graefe, 1997). According to Lee and Jan (2015a), tourists may engage in general ERB in their everyday life and engage in site-specific ERB when visiting tourist destinations. To better understand tourists' environmental behaviour at tourist destinations, Lee, Jan and Huang (2015) emphasise the necessity to measure their environmental behaviour at specific sites. Several studies are known in the literature describing ERB measurements of tourists. For example, Halpenny (2010) measured the pro-environment behavioural intentions of national park visitors.

Kim, Aire and Szivas (2011) researched general and site-specific ERB in protected areas. Lee, Jan and Yang (2013) developed a reliable and valid measurement to assess community-based tourists' general and site-specific ERB. However, so far, no ERB of camping tourists have been measured. Therefore, this paper aims to validate the scale for measuring site-specific ERB of camping tourists.

### **3. METHODS AND SAMPLE**

#### **3.1. Research instrument**

ERB of camping tourists was measured using 28 variables. The scale is based on variables related to specific ERB by Lee, Jan and Yang (2013). New items have been added that represent encouraging other people to behave responsibly on the campsite. All items were adapted to the specific context of camping tourism. The attitudes of the respondents were measured by the 7-point Likert type scale ranging from 1 ("I completely disagree") to 7 ("I completely agree"). The questionnaire also contained questions about the socio-demographic profile of the respondents and the characteristics of travel and stay in the campsite.

#### **3.2. Data collection and sample**

Empirical data were collected from March 4 to March 29, 2019, on a sample of 143 respondents who have stayed in one of the camps in the Republic of Croatia in the last 5 years. Three questionnaires were not complete and were excluded from further analysis. Table 1 shows the structure of the sample.

*Table following on the next page*

<i>Characteristics</i>	<i>Total</i>	
	<i>N</i>	<i>%</i>
<i>Gender*</i>		
Female	64	51.2
Male	61	48.8
<i>Age</i>		
18 – 25	39	27.9
26 – 35	47	33.6
36 – 45	21	15.0
46 – 55	14	10.0
56 – 65	9	6.4
Over 66	10	7.1
<i>The main motive for arrival</i>		
rest and relaxation	123	87.9
new experiences	40	28.6
fun	39	27.9
gastronomic offer	3	2.1
the beauty of nature and landscape	87	62.1
sports and recreation	41	29.3
health	9	6.4
something else	8	5.7
<i>Travel partners</i>		
alone	8	5.7
partner	34	24.3
family (with children)	55	39.3
friends/colleagues	59	42.1
organised group of people	10	7.1
<i>Length of stay</i>		
1 day	7	5.0
2-3 days	31	22.1
4-7 days	62	44.3
more than 7 days	40	28.6
<i>Number of previous visits</i>		
This is my first time	46	32.9
Only once before	31	22.1
Two or more visits before	41	29.3
I have been visiting for a long time	22	15.7
Note: N=125.		

*Table 1: Sample structure (N=140)*  
(Source: Research results)

Among the respondents, there were more women (51.2%) than men (48.8%). The majority of respondents (61.5%) were under 35 years of age. The main motive for arrival was rest and relaxation (for 87.9% of respondents) and the beauty of nature and landscape (62.1%). Most stayed in the camp with friends/colleagues (42.1%) or as families with children (39.3%). Respondents stayed at the camp for 4-7 days (44.3%) and seven or more days (28.6%). The majority (32.9%) visited a camp for the first time.

### 3.3. Data analysis

Data analysis was performed using quantitative methods, specifically descriptive and multivariate statistics. Descriptive statistics were used to describe the sample, the mean values and standard deviations of items included in the measurement scale. Measurement scales were validated using principal component analysis (PCA) and reliability analysis (RA). PCA with Varimax rotation and Kaizer normalisation was applied to determine the scale's dimensionality. RA was performed using the internal consistency coefficient Cronbach's alpha. Data collected by empirical research were analysed using the IBM SPSS Statistics version 23.



## 4. FINDINGS

### 4.1. Descriptive analysis

The initial set of items is shown in Table 2. In the beginning, the analysis of the items' mean values and standard deviations was performed. The arithmetic means of the items range from 3.11 to 6.58. Respondents least agree with the statement: "I always take pets to a campsite." (3.11 + 2.298). They mostly agree with the statement: "After leaving a campsite, I leave the place as clean as it was originally." (6.58 + 0.805).

Item label	Item	Arithmetic mean	Standard deviation
erb1	I get the travel information and plan the travel program before travel.	4.94	1.770
erb 2	When I do outdoor activities (e.g. hiking, jogging, horseback riding, skiing, cycling), I stay within the allowed area.	4.81	1.861
erb 3	I always take pets to a campsite.	3.11	2.298
erb 4	I always keep my dog on a leash when I am at a campsite.	4.56	2.348
erb 5	I do not disturb animals and vegetation in the campsite.	6.21	1.302
erb 6	I intend to behave in a manner that does not cause harm the plants and animals on a campsite.	6.28	1.264
erb 7	I carefully observe nature and wildlife in the campsite.	5.77	1.421
erb 8	I don't collect flora and fauna specimens without permission.	6.13	1.549
erb 9	During my stay in the campsite, I don't overturn rocks and dry wood.	5.64	1.565
erb 10	During my stay on the campsite, I use environmentally friendly products to maintain hygiene.	5.02	1.683
erb 11	During my stay at the campsite, I use eco-labelled products.	4.53	1.708
erb 12	During my stay at the campsite, I buy products or services from local producers.	4.86	1.635
erb 13	During my stay at the campsite, I take care not to make noise or disturb other camp guests.	6.02	1.190
erb 14	During my stay at the campsite, I conserve water.	5.50	1.391
erb 15	During my stay on the campsite, I conserve energy.	5.49	1.447
erb 16	During my stay on the campsite, I separate the waste.	5.68	1.566
erb 17	After leaving a campsite, I leave the place as clean as it was originally.	6.58	0.805
erb 18	During my stay on the campsite, I use the car as least as possible a means of transportation.	5.89	1.521
erb 19	During my stay on the campsite, I throw cigarette butts and chewing gum in a designate place.	6.39	1.287
erb 20	I voluntarily visit my favourite place less often when it needs to recover from environmental damage.	5.32	1.699
erb 21	I would voluntarily stop visiting a favourite place if it had to recover from environmental damage.	5.29	1.795
erb 22	I encourage other people to save water in the campsite.	4.58	1.895
erb 23	I encourage other people to save energy in the campsite.	4.62	1.837
erb 24	I encourage other people not to disturb animals and damage the plants on the campsite.	5.36	1.740
erb 25	I encourage other people to separate the waste on the campsite.	4.93	1.984
erb 26	I encourage other people to pick up litter left by other people while on a campsite.	4.98	1.924
erb 27	I encourage other people to leave the campsite as clean as it was originally.	5.50	1.750
erb 28	I encourage other people to throw cigarette butts and chewing gum in a designated place.	5.42	1.754

*Table 2: Descriptive statistics of the scale items  
(Source: Research results)*

## 4.2. Validation of the measurement scale

Validation of the measurement scale includes the analysis of the construct validity, dimensionality and reliability of the measuring scale. The construct validity was assessed by the authors and three marketing experts, who agreed that the proposed items relate to ERB of camping tourists. The constructed scale was then presented to a group of 13 students who gave their review of the clarity of the items and the terminology used. Based on their observations, the questionnaire was revised. Finally, the scale was tested in a pilot study, and the results are presented in this paper. In order to determine the dimensionality of the measurement scales, PCA was performed. The suitability of the sample for the PCA was assessed by calculating the Kaiser-Meyer-Olkin (KMO) indicator and the Bartlett sphericity test. The analysis gave a KMO value of 0.820, and the Bartlett sphericity test is  $\chi^2 = 2149,58$ ;  $p < 0.001$ , which represents an excellent value according to Field (2005). Therefore, it can be concluded that the correlation matrix is acceptable for conducting PCA according to the recommendations of Tabachnik and Fidell (2007; 614). After confirming the suitability of the scales for conducting the factor analysis, the PCA with varimax rotation of the factor axis according to the recommendations of Tabachnik and Fidell (2007; 614) was performed. The Varimax rotation with Kaiser normalisation method was used since the goal was to reduce a small number of variables and a clear division of factors (Hair *et al.*, 2006; 126-127), maximising the variance of the load of each factor (Tabachnik and Fidell, 2007; 639). Criteria for the number of extraction factors and retained variables are based on eigenvalues, the percentage of explained variance, and the significance of factor loadings. Factors with eigenvalues greater than 1, factors with a total of 60% of the explained variance and a factor loading above 0.50 are considered acceptable, considering the number of respondents (Hair *et al.*, 2014; 115). The results of the PCA are shown in Table 3. Five factors were extracted. The total percentage of variance show that the extracted factors contain 70.335% of the information of all source variables. The first factor which is consisted of seven items, is named "Encouraging others to behave responsibly" and explains 24.86% of the total variance. The second factor explains 14.24% of the variance, consisting of four items and is named "Sustainable behaviour in a campsite". The third factor is named "Responsible behaviour towards flora and fauna", consisting of five items explaining 11.96% of the variance. The fourth factor, "Responsible use of the products", explains almost 11.22% of the variance and comprises three items. The last fifth factor is named "Responsible behaviour in a campsite". This factor includes three items and explains 8.05% of the variance. During the PCA, six variables were excluded due to the high factor loadings on more than one factor. Excluded variables were erb1, erb3, erb4, erb7, erb20 and erb21. Extracted factors were a further object to RA. Cronbach's alpha coefficients ranged from 0.556 to 0.947 and exceeded the threshold value of 0.70, considered the accepted limit (Nunnally, 1978). However, Cronbach's alpha coefficient for the fifth factor is slightly lower and amounts to 0.556. Therefore, the reliability of the scale needs to be further verified by testing it on new samples.

*Table following on the next page*

<i>Number</i>	<i>Item</i>	<i>Factor loading</i>	<i>Total explained variance (%)</i>	<i>Cronbach alfa</i>
<b>FACTOR 1 - ENCOURAGING OTHERS TO BEHAVE RESPONSIBLY</b>			<b>24.860</b>	<b>0.947</b>
erb 27	I encourage other people to leave the campsite as clean as it was originally.	0.876		
erb 25	I encourage other people to separate the waste on the campsite.	0.859		
erb 24	I encourage other people not to disturb animals and damage the plants on the campsite.	0.845		
erb 22	I encourage other people to save water in the campsite.	0.835		
erb 28	I encourage other people to throw cigarette butts and chewing gum in a designated place.	0.828		
erb 26	I encourage other people to pick up litter left by other people while on a campsite.	0.827		
erb 23	I encourage other people to save energy on the campsite.	0.818		
<b>FACTOR 2 - SUSTAINABLE BEHAVIOR ON A CAMPSITE</b>			<b>14.241</b>	<b>0.839</b>
erb 15	During my stay on the campsite, I conserve energy.	0.879		
erb 14	During my stay at the campsite, I conserve water.	0.843		
erb 16	During my stay on the campsite, I separate the waste.	0.671		
erb 17	After leaving a campsite, I leave the place as clean as it was originally.	0.524		
<b>FACTOR 3 - RESPONSIBLE BEHAVIOR TOWARDS FLORA AND FAUNA</b>			<b>11.963</b>	<b>0.784</b>
erb 8	I don't collect flora and fauna specimens without permission.	0.782		
erb 6	I intend to behave in a manner that does not cause harm the plants and animals on a campsite.	0.700		
erb 9	During my stay in the campsite, I don't overturn rocks and dry wood.	0.697		
erb 5	I do not disturb animals and vegetation on the campsite.	0.665		
erb 19	During my stay on the campsite, I throw cigarette butts and chewing gum in a designate place.	0.438		
<b>FACTOR 4 - RESPONSIBLE USE OF THE PRODUCTS</b>			<b>11.219</b>	<b>0.795</b>
erb11	During my stay at the camp, I use eco-labelled products.	0.833		
erb10	During my stay on the campsite, I use environmentally friendly products to maintain hygiene.	0.785		
erb12	During my stay at the campsite, I buy products or services from local producers.	0.611		
<b>FACTOR 5 - RESPONSIBLE BEHAVIOR ON A CAMPSITE</b>			<b>8.053</b>	<b>0.556</b>
erb2	When I do outdoor activities (e.g. hiking, jogging, horseback riding, skiing, cycling), I stay within the allowed area.	0.769		
erb18	During my stay on the campsite, I use the car as least as possible a means of transportation.	0.583		
erb13	During my stay at the campsite, I take care not to make noise or disturb other camp guests.	0.540		

*Table 3: Results of exploratory factor analysis  
(Source: Research results)*

## 5. CONCLUSION

This paper aims to test a scale for measuring the environmentally responsible behaviour of camping tourists. No scale has been identified in the literature to measure specifically environmentally responsible behaviour of camping tourists. Therefore, this work can be considered a valuable contribution to science. A scale was developed and tested that initially contained 28 items. Using PCA, it was determined that the environmentally responsible behaviour of camping tourists is a multidimensional construct. Six items were excluded from the scale during the PCA, so the final scale consists of 22 items. Checking the internal consistency showed that a slightly lower Cronbach's alpha coefficient was achieved for one factor, namely factor "Responsible behaviour on a campsite". This may be the result of a relatively small and convenient sample on which the scale was validated. Hence, representing paper limitation. Consequently, further validation of the scale on a larger sample is needed as well on a sample that is consisted of different groups of individuals. But this paper can be a good starting point for additional analysis and further development of the scale for measuring environmentally responsible behaviour of camping tourists.

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# IMPORTANCE OF MULTIMODAL TRANSPORT IN DEVELOPING A MORE SUSTAINABLE TRANSPORTATION NETWORK IN THE EUROPEAN UNION

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## ABSTRACT

*Due to the growth of world trade, the globalization and technological progress, the demand for transport services has been continuously growing, which stimulates further need for establishing a more sustainable transport. Many goods travel long distances to reach their destinations, and these long distances are a prerequisite for introducing a form of multimodal transport in the transporting process. The institutions in charge in the European Union saw the need for the development of multimodal transport already twenty years ago, with the aim of facilitating sustainable transport and defining the objectives for the years 2030 and 2050. Better use of the railway and inland waters as transporting options that cause considerably less pollution than road transport represents the basis for the realisation of the goals set by the EU. The analysis of transport according to single transport branches shows that road transport is still dominant and there are no significant reductions in the amount of transport realized on the routes over 300 kilometres. In addition, freight transport on inland water routes and railroads has been recording negative growth rates, which reflects the necessity for the revision of the measures that stimulate Member States to participate in building a uniform network of multimodal transport in the EU.*

**Keywords:** *multimodal transport, European Union, sustainable transport*

## 1. INTRODUCTION

Owing to globalization, the technological progress and the recognition of the need for reducing the negative impact of transport on the environment, over the last decades, multimodal transport has been more and more in the focus not just of the European Union, but other parts of the world as well. In line with that, freight consolidation is gaining on importance, too (Lv et al, 2019), especially the one including the use of the transport branches that do not pollute as much, like rail and inland water navigation. Transport has been polluting our environment for decades and we are facing the challenge of moving towards a more sustainable transport system in order to try to reduce the damage (Reichenbach, 2019). An integrated multimodal system is seen as a good option for dealing with the problems of environmental pollution, rising fuel prices and traffic congestion. Such a system may be of critical importance when companies are trying to be successful both home and abroad (Harris, Wang and Wang, 2015). Unlike regular, conventional transport, multimodal options are combinations of two or more modes of transport (Nikolić, 2003) and this seems like a really good tool for tackling problems like congestion and pollution (van Nes, 2002). Multimodal transport systems have a strong correlation with the schedules of the individuals (Chow and Djavadian, 2015). Goods have been transported in a certain way for ages and the time has come to think of some other options to reduce the economic costs and the impact on the environment (Jahn et al, 2020: 5). Already in 1996, the European Commission defined a framework for the introduction of the Trans-European transport network (TEN-T), and later on clearly specified the objectives to be achieved before 2050. Reaching these objectives will help build a unified multimodal transport network in the European Union (European Commission, 28.03.2011). Regarding the transport policy in the European Union, it is important to note that transport is one of those areas for which all Member States are responsible i.e., they retain the right to individually deal with and regulate those

matters that the EU has not encompassed in the common policies and strategies regarding multimodal transport (European Court of Auditors, 2018). As mentioned above, the focus of this paper is on multimodal transport in the European Union i.e., its significance in developing a more sustainable transport in the EU. The introductory part is followed by an overview of the selected research on the advantages of multimodal transport and the importance of its development for the transport of both goods and passengers. The analysis of multimodal transport in the European Union is presented in the third section, followed by the concluding remarks in the fourth section.

## **2. OVERVIEW OF THE LITERATURE ON MULTIMODAL TRANSPORTATION**

Using the advantages of different transport branches and combining them into a functional multimodal transport system offers great opportunities (van Nes, 2002). Multimodal options that combine private and public transport have been gaining on importance (Zhang et al, 2011: 314). Today, people travelling for different reasons use different modes of transport, including personal vehicles, bicycles, buses, trains, the metro. Each of these have their own pluses and minuses, and travellers opt for those combinations that match their current needs best (Liu et al, 2019). However, these possibilities bring new logistical challenges, like the organisational and financial rearrangements for all the included parties. This should be done in a manner so as no one suffers delays, long waits for another transport mode in the multimodal chain, which means new standards and time-table synchronisations are vital. A modal transport network consists of different components: the networks for private transport, public transport, and other transport services that are a part of the multimodal transport system (van Nes, 2002). The goal of multimodal mobility is not just reducing pollution and other negative effects of heavy traffic. Multimodality also influences private lives and lifestyles; it changes individual behaviours, relationships, and social interactions (Reichenbach, 2019). Dib et al (2017) offered a multicriteria algorithm for identifying solutions for the complex planning of multimodal itineraries. They included the following mobility options: railway, bus, tram and the pedestrians. Several variables were used as the optimization criteria: travel time, the number of transfers and the total walking time. The research had the aim of building an Advanced Traveller Information System (ATIS) that would provide information to the passengers before they start their travel. Such a system should enable travellers to easier become active users of the multimodal network (Dib et al, 2017). Besides the fact that the advantages of multimodal transport can be reflected through combinations of private and public transport services, innovative multimodal systems can be used for upgrading the railroad standard car transport. Dočkalíková, Cempírek and Indruchová (2020) highlight the innovative concept of Innofreight<sup>1</sup> for railway transport. This company offers logistics solutions that meet the requirements for technical interoperability specifications which can be used throughout the Trans-European Transport Network. Innovative solutions and digitalisation are the right tools for developing a unified multimodal transport system in the European Union. In this way, all transport modes would be brought under the same service of uninterrupted transport of passengers and goods (European Court of Auditors, 2018). Multimodal transport is the best possible combination of different modes of transport, each with its own advantages, such as the flexibility of road haulage, the large capacity of railways and the lower costs of short/deep-sea transport (Zaheer, 2008). Besides the advantages related to environmental protection, multimodal transport lifts some of the burden from the backs of manufacturers because they no longer need to allocate time for the communication with individual transporters; multimodal transport operators are in charge of the entire organization of the transportation process (Shakil and Mostafa, 2018: 62).

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<sup>1</sup> Innofreight was founded in 2002 and it is oriented towards the development of innovative solutions for rails. Their equipment is used on tracks in 20 European countries and rolls on all three common European gauges.



The operator needs to carefully consider the market demand and mind the needs of the customers in order to ensure customer loyalty; this also includes the shortening of the transit time, which is definitely in everybody's interest (Xu and Rong, 2021). Dua and Sinha (2019) looked into a set of dimensions that influence the quality of a multimodal transport service. These dimensions include the following: customers' perspectives (the six "rights" and their perceptions), relationship perspectives (the three C's – cooperation, competition and collaboration among stakeholders), operational perspectives (resources, constraints, processes, visibility and anxiety), financial perspectives (fixed, variable, and opportunity costs and benefits) and risk perspectives (disruptions with and without past information and data, frequency and magnitude). The quality of the multimodal chain will be affected if any of these dimensions are disrupted. The same authors imply that the quality of multimodal transport can be maintained with the use of a causal approach; one should take into consideration the effects of any imbalance arising in the multimodal chain, the recovery period and the impacts on customers' expectations and perceptions (Dua and Sinha, 2019). The fact supporting multimodal transport is that it is a more favourable option for the standardised cargo units including containers, pallets, swap bodies and trailers favour (Van Schijndel and Dinwoodie, 2000). Wang et al (2020) calculated multimodal transport line parameters based on a "Witness" software simulation. The simulation in question covered the transport along the Wuhan-Berlin transportation route. In doing so, the authors have come up with a framework for the efficiency evaluation of multimodal transport, with the aim of reducing carbon emissions caused by the transport activities. The evaluation of efficiency is important both to the multimodal operators and the shippers and they all have similar objectives. The cost of transport and the time consumed always come first. This means that the conservation of energy and the reduction of carbon emissions come second. Also, energy consumption is the priority when compared to greenhouse gas emissions (Wang et al, 2020). Consolidating multiple modes of transport can bring many benefits. For example, container shipping can be easily arranged, where the fixed costs of the containers can be offset by the transport of the containers and the distribution of the cargo. In this way, container capacity can be used very efficiently. Because of the growing interest in multimodal transport options, this industry has been receiving a lot of attention (Lv et al, 2019). Kilani, Diop and De Wolf (2022) have developed a transport model for the North of France. The model has been used for the consideration of the impact of some policies that had been introduced and which relate to the limitations of polluting gas emissions and congestion. The authors considered the following modes of transport/mobility: walking, cycling, private vehicles and public transport (buses, regional trains, trams and the metro). Following to that, a multimodal transport system is definitely a good option because the users can combine two or more modes for a single trip. However, there is a downside to this current version because there is a lack of flexibility in the combination of several transport modes and, for now, it remains limited to some extent (Kilani, Diop and De Wolf, 2022). Transport companies that wish to introduce multimodal transport systems will need to promote more cooperation among themselves. In addition, they need to consider large investments being made to generate sufficient economies of scale to cover their capital costs. Not to stop there, improvements should be made to the equipment, and companies should try to focus on faster and cheaper services based on ro-ro ships and trains, automation, and self-loading and unloading transport equipment (Van Schijndel and Dinwoodie, 2000: 238-239). Another research on multimodal transport was conducted by Banomyong (2000). It relates to the multimodal transport corridors in South East Asia, particularly in Lao PDR. The results of the primary research suggest that the speed, reliability and cost play the most important role in deciding on the transport options. The research also confirms that the most competitive multimodal transport corridor is a combination of road, rail and sea (Banomyong, 2000). A multimodal combination including sea transport is the correct choice for many companies

because it implies reducing the costs and travel time. However, there are other possible combinations of multimodal transport which can ensure competitiveness (Dua and Sinha, 2019).

### 3. MULTIMODAL TRANSPORTATION IN THE EUROPEAN UNION

Multimodal transport is more difficult to organise than regular transport services. This is due to the fact that many different processes and people are involved, and this requires careful planning and some serious effort. Therefore, the cost-effectiveness of a certain combination cannot be guaranteed, and it is rarely competitive on short distances (Research & Education on Eco-Friendly Transport, 2016). For many years, one of the main goals set by the European Union has been to increase the scope of multimodal transport. In order to do so, it is necessary to make a transition from road transport to alternative solutions. Unfortunately, despite numerous efforts put in by the European Union to expand the multimodal network, it has not been developing in line with the defined goals (European Court of Auditors, 2018). One of the main reasons for strengthening the role of multimodal transport relates to reducing negative impact on the environment. European transport policy aims at 60% reduction in greenhouse gas (GHG) emissions from transport compared to the 1990 levels (Eurostat, March 2022). First, it is necessary to note that if we are to look at the CO<sub>2</sub> emissions, road transport generates 103g/tkm, inland waterways 32g/tkm, and the railway only 19g/t km (Jahn et al, 2020: 5). Technology progress and development of innovative solutions have had impact on the reduction of the CO<sub>2</sub> emissions generated by road transport, which generated 153,71g/tkm in the year 2000 (European Environment Agency, 04.01.2017), which suggests that the new data of 103g/tkm is a reduction by one third. Despite this reduction, road transport causes 3.25 times more pollution than inland waterways and 5.4 times more than the railway. These differences are the best reflection of how a combination of the road with the railway and inland waterways can contribute to the development of a more sustainable transport. In 2019, the entire transport industry generated 16.5% of the total GHG emissions. However, if we are to observe individual branches of the transport industry, we can conclude that road transport is in fact the main pollutant, with the share of 71.7% in the GHG emissions in 2019. The reasons for preferring railway and inland waterways are best reflected in their shares in the GHG emissions. Figure 1 shows that in 2019, the share of railway in the entire industry was only 0.4% and water transport 14.1% (maritime – 12.5% and inland – 1.5%).

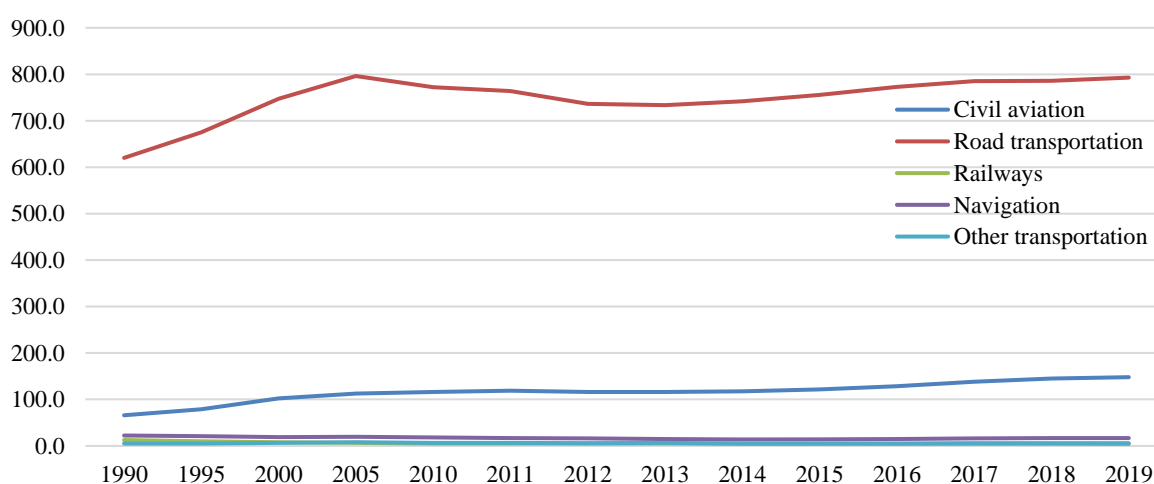


Figure 1: GHG emissions from transport in EU-27 (million tonnes CO<sub>2</sub>)

(Source: author according to European Commission (September 2021). Statistical pocketbook 2021. EU transport in figures, Luxembourg: Publications Office of the European Union, p. 134)

For decades, road transport has been a dominant branch in the transportation industry in the European Union, so it is not surprising that, in 2019, its share was 52%, with the maritime transport of goods included (Figure 2). Moreover, when the transport along the maritime routes is included, the dominance of road transport is even more prominent. Inland waterways and railroad only take up 16.10% of the total transport of goods, which is definitely a disturbing fact. These branches are the pillars of sustainability and should be the main components of multimodal transport. Their low share in the total transport reflects the fact that it is going to be rather difficult for the goals set by the European Union to be achieved before the year 2030.

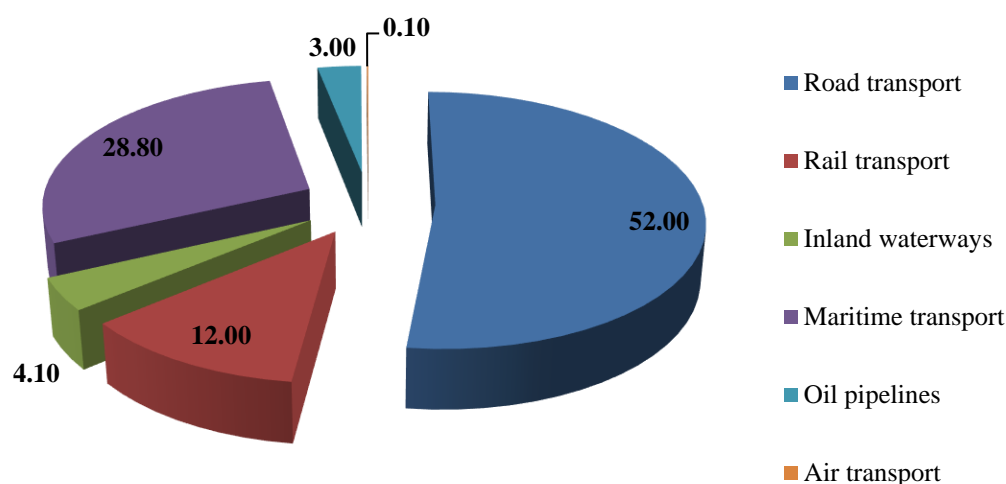


Figure 2: Transport of goods in EU 27 by mode in 2019 (%)

(Source: author compiled according to European Commission (September 2021). Statistical pocketbook 2021. EU transport in figures, Luxembourg: Publications Office of the European Union, p. 19)

As previously mentioned, multimodal transport is not competitive on shorter distances. Due to that, in its goals relating to the development of a unified multimodal transport network, the European Union has placed the focus on the long-distance transportation routes, i.e., routes over 300 km and it mandates the following (European Commission, 28.03.2011):

- 1) 30% of road freight transport over 300 km should shift to other modes such as rail and/or water transport by the year 2030; furthermore, before 2050, the percentage of the road transport shifting to more sustainable modes should be 50%, supported by efficient and green freight corridors. This implies updating the existing and developing new appropriate infrastructure.
- 2) A completed European high-speed rail network by 2050. The length of the existing high-speed rail network tripled by the year 2030 and keep maintaining an extensive railroad network expanding across all the Member States. By 2050, the majority of medium-distance passenger transport should go by rail.
- 3) A fully functional and EU-wide multimodal TEN-T ‘core network’ by 2030; extend to a high-quality and full-capacity network by 2050, supported by a corresponding set of information services.
- 4) By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that the rail freight network is connected to all core seaports and, where possible, to inland waterway system.

	From 150 to 299 km			From 300 to 999 km			Over 1000 km		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
<b>EU</b>	<b>335.597</b>	<b>342.115</b>	<b>341.455</b>	<b>703.342</b>	<b>730.397</b>	<b>730.810</b>	<b>335.689</b>	<b>349.907</b>	<b>340.010</b>
<b>Belgium</b>	11.795	12.974	11.692	15.619	18.120	18.634	1.112	1.142	1.235
<b>Bulgaria</b>	2.958	2.136	3.476	9.412	6.909	10.188	11.336	8.819	15.795
<b>Czech Republic</b>	8.203	8.759	10.756	11.875	10.943	19.454	6.220	4.467	11.407
<b>Denmark</b>	4.450	4.151	4.415	4.705	5.008	4.666	1.213	1.272	964
<b>Germany</b>	78.962	77.567	76.634	122.387	117.076	114.096	8.233	8.074	6.956
<b>Estonia</b>	840	876	647	1.685	1.537	1.406	2.304	1.422	1.461
<b>Ireland</b>	3.694	4.174	3.801	1.827	1.949	2.008	709	693	757
<b>Greece</b>	3.654	3.531	3.233	8.365	7.399	5.841	11.469	11.519	10.646
<b>Spain</b>	30.013	32.104	30.854	105.927	110.568	109.770	62.690	64.445	60.879
<b>France</b>	41.064	41.890	41.357	82.036	84.363	82.782	3.298	3.370	3.108
<b>Croatia</b>	2.041	2.132	1.882	5.520	5.450	5.682	3.100	2.779	2.515
<b>Italy</b>	35.427	38.254	36.981	51.262	57.588	55.490	8.456	10.178	9.360
<b>Cyprus</b>	21	22	17	0	1	1	21	22	34
<b>Latvia</b>	1.784	1.644	1.737	3.649	3.940	3.570	6.873	6.744	5.603
<b>Lithuania</b>	2.637	2.914	3.301	14.416	17.692	19.791	24.680	30.590	30.172
<b>Luxembourg</b>	1.652	1.817	1.609	3.475	3.707	3.069	343	345	274
<b>Hungary</b>	6.802	6.953	6.549	15.864	15.747	13.738	8.012	7.089	5.004
<b>Netherlands</b>	19.947	19.628	19.560	18.743	17.873	16.895	4.782	4.593	4.248
<b>Austria</b>	5.865	5.906	5.648	7.428	7.628	7.429	1.430	1.752	1.626
<b>Poland</b>	42.033	42.979	45.402	133.789	152.676	156.345	102.436	112.714	112.477
<b>Portugal</b>	4.385	4.107	3.310	9.160	8.449	6.492	14.561	14.696	10.093
<b>Romania</b>	5.028	5.539	5.372	21.764	23.157	21.014	26.636	26.330	22.215
<b>Slovenia</b>	2.010	2.030	2.021	9.922	10.631	10.783	8.244	9.238	7.662
<b>Slovakia</b>	3.678	3.630	3.486	14.184	12.823	11.951	13.430	12.912	11.957
<b>Finland</b>	6.037	6.261	6.441	13.785	13.648	14.638	1.515	995	1.238
<b>Sweden</b>	10.615	10.140	11.274	16.542	15.516	15.075	2.364	1.567	2.230

*Table 1: Road freight transport by distance in Member countries (million tonne-kilometres)  
(Source: Eurostat a (October 2021). Road freight transport by distance classes.)*

Since the goals of the European Union that are outlined in the White Paper on Transport, targeting the development of a unified multimodal transport network have placed the focus on the distances over 300 km, Table 1 shows the number of ton-kilometres of road freight transport on longer distances. It is evident that the number of ton-kilometres for the distances over 300 and under 1000 kilometres has been continuously growing in the observed period. In 2020, this growth was modest, but this can be attributed to the beginning of the pandemic and we can only imagine what would have happened if the pandemic had not progressed. The fact that this segment has been expanding really does not support the initiative that, before 2030, 30% of road freight transport on the distances longer than 300 kilometres should shift to railway and inland waterway transport. Furthermore, railway transport recorded negative growth rates in the European Union both in 2019 and 2020. More specifically, it was 2.2% and 5.9% for the years 2019 and 2020, respectively. Assuredly, this can be, to some extent, attributed to the restrictions connected to the coronavirus pandemic. Germany leads with even 30% of the total rail freight transport (108 billion tkm), followed by Poland (50 billion tkm) and France (31 billion tkm) (Eurostat b, October 2021). Rail transport is not the only branch that has been falling behind, it is also the transport by inland waterways. In 2020, inland waterways were used to transport 505 million tons, which is a drop of 3.2% in relation to 2019. The drop is even greater if ton-kilometres are observed (5.7%). Lithuania is the only Member State to make a huge lunge; in 2020, rail transport reached 64.7% of the total inland freight transport. The greatest share of inland navigation in inland freight transport was recorded in the Netherlands, amounting to 41.6% (Eurostat, September 2021), which is no surprise, since there are so many flows of goods along the inland waterways going to and from the Port of Rotterdam.

#### 4. CONCLUSION

Serious environmental problems, the growing demand for transportation services, volatile fuel prices and congestion call for new solutions to the problem of freight transport. One of the possibilities for implementing a more sustainable transport is to take advantage of the inland

navigation and railway and strive at developing multimodal options. Inland navigation and railway generate up to several times less GHG emissions than road transport. Advantages that multimodal transport has to offer are equally reflected in both passenger and freight transport. However, organizing multimodal transport is much more complex in comparison to using only one transport branch since there are many more people included in the processes of developing a multimodal option. Due to the organizational complexity and the uncompetitive aspect of the prices of multimodal transport on shorter distances, the focus regarding multimodal transport options has been put on the distances over 300 kilometres. Around twenty years ago, the European Union detected the need for developing a unified multimodal transport network and then, in 2011, outlined clear goals to be reached before 2030 and 2050. The emphasis has been placed on shifting from road freight transport on the routes over 300 kilometres towards the inland waterways and rail. One of the goals is to shift 30% of road freight transport on the distances over 300 kilometres to more sustainable transport branches before the year 2030. However, this goal, based on the analysis of the road, rail and inland navigation freight transport, seems unrealistic. While road transport in the European Union has not experienced any setbacks, rail and inland navigation recorded negative growth rates both in 2019 and 2020. This supports the fact that, despite the efforts the EU has been putting in the development of a unified multimodal transport network, the is not developing according to plan and defined deadlines. It is evident that the EU will have to revise the existing regulatory framework on the introduction of financial sanctions for the Member States who are not implementing the transport policy in line with the White Paper on Transport, with the aim of developing a more sustainable transport network on its territory.

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## REPRESENTATION OF SOCIALLY RESPONSIBLE MARKETING TOWARDS CHILDREN IN THE REPUBLIC OF CROATIA

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### ABSTRACT

*The challenge of the economy depends on continuously attracting new customers, and attracting new customers starts from an early age. Children are an important factor in attracting new customers because their explicit requirements can influence parents to buy more expensive goods and decide with parents when buying products. That is why consumerism has become a cultural and social ideology of seducing children and youth. Consumers are manipulated to the point of buying and accumulating unnecessary things. By creating marketing campaigns for children, in addressing families, marketing professionals use emotions, especially parental love. That's why marketers are aware that kids will get products by constantly repeating requests, so they expose them to numerous ads to encourage purchase. They want to position themselves in children's consciousness, knowing that children significantly influence their parents through their influence. From the above we come to the key problem of modern society, which is also a problem of this research and that is the impact of marketing advertising on the consciousness of children, which encourages pressure of buying by parents and guardians. The aim of the research in this paper is to prove that socially responsible marketing to children is not sufficiently represented in the Republic of Croatia and children have a great influence on the decision to buy their parents. Empirical research on a representative sample, consisting of parents, surveys and the application of statistical methods, will try to scientifically prove the extent to which socially responsible marketing is represented in the Republic of Croatia; then to what extent children, with their parents, influence the purchase of toys and branded clothing; and whether parents spend more on home budget to buy toys and luxury products.*

**Keywords:** *socially responsible marketing, consumerism, children consumers, marketing advertising, buying incentives*

### 1. INTRODUCTION

The future success of a company depends on how successfully it will motivate its consumers and create new markets. Given today's environment, companies strive to attract their customers from an early age. Children constitute a particularly interesting market segment given that children are estimated to participate in consumption totaling 2 trillion dollars (Buckingham, Miliša i Spasenovski, 2017). Children get money from adults who can spend as much as they want and significantly influence their family when making a purchase decision. Children will become independent consumers in the future, so it is important for marketing professionals to create their loyalty. Today, advertisers directly target the youngest population and use sophisticated technologies and techniques that are beyond the scope of conventional marketing. In such conditions, children learn from an early age how to become a consumer given that they are exposed to the market and consumption. Advertisers justify such actions by claiming that children are increasingly empowered through children's rights and claim that they actually respond only to the wishes and needs of consumers that have been neglected for years



(Buckingham, Miliša i Spasenovski, 2017). The subject of this paper is the influence of children on the purchase of parents. We will also point out the extent to which socially responsible marketing is represented in the Republic of Croatia. This is proven by empirical research on a sample of 241 respondents, parents. As an instrument research uses a questionnaire with a Likert scale of intensity from one to five.

## 2. THEORETICAL OVERVIEW

The future of the economy and consumer style depends on the continuous attraction of new customers, and attracting new customers starts at an early age. Parents are in a situation where they have to accept materialism as an integral part of life, given that they spend less and less time with their children because of work and therefore buy them desirable things to make up for lost time with them. They leave children to the influence of the media, which is used by marketing experts to please children (Bašić, 2018). It can be said that children learn about consumption from infancy, given that most parents already take their children to supermarkets where they are exposed to numerous stimuli. Already at the age of 2 to 3, parents determine ways to meet their children's needs. At the age of 3 to 4, children under the influence of the media as well as mental and awareness development, begin to ask their parents to buy them certain things. At the age of 5 to 6, children already often influence decisions of buying by their parents, aunts, grandparents. Children up to the age of 9, and even later, do not develop the ability to think critically about their purchasing decisions and are exclusively guided by their desires (Bašić, 2018). Deborah Roedder states the following stages of consumer socialization: (1. Perceptive - covers the period from 3 to 7 years of a child's life and is characterized by a focus on currently available products, a preference for well-known brands and stores that he knows superficially; 2. Analytical - covers the period from 7 to 11 years. During this period, children go through a number of cognitive and social changes. Children begin to understand the motives of advertisers and perceive several different dimensions of products and services. Decisions are made after deliberation; 3. Reflective - covers the period from 11 to 16 years. Young people at that age are aware of the social aspect of the market. Through the consumption of brands, they try to stay integrated into their environment. Children are interesting to producers and the marketing industry because although children do not earn their own money, they come to meet it through gifts, pocket money and occasional household chores that they do for them, family or neighbors in agreement with their parents. Children are also an important factor because their influence can encourage parents to buy more expensive goods and co-decide with parents when buying goods (Miliša & Spasenovski, 2017). Consumerism has become a cultural and social ideology of seducing children and youth. In the most developed countries, consumers are manipulated to the point of buying and accumulating unnecessary things. The marketing industry has done everything to make children consumers. The role of the child in America has changed significantly and they have become pillars of the consumer economy with economic power equal to that of their parents. The influence of consumerism is also felt in schools in the United States as they have become a place where many commercial companies that use school space for their own benefit are publicly advertised. The school has thus ceased to be exclusively educational - the educational institution has already become a place where companies directly address children as consumers (Miliša & Spasenovski, 2017). Children are faced with media manipulation on a daily basis while watching a cartoon in a situation where in the most exciting part of the cartoon, the cartoon is interrupted and an advertisement for new toys, sneakers or food is shown. Media manipulation is defined as a designed process in which the manipulator transmits through various media symbolic means that affect consciousness and behavior. The manipulator replaces real needs with fake ones and does so by various symbolic means such as advertisements, commercials, creating an image of idols, etc.

How powerful advertisements are can be seen in the example of Coca Cola which has become a global phenomenon promoting consumer culture. For decades, it has been synonymous of entertainment with accompanying cool messages: refreshing, youthful, delicious (Miliša & Tolić, 2009). Socially responsible marketing and socially responsible business policy of the company is not only a passing trend but as such has an impact on the implementation of responsible corporate strategy. Corporate social responsibility has become an important reflection and identity of every successful manager and the company as a whole (Vinšalek Stipić, 2017). Today, there are a large number of shows, especially cartoons, in which the main characters are available in stores. In addition to toys, it is possible to find a large number of accompanying products on the market with printed characters from cartoons. In this way, children create a connection with familiar characters, and will require their parents to buy products that have these characters. Before the age of two, as many as 74% of children start watching television, and about half of these children watch television every day. Children between the ages of eight and eighteen use the media daily or even several at a time for six and a half hours a day. Advertisements during and between cartoons and children's shows blur the line between programming and marketing. The same technique is used in video games with disguised advertising (Oroz Štancl, 2014). With the sharp increase in the involvement of children and adolescents in consumer culture, the question arises whether the rapid expansion is sufficient to form new approaches to childhood that include a revised relationship between parents and children (Dadić, 2013). Contemporary sociological theoretical considerations of family relations are focused on the analysis of broader structural and social changes and on determining their impact on the functioning of the family. As a consequence of post-industrialization and postmodernism, there has been a change in the relationships of modern families (Bašić, 2018). Important features of postmodern families are the following (Zeitli, 1995); 1. Indifference of adolescents towards family; 2. Instability of marital union; 3. Liberalization of women. Postmodern families are numerically smaller, less dependent on blood ties, communicate more often through electronic devices, have a high level of privacy and choice, participate in many symbolic, psychological and social contexts, and develop different identities. However, regardless of the contemporary changes that have affected it, the family still remains a group of two or more persons connected by birth, marriage or adoption, and living together. All families adopt certain patterns of communication in mutual understanding, functioning and socialization of its minor members (Bašić, 2018). Today's children as consumers are unique compared to all generations before them in that their purchasing decisions are significantly influenced by social networks that have become a global communication phenomenon. Their main feature is that they are universal means of communication and techniques, and their common interest is to keep groups of people together. The Internet and social networks have significantly changed the understanding of communication. The Internet used to be used for information purposes, and today it is becoming a means of communication. During 2019, of the total population, about 67% of people used mobile phones, and 57% of the population used the Internet. There are 45% of active users of social networks. Saudi Arabia has the highest social network penetration in 2019, at 99%, while the global average is 45%. Social networks reach a large number of people and occupy an important position in the promotion of products and services. Social media marketing involves the use of social networking platforms that connect with the audience in order to build a brand, increase sales or drive online traffic (Mesarić, 2019). Children belong to a vulnerable consumer group and it is important to assess the ways in which marketing managers can implement CSR-related activities to generate value for their various stakeholders (Sanclemente-Téllez, 2017). In the long run, modern capitalism not only requires companies to profit as much as possible, but also pays more and more attention to the social and environmental problems of business.

It refers to meeting the social and environmental needs of the wider community (Vinšalek Stipić, 2019). Linking the concept of CSR with the concept of marketing seeks to develop a meaningful relationship with customers and other stakeholders (Podnar & Golob, 2007).

### **3. PREVIOUS RESEARCH**

In the middle of the twentieth century, research into the behavior of children as consumers began. The first studies published investigated children's loyalty to a particular brand, the influence of children on the Research of Children's Consumerism appears in the 90s of the 20th century as part of the discipline of media studies or as part of research for commercial purposes. Child Development (1997) finds a link between increased materialism and anxiety, feelings of fear, lack of satisfaction, withdrawal, sadness in children. A high degree of involvement in consumerism leads to bad relationships with parents that lead to depression, anxiety as well as increased levels of family stress. Consumerism is associated with reduced self-confidence of children in the field of peer relationships and the possibility of extreme violence (Dadić, 2013). Psychologists in their research point to the negative consequences for children's mental and physical health caused by commercial activities. Miliša and Spasenovski (2017) therefore point out that the youngest population becomes a victim of aggressive manipulative marketing industry and that consumerism is an important pedagogical issue and that it is necessary to find an answer how to empower children in modern consumerist environment. According to research conducted in the United States, children between the ages of 8 and 14 spend 150-160 billion dollars on their pocket money in one year, and their decisions contribute to spending 600 billion dollars a year. Globally, children participate in spending a total of 2 trillion dollars. Children under the age of 12 directly affect spending of 700 billion dollars. This amount is equivalent to the cumulative sum of 115 poorest economies in the world. During the 1960s, children aged 4 to 14 influenced their parents' spending 5 billion dollars, during the 1970s that amount jumped to 20 billion dollars, while in 1984 that amount was 50 billion dollars. Research conducted in the UK shows that children aged 7 to 16 spend around 80 million pounds, an increase of 600% over 20 years (Miliša & Spasenovski, 2017). Surreptitious advertising is a fast-growing industry worth several million dollars. According to a 2012 study made by P. Media (2012), the value of surreptitious advertising was 8.25 billion dollars. In 2006, television advertising was the first choice of marketing experts, and 71% of advertising was related in this way. By covert advertising, products and services are placed within the store of educational, informative or entertaining content and subtly impose on the viewer ads that are perceived subconsciously (Oroz Štancl, 2014). Marketing experts are aware that children will receive products by constantly repeating requests so they expose them to numerous advertisements to encourage purchase. Psychologists, sociologists, child behavior experts and marketing experts work together to find ways to develop children's interest in brands. They want to position themselves in children's consciousness, knowing that children significantly influence their parents through their influence. For example, neuromarketing scientists calculate the number of blinks that children make when watching a particular commercial. If the number of blinks is large then they change the ad to achieve a greater hypnotic effect. The average American child was exposed to over 3,000 commercials by the mid-1990s, while today the average American child under 12 watches between 25,000 and 40,000 television commercials a year, while the average British child of the same age sees 10,000. A study conducted in 2003 proved that children whose parents turn off the TV for 48 hours significantly reduced their requests to buy new toys (Miliša & Spasenovski, 2017). Neuromarketing, as a scientific discipline in the field of marketing research, represents an application of neuroscientific methods, for the purpose of better understanding human behavior. As a sublimation of two scientific disciplines – consumer behavior and Neuroscience - Neuromarketing replaces traditional types of marketing research (Šola, 2013).

A GfK study conducted in Croatia showed that children aged 11 to 13 have an average allowance of HRK 200. Also, it was noticed that among them there is a high world about brands among which the most significant are Nike and Adidas. Of the total number of respondents, 84% watch television commercials, and 58% pay attention to large advertising posters. In the Republic of Croatia, watching television is the second leisure activity of children aged 11 to 15. Research indicates that children from families belonging to social minorities or of lower socioeconomic status have a higher risk of advertising influence. Likewise, active advertising of food products leads to higher levels of obesity in children (Dadić, 2013).

#### 4. METHODOLOGY AND MODEL SPECIFICATION

In accordance with the theoretical approach, the aim of this paper is to prove that socially responsible marketing to children is not sufficiently represented in the Republic of Croatia and that children have a great influence on the decision of buying by their parents. Based on the above, the following research hypotheses were set:

- *H1 – Socially responsible marketing towards children is not sufficiently represented in the Republic of Croatia*
- *H2 – Children largely driven by marketing tricks have a significant impact on their parents' decision to buy toys and branded clothing*
- *H3 – To buy toys and luxury products for children, parents spend more than the possibilities of the household budget*
- *H4 – The purchase of luxury products for children is significantly statistically related to the amount of the parents' household budget*

The empirical research was conducted by a survey on a sample of 241 respondents in the period from March 1 to April 30, 2022. The survey questionnaire consisted of three parts. The first part consists of a group of questions about the age, gender of the respondents, the number of children and the amount of the household budget. The second part of the questionnaire consists of a group of questions about the preferences for the consumption of necessities and luxury products for children, where the answers are offered by Likert's scale of intensity: 1 - I absolutely disagree; 2 - I do not agree; 3 - I neither agree nor disagree; 4 - I agree; 5 - I absolutely agree. The third part consists of questions about personal opinion for buying toys, sweets and branded clothes. In research participated 81.7% of women and 18.3% of men. According to the age group, there are at least those aged 56 and over, 1.2% of them and then those aged 18 to 25, is 2.5%. It is followed by respondents aged 46 to 55 years 14.5%, 32.8% of respondents aged 26 to 35 years. The largest number of respondents belongs to the age group of 36 to 45 years, 49% or absolutely 118 respondents. Respondents by number of children are shown in Graph 1, which shows that most of those are with two children, 112 respondents, and Graph 2 shows the amount of income of household respondents.

*Graph following on the next page*

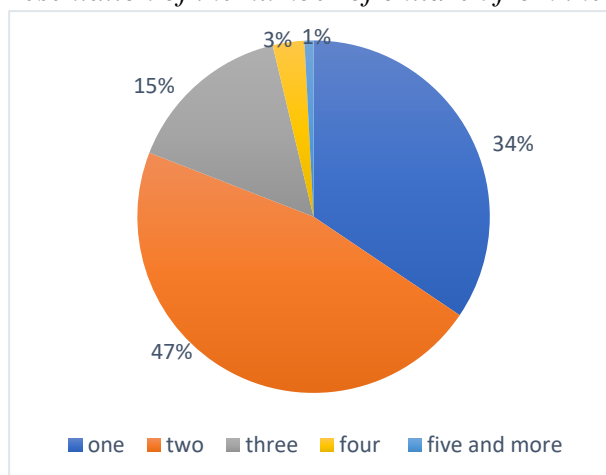
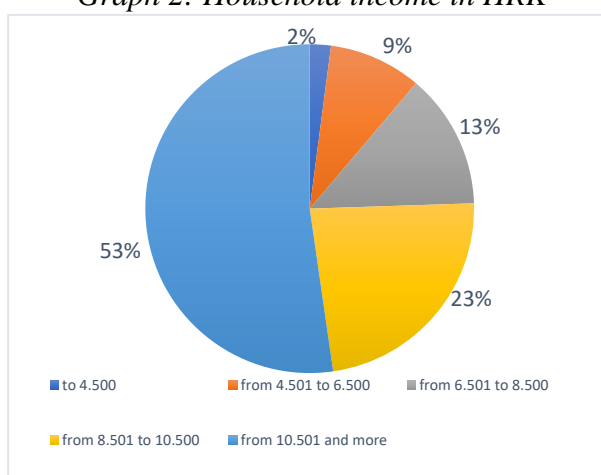
*Graph 1: Presentation of the number of children from the respondents**Source: Author's work**Graph 2: Household income in HRK**Source: Author's work*

Table 1 shows the structure of the second part of the questionnaire for obtaining perceptions of household budget spending, the impact of children on the purchase, as well as socially responsible marketing in the Republic of Croatia. Based on the hypotheses, it was necessary to calculate the Cronbach's alpha coefficient of 0.830, which tells us about the reliability of the measuring instrument.

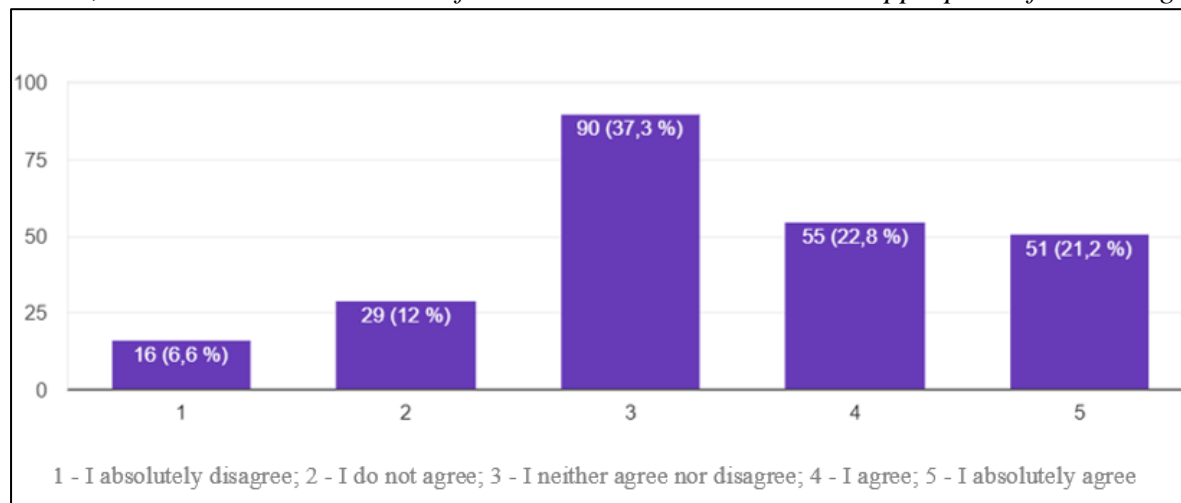
*Table 1: Questionnaire questions for measuring the reliability of a measuring instrument*

Number of questions	Question
1.	You spend most of your household budget on food, utilities and hygiene supplies
2.	To a large extent, your child influences the decision to buy food on a daily basis
3.	Extremely often, once a week or more you buy toys
4.	When watching advertisements, your child is extremely persistent in asking you to buy the advertised product
5.	Almost always meet the demands of the child caused by advertisements from the public media
6.	To buy toys and luxury products for children, spend more than the possibilities of the home budget
7.	You buy your child branded products more than yourself
8.	Socially responsible marketing in the Republic of Croatia is not at a satisfactory level, advertisements intended for children are not ethical and appropriate for their age

*Source: Author's work*

As children are a socially vulnerable group, the question of implementing socially responsible marketing towards children is often asked, so the H<sub>1</sub> hypothesis has been proven. The data obtained from the survey conducted on a sample of 241 respondents show: 44% of respondents agree that socially responsible marketing to children is not at a satisfactory level; while 18.7% of respondents do not agree with this statement while a significant part of undecided are undecided, as shown in Graph 3. From the above it can be concluded that hypothesis H1 – Socially responsible marketing in Croatia is not satisfactory, ie advertisements for children are not ethical and age-appropriate is confirmed.

*Graph 3: Socially responsible marketing in the Republic of Croatia is not at a satisfactory level, ie advertisements intended for children are not ethical and appropriate for their age*



*Source: Author's work*

By processing the survey data shown in Table 2, it can be seen that 146 respondents spend most of their household budget on food and hygiene items, while in 44 respondents children have a great influence on the decision to buy food, in 26 respondents children have no influence to buy food and 79 respondents neither agree nor disagree with the stated statement. For frequent toy purchases (once a week) 7.5% of respondents said yes and when we add respondents who answered (nor agree/nor disagree) we come to the fact that 21.5% of respondents often buy toys (once a week). When watching advertisements, a very persistent child asks to be bought an advertised product, 64.3% disagree with this statement and 22% of respondents agree with this statement. Twenty respondents almost always meet the demands of the child caused by advertisements from the public media, while 173 respondents disagree with this statement. Eighteen respondents, or 7.5% of respondents, spend more than they can afford to buy toys and luxury products for children, and 197 or 81.7% of them disagree, while 10.8% of respondents are undecided with this statement. For the purchase of branded products more for themselves than for the child, the following results were obtained: 120 respondents disagree, 68 agree with the statement and 53 respondents are undecided.

*Table following on the next page*

*Table 2: Display of the degree of agreement with individual statements from the survey questionnaire*

Q	Absolutely disagree	Disagree	Nor agree/nor disagree	Agree	Absolutely agree
1.	1,7	2,9	12,9	22	60,5
2.	10,8	14,1	32,7	24,1	18,3
3.	52,4	26,1	14,1	4,1	3,3
4.	39	25,3	13,7	13,7	8,3
5.	43,2	28,6	19,9	5	3,3
6.	65,5	16,2	10,8	5,8	1,7
7.	33,1	16,6	22	18,3	10

*Source: Author's work*

From the above, it can be concluded that the hypothesis H<sub>2</sub> – Children are largely driven by marketing tricks have a significant impact on the decision to buy toys and branded clothing from their parents has not been confirmed. Hypothesis H<sub>3</sub> – To buy toys and luxury products for children, parents spend more than the possibilities of the household budget has not been confirmed. Demonstration of hypothesis H<sub>4</sub> was performed by linear correlation analysis and simple regression model of variables Household income (H\_income) and buying branded products for children (Buy\_brend).

*Table 3: Simple regression model of the variables H\_income and Buy\_brand*

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F Change	df1	df2	Sig. F Change	Durbin-Watson
1	,162 <sup>a</sup>	,026	,022	1,07308	,026	6,439	1	239	,012	2,229

a. Predictors: (Constant), H\_income

b. Dependent Variable: Buy\_brend

*Source: Author's work*

The analysis of linear correlation shows that there is no linear connection between the variables of household budgets and the purchase of branded products for children. The regression model shows a positive but weak statistical correlation (0.162) coefficient of determination closer to zero than one and we can not talk about good representativeness of the model, in fact variations of the dependent variable Buy\_brand are not a significant result of variations of the independent variable H\_income, and Durbin-Watson is 2,229, which means that no autocorrelation of relation errors was found in the sample. The indicator of independent variations with the number of degrees of freedom (1,239) and the level of significance 0.05 concludes that the independent variable height of the household budget statistically significantly predicts variations of the dependent variable buying branded clothing for children ( $F_{1, 239} = 6,439$ ; Sig. <0.001). Based on statistical testing of hypothesis H<sub>4</sub>, it can be said that it has not been confirmed, the purchase of luxury products for children is not significantly statistically related to the amount of household budget of parents. By analyzing the third part of the survey questionnaire on spending on sweets, toys and branded clothing the following results were obtained. The largest number of surveyed parents stated that 53.9% spend the most on sweets, 25.7% spend on toys and 20.3% spend the most on branded clothes. When asked which purchase of products they consider a mistake, 47.7% of them consider the purchase of branded clothing to be a mistake, 27.8% consider the purchase of toys to be a mistake and 24.1% consider the purchase of sweets to be a mistake.

## 5.CONCLUSION

Numerous authors in their scientific research point to the fact that consumer culture is the period with which today's generations grow up. Consumption becomes everyday and consumerism begins to affect all segments of life. Marketing professionals strive to recognize the needs and desires of consumers and strive to create the affection of their consumers from an early age. The media have become intermediaries between marketers and end consumers in a way that combines information with the entertainment and commercial aspects and is often subject to its power. Today, advertisers are directly targeting the youngest populations by teaching them how to become consumers of their products. The implementation of empirical research on a sample of 241 respondents in the Republic of Croatia found that socially responsible marketing in the Republic of Croatia is not at a satisfactory level, in fact advertisements intended for children are not ethical and appropriate for their age. Furthermore, children largely driven by marketing gimmicks do not have a significant impact on their parents' decision to buy toys and branded clothing, while to buy toys and luxury products for children, parents spend no more than the household budget options. Also, the purchase of luxury products for children is not significantly statistically related to the amount of household budget of parents. Today, there are legal restrictions on child-centered communication, and a number of provisions have been developed to protect children from lack of life experience, gullibility, and violation of parental authority. However, advertisers are interested in children because of their high purchasing power and abuse of their naivety, and seek to position themselves in their consciousness in the long run.

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# APPLICATION OF K-MEANS CLUSTERING ALGORITHM FOR ANALYSIS OF LMS CONTENT TRANSFORMATIONS CAUSED BY THE COVID-19 PANDEMIC

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## ABSTRACT

*In the first half of 2020, due to the Covid-19 pandemic, educational institutions worldwide had to close their doors to students; learning in the classroom was not possible due to the growing virus infection. Depending on previous experience and infrastructure, institutions have more or less successfully switched to online teaching. This paper presents a method that, from the data in the report of the administrator of one of the most popular LMS systems, Moodle, can bring new knowledge about this transfer on the Moodle system. It uses the k-means algorithm, which is used to divide courses into clusters depending on the content available in each course on the LMS. To analyse this transformation, a comparison was made of the number and content of clusters from the data of the winter semester of the academic year 2019/2020, with the winter semester of the academic year 2020/2021.*

**Keywords:** *course transformation, COVID-19, LMS, k-means, Moodle*

## 1. INTRODUCTION

In the last year, due to the Covid pandemic-19, educational institutions worldwide have been forced to close their doors for students. The faculty of Agriculture in Zagreb have switched classes to online learning and encouraged students to attend lectures from their homes. The Faculty of Agriculture has many years of experience in online teaching through the LMS Moodle used in both domestic and international environments. With the new situation in 2020, Covid-19 and the earthquake in March that hit Zagreb, the faculty had to face new challenges such as complete online learning. Many classrooms suffered damage as well as teachers' offices, which further aggravated the education. A new situation has created a new online environment; professors have used various methods and applications in online teaching, and many of them have not encountered such technologies so far. Also, many of them did not use information communication technology. To assess as objectively as possible the success with which the lecturers transferred the materials to Moodle and to what extent they use it, a method is proposed in this paper that can help analyse this transformation. The procedure is based on the k-means clustering algorithm, which needs to divide courses from the LMS into clusters. After that, clusters comparison from the period before the pandemic and during the pandemic has to be done. Data from the Moodle LMS system used by the Faculty of Agriculture in Zagreb from the winter semesters 2019/2020 and 2020/2021 is used in this paper.

## **2. LITERATURE REVIEW**

### **2.1. LMS systems during COVID-19 pandemic**

This global change has taken place in world education, where we have moved from direct instruction to distance education in which the learning process uses various digital platforms. The transition to remote teaching and learning can be seamless as possible with a suitable LMS (Learning Management System). LMS as an e-learning platform benefits administrators, teachers, and students. LMS allow administrators to watch student progress as individual and in class as part of a community. Now, in this time, a new learning environment began to be intensively recognised in various countries. Many universities have implemented eLearning to present new study programs, class planning and new teaching materials. This new way of learning includes tools like conferencing, virtual tutoring, and, most important because LMS is software that manages administration, monitoring, online courses and learning programs. LMS solution is essential in times where social distancing and lockdown protocols are in place. Alias and Zainuddin defined LMS as technology based on the web and developed to increase learning with excellent and proper planning, with many tools and materials in educational institutions [1]. LMS as virtual classrooms during the COVID-19 pandemic is a need because it must keep the learning to be continued. To utilise an LMS, students only need a connection and a device to continue their courses online. But the organisation, by using LMS technologies, requires additional preparation, ensuring sufficient technical support and availability of the necessary equipment, and timely access to assignments. Teachers and students now intensively exchange files, links, articles, organise video conferences, etc. Many LMS systems can be used for higher education. Scalability, easy usage and reliability are most important for an institution's choice of LMS. So, when comparing LMS, consider these factors: scalability, ease of use, mobile accessibility, content creation and content management [2]. LISTedTECH is a market research firm that only tracks systems used in education. They investigated LMS systems and set five key quality criteria for the LMS systems (number of LMS used in Higher education institutions, number of Countries in which product is used, LMS used by the best Higher education institutions, the LMS which are selected by wealthy institutions and trends of LMS in last 5 years). By this research, Blackboard is the best LMS by these five criteria, and Moodle is the second. After analysing their criteria and results, it is essential to note that the needs of the institution or company best define which LMS is appropriate [3]. These many e-learning platforms, technologies, and tools also create many problems for teachers, administrators, and students. During the COVID-19 pandemic, when online learning is the only form of education, universities must consider that the quality of training must meet all requirements for the best education. Also, teachers and students must know that quality education, besides LMS, really depends on their motivation and goodwill and interaction between teachers and students [4]. Author P. Hill did fascinating research. The research lasted between March 23 and March 30, 2020. This author claims that LMS Canvas usage increased more than 60 % in maximum concurrent users in the past two weeks. LMS D2L had 25 times more activity. Blackboard's Learn LMS logins increased fourfold, and its Collaborate virtual classroom global daily user count increased by 3,600 per cent. LMS Moodle and MoodleCloud have more activities than usual. Also, there was significant growth of Zoom videoconferencing use overall [5]. The Digital Learning Pulse survey published results about students who perceive online learning during the Covid-19 pandemic. This survey includes responses from 772 teaching faculty, 514 academic administrators and 1413 students registered at a U.S. higher education institution for both the fall 2020 and spring 2021 semesters. 73 % of student in this survey responded that they would like to have only online courses in the future. About 68 % of students would be interested in hybrid learning. The almost identical number of students would like to see more usage of technology and an increase in the use of these materials. 57% of students felt positive about online learning in the Covid-19 pandemic [6].

The evaluation of LMS in the Covid-19 pandemic show that different platforms are used for various purposes. Still, the role of LMS now is a highlight, and many kinds of research analyse the efficiency of distance higher education.

## **2.2. About Moodle**

Moodle is an open-source platform designed to ensure educators, administrators and students a single robust, secure and integrated system to produce personalised learning environments. Powering hundreds of thousands of learning environments globally, Moodle is trusted by institutions and organisations large and small; Moodle has more than 213 million users worldwide. Because of that, it is the most widely used learning platform [7]. Over the past year, various authors from different institutions and multiple parts of the world have analysed the increased usage of Moodle platform and its capabilities. In this paragraph, some of these conducted researches will be explored. At the University of Puerto Rico, Pagan and Medina measured the effect of technology acceptance by students and teachers, considering the current conditions of online education at a higher level. The objective of described research was to identify the acceptance of Moodle as a platform use in web-based learning (online learning). The tool used for this research is the questionnaire that consists of 2 parts: the first part consists of demographic data and data about the experience and knowledge of the distance learning system, and the 2nd part consists of 31 questions with a 7-point Likert scale focused on collecting data on the intention and acceptance of technology. The population that participated in this study was composed of teachers and undergraduate students from the University of Puerto Rico. The population consisted of 606 freewill respondents participating in live courses assisted with online technologies and subjects enrolled in courses under the hybrid or online modality. The data that was analysed was described using statistics and multivariate analysis. This study concluded that professors are influenced by Performance expectancy (PE) and the Facilitating conditions (FC) for the use and acceptance of the Moodle. Analysing students, the PE, Social influence (SI), and FC influenced. The results show that there is no significant difference between the sociodemographic data of gender and experience. When they analyse gender, more women than men participated and in both cases, the FC, PE, and SI significantly influence the intention to use Moodle as a distance learning system. However, this does not happen with the Effort expectancy (EE). Regarding the experience, it was proven that for participants who are very competent or competent in using the computer, the factors of FC, PE, and SI impact their level of acceptance and use of Moodle. However, if their knowledge is limited in the use or ability to handle the computer, these determining factors could not be sustained. Suppose the participant does not know how to use the computer. In that case, they have fewer possibilities of using the management platform of learning due to difficulty accessing or limiting knowledge. For the participants in this study, it was significant to have infrastructure support to use the platform effectively. These results imply that the university should continue developing various strategies and methods to facilitate technical support to users. The researchers recommend to expend this research to other higher education institutions and continuing the training in the use of the platform to increase its use considering the external factors of FC, PE and SI so that both teachers and students continue to use the platform as an educational tool for distance learning [8]. Simanjuntak and Perwira from the University of Yogyakarta write about the development of online learning course based on Moodle during and after the covid-19 pandemic. Their research is qualitative descriptive research. This study seeks to study problems related to a bold learning system (online) and disparities in the quality of higher education. The data techniques used in this research were perception and document review. Some of the precepted parts were a catalogue of courses, a catalogue of lecturers, a catalogue of accessible materials, consultation and questions and answers, professor's argument rooms, and academic argument rooms. The software development model uses a prototype model, and the phases in the developing system

went through few recursive steps: Listening to users' output - the instrument in development was a questionnaire filled in by nearly 85 % of UPN "Veteran "Yogyakarta academics at the beginning of the Covid-19 pandemic. Most of the academics wanted the official online learning platform developed by UPN "Veteran"Yogyakarta“ Development and overhaul of the initial appearance - The prototype procedure allows rapid system growth. User input is sufficient to create the initial design of the application. Testing: the system created by the prototype concept is not perfect. The performance of LMS by upgrading to version 3.8 has been effectually carried out. The precedence of LMS Moodle compared to previous versions are the presence and conference platform features such as Zoom, BigBlueButton, and Google classroom, which can be embedded using the concept of URL. This research is more focused on upgrading the Moodle platform itself and student satisfaction analysis [9]. The research conducted by Vasanth and Sumathi compares two E-learning platforms: Moodle and Google classroom. They state similarities and differences between those platforms and challenges that exist in both platforms. The contribution of this research is that this study between Google Classroom and Moodle platforms would make teachers and students aware that there exist free E-learning platforms which can be used for learning. This study also details the platforms mentioned above so that teachers and learners can choose them according to their requirements. This study shows that the implementation of Google Classroom or Moodle E-learning platform would create a virtual classroom that creates an influential teacher and students' communicative environment. However, the availability of computer devices and good bandwidth are significant constraints. Future research can be conducted comparing all features of Google Classroom and Moodle platforms to get more comprehensive and important findings [10].

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

#### **3.1. Clustering method**

One of the most well-known clustering algorithms is the k-means algorithm. Hartigan first described it, and the implementation in the Fortran programming language was described by the same author three years later [11] [12]. The algorithm works by dividing a set of  $n$  data points in multidimensional space with a given number of clusters by determining the centres and minimising the mean square distance from the nearest centre. The number of centres is equal to the number of clusters. Since the introduction of the algorithm, several authors have described methods for improving some characteristics of the algorithm. Alsabti et al. presented an improved algorithm that was in some examples twice as fast as the original algorithm [13]. Kanungo et al. improved the implementation of k-means algorithms and called it the filtering algorithm. Acceleration is achieved so that the kd-tree is built only once initially, and the algorithm is exceptionally efficient if the clusters are better separated [14]. Likas et al. proposed a second approach for the more efficient operation of the algorithm. It consists of an incremental approach in which cluster centres are dynamically added in the search procedure [15]. Na et al. also presented how the algorithm can be accelerated and is based on collecting data into a simple data structure for each iteration and based on this data. The whole procedure can be accelerated and achieve greater accuracy [16]. The literature often states that the lack of a k-means algorithm is a requirement that the number of clusters must be determined before applying the algorithm itself. Pharm et al. listed the eight methods used by other authors in their paper to define a number of clusters, while Celebi et al. also listed eight methods [17] [18]. Interestingly, the authors do not list the same methods, although their total number is the same. Kodinariya et al. analysed six methods in their paper, and Yuan et al. only four methods [19] [20]. The last four listed papers are arranged by year of publication, and the previous two mention the elbow method for defining the number of clusters. In older papers, this method is not mentioned. The elbow method uses the squares of the distances between the centroids of the cluster and the individual points. The sum of squared errors is used as a performance indicator.

The largest value is for two clusters, and as the number of clusters increases, the sum of the squares of the errors decreases. The most significant drop in value indicates the actual number of clusters. The elbow method belongs to the graphic methods, and in this group, there is also the Calinski Harabaz score, which is easier to use. This value is the ratio of the dispersion between and within the cluster, as shown in equation 1.

$$s(k) = \frac{\text{Tr}(B_k)}{\text{Tr}(W_k)} \times \frac{N - k}{k - 1}$$

The value of  $B_k$  is the dispersion matrix between the clusters, and  $W_k$  is the dispersion matrix within the cluster, while  $N$  is the number of points and  $k$  is the number of clusters. The number of clusters is most optimal when this value is highest. The Calinski Harabaz score was used in this paper to define the number of clusters [21].

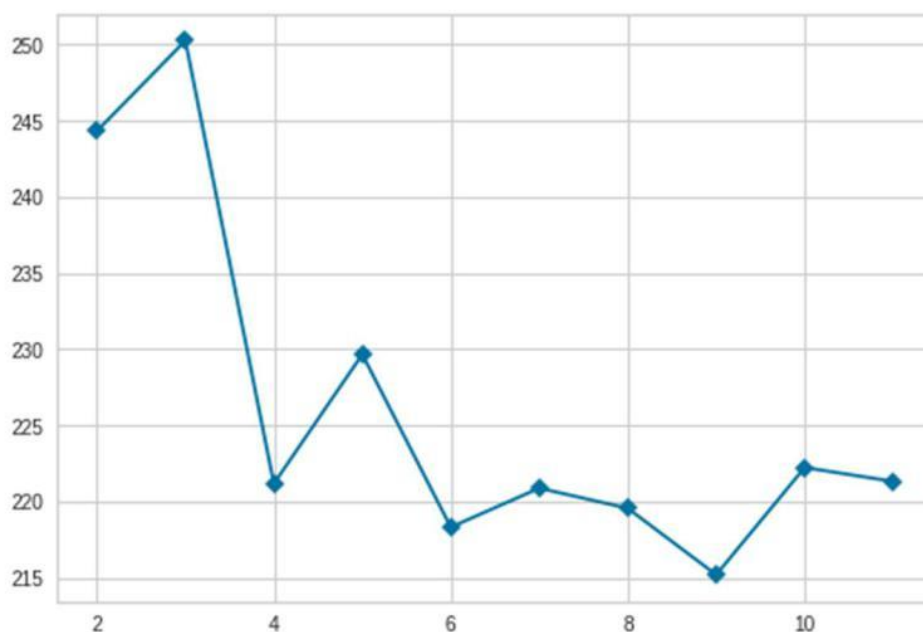
### 3.2. Processed data

This paper aims to determine what changes have taken place regarding the course structure on the Moodle distance learning system used at the Faculty of Agriculture in Zagreb. As mentioned before, the administrator of the LMS system at the Faculty of Agriculture in Zagreb generated two reports (Excel format) in which many data are available. One report covered courses available to students in the winter semester of 2019/2020, i.e. before the covid-19 pandemic. The second report covers courses available to students in the winter semester of 2020/2021, meaning a period when the pandemic was still present in the world. All columns except the course name (first column) and the number of individual elements used within the course on the LMS were deleted from the above data. The elements that were available to teachers when creating the course are the following: Book, Selection, Poll, Map, Dictionary, Label, Lesson, Page, File, Link, Wiki, Smart map, Game, Database, GeoGebra, Presence, External tools, Dialogue, Forum, Active quiz, list, Interactive content, Planner, SCORM package, 3D model viewer, Student map, Task, Chat, Test, Workshop and Virtual programming laboratory. The described procedure yielded two tables with 32 columns each. The number of rows depended on the number of courses. It was 129 in the academic year 2019/2020 and 131 in the academic year 2020/2021. The tables were transferred to the Google Collaborative service, and k-means cluster analysis was performed using the Python programming language. The number of clusters was defined using the previously described method with the Calinski Harabaz score.

## 4. RESULTS

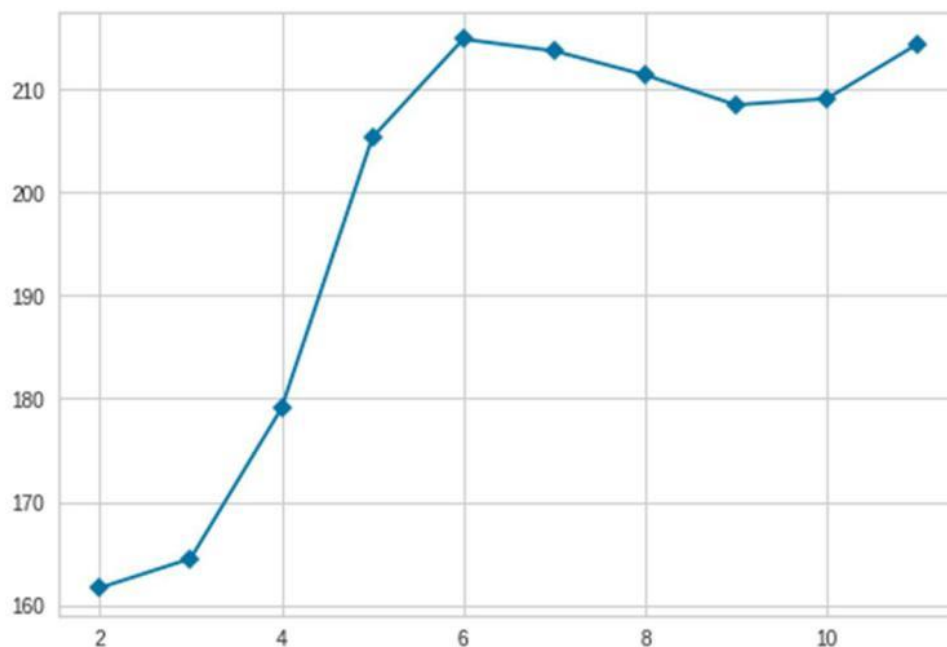
Figure 1 shows the Calinski Harabaz score depending on the number of clusters for the academic year 2019/2020. the analysis was done for ten different values, from two to 11. The Calinski Harabaz score is the largest for 3 clusters, and further research was done with this value.

*Figure following on the next page*



*Figure 1: A Calinski Harabaz score depending on the number of clusters for the academic year 2019/2020*

Figure 2 shows the Calinski Harabaz score depending on the number of clusters for the academic year 2020/2021. as in the previous case, the analysis was done for ten different values, from two to 11. Calinski Harabaz score is the largest for 6 clusters, and further research was done with this value.



*Figure 2: A Calinski Harabaz score depends on the number of clusters for the academic year 2020/2021*

After defining the number of clusters, the division into clusters by the k-means algorithm was performed. Results for the academic year 2019.2020. are shown in Figure 3, and the number of courses belonging to each cluster is shown as a percentage.

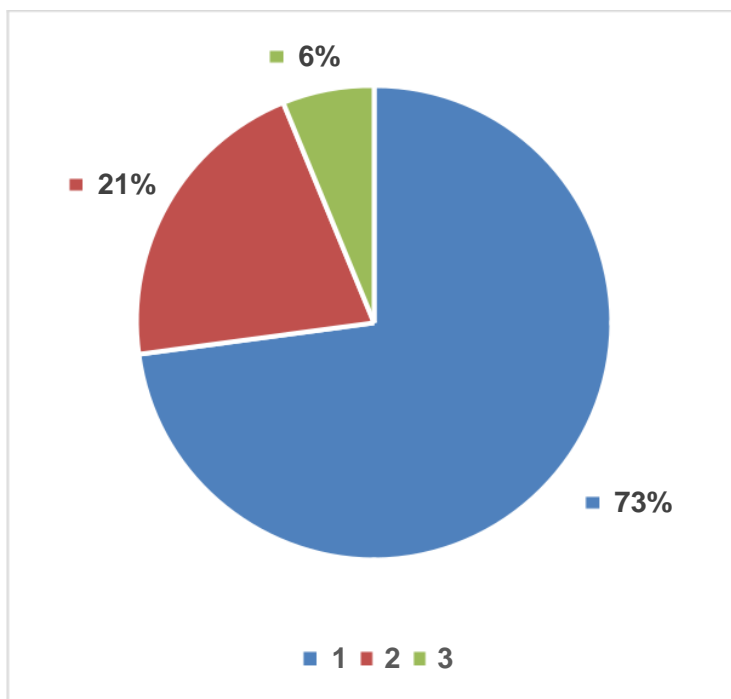


Figure 3: The percentage of courses belonging to each cluster for the academic year 2019/2020

Results for the academic year 2020/2021 are shown in Figure 4. The number of courses belonging to each cluster is shown as a percentage.

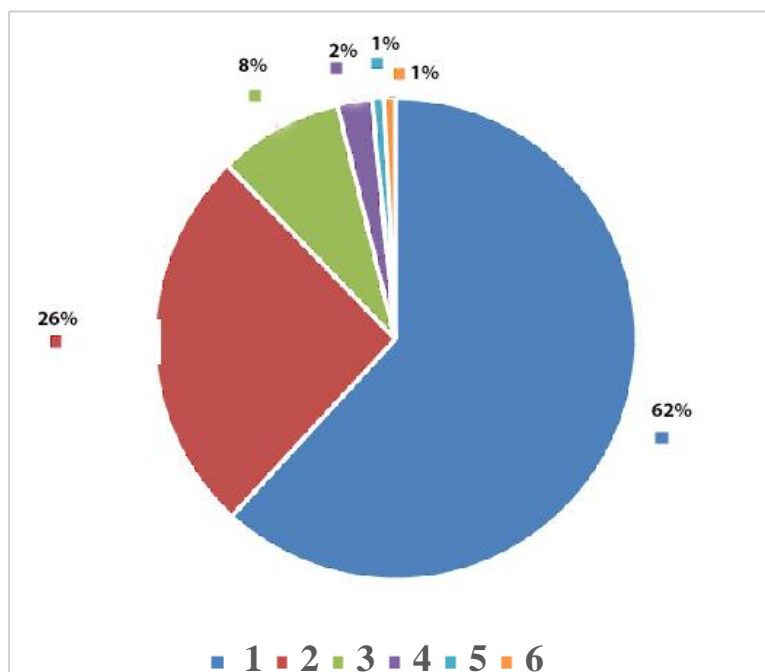


Figure 4: The percentage of courses belonging to each cluster for the academic year 2020/2021

The number of courses belonging to each cluster in absolute amount is shown in Table 1 for both winter semesters in the academic years 2019/2020 and 2020/2021.



CLUSTER	2019/2020	2020/2021
1	94	81
2	27	34
3	8	11
4	-	3
5	-	1
6	-	1

*Table 1: Table captions should be placed above the tables*

#### 4.1. Description of individual clusters

After the courses are divided into clusters, from a more careful analysis of the courses in the cluster, conclusions can be drawn about the properties of individual clusters. In the academic year 2019/2020, the courses were divided into three clusters. Let's start with the description. In the first cluster, 73% of courses can be found, i.e. 94 in absolute amount, and it is evident that these are courses with little or no activity. These courses usually have no content, with a few exceptions. What is specific for practically all courses from the first cluster is that the number of student registrations to Moodle divided by the number of enrolled students in 93% of cases is less than 1. This means that the student registered on average less than once during the semester. The average value of registrations for all courses of the first cluster is 0,39. The second cluster includes 27 courses or 21% of all courses. These are courses containing some content, and each course has a double-digit number of available files for students. In addition, more than half of the courses in the second cluster include tests, and the average ratio of the number of student approaches to the total number of enrolled students in that cluster is 2,36. The third cluster includes eight courses or 6% of courses. These are courses that are richer in content than the courses of the second cluster. As a rule, about 50 files are available to students in these courses, and the same as in the second cluster course, half of them include tests. The average ratio of the number of student approaches to the total number of enrolled students in that cluster is 2,74. As expected, there was a change in the winter semester of the 2020/2021 academic year. Lecturers at the faculty were forced to distribute content through the LMS because classes were conducted entirely online. Given that there were no strict regulations and that lecturers could choose how to distribute the material themselves, not everyone chose Moodle as a platform. As noted, the courses in the winter semester 2020/2021 are divided into six clusters. The first cluster in this academic year has the same properties as in the previous academic year. Nevertheless, the number of courses decreased to 81 and 62% of all courses, respectively. The apparent decline in the number of content-poor or completely inactive courses fell by about ten per cent. Interestingly, the number of applications for first cluster courses is an average of 10,9 registrations per enrolled student. The second cluster includes 34 courses or 26%. This cluster is similar to the second cluster in the last academic year, and these are courses with ten to twenty files, and a little more than a third of these courses enable testing. The average ratio of the number of student registrations and the total number of enrolled students in that cluster is 34,67. The third cluster includes 11 courses or 8%. This cluster is similar to the third cluster in the last academic year as well. These are courses that contain between 30 and 60 files, and more than half of them include tests. The average ratio of the number of student registrations and the total number of enrolled students in this cluster is 51,77. The fourth cluster consists of only three courses, which the algorithm recognised by certain specifics. These courses have between 18 and 42 files and over 20 links to other content on the Internet. In addition, they include tests and assignments. The average ratio of the number of student registrations and the total number of enrolled students in that cluster is 34,72. The last two clusters consist of only one course each. The fifth cluster is a course that has a considerable number of files (107) and includes links, assignments, and tests.

The average ratio of the number of student approaches and the total number of enrolled students in that course is 42,54. The sixth cluster is a course that differs from the others by a considerable number of links (48) and includes many files (57). It is a course that offers both tests and assignments. The average ratio of the number of student approaches and the total number of enrolled students in that course is 51,41.

## 5. DISCUSSION AND CONCLUSION

The raw data taken from the Moodle system for the said two academic years did not initially bring us knowledge, but the two tables of several thousand numbers, most of which are zeros, were analysed using the k-means clustering algorithm. In the 2019/2020 academic year, the courses have been divided into three clusters. The largest included almost three-quarters of the courses, which are lacking in content or completely inactive. As many as 60 courses did not have a single enrolled student, and they were completely inactive. The second and third clusters included courses that were active and used by students. The courses of the third cluster were richer in content than the courses of the second cluster. In the academic year 2020/2021, the courses have been divided into six clusters. Interestingly, the first three clusters in terms of course properties are practically the same as the clusters from the previous academic year. Fortunately, in the first cluster, the number of courses decreased by about ten per cent. There were five courses in the fourth, fifth and sixth clusters, and the analysis of the content shows that the lecturers who edited the courses made an effort and created content-rich courses. An interesting piece of data is the average number of students accessing the course on the LMS system divided by the number of enrolled students. In the 2019/2020 academic year, that number was 0,39 for the first cluster. It was 2,36 for the second and 2,74 for the third. Considering the number of students enrolled, this is extremely small, i.e. it can be seen that Moodle was not used more seriously. In the 2020/2021 academic year, the situation changed drastically. The ratio rose to 10,9 for the first cluster, a jump of almost 2800%. As for the other comparable clusters, referring to the second and third clusters, that jump was also significant. For the second cluster, it was 34,67, and for the third, it was 51,77. This growth is expressed in percentages, almost 1500% for the second cluster and nearly 1900% for the third cluster. One fact needs to be emphasised. It is about the mentioned average number of students accessing the course on the LMS system concerning the number of enrolled students for the first cluster in the academic year 2020/2021. The growth of 2800% can be seen, and these are inactive courses and courses that are extremely poor in content. It is evident that the students applied for the courses from the first cluster several times, but they did not find the content. In other words, students expected lecturers to distribute the content via Moodle LMS. The described method of applying the k-means algorithm for course transformation analysis as seen brings new knowledge about the use of Moodle LMS by a higher education institution. With the help of clustering, some phenomena are noticed that the institution's management should react to if they care about the effective use of the LMS systems. Also, clustering singled out courses that are different from others and can probably be presented as examples of good practice. The described method could give even better results if the data on the registration of students and lecturers in the LMS system were entered as input variables, an extension of the model that

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# IMPORTANCE OF ORGANIZATIONAL CULTURE AND QUALITY CULTURE IN BUILDING AN INTEGRATED MANAGEMENT SYSTEM

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## **ABSTRACT**

*The environment in which most businesses are operating today is dynamic, forcing them to make continuous adjustments to the strategy they build their competitive advantage on or to find a solution for building sustainable competitiveness in the integration of the management systems. There are many advantages management integration i.e., building of a complex composition of the structural elements, requirements, rules and mechanisms can offer to a company, but, at the same time, the process of creating an effective integrated management system is quite complex. Literature lists a number of factors that influence the development of an integrated management system. In order for an integrated management system to be successfully implemented, its values have to be coordinated with the values ingrained in the organizational culture, which often results in the need for the organizational culture to be transformed. Quality culture represents a subset of organizational culture and as such implies the accepted and integrated quality patterns. Therefore, this paper focuses on two internal factors for building integrated management system: organizational culture and a subset of organizational culture – the quality culture.*

**Keywords:** *integrated management system, organizational culture, quality culture*

## **1. INTRODUCTION**

Modern-day businesses are faced with the challenging dynamics of highly competitive markets (Hernandez-Vivanco, Cruz-Cázares and Bernardo, 2018) and in order to stay competitive, they need to adjust and consider implementing integrated management systems (Mohammad et al, 2006). Establishing an integrated management system is the road towards successful business, and in doing so, companies can hope for many benefits. There is a possibility that many companies are not even aware of those benefits and standard management practices. This process of integration brings certain synergy i.e., the optimization of resources, unification of audit and increased efficiency (Talaptra and Santos, 2019: 86). Businesses that strive to achieve their goals choose integration for unifying these strategies and activities so that all parts of the company connect and communicate in the same language (Rahman, Zahid & Muhammad, 2022). Organizations use integrated management systems to transform resources into products or services that are in line with their goals. In addition, it is a means of satisfying various other requirements set by the stakeholders, such as quality, health, safety, environmental, security, ethical requirements etc. (Olaru et al, 2014). Integrated management systems have to be developed while keeping sustainability and its implementation possibilities, and the existing organisational culture in mind (Mežinska, Lapina and Mazais, 2015). Literature offers many different divisions regarding the internal and external factors of building an integrated management system. Zeng, Shi and Lou (2007) list the following internal factors for building integrated management systems: human resources, organizational structure, organizational culture, comprehension and perception, while the external factors include the technical management, certification bodies, all the members included in the activities, buyers and institutional environment. The focus of this paper is directed towards both organizational and quality culture as two important factors for building integrated management systems, while, at the same time, representing a huge challenge to managers because of their complexity

(Wilkinson & Dale, 2001: 319). Following the introductory part, the second section of the paper analyses organizational culture in the context of building an integrated management system. The third section focuses on quality culture within the implementation of an integrated management system. The concluding remarks are presented in the fourth and final section.

## 2. ORGANIZATIONAL CULTURE

Proper organizational culture is an assumption, but also the result of the functioning of human potential (Jambrek and Penić, 2008: 1193). Žugaj et al. (2004: 10) define organizational culture as the specific mode of behaviour and the lifestyle of the organisation and the groups within the organization. The concept of organizational culture has been defined by at least two determinants (Drljača, 2005):

- 1) Many terms used loosely in literature as synonyms for organizational culture and
- 2) Many different definitions resulting from the fact that the concept of organizational culture is rather “young”.

Schein (1996: 231) sees organizational culture as the most powerful and stable force operating within a company. Organizational culture is actually a phenomenon imbedded in its employees, relating to life and work in the organization, relations between the employees, the systems of values and understanding. Organizational culture is the basis for the image of the company, but also the basis for creating certain image that will enable the organisation to become recognizable and accepted on the market. Adequately implemented and fostered organizational culture will bring stability and recognizability to the organization (Kiss, 2007: 384). Organizational culture is a system of values, understanding, beliefs, ethics, lifestyles, personalities and characteristics assigned to a company (Sikavica, 1999: 596). Organizational culture represents a set of common values, beliefs and assumptions that shape the behaviour and attitudes of the members of the organization. It has huge impact on the functioning of the entire system because it influences the behaviour and attitudes of their employees. It can therefore be concluded that it implies the personality of the organization and it is why it plays the key role in building the organization's readiness to successfully implement certain changes. Most importantly, organizational culture enables management of the organization because its elements can be rearranged and adjusted to the selected strategies (Belak and Ušljebrka, 2014: 87-88). Organizational culture is an extremely important segment of an organization and its functioning, and it needs special attention since it is essential for the employment of the strategies and achieving business success (Pauković, n.d.). Concerning management and organization, culture is usually referred to as internal (organisational/corporate culture) or external (national culture) (Asif et al, 2009).

Fayol (1949) defines fourteen principles of managing an organization:

- 1) Specialization in designing work for the employees;
- 2) Authority;
- 3) Formalized processes of control;
- 4) Reporting to only one person in charge;
- 5) There is only one plan and one person in charge;
- 6) Subordination of single interests;
- 7) Appropriate rewarding system;
- 8) Centralized decision-making;
- 9) Hierarchical and centralized management structure;
- 10) Internal information systems for control purposes;
- 11) Equality;
- 12) Training and retaining the employees;

- 13) Managers develop and implement new ideas and
- 14) Creating strong interest among the employees.

It is the fourteenth principle that truly implies the established organizational structure. It is important to note that organizational culture is developed within the organization, but manifested inside, as well as on the outside. Since organizations differ regarding their specific values, organizational cultures within the same society will differ considerably (Jambrek and Penić, 2009: 1194). Organizational culture is directly connected with the national culture. Therefore, businesses cannot consider developing organizational cultures that are not in line with the norms imbedded in the national culture (Lagrosen, 2003). Kiss (2007: 385) states that organizational culture exists on two levels:

- **The visible.** Refers to the signs that are accessible to the environment i.e. those that exist because of the environment: the symbols, slogans and the dress code of the employees. As such, the status symbols speak of the social status of the individual, the group or the entire company in comparison to others. The examples of status symbols are types of business cars, bonuses for employees, macro and micro locations etc.
- **The invisible.** It is found inside the organization, in the form of the signs that are difficult to recognize and bear more value to the employees. The invisible level implies the attitudes and feelings of the employees, mutual values and beliefs. Bahtijarević-Šiber et al. (1991) include the company's philosophy, strong orientation toward the customer, management through goals, openness to changes, teamwork, employees participating in the management, collaborative problem-solving, sense of belonging etc.

Belak and Ušljebrka (2014: 80) point out that organizational culture is a key factor for the successful implementation of organizational changes. The environments in which businesses operate today are increasingly dynamic, so establishing organizational culture has never been more important. Organizational culture plays an important role in influencing the attitudes, the beliefs and the behaviour of the employees, and a well-established organizational culture will enable the changes to be easily implemented and receive very little or no resistance from employees. Brčić (2002: 1049) suggests that the importance of organizational culture is evident in the fact that it reduces ambiguity and suggests steps for solving a task, which is of huge importance for the business world. However, one should not ignore the fact that organizational culture influences the inertia of the organisation, because the better the inertia, the better the organisation will be able to respond to the changes in the environment. Organizational culture represents the personality of the organization, together with the system of values and norms established in the organization that interact with the formal organizational structure. In fact, it also represents the environment of the organization which is the result of the impact of the employees who had worked for the organization, the current employees and the immediate environment that, to some extent, influences the behaviour inside the organization. It is of extreme importance because it impacts the efficiency of the entire business endeavours and the mode of the managerial function (Zimo, 04.10.2011).

*Table following on the next page*

<b>ENVIRONMENT A</b>	<b>ENVIRONMENT B</b>
<b>PLANNING</b>	<b>PLANNING</b>
Objectives are set autocratically. Centralized decision-making.	Objectives are set through collaboration. Decentralized decision-making.
<b>ORGANIZATION</b>	<b>ORGANIZATION</b>
Authority is centralized. Narrow authority.	Authority is decentralized. Broad authority.
<b>RECRUITMENT OF STAFF</b>	<b>RECRUITMENT OF STAFF</b>
Based on the friendships. Training focuses on narrow areas.	Based on excellence. Training focuses on many functional areas.
<b>MANAGEMENT</b>	<b>MANAGEMENT</b>
Direct management. Communication most often going from the top downwards.	Participation management. Communication in all directions: downwards, upwards, diagonally...
<b>CONTROL</b>	<b>CONTROL</b>
The superior managers oversee the control. Financial criteria are in the focus.	Considerable amount of self-controlling. Multiple criteria are considered.

*Table 1: Illustrations of organizational culture and managerial practices  
(Source: Kiss (2007). Ljudski faktor-najvažniji element organizacijske strukture, Ekonomija)*

It is important to note that the approaches to organizational culture for each of the managerial functions (planning, organization, recruitment of staff, management and control) can be different, as presented in Table 1. Carroll and Wake (1993: 63-64) state that organizational culture falls under the influence of many different factors, like the history of the company, the location, the qualifications of the employees, the size and objectives, the environment etc. Organizational culture is made up of many different elements, from the physical objects through the norms, beliefs, attitudes, rituals, ceremonies, values and basic assumptions (Pauković, n.d.). If we are to look deeper into the data displayed in Table 1, we can conclude that environment A is centralized, with very little power given to the employees and the relations are mostly burdened with dissatisfaction and silent disapproval among the staff. On the other hand, environment B offers more participation for the employees and more freedom in decision-making. This is then in accordance with a harmonious and pleasant organisational culture (Kiss, 2007: 386).

*Figure following on the next page*

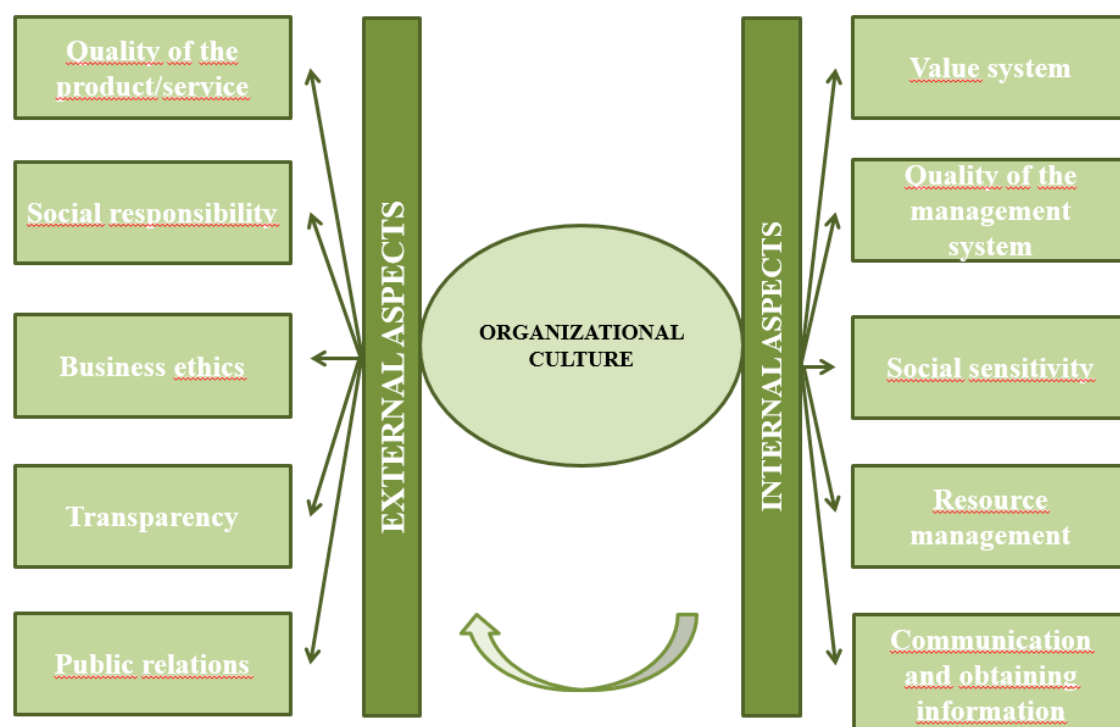


Figure 1: Internal and external aspects of organizational culture

(Source: author according to Drljača, M. (2005). *Kultura kvalitete i organizacije*. Zbornik radova 6. Hrvatske konferencije o kvaliteti.)

Since organizational culture is established within the organization, it is manifested inside and on the outside. Therefore, both internal and external aspects of organizational culture are outlined, representing the criteria for its evaluation. In order to achieve the desired level of quality of the external factors, the company needs to adequately build the internal aspects. It is important to note that the external aspects of organizational culture are mostly stipulated by the level of quality of the internal aspects, but they can also be influenced by various external effects (Drljača, 2005). The aspects of organizational culture are presented in Picture 1. Literature offers many divisions of organizational culture. Sikavica and Novak (1999: 601) divided it according to the significance it carries for the company:

- 1) **Dominant culture and subculture.** Dominant culture is the one most employees support and accept as a unique set of common actions, values and beliefs.
- 2) **Strong culture and weak culture.** Strong culture exists if the culture has been developed at the large scale. It implies a system of informal rules according to which the people in the organization behave, but also supports the employees to feel better about what they do. On the other hand, weak culture is not given the support by the members of the organization and there is no close collaboration among the employees.
- 3) **Well-defined culture and ambiguous culture.** The culture that is recognized through its symbols is a well-defined culture, while the ambiguous culture is not easily identified, and it is a characteristic of those organisations where changes in the management are frequent.
- 4) **Excellent culture and bad culture.** Excellent culture implies order within the organisation and the employees with a true sense of belonging, while bad culture implies the crisis management and tense, uncomfortable atmosphere.
- 5) **Stable culture and adaptive culture.** Stable culture exists within those organisations that operate in stable environments, while adjustable culture relates to those swimming in more shifting environments. Stable culture focuses on the internal factors, as opposed to adaptive (changing) culture that is directed towards the external environment (Sikavica, 2011: 739).



- 6) **Participatory culture and autocratic culture.** Regarding the participation that exists among the employees, there is participatory and autocratic culture. Participatory or open culture is characterized by the trust in the employees, methodical and supporting management, joint problem-solving, autonomy for the employees, ambitious goals and sharing and availability of the information. Autocratic culture is stiff, there is a narrow span of control, focus on an individual and strict individual responsibility (Sikavica, 2011: 740).

Schein (1996: 236-232) divides organizational culture according to the specific groups of professions:

- **culture connected to the “operators”** i.e., the culture of the employees in charge of the realisation of the main objective of the company,
- **culture connected to the engineers** and other experts, responsible for maintaining the basic work technology at the company and
- **lead management culture.**

Handy (1989) differentiates four basic types of organizational culture:

- 1) **The culture of the role.** Here, the impact of an individual is measured by their role in the company, so this culture type is generally structured in the form of bureaucracy.
- 2) **The culture of power.** It is characterized by the great influence from the founder or the owner and most often exists in smaller businesses. Formal rules and procedures are reduced to minimum.
- 3) **The culture of the individual.** The basic characteristic is that the company operates with the goal of bringing benefit to its employees. Therefore, all the members of the organisation use the common infrastructure to achieve their personal goals (e.g., the consulting companies).
- 4) **The culture of the task.** The organisation within a company is based on tasks or projects which represent the basis for the conceptualization and grouping of the employees.

In today's business environment, organisational culture is becoming more and more relevant, if not the most important component of a company's efficiency. That is why it is extremely important that the management develops its specific, unique culture which could then always be associated with the specific organisation (Sikavica, 2011: 755). Business organisations should establish cultures that are unique and impossible to imitate. In line with that, Gross and Shichmann (1987) propose an adequate model for establishing a cohesive organisational culture in the form of the so-called HOME model as represented in Picture 2. The model is an acronym formed from the words: history, openness, membership and exchange of membership. In building a cohesive culture, this model starts with (Gross and Shichman, 1987):

- The need to develop the feeling for the tradition, more precisely for the history (through describing the history and talking about role models etc.).
- The need for developing the sense of togetherness within the organisation through developing an adequate system of communication.
- The need for fostering the sense for membership i.e., measures for developing employees' feeling of belonging to the organisation.
- The need for developing the sense for the change of membership.

*Figure following on the next page*

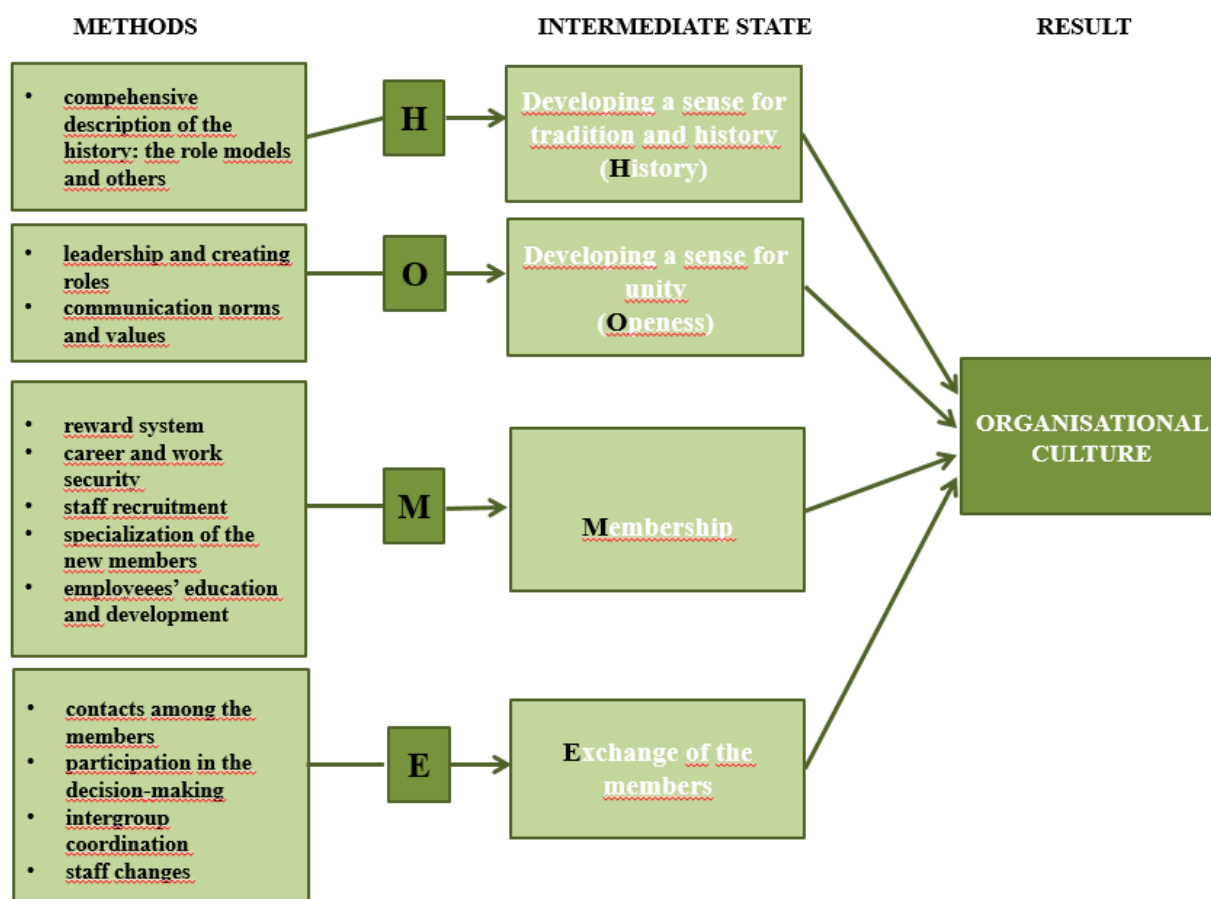


Figure 2: HOME model

(Source: Gross, W., Shichman, S. (1987). *How to Grow an Organisational Culture, Personnel.*)

Cultural transformation is very important. The reason for that may lie in the core values of the integrated management system. Those values encompass customer satisfaction, participation of employees, education and training, fact-based decision making, continuous improvement, employees' health and safety, commitment of the lead management and the realisation of social responsibilities. Any organisation that wishes to successfully implement an integrated management system has to immerse these values into the organisational structure. This is not an easy task because the values are grounded in the organisational culture and, to effectively implement an integrated management system, the organisation needs to conduct cultural transformation. The transformation of the culture is further characterised by different subcultures within an organisational culture that supports learning and the integration of the management system. The scope of the management system and the culture within the organisation are linked to each other. In line with that, the differences that occur in the scope influence the creation of the sub-cultures (Asif et al., 2009). Once the culture is established, it is important to conduct analyses regularly to see if there are any changes needed to be made because today's business environment is such that often requires changes being made.

### 3. QUALITY CULTURE

Introducing a system of quality in the organisation is inevitably accompanied by cultural changes i.e., the focus on quality implies preparedness to change the way of operating (Drljača, 2005). It is the quality management system that enables the company to direct its endeavours towards having a qualified staff and building quality culture.

*„Quality culture is a narrow term belonging to the broader concept of organisational culture, and it is a significant factor within organisational culture, implying the integration of the principles of the Total Quality Management into the organisational culture" (Drljača, 2005).*

*„Quality culture refers to a set of shared, accepted, and integrated patterns of quality (often called principles of quality) to be found in the organizational cultures and the management systems of institutions. Quality culture may also be defined as the ability of institution or individual programme to develop the quality assurance system in its everyday work and thus achieve continuous quality assurance, not relying exclusively on periodic evaluation. Awareness of and commitment to the quality of higher education, in conjunction with a solid culture of evidence and with the efficient management of this quality (through quality assurance procedures) are the ingredients of a quality culture. As quality elements change and evolve over time, so must the integrated system of quality supportive attitudes and arrangements (quality culture) change to support new quality paradigms in higher education." (Agency for science and higher education, n.d.).*

Quality culture is a set of acquired common principles, values and norms all the employees inside the company adhere to, together with others included in the operations (Krivokapić, 2015). Quality culture is a mind-set, a set of beliefs, experiences and traditions related to quality of the company (Lazibat and Matić, 2000: 1346). Management principles that need to be integrated are the following: orientation towards the customers, leadership, participation of the employees, the process approach, the system approach to management, continuous improvement, fact-based decisions and a reciprocal relationship with the suppliers. Quality culture represents the instrument for managing business results (Drljača, 2005). Quality culture begins with the leadership that understands and believes in the implications of the methodical approach but can also recognize the need for servicing the customers in order to achieve success. The result of this understanding from the leadership is the culture where healthy environment and customer satisfaction are created as a common effort. This culture naturally accentuates the need for continuous improvement made to the process, and results in a pleasant working atmosphere, happy customers and growing business (El Safty, 30.08.2012). The quality culture of an organisation can be seen as a significant part of its organizational culture (Wolniak and Olkiewicz, 2019).

QUALITY CULTURE FEATURES
employees' awareness of the importance of quality and dealing with the problems connected to quality
knowledge and competence regarding quality (acquired by training and instructing personnel and through independent learning)
commitment of management and employees to various activities aimed at improving and maintaining quality within the organization
monitoring, controlling and auditing the quality level in the organization, undertaking corrective and preventive actions
motivation to maintain the culture of quality - assigning tasks and the bonus and disciplinary systems
responsibility for quality activities (through formal assignments and descriptions of duties and their understanding by employees)

*Table 2: Features of quality culture*

*(Source: Wolniak and Olkiewicz, 2019). The relations between safety culture and quality culture, System Safety: Human-Technical Facility-Environment)*

Luburić (2017) points out that key components of organisational culture are quality culture and risk culture. Quality culture implies a set of adopted principles, values and norms whose features have been accepted by everyone included in the management. In addition, quality culture is the driver and the deciding factor for the quality management, education management and many others. Communication, participation and mutual trust and respect, together with understanding of the common goals and tasks make up the quality culture (Luburić, 2017). Since quality is one of the core values fostered by companies, the link between organisational culture and quality culture is most often examined through looking at quality culture as a subset of organizational culture (Krivokapić, 2015). Quality culture implies proactive functioning of all the staff within the organisation and work on the improvement of all the activities and all its sections valuable for stimulating creativity and innovation, which completely differs from the mechanical and managerial processes for improving the level of quality (Lučin, 2007: 8). If the implementation of a quality culture is conducted effectively, the organisation will certainly reap the benefits and adapt better to the changing markets, meet customers' requirements, provide better services, and promote a good corporate image (Ionescu et al, 2018). One of the main features of the organisation with an established quality culture is that the employees can freely assess situations that do not belong to those defined with the existing set of norms. Another crucial feature is providing adequate leadership. Generally, if a quality culture has been introduced, the employees do not have that much room for creativity (Srinivasan and Kurey, 2014). The barriers that typically emerge during the implementation of a quality culture are (Kelly, 1997: 127-128):

- 1) **Short-term measures.** If the focus is placed on short-term financial results, the endeavours to build a quality system will be stifled.
- 2) **Job insecurity.** Current experience suggests that quality management system operates better in companies that have opted for occupational retraining instead of layoffs.
- 3) **Poor work design.** During the building of quality culture employees should be included in the design of their own work methods.
- 4) **Poor leadership.** If the top management is not actively involved in creating the quality culture, it will not happen at all.
- 5) **lack of long-term commitment to quality.**

Those organisations that strive to incorporate quality culture into their activities need to bear in mind that, in order to change the culture, the employees have to (Heard, 2009):

- 1) Have a standard definition of the concept of quality that is in line with the industry they belong to and the products/services they offer.
- 2) Include themselves in the training to acquire knowledge on the ways in which quality influences the life of those they work for, but their own lives as well.
- 3) Be active participants and contribute to the change.

When starting the journey towards building a quality culture, it is necessary to ascertain what quality means to your company. Then, you should check whether it is in line with the basic mission and values of the company. The employees should also be kept in the loop of what the managers deem most important core values. Finally, it is crucial to ensure adequate training for all the employees. The company cannot establish a quality culture without providing all the staff with the same information. A friendly and pleasant atmosphere is crucial for the employees to realize the importance of the implementation of quality and the significance of the sustainability of the entire process (Heard, 2009). Previous experience in practice shows that successful techniques for building quality culture are showing commitment; creating connections with the buyers; allowing the employees to handle the problems themselves;

appropriate use of the symbols; involvement of the employees at all levels; orientation to the inside of the company; fostering team work; adopting the language of quality; removing the narrow-mindedness and stimulating the importance of the employees being involved in the business processes (Kelly, 1997: 128-133). El Safty (30.08.2012) starts off with the thesis that successful approach to developing a quality culture should be directed towards the five factors:

- 1) **Adopting the “We are all in this together” attitude.** A company is not just the material assets and employees, but the suppliers and clients too, and the employees should be made aware of this.
- 2) **Maintaining open communication is vital.** The people should listen to each other, and such culture permeated with open and honest communication will enable all the involved parties to function well.
- 3) **Information has to be available.** Access to information is crucial for the work of each individual. In line with that, managers need to support the staff to share information, especially those related to the strategic objectives because it is the only way to achieve long-term success.
- 4) **Focus on the processes.** The organisation should nurture the attitude not to blame the employee, but the process. So, if any problems arise, the solution should be looked for in improving the processes.
- 5) **There is neither success nor failure but only the learning experience.** It is important to emphasize that there is never certainty about a process becoming a success or failure, but it is important to learn that you try to do your best at the certain point in time based on the experience and the information at hand.

An effective way for building and advancing quality culture can be accomplished with the management initiative and the inclusion and the employees' commitment to quality. In order to implement a quality culture, it is necessary to continuously apply the cycle: analysis, dialogue and development, and the key elements of quality culture include leadership, user-oriented activities, human potentials management, process management, continuous upgrades and decision making based on facts (Krivokapić, 2015).

#### 4. CONCLUSION

In today's turbulent environment, it is possible to achieve business success only in conditions of a systemic approach to business processes. Following to that, the development of a management system and the integration of environmental protection, quality and safety into one single system has become an important factor in achieving competitiveness. An integrated management system can be the basis for building business excellence by enabling the organisation to gradually make a transition from consumer-oriented towards focusing on all those included in the business processes. Management system integration offers many benefits to the organisation. However, the process of integration should be taken seriously and done methodically. There are many factors that influence the building of an integrated management system, mostly grouped into the internal and external factors. Any organisation, before beginning the process of management system integration should carry out the analysis of the current state and then decide whether there is a need for transformation of certain sections. Previous research has singled out some of the extremely important internal factors, such as organisational culture and quality culture. The effectiveness of the management system integration is closely related to organisational culture because it is often necessary to transform the organisational culture to align its values with the values of the integrated management system. A well-established organisational culture allows for the changes to happen smoothly. Another important subset of organisational culture is quality culture that is not just the engine, but the factor that directs various subtypes of the management, e.g., the quality management.

To be able to implement good quality culture, the organisation has to assure that all the employees have access to the same information. To carry out a successful integration of the management system, much care should be given to the values of the organisational culture and, if necessary, be ready to introduce some changes to be sure of the effectiveness of the integrated management system.

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## THE ROLE OF INFORMATION SOURCES IN THE CHOICE OF THE HIGHER EDUCATION INSTITUTION (IES) BY THEIR FUTURE STUDENTS

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### ABSTRACT

*Students who apply to higher education are no longer considered mere users; they are consumers and a more demanding generation. They grew up familiar with technology, using platforms to connect and interact with the world, the so-called Generation Z. The purpose of this study is to identify the information sources used in HEI/course selection by its future students. A qualitative methodology was adopted, with semi-structured interviews. The results show that the websites of the DGES (Direção Geral do Ensino Superior de Portugal) and the HEI's website are the most referenced sources by students and parents. The information they most look for are the averages (the entrance grade of the last-placed student), the location, course offers, prestige of the institution and entrance exams. Therefore, this study may enrich the higher education literature. HEIs may have a clearer notion of what information to provide and in what channels to attract more students and strengthen their institutional positioning in an increasingly competitive and technological market. By attracting more students, HEIs create more value and become more competitive.*

**Keywords:** Higher Education, Information Sources, Relevant Information, Services

### 1. INTRODUCTION

Access to the job market is very demanding. Employers are more rigorous in recruiting. They demand more specialization, seek to attract talent, and are advised to adapt jobs around Generation Z's unique skills (Kyrrousi et al., 2022). By joining a Higher Education Institution (HEI) these students will undoubtedly deepen their knowledge and grow professionally. So, Higher education is an "investment" that will bring a return on employability (Tavares, 2017). Accordingly, the choice of HEI to attend can decide a young person's future (Carvalho et al., 2020), being a long-term personal investment with high switching costs, making this process unique and particularly risky (Le et al., 2020). Knowing how students of this digital generation choose a particular HEI/course, and the information sources they use during the decision-making process is essential for HEIs to strengthen their institutional positioning (Le et al., 2020) (de Jager & du Plooy, 2010) in an increasingly competitive market (Meštrović et al., 2019). Although there is a vast literature on information sources as a factor influencing decision making, little is known about the sources and what information they seek in each site, especially regarding generation Z attending Higher Education in Portugal. This research intends to fill this gap, contributing to understand the students' decision-making process, focusing on the sources of information and the respective information sought, providing a reference for the heads of marketing and communication departments and HEI managers to improve their strategies, in order to strengthen their positioning and improve their services and, eventually, recruit a greater number of students.



Therefore, this study aims to answer the following research questions:

- Q1 – What are the sources of information used for choosing the HEI?
- Q2 – What information is sought and where?

A qualitative methodology was adopted, with 16 semi-structured interviews directed to final year high school students, students already in higher education and parents. This paper is structured as follows. A literature review to identify and summarize the university choice process, then a description of the methodology adopted. This is followed by a discussion of the results, academic and managerial contributions, and a conclusion.

## **2. LITERATURE REVIEW**

### **2.1. Choosing HEI**

Three characteristics distinguish the purchase of services from that of products: 1) research (when a service can be evaluated before it is purchased), 2) experience (the service is evaluated only when it is purchased), and 3) credibility (although this characteristic cannot be evaluated even after its consumption, the customer needs to trust that certain functions will be fulfilled) (Wirtz & Lovelock, 2016). Concerning Higher Education, while it is true that this is a service on which the student's entire future may depend, it is not easy to evaluate. It is true that, in some ways, the experience will help students to evaluate the quality of the service. Still, there are many points that only later in their career development, throughout their lives, they will be able to evaluate. This "acquisition", therefore, implies a high risk. Wirtz and Lovelock (2016) also refer that uncertainty can be reduced when there is good risk management. Therefore, when choosing a Higher Education Institution/course, consumers will seek information from sources that are respected to them (family, friends, teachers); and they will use the Internet to compare the supply of education services based on reviews and debates on social networks. Thus, this selection relies on the reputation and information about the service, seeking excellence to be well served. So, according to Hieu et al. (2020); Le et al. (2020); Vulperhorst et al. (2020), choosing the HEI/course is a highly involved process, and there are several risks, namely those related to the student's performance during the course; the social and psychological concerns of attending a particular institution; the duration of the course and the financial risks (associated with attending higher education, i.e. tuition fees or loss of income, while studying) (Scott, 2006). So, all these factors, which have to be weighed up, raise doubts in the students (Mbawuni & Nimako, 2015) because this choice will strongly impact their future life. (Raposo & Alves, 2007; Taulke-Johnson, 2010; Veloutsou, 2004). Veloutsou (2004) mentions that to help in choosing HEI/course information is necessary; it will influence candidates, facilitating their decision making. Kusumawati (2019) refers that the search for information by future students on Social Networks about a given HEI is to understand if the higher education institution is adequate to their needs, namely through other students' opinions; at the same time, future students continue searching information on official sites, such as the official page of each HEI. Therefore, as candidates (consumers) need to reduce uncertainty and perceived risk (Le et al., 2019) when applying to a HEI/course, it is necessary that they look for the best information to make the right decision, and one of the sources that can help to reduce this risk is the use of the Word of Mouth - WOM<sup>1</sup>, which for Le et al. (2019), in the context of Higher Education, is a source of information that eventually reduces uncertainty when the candidate makes the decision.

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<sup>1</sup> Define-se o WOM como uma comunicação que é interpessoal e informal, que ocorre entre duas ou mais pessoas, sendo uma forma de promoção não paga, que pode ser feita de forma escrita ou oral, em que os consumidores, que estão satisfeitos, contam a outras pessoas o quanto gostam de determinado serviço, produto ou evento Ranaweera, C. (2015). The Impact of Word of Mouth on Service Purchase Decisions: Examining Risk and the Interaction of Tie Strength and Involvement. *Journal of Service Theory and Practice*, 25. <https://doi.org/10.1108/JSTP-04-2014-0070> .

Also parents and friends, teachers and psychologists can be considered sources of WOM (Le et al., 2019; Wilkins & Huisman, 2011), since they can influence the candidates' decision-making. Veloutsou et al. (2005) categorize information sources as controlled, uncontrolled, and partially controllable and partially non-controllable information sources. Controlled information sources are usually disseminated by HEIs, such as the information on the website, the information material made available in secondary schools (brochures or candidate guides), institutional videos, etc. The non-controlled information sources, where the decision making is influenced by people who are important to the student, which can be friends, family members, teachers, psychologists or contacts in the HEIs. These sources often end up being considered reliable. Finally, the sources of information that are partially controllable and partially not controllable. Since the Internet is currently the tool most used by young people, access to it can bring a lot of information, being partially controllable and also reliable, when one gives the example of the HEI's official site or the Ministry of Education's site. But, that which is partially uncontrollable is verified when applicants or interested parties about the HEI/course assimilate information from sources that, sometimes, are not very precise and not very reliable, which may influence the applicant's decision. The students will therefore research different information (Veloutsou, 2004). This information can be searched through the most relevant *information sources* and is of extreme importance for any decision-making (Obermeit, 2012), influencing the choice of institution (McManus et al., 2017). Students look for and value different types of information in each source, so this information can completely change the whole process of choice.

## 2.2. The Relevant Information

Students who wish to pursue their studies in higher education evaluate institutions and courses by gathering information from many sources (Veloutsou et al., 2005). Since the information sources are increasingly important in the students' decision making, for choosing the HEI they intend to enrol in; it is fundamental to understand which ones impact more on these decisions and which ones could be better explored by the HEIs (Herold et al., 2016). The most efficient information sources should be used to disseminate information that will enable students (de Jager et al., 2010), based on their needs and motivations to make an informed decision about their preferred Higher Education Institution (Wong et al., 2018). In the case of a study by Stephenson et al. (2016) students, who seek information about the reputation, cost and location of HEIs, are influenced by parents and friends. These results are in line with Veloutsou (2004), providing evidence that the most relevant information applicants sought was related to the reputation of the HEI, the courses and the campus. Santelices et al. (2020) also concluded that both psychologists and teachers, although not considered a powerful source of information, influence students to search for relevant information on the HEIs' websites, namely the study plans of the course they intend to follow. Nowadays, applicants are increasingly demanding and look for more and more information quickly accessible. Many of the factors that help the student's decision making, mainly the reputation of the HEI, the course contents, entry requirements, job prospects, academic life, location are, according to Le et al. (2019), information gathered, not by research, but by the effect of eWOM (Cheung & Thadani, 2012). Amani (2022) even states that more than 70% of other people's recommendations on the Internet are helpful for consumers to decide to buy. Therefore, and in the case of higher education, this tool associated with the sharing of information that HEIs do on social networks can help them strengthen their brand and create more value (Sagynbekova et al., 2021).

## 2.3. Generation Z Information Search

Technology has undoubtedly changed in the last decades the way students communicate with each other; Generation Z understands this technology the most (Loveland, 2017), enabling these

young people to search for information quickly and browse any digital platform. The importance of social networks, namely Facebook, Instagram and LinkedIn, to seek information about HEIs/courses, has made them currently one of the most popular information channels (Kusumawati, 2019; Le et al., 2019; Ranaweera, 2015), influencing the candidates' decision-making processes (Kusumawati, 2019). For Areces et al. (2016), consumers who typically search for information on the Internet have more experience searching for information than consumers who do not typically search for information on the Internet. Therefore, it is expected that "digital natives" applicants (Generation Z) use digital platforms to search for information about HEI, instead of searching in more traditional sources (the applicant's guides, pamphlets, or searching for information in person, in the Admission Offices of each HEI). Through smartphones, candidates of this new generation have quick access to more information than any other generation of their age; everything they want to know is just a click away (Seemiller & Grace, 2017). This generation is also called *Phygit*. They stop looking for differences between the online and offline worlds; they do not see the difference between the virtual and the real but do not think of themselves outside the *Phygit* environment (Tolstikova et al., 2020). The pandemic situation due to COVID and the continued use of the Internet to communicate (Munjal, 2021) enhanced this new way for brands to relate to consumers through more dynamic, faster communication, sometimes exceeding the limits of human perception (Moravcikova & Klietkova, 2017). As these information sources are among the most used by generation Z, they are also considered recruitment tools by higher education because they are relevant to reaching and attracting future students (Rutter et al., 2016).

### 3. METHODOLOGY

A qualitative methodology is used in this study. Data were collected through semi-structured interviews, this method being the most common in qualitative methodology (Fortin et al., 2009). Sixteen individual interviews were conducted with students currently in Higher Education, High School students intending to enter higher education, and parents whose children are or want to apply higher education.

#### 3.1. Sample

The semi-structured interviews focused on topics that met the research questions, the sources of information, what information was sought, and where. The use of this type of interview, through a broad question guide, allowed the flexibility to interact more easily with the interviewees, making it possible to add questions or even reformulate the script (Yang et al., 2020) and produce more concrete and defined answers (McIntosh & Morse, 2015). These interviews were done privately, some of them in person some of them zoomed in due to COVID (See Table 1). The interviews were all recorded and transcribed, by the first author.

*Table following on the next page*

Interview	Data	Type	Place of Residence	Age	Academic degree	Form
E01	21/4/21	Student IES	Matosinhos	19	-	in person
E02	23/4/21	Mother Student IES	Gondomar	46	12 <sup>o</sup>	in person
E03	23/4/21	Father Student IES	Porto	48	9 <sup>o</sup>	in person
E04	26/4/21	Student ES	Porto	16	-	in person
E05	2/5/21	Student IES	Porto	18	-	in person
E06	3/5/21	Mother Student IES	Porto	50	PhD	in person
E07	4/5/21	Student IES	Porto	19	-	online
E08	4/5/21	Mother Student IES	Porto	51	Bachelor	online
E09	4/5/21	Mother Student IES	Porto	49	Undergraduate	in person
E10	4/5/21	Student ES	Porto	17	-	in person
E11	4/5/21	Student IES	Porto	20	-	in person
E12	4/5/21	Student ES	Porto	18	-	in person
E13	5/5/21	Mother student ES	Porto	49	Undergraduate	in person
E14	6/5/21	Mother student ES	Porto	53	PhD	presencial
E15	19/5/21	Student ES	Maia	17	-	online
E16	19/5/21	Mother student ES	Maia	47	Undergraduate	online

Table 1: List of interviews

### 3.2. Data Analysis

The information collected through the interviews was later analyzed with the help of NVIVO software. The interviews were manually transcribed on the computer, one document for each interview, and later entered into this program. NVIVO (Zamawe, 2015). These interviews reinforced the categories suggested by the literature, and allowed the creation of new categories which, not being understood in the literature, were mentioned by the interviewees. Therefore, most of the codes introduced come from the literature. However, throughout the interviews other codes considered relevant emerged. These were also added to the analysis, and can be seen in the tables available in the results section. From the results of this analysis we obtained the categories needed to elaborate the quantitative study (Yang et al., 2020), which will be elaborated on later.

### 3.3. Findings

Here are the conclusions that follow the two research questions. In particular, understand which information sources are sought to access Higher Education and what information is sought in each source.

#### 3.3.1. Information Sources

Ten sources of information were mentioned (Table 2). This number is lower regarding other studies (Le et al., 2020) (Santelices et al., 2020). As shown in Table 2, almost all respondents (the students and parents) look for information about courses on the HEI websites and the DGES website (the State's official website on Higher Education). As mentioned in the literature (Le et al., 2020; Meštrović et al., 2019; Santelices et al., 2020), the HEIs' websites are very credible sources of information and are used by almost all the interviewees (whether students or parents) to seek information on ES. As DGES is an official site promoted by the Portuguese State, it is a source of information that transmits more confidence to all those who seek information on Higher Education. All interviewees were unanimous in stating that the DGES website was the source of information that transmitted confidence to them when searching for information (see Table 2). There are also two other sites - the *UNIAREA*<sup>2</sup> and the *Inspiring Future*<sup>3</sup> that students also refer as sources of information.

<sup>2</sup> <https://uniarea.com/forum/index.php>: Uniarea is the reference medium for future and current higher education students. In a tone and format close to young people, but without losing rigor, Uniarea provides relevant content and essential information, communicating to young people the possibilities of their educational future and everything that can be associated with it

<sup>3</sup> <https://www.inspiringfuture.pt/>: It is a non-profit foundation that aims to empower young people to build their life and career project to their fullest potential, contributing to the active fight against school dropout and to young people's conscious and informed choices about their future.

On these sites, they seek the opinion of other students, because these sites are forums where they all share information about higher education. However, parents do not access these types of sites since they are directed to the youngest, which is in line with the conclusion of López and Sicilia (2014), which states that consumers who seek opinions on the Internet are more experienced in researching than others who do not. Note that students belong to Generation Z, always grown up with technology and are more accustomed to information being disseminated on the Internet, and in this case, these sites are more appropriate for students than for their parents. For example one of the students (E10) mentions in the interview:

- *At Inspiring Future there is a Youtube channel and an Instagram; there are always people online to help us. They explain to us step-by-step; it's like they are with us going through the application process.*

	Interviews	Filles	References
		16	35
HEI Websites	E01; E02; E3, E04; E05, E06; E07; E09; E10; E11; E13; E15	12	13
DGES	E02; E03, E04; E05, E06; E07; E10; E15; E16	9	9
High School Teachers	E08; E09; E016	3	3
Family	E12, E13	2	2
Education Fairs	E11	1	1
Inspiring Future	E10; E12	2	2
Word-of-Mouth (friends, well-known)	E08; E09	2	2
Vocational Orientation	E14	1	1
Secretariat	E11	1	1
Uniaarea	E05	1	1

Table 2: Information Sources

The WOW is a relevant source of information for the students, but it is especially important for their parents, who are part of another generation. Also, high school teachers are a source of information that, although not very strong, could influence the students' decision-making process. But in this case, contrary to Santelices et al. (2020), it seems that the parents are the intermediaries, being them, and not the students, who talk to the teachers directly, as one mother (E16) noted:

- *From time to time, I also talk to the teachers in the school, to try to understand what they think. Better than anyone else, they have an experience in this area*

Other sources of information that are addressed in these interviews, although not with as much impact as those mentioned above, are the professionals linked to the vocational orientation, the school's own office, and Education Fairs. None of these seems to have as much importance as those mentioned above or in the literature.

### 3.3.2. Information sought in access to Higher Education

The information most sought by students and parents (**Error! Reference source not found.**) is the *Avarage*<sup>4</sup>. This information is extremely important, mainly because the weighted *average* of the final exams and the secondary school grades in the Portuguese education system is essential for calculating the averages to access any higher education course.

<sup>4</sup> To calculate the average for access to higher education in 2020-2021, the arithmetic mean of the final grades of the secondary school subjects and the grade of the entrance examinations will be used. Based on this calculation, the average will be calculated taking into account the entrance examinations, according to the percentage set by each Higher Education Institution to each course.

In addition, as one mother (E02) mentioned, it is also important to know how these averages are calculated; calculation formulas must be easily accessible because it is not readily available:

- *I think the most relevant information is the averages and knowing how these “averages” are made. Although I had a hard time finding out on the DGES website how the entry averages are calculated.*

	Filles	References
	16	46
Avarage	11	11
Location	6	6
Course Offerings	4	4
About the course	3	3
Prestige Institution	3	3
Admission examinations	2	2
Subjects	2	2
Exams	2	2
High school teachers' opinions	2	2
Tuition Fees	1	1
Study Plan	1	1
Family opinion	1	1
Open Day	1	1
Places	1	1
Erasmus	1	1
HEIs teaching the Courses	1	1
Administrative procedure	1	1
Scholarships	1	1

Table 3: Most popular information search

The Average is the information sought more by students than by parents, and in 11 answers, seven of them are from students and four from parents. The Location is also information that both students and parents seek. However, the parents are more concerned about the location of the HEI than the children, namely because it may imply a more significant financial effort. The Course Offering is the information parents seek most. It reflects the parents' concern in knowing which course their children should follow and trying to help them in the choice and decision making, as one mother, E06, mentions:

- *It was mainly looking within the Humanities for the different courses offered and then those that interested him.*

About the courses is information that both parents and students take into consideration when, because they want that the course to be followed gives, for example, a good job opportunity, as mentioned in an interview:

- *The contents that I consider most relevant are whether the course has several professional outlets and whether the college has a good internship program that integrates us into working life.*

Although in Portugal, averages are the priority condition for entering an HEI, as mentioned before, both students and parents certainly like to look for information about the Prestige of the HEI, so if they can't get into the first option, they always try to get into the second one, and so on. Therefore, this information always ends up being sought, by parents and students, as shown in the response of a mother (E09):

- *I always tried to make him choose a reference HEI, either Universidade do Porto or Universidade do Minho or Técnico de Lisboa.*

Subjects of the courses are information sought by students since it gives a notion of what they will learn, which is relevant for decision making, as reported by a student (E01):

- *[...] the information that I looked for the most was the subjects that my course was going to have, because that was the most relevant for me.*

The Admission Examinations, Places and Exams, and High school teachers' opinions are also information that students and their parents usually look for to make a decision. The Tuition Fees, Study Plan, Family Opinion, Open Day, Places, Erasmus, HEIs teaching the Courses, Administrative procedure, Scholarships are Information sought, for prospective students and parents. Still, it doesn't have as much impact on the decision. For example, regarding tuition fees, since almost all students want to apply for public education, it is not such relevant information. This only happens if the student, by choice, wants to apply to private higher education. Regarding scholarships is the same because probably student can't apply to Public HEI and will try a private HEI with a scholarship. Two interviewees mentioned the scholarships: one student (E10) who want to attend a private institution by choice, and a parent of a university student (E03), who pondered the hypothesis that his son would not enter public education and therefore would not be financially able to maintain in a private institution, stressing that:

- *First of all, is the tuition fees, then also see each university's conditions, namely scholarships [...]*

### 3.3.3. What information is sought and where

Once the most used information sources and the most searched for information have been analysed, we try to understand where each piece of information is searched. The *averages* are the most searched information on the DGES website. As the data show, the information that the interviewees seek from the DGES does not go much beyond averages. Some also seek information about courses, and one of the interviewees, E04, even mentioned that *At DGES, I look up the averages to enter university and what exams are required [...]*.

*Table following on the next page*

	Files	References
<b>What information is sought and where</b>	<b>13</b>	<b>44</b>
<b>DGES</b>	7	13
Averages	7	7
Exams	1	1
Courses	2	2
<b>Word of Mouth (friends, and other people)</b>	2	2
Course information	2	2
<b>Inspiring Future</b>	1	1
Averages	1	1
<b>Vocational Guidance</b>	0	0
Psychologists	1	1
<b>HEI Websites</b>	11	22
Disciplines	5	5
Scholarships	2	2
Admission Conditions	1	1
Courses	4	5
People's opinion about the courses (students, alumni)	1	1
Programmatic content of each discipline	1	1
Internships and Career Prospects	3	3
International mobility	1	1
Protocols with companies	1	1
Tuition fees	2	2
<b>Uniarea</b>	1	1
Forum of students	1	1
<b>High School Teachers</b>	1	2
Opinion about the course or area to follow	1	1
<b>High School Secretary</b>	1	2
Application Process	1	1

Table 4: What information is sought and where

Only one interviewee referred that he accessed Inspiring Future to see the course *averages*. Regarding Worth-of-Mouth, although it is not very expressive in the results, the students will look for this source of information to get their friends' opinions about the courses. The same goes for the High School Teachers, which, without much impact on the results, is where they go to seek views about the course or area to follow. On the HEI Websites, all respondents will seek more diverse information, as shown in (table 3). For example, *the course subjects* are much sought-after information on the HEIs' websites (See Table 4) and the *courses on offer*. *Internships and Career Prospects* is also information that is searched for on the sites and the *scholarships and tuition fees*. To a lesser extent, as the table indicates, are the information about *Protocols with companies*, The mobility *Erasmus*, *opinions about other students* (alumni), *the programmatic content of each discipline* and *Admission Conditions*. The fact that this information is less prominent may not mean that prospective students have no interest in this information, but rather that this same information may not be easily accessed or even difficult to understand.

#### 4. CONCLUSION

The main objective of this study is to understand which are the most used information sources for choosing the HEI/course as well as the information that is sought and where. We know that competition is increasing and that the generation that applies for higher education is becoming more and more technological, so each HEI must understand the best way to attract them. Now, the information sources most used by the students and their parents, verified in this study, are the DGES's and the HEI's websites. Each institution constructs its (HEI) website, so it is controlled information.



This is good news for HEI, which can manage what information wants to disseminate there. As this study was carried out taking into account Portuguese higher education, and as access to higher education is made through the weighted average of the final exams together with the high school grades, it was noticed that the information most sought by students and their parents were the course *averages*; this information being more sought on the DGES website, than on the websites of the HEIs themselves. Other important sources of information that can help in the choice of HEI/course and that are also mentioned in the literature are the WOM (friends, and other people) (Amani, 2022), *High School Teachers* (Sia, 2013), *the school's own office and Vocational Guidance* (Veloutsou, 2004) and it's through these information sources that prospective students will find information about the course, applications, or even the institution where they intend to study. Although they are not controlled sources, prospective students and their parents find them reliable and therefore one of the most sought after sources of information that can help in choosing and making a decision. However, because we are facing a more technological generation, students are always connected to the Internet; it was mentioned as sources of information for students the *Uniarea* and the *Inspiring future*. These portuguese platforms that besides having information about averages, courses, also disseminate opinion sharing among students, contests, both on the sites and their social networks, motivating them to become interested and learn more about the courses and their HEIs. Although these two sources of information are partially controllable they turn out to be reliable because most of the information made available is provided by each HEI, through advertising and therefore, this information can help students in the choice process. Finally, since the HEI's website is one of the most used sources of information, the information that Portuguese students and their parents like to look for on the websites are the courses, scholarships, admission requirements, courses, people's opinions about the courses, program content of each course, internships and professional opportunities, international mobility, protocols with companies, and fees. Therefore, HEIs will need to take this information into account if they are to be effective in disseminating information that will enable students to make an informed decision about their preferred higher education institution/course. Actually, the HEIs are betting on social networks as a way to disseminate information, but at no time during the interviews was this source of information mentioned, which leads us to think that future students and their parents still do not see these platforms as the best source to disseminate information. Perhaps because the HEIs themselves have not yet realized that this could be a great opportunity to disseminate and communicate personally with prospective students. Joining the offline and online means building a better relationship with their public and facilitating processes, saving resources by taking advantage of the possibilities that technology offers. HEIs must understand how their future candidates use digital. Only then will these institutions be able to spread the best information digitally to attract more students, namely through social networks. This study has some limitations, because as mentioned in the beginning, an exploratory qualitative research was conducted, through an inductive approach. As we face a generation increasingly connected to digital, future studies would be relevant to understand what information HEIs should disseminate on their social networks to attract more students, even knowing that the website is a relevant source.

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## COVID-19 IN PORTUGAL - ECONOMICAL CONSEQUENCES (AN APPROACH)

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### ABSTRACT

*This work intends to show how the pandemic SARS-CoV-2, responsible for the disease Covid-19, has affected all the world in several domains, also, differently from country to country. In particular, the way it has affected the Portuguese life, mainly concerning the country's Economy. It also shows the evolution of the transmissibility rate, the numbers of infected cases and deaths as well as the vaccination plan in Portugal, which was a case of success due the implementation of a Task Force with that focus. Knowing that different factors are contained in Economic concept, such as health, GDP, inflation, employment (most of it could be affected by Lockdown measures), tourism flow among others. An approach related to the evolution of the disease in Portugal will be presented in this article.*

**Keywords:** *GPD, Inflation, Portuguese Economy, SARS-CoV-2/Covid-19, Tourism*

### 1. INTRODUCTION

As globally known, the new coronavirus SARS-CoV-2 responsible for the disease Covid-19, was first identified in January 2020 in Wuhan, China, although there are reports of the existence of this new virus at the end of 2019. This new agent had never been previously identified in humans, causing an outbreak in the city of Wuhan, as cited in <https://www.insa.min-saude.pt/category/areas-de-atuacao/doencas-infeciosas/novo-coronavirus-sars-cov-2-covid-19/>. According to Luisa Canto e Castro et al (2022), on January 30, 2020, the World Health Organization (WHO) declared that the outbreak SARS-CoV-2 constituted a Public Health Emergency of International Concern (PHEIC), followed by its characterization as a pandemic on March 11th, 2020. During the COVID-19 pandemic, Portugal has experienced distinct SARS-CoV-2 infection waves. The laboratory diagnosis of SARS-CoV-2 by Rt - PCR (Polymerase Chain Reaction) is carried out in hospital laboratories of the Portuguese Network of Laboratories for the Diagnosis of SARS-CoV-2, complemented with a vast network of private laboratories, laboratories of Universities and Research and other laboratories authorized for this purpose. It is intended to analyze (not exhaustively) the effects of COVID-19 in Portugal (number of patients, deaths, lockdowns, Rt (The transmissibility ratio, [Rácio de transmissibilidade (Rt), in Portuguese], has been one of the most mentioned indicators since the beginning of the pandemic, but it has gained even more prominence with the progression of deflation measures. It gives the degree of contagion of covid-19), vaccination plan, and now the “European Bazuca”) on the Portuguese Economy, considering economic indicators as GDP (Gross Domestic Product) the most fundamental concept of aggregate economics (Syrquin, M., 2016) that represents the total monetary or market value of all goods and services produced in the country during a specified period of time; inflation as described for instance by Bennett T. McCallum, (1990), (most of it related with the Lockdown measures), tourism among others. Also, it will be taking in account the repercussions in Portugal from Russia-Ukraine war in the last almost four months, and from “European Bazuca” (in the coming years Portugal will receive 66.2 billion euros from the European Union).

## 2. BRIEF STATISTICAL ANALYSIS OF SARS-COV2/COVID-19 IN PORTUGAL

In this point it will be exposed firstly information about the evolution of the number of patients who have contracted COVID-19 and also the number of deaths recorded as a result of people which had contracted the disease, based on DGS (General Directorate of Health – Direção Geral de Saúde in Portuguese). Secondly the evolution of transmissibility ratio,  $R_t$  will be described. After the vaccination plan in Portugal is presented and the vaccines used to prevent the disease in Portugal are indicated, also some of the restrictions taken in Portugal during the pandemic, including the lockdowns are described. Starting to analyze the number of people who contracted COVID-19:



- **New cases – Mean of seven days**

Figure 1: Evolution number of cases of COVID-19 in Portugal from 16th March 2020 until 20th May 2022

(Source: JHU CSSE COVID-19 Data <https://ourworldindata.org/covid-vaccinations?country=PRT>, adapted by the author)

The number of deaths due COVID-19 in Portugal from 13th March 2020 to 20th May 2022, it can be seen the pick was attained in 1th February 2021 with 299 deaths

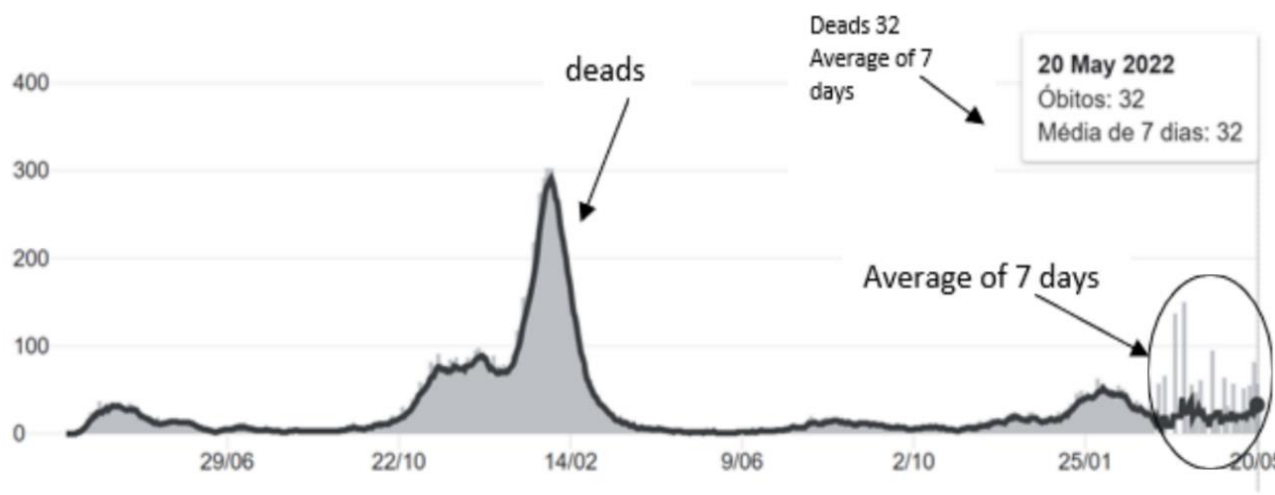


Figure 2: Evolution of number of deaths in Portugal due COVID-19 from 13th March 2020 until 20 May 2022

(Source: JHU CSSE COVID-19 Data <https://ourworldindata.org/covid-vaccinations?country=PRT>, adapted by the author)

Concerning  $R_t$  the following information is presented.

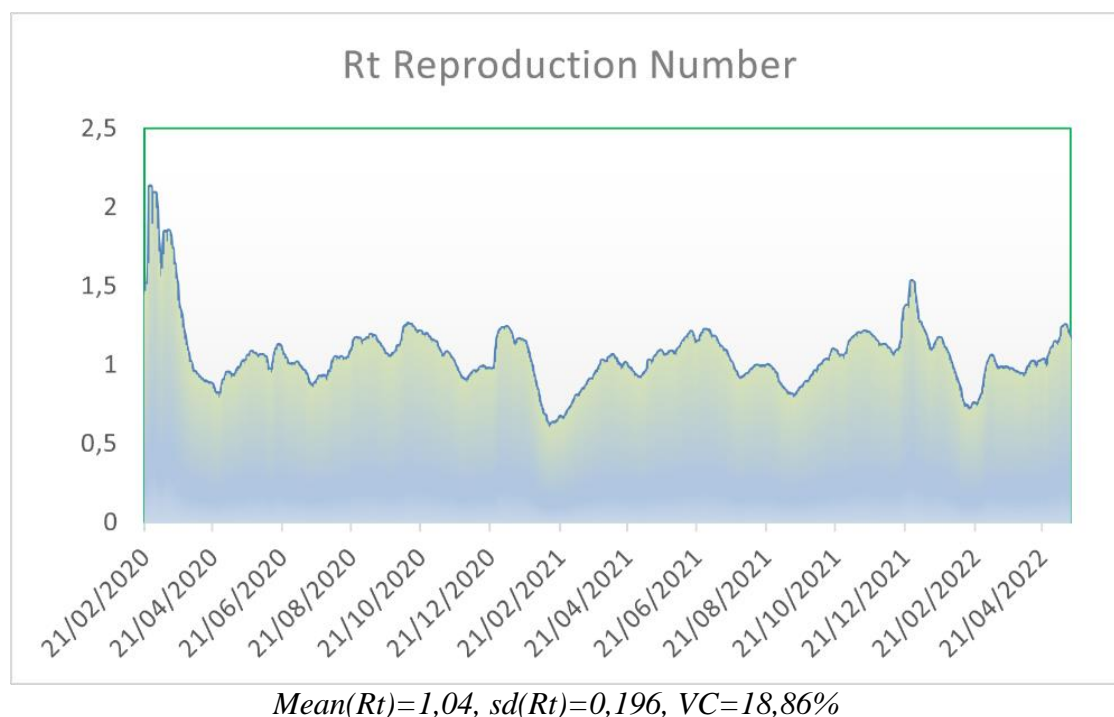


Figure 3: Evolution of  $R_t$  in Portugal from 21 January 2020 until 15th May 2022

(Source: ISA, adapted by the author)

As we can see the  $R_t$  is now higher than in some critical dates of pandemic and higher than 1, which means that each 1 case may cause more than one other, that is, it implies an increasing tendency. The variation coefficient assuming the value of 18% shows the absence of homogeneity in the distribution of  $R_t$ , such as expected, since the Portuguese government has based on this indicator to define lockdown measures concerning teaching institutions – online classes – remote working for all the professions that allow it at full time, closed restaurants, cultural and sporting events were not open to public, and lockdowns when the government considered better to control the spread of disease.  $R_t$  from 21/02/2020 to 15/05/2022 source INSA(2022) (Instituto Nacional de saúde Ricardo Jorge), <https://www.insa.min-saude.pt/category/areas-de-atuacao/epidemiologia/covid-19-curva-epidematica-e-parametros-de-transmissibilidade/>. In Portugal there were already five waves of the disease, with the sixth one starting in May 2022. Although the number of cases were remarkably higher in the last three waves, no lockdown was needed in the Economy, due to the high vaccination rate. The number of deaths is low as well as the number of patients in ICU. The vaccination plan in Portugal it was very well organized, the Covid-19 Vaccination Plan was presented on December 3, 2020. The Government and the task force created to prepare the document that defined the priority groups to whom the vaccine should be administered, established the vaccination phases, designed the logistics of the entire process and were responsible for ensuring its safety - this was coordinated by a vice admiral Henrique Gouveia e Melo.

Figure following on the next page

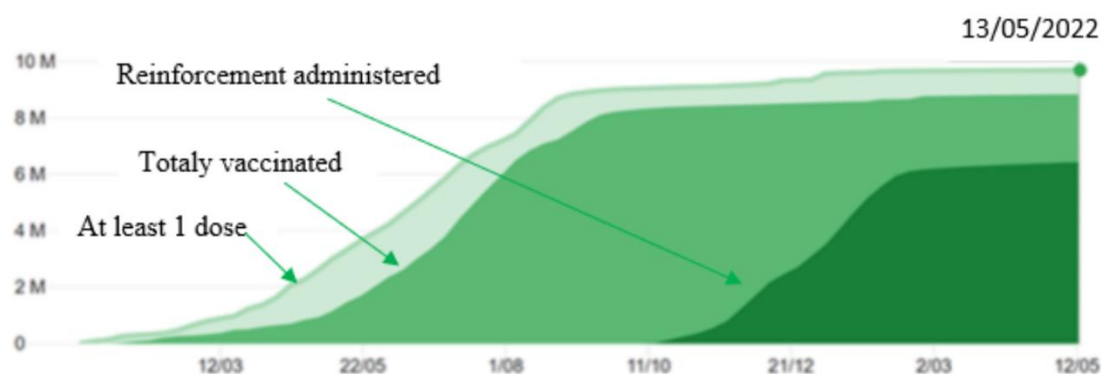


Figure 4: Evolution of vaccination in Portugal from 1st January 2021 until 13th May 2022  
(Source: Our World In Data, adapted by the author)

13/05/2022	total	%Pop
At least one dose	9704596	94,2%
Totally vaccinated	8845577	85%
Reinforcement administered	6435491	62,4%

Figure 5: Evolution of vaccination in Portugal from 1st January 2021 until 13th May 2022  
(Source: Our World In Data, updated at 16/05/2022 adapted by the author)

The vaccines that were and are being used in Portugal are the following ones: BioNTech- Pfizer, Johnson & Johnson, Moderna, Novavax-Oxford and AstraZeneca. Also, should be remarked that people over 80 years old or living in nursing homes started receiving the 4th dose of vaccine on 16th May 2022 and immunosuppressed children aged 12 to 15 also receive an additional dose.

## 2.1. Waves of Sars-CoV2 in Portugal

The first wave reached Portugal, similarly to what was happening in the rest of the world, was extreme: it motivated the most severe set of restrictions to “flatten the curve” of the pandemic, at the same time it was the one in which there was less contagion, as the country entered a state of emergency and practically absolute lockdown two weeks later, on March 18, 2020, at a time when the country recorded an accumulated total of 642 cases and two deaths from covid-19. The second wave emerged at the end of September 2020, having been controlled with measures announced in November 2020. The third wave of infections in Portugal, still with the original variant as the dominant one, caused maximum hospitalizations and serious patients, as well as lethality. When the measures were being lifted, the Delta variant arrived in Portugal in May 2021, at this time, vaccination was already in the equation, guaranteeing protection in the most advanced age groups of the population that already had immune coverage. The fourth wave of infections, which crossed the summer, was a wave “of less expression” than the previous ones but linked to Delta variant. The fifth wave that Portugal faced, began to take shape in October 2021. According to a report of IST (Instituto Superior Técnico, from Lisbon University) a sharp rise in the transmissibility index may indicate that the sixth wave is coming soon, with the scenario being admitted, which states that the  $R_t$  is already above 1 and the pandemic is worsening significantly. The Government recognizes that there is growth but does not consider that additional measures should be applied.



The growth, although slight, is related to the BA.2 lineage of the Ómicron variant, which is already dominant in Portugal and due to no longer be mandatory the use of face masks indoors. Some of the restrictions until lift phases will be understood in 2.2..

## 2.2. Lifting phases of Sars-CoV2 in Portugal

The Government, in addition to determining the measures that apply to the entire mainland territory from August 1, 2021, approved a plan for the gradual lifting of measures to combat the pandemic. Thus, and based on the evolution of vaccination in Portugal, the Council of Ministers established three phases for the lifting of measures (adapted from <https://covid19estamoson.gov.pt/fases-do-levantamento-das-restricoes/>):

- Phase 1: More than 50% of the population fully vaccinated (August 1, 2021)  
Rules become the same throughout the continental national territory:
  - Recommended telework, when activities allow it;
  - End of the limitation of circulation on public roads from 23:00;
  - End of limits on opening hours and homogenization of closing times;
  - Audience at sports shows, according to rules defined by the DGS;
  - Cultural shows with 66% of capacity;
  - Bars subject to catering rules.
- Phase 2: More than 70% of the population fully vaccinated
  - Restaurants, cafes and pastry shops have a maximum limit of eight people per group inside and 15 people per group on terraces;
  - Public services can be accessed without prior appointment;
  - Public transport without capacity limits;
  - Cultural shows with 75% capacity;
  - Events (namely weddings and baptisms) now have a maximum limit of 75% of the capacity.
- Phase 3: More than 85% of the population fully vaccinated
  - Restaurants, cafes and pastry shops with no maximum number of people per group, either inside or on terraces;
  - Establishments and equipment without capacity limits;
  - Cultural shows without capacity limits;
  - Events (namely weddings and baptisms) no longer have capacity limits;
  - Bars and clubs reopen their usual activity upon presentation of an EU COVID Digital Certificate or a negative test result.
  - Monitoring of the evolution of the pandemic will continue to be based on indicators of incidence and Rt, now adapted according to the evolution of vaccination (alert level changes to 240 cases per 100.000 inhabitants, risk level changes to 480). (<https://covid19estamoson.gov.pt/fases-do-levantamento-das-restricoes/>)

The DGS began to publish, from March 11, a report on the epidemiological and vaccination situation on a weekly basis, instead of daily as previously, which is published each Friday. According to DGS, this phase justifies the change in the disclosure standard, with daily reports being discontinued (adapted from: <https://www.dgs.pt/em-destaque/dgs-inicia-divulgacao-semanal-de-dados-epidemiologicos.aspx>). In reality, what is happening is that the non-compulsory use of a mask is causing an alarming number of new cases, most with mild symptoms like the flu, but others with more serious symptoms even if they have a complete vaccination plan.

### 3. BRIEF ANALYSIS OF PRINCIPAL ECONOMIC INDICATORS IN PORTUGAL DURING SARS-COV2/COVID-19, PANDEMIC SITUATION

In this chapter an analysis of main economic indicators that can reflect the effect of pandemic will be made. The focus on economic indicators, will be GDP, private consumption, inflation, gross fixed capital formation, exports, unemployment rate, harmonized consumer price index, current and capital account and international investment position on public debt. According to the report of Boletim Económico (2022), Bank of Portugal, in 2021, the Portuguese economic activity grew by 4.9%. Despite the growth, it was still not enough to surpass the level before the pandemic. The growth recorded in the euro of, 5.3%, and at the end of the year the level of Gross Domestic Product (GDP) of the last quarter of 2019, was almost reached in Portugal, as it can be seen in Figure 6 presenting annual data from GPD.

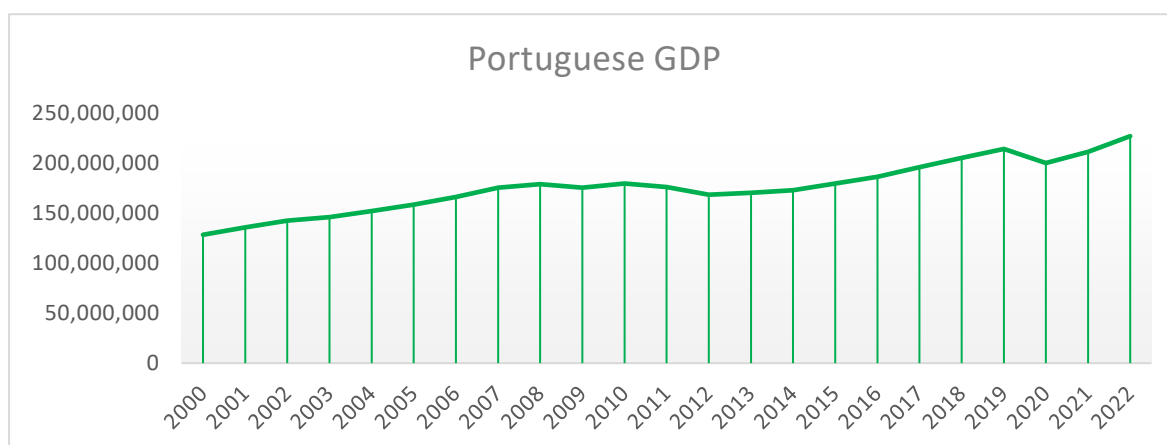


Figure 6: Portuguese GDP by year  
(Source: Author – data obtained from PORDATA)

The most significant impact of the pandemic in the Portuguese economy is reflected by the strong weight of tourism exports, as can be evaluated in Figure 7. There was an abrupt decrease of tourism exports in 2020, that started to recover a bit of confidence in 2021.

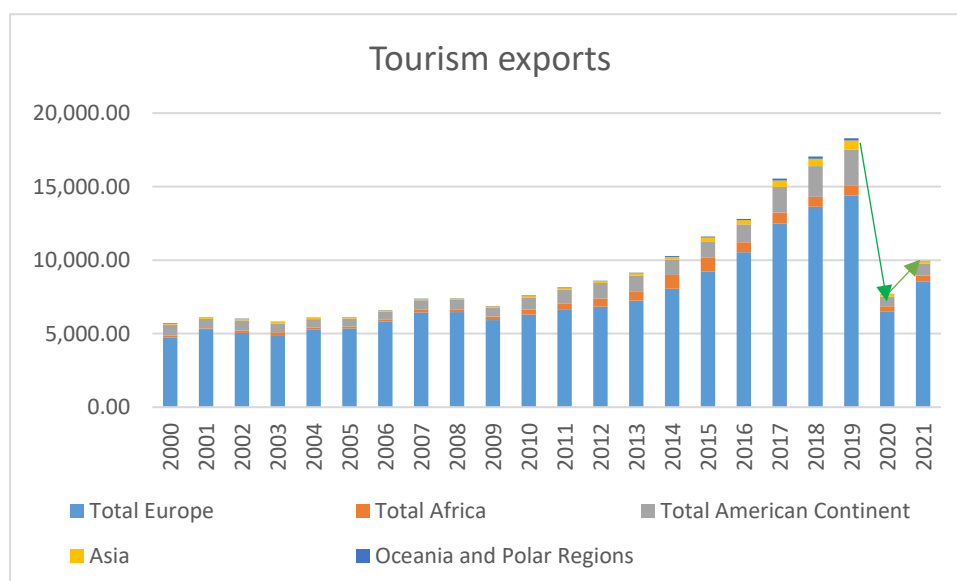


Figure 7: Travel and tourism balance exports by some continents including specific trade countries from 2000 to 2021  
(Source: Author – data obtained from PORDATA)

The sectorial composition of the activity continues to show differences compared to the pre-pandemic period. On the one hand, Gross Value Added (GVA) remains lower in:

- commerce, accommodation, and catering, and
- in other services that involve high personal contact – cultural and sports, but it is above in communication and information services and construction – because these ones did not need direct contact with people.

On the other one, everything related with Information technology (IT) has had a boom during pandemic – because it does not depend on presential work, only on online services. The enterprises felt “obliged” to develop online commerce, digital transition and part of Portuguese restaurants “reinvented themselves” to adapt to delivery systems, such as Uber, Glovo between others, which can be corroborated by the Boletim Económico (2022), Bank of Portugal, where also can be read that “The job market was dynamic throughout the year. Employment benefited from support public policies and remained resilient during the pandemic, particularly in contracts without term and in workers with more experience and qualifications, the hours worked, despite growth in 2021, they had not yet recovered to pre-pandemic level at the end of the year.”. Small businesses closed and even franchised stores closed their doors, with the main reason being the need to pay the rent until the end of the contract, even during lockdown. This occurred mainly in shopping centres. Average earnings per employee accelerated compared to the previous year, increasing 5.5% in the two years of the pandemic, in part due to the increase in the minimum wage (it was 635€ per month when the pandemic begun, and increased to 665€ in 2021 and 705€ in 2022). «The job market was dynamic throughout the year. Employment benefited from support public policies and remained resilient during the pandemic, particularly in contracts without term and in workers with more experience and qualifications, the hours worked, despite growth in 2021, they had not yet recovered to pre-pandemic level at the end of the year.»

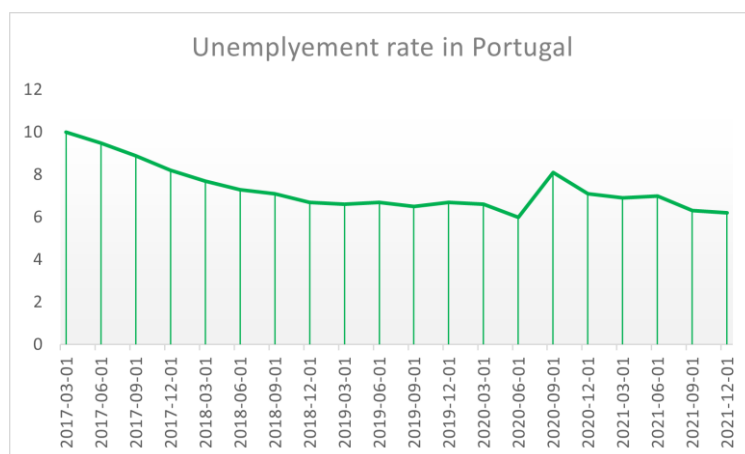
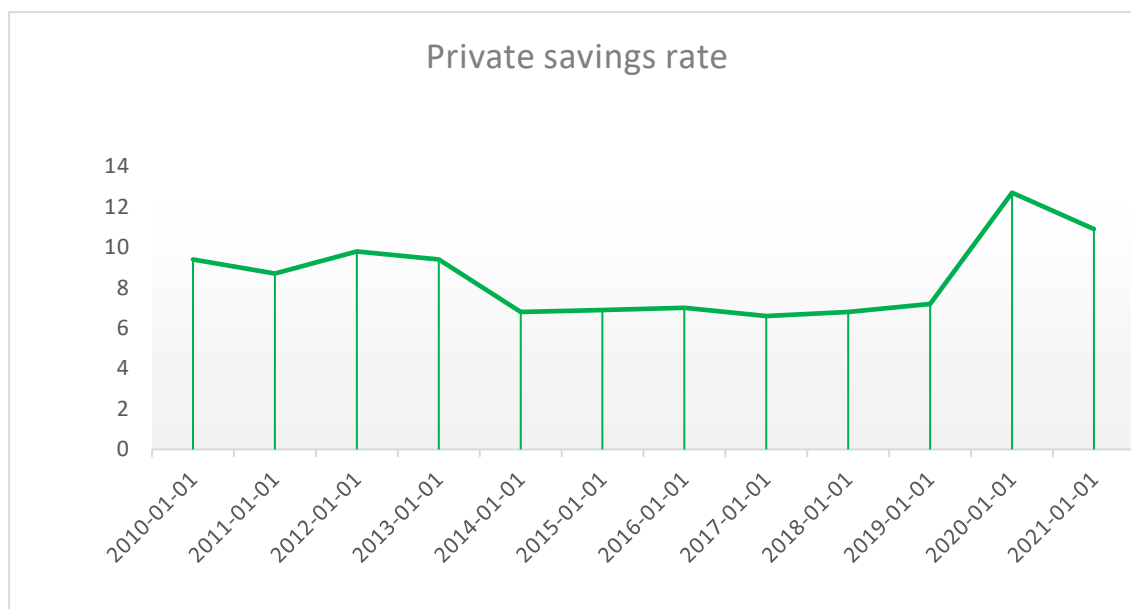


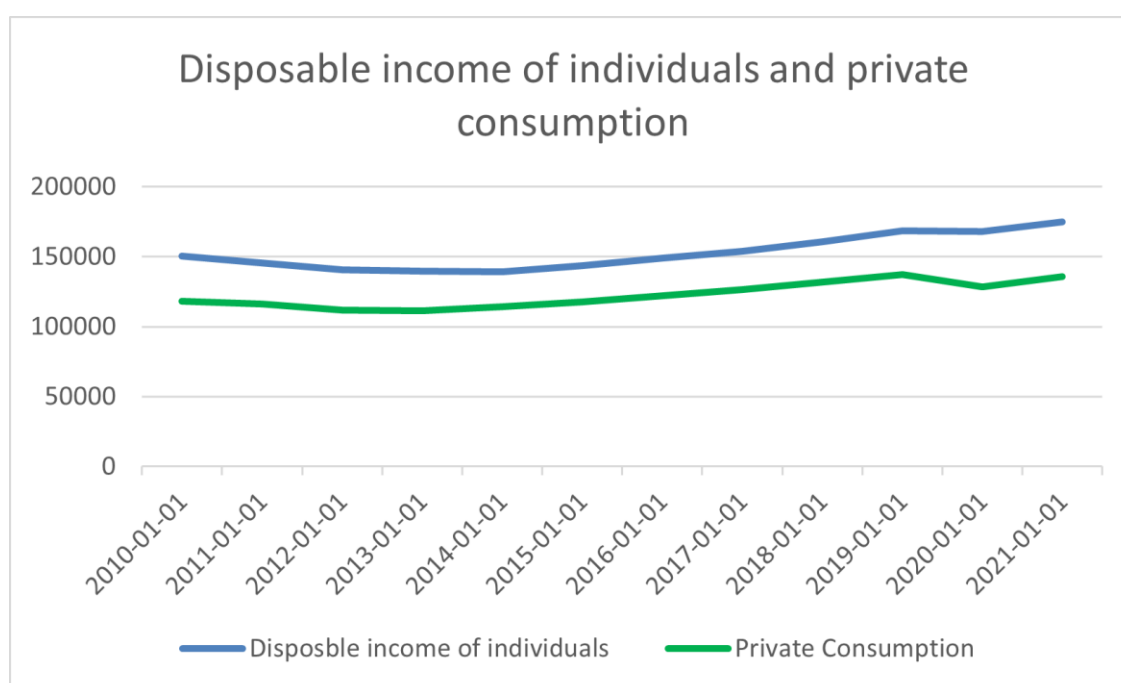
Figure 8: Unemployment rate - Quarterly in Portugal from 2017 to the end of 2021  
(Source: Author– data obtained from Banco de Portugal)

Families had an increase in disposable income and increased in savings. The increase in income supported the recovery in consumption, in particular in consumer goods non-food current and durable goods, a typical phenomenon. The job market was dynamic throughout the year. Employment benefited from support public policies and remained resilient during the pandemic, particularly in contracts without term and in workers with more experience and qualifications, the hours worked, despite growth in 2021, they had not yet recovered to pre-pandemic level at the end of the year. (Boletim Económico, 2022).

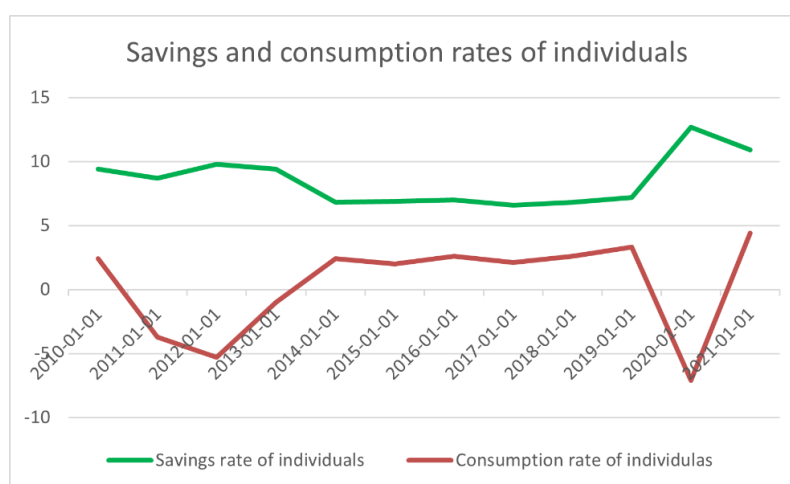
At the end of the year, private consumption maintained a different composition and was lower than in the pre-pandemic period. The savings rate of households decreased from 12.7% in 2020 to 10.9% in 2021, but remained above period before to the pandemic, 7.2%. Individual deposits maintained a robust growth of 6.6%, while consumer loans increased by 2.7%, it can be clear in the following Figures:



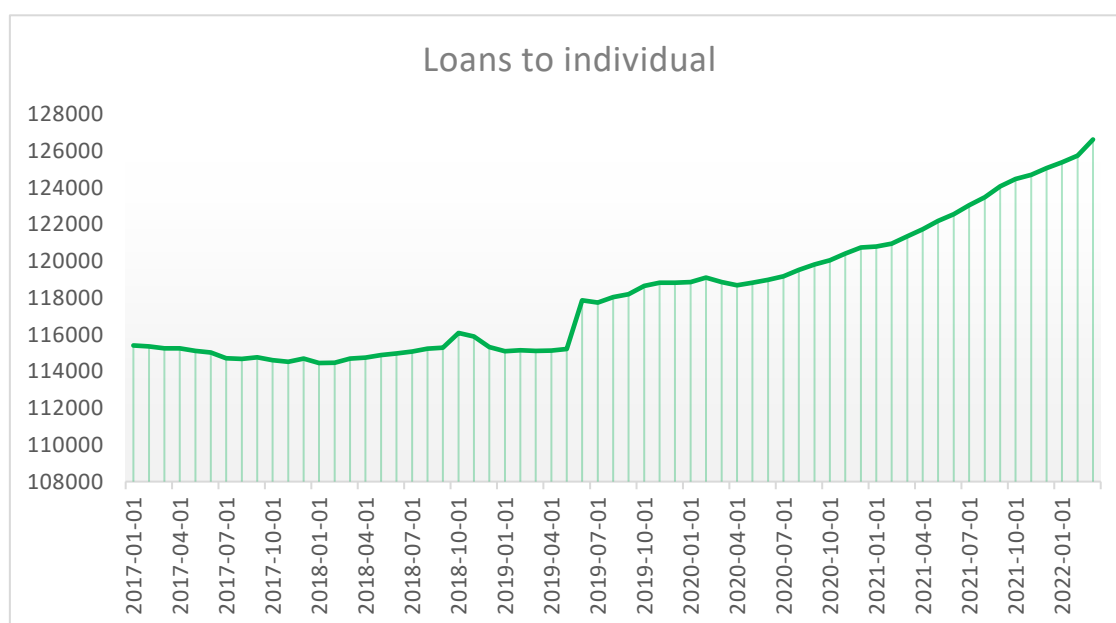
*Figure 9: Individuals' savings rate (after adjustment)-Annual-Current prices-% RD – Portugal From 2010 to 2021*  
(Source: Author– data obtained from Banco de Portugal)



*Figure 9: Private Consumption-Annual-Current Prices-M€ and Individuals' disposable income adjusted-Annual-Current prices-M€- Portugal from 2010 to 2021*  
(Source: Author– data obtained from Banco de Portugal)



*Figure 10: Private Consumption-Annual-Volume Chained Data- Year-on-Year Rate of Change and Individuals' savings rate (after adjustment)-Annual-Current prices-% Disposable Income – Portugal from 2010 to 2021  
(Source: Author– data obtained from Banco de Portugal)*



*Figure 11: MFI balance: Other monetary financial institutions - Unconsolidated data - Assets - Portugal - Loans - Households and non-profit institutions serving households - Portugal - Positions - Monthly - Millions of euros – Portugal from 2017 to 2022 (1st month)  
(Source: Author– data obtained from Banco de Portugal)*

Investment showed high growth in 2021, extending to all components and institutional sectors. The recovery was more significant in machines and equipment and construction, despite some constraints on access to materials and labor and the increase in its cost. The strong recovery, by institutional sector and investment by households also by companies, maintaining an important contribution from public investment. In the case of households, new housing loans registered high growth, reflecting the increase in the number of debtors in a context of lower uncertainty resulting from the pandemic. Companies continued to benefit from favorable financing conditions, in particular of more favorable interest rates and longer maturities in credit lines with public guarantee and, in the first three quarters of the year, credit defaults (Boletim Económico, 2022).

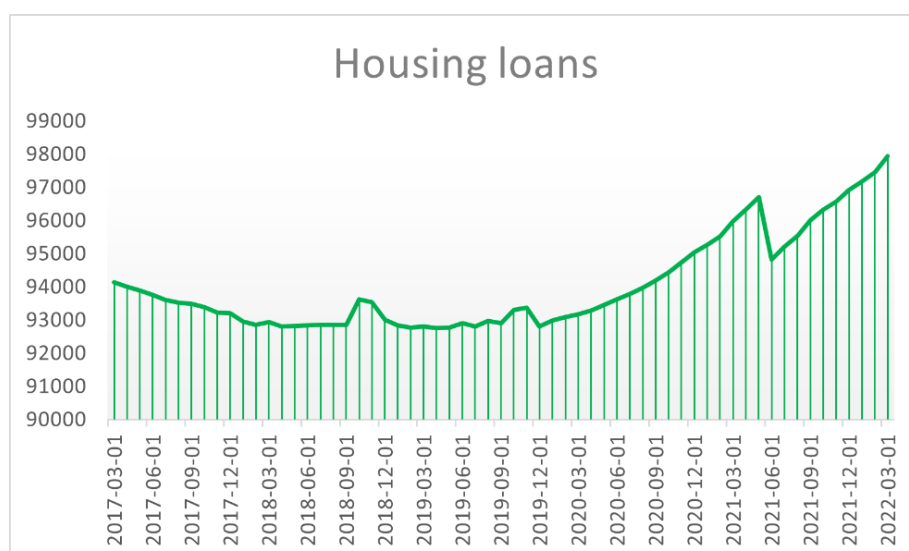


Figure 12: Evolution of individual loans for housing - Quarterly – M€– Portugal from 2017 to 2022(1st quarter)

(Source: Author– data obtained from Banco de Portugal)

Due to telework option, several families sold or rent out, to other ones, their apartments in main cities – mainly in Lisbon and bought houses in countryside nearby Lisbon or nearby other main cities. Since cost of living outside the big cities is cheaper when compared to the city centre and families with many children have also exchanged small apartments for where, where they have more rooms and outdoor space. Inflation increased in 2021 to 0.9%, as known the inflation is measured by the Consumer Price Index (CPI) rate change and by the Harmonized Index Consumer Price Index (HICP) as supported by economic theory, e.g. Samuelson and Nordhaus, 2009. The analysis of these two measures of inflation can be analyzed in the two following graphs. As can be seen both increased by June 2021, until now (last observation on April 2022).

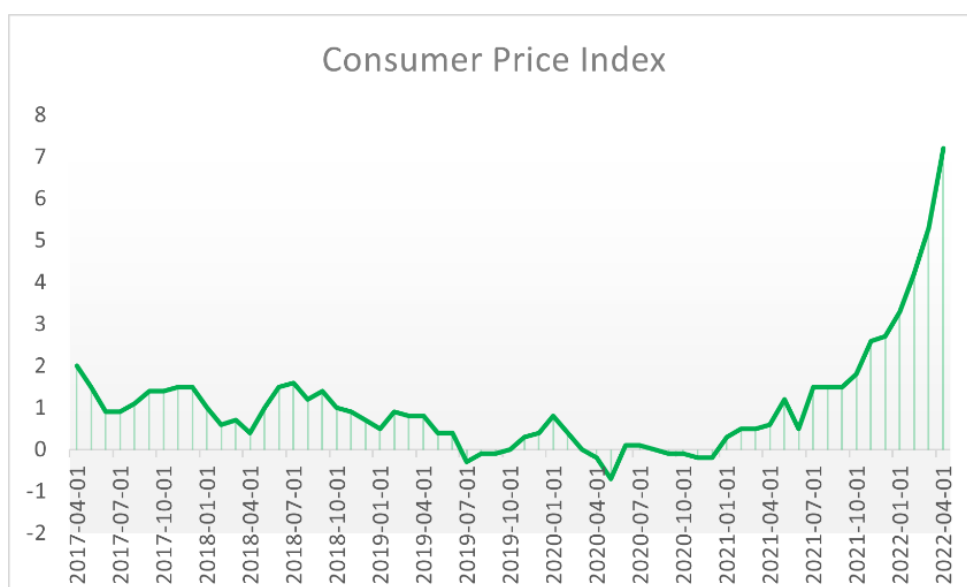
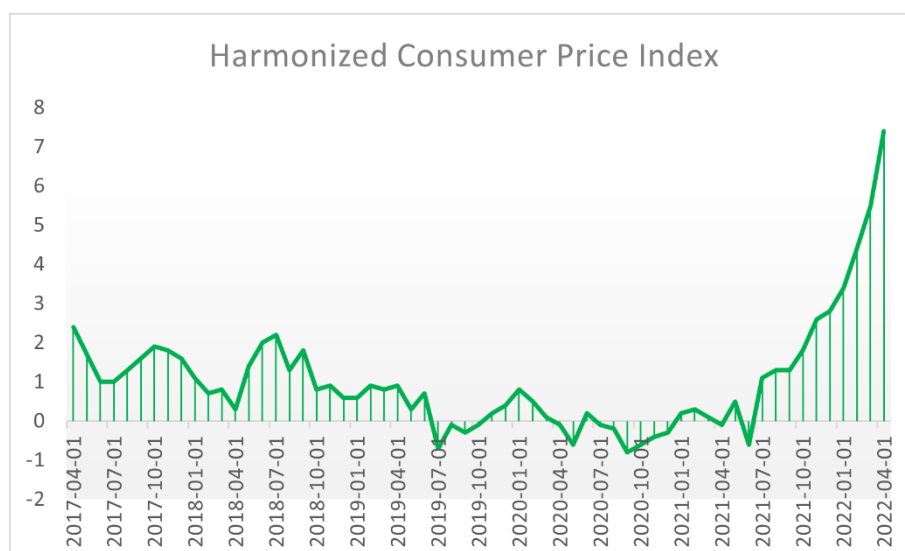


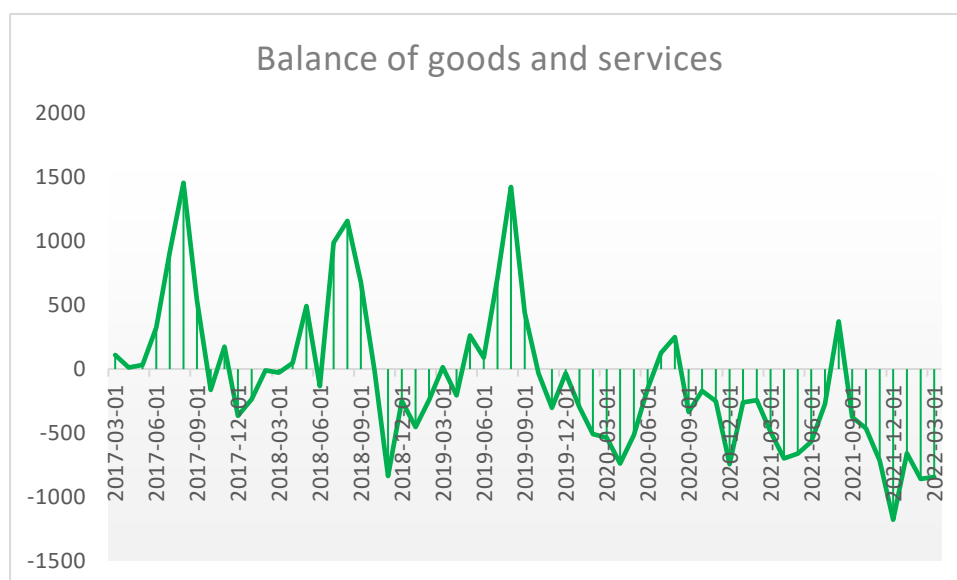
Figure 13: Evolution of consumer price index - Monthly - CPI-Total-(TVH - (Homologous change rate)-M (Year-on-year inflation rate), measure: % – Portugal from 2017 to 2022(4th month)

(Source: Author– data obtained from Banco de Portugal)



*Figure 12: Evolution of Harmonized Consumer Price Index - Portugal - Monthly - Year-on-year rate of change, measure: % – Portugal from 2017 to 2022(4th month)*  
(Source: Author – data obtained from Banco de Portugal)

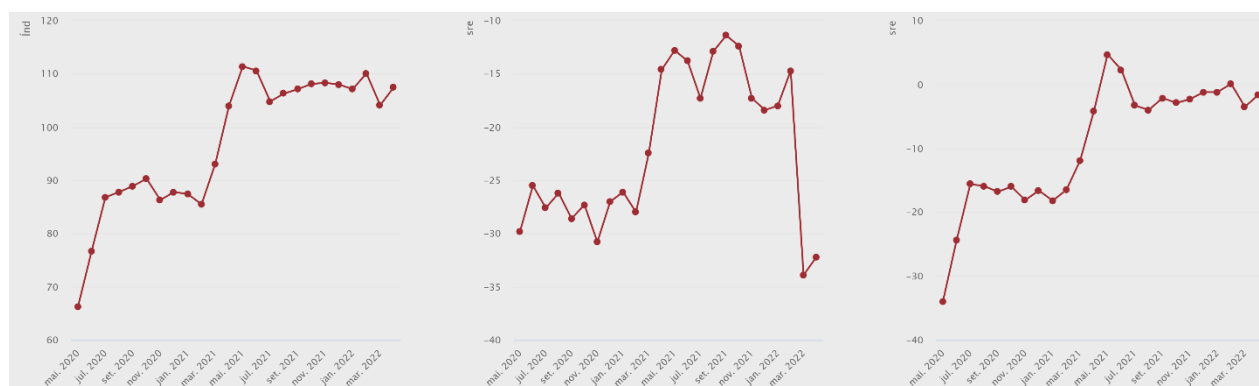
In annual average terms, a rise in the prices of non-energy industrial goods was observed, after several years of declines, while the prices of services showed a null variation. The rise in inflation was accentuated and generalized throughout the year. The negative inflation differential vis-à-vis the area of the euro was accentuated mainly due to the prices of energy goods, reflecting differences in the structure, and functioning of these markets. The Portuguese economy's ability to finance itself abroad has improved. The reduction of the public deficit was only partially balanced by the decrease in savings from families. The current and capital account balance increased from 0% to 0.7% of GDP, but remained lower than that recorded in 2019, according to the Figure13.



*Figure 14: Goods and Services Balance-Monthly-Balance-M€*  
(Source: Author – data obtained from Banco de Portugal)

The goods account deficit deteriorated since September 2021 due to volume and terms of trade, essentially due to the rise of energy prices goods where Portugal has a deficit position.

The surplus in the services balance increased slightly and the balance of travel and tourism was in 2020 about half of that recorded in 2019. Analyzing the indicators: of economic sentiment (monthly), Consumer confidence indicator (monthly) and Industry confidence indicator (monthly), presented sequentially in the following figure:



*Figure 15: Confidence Indicators: Economic Sentiment, Consumer Confidence and Confidence in the industry – Portugal – Monthly*  
(Source: Banco de Portugal)

The Economic Sentiment indicator has been globally increasing since the beginning of the pandemic, as has Industry Confidence, the same does not happen with Consumer Confidence, which only started to recover in February 2022. It can be partially explained by the analysis and figures presented above and more clearly by Figure 10, private consuming increasing the price face to decreasing private savings. The increase in transfers from the European Union (EU) boosted the improvement in the surplus of income and capital balances. The international investment position has become less negative, going from -10.5% of GDP to -96% at the end of 2021. The Portuguese economy went through the pandemic period in a similar way when compared to other EU economies. The support of economic policies has proved to be essential for the preservation production capacity, although there is some sectorial decomposition. The permanence of changes in the relative weight of productive sectors and consumption patterns is something that only can be confirmed in the future when further data is available. In terms of risks, those arising from the high public and private indebtedness. The disturbances caused by the rise in the prices of energy products and the scarcity of some essential goods in world economic activity represent a new challenge, with negative consequences on the activity and, above all, on the inflation – that is suffering in last months the consequences of the war between Russia and Ukraine. Portugal in the coming years will receive, 66.2 billion euros from the European Union, with 45 billion for mitigate the impact of the pandemic on the economy and 21.2 billion of next community framework 2021-2027. But the success of allocation of European funds to SMEs and the impact on the economy continues to be under debate, making it urgent to find efficient and effective solutions for the benefit of the Portuguese economy (Fernandes et al, 2021).

#### 4. CONCLUSION

An analysis of COVID-19 in Portugal and the Portuguese Economy during the pandemic situation was presented. It can be concluded as expected that the pandemic induces some changes in main economic indicators, some of them are recovering quickly than others. The damages in economics will be to try overcoming, by the “injections” of money that will arrive from European Union.



It's intended to complete this work comparing the pandemic crise with two different crises that Portugal went through, the subprime (Pereira, E. and Jardim, P. 2012), crise faced between 2007 and 2008 (a Mondial one) and austerity of the troika 2011/2013 (Rodrigues et all, 2017).

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## COMMUNICATION IMPLICATIONS OF SELF-PERCEPTIONS OF EDUCATORS

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### ABSTRACT

*A key concept of research into the communication implications of educator self-perception is professional identity. According to Daryl Bem's theory of self-perception, (educators) interpret their own open behaviour rationally in the same way they try to explain other people's behaviour. Therefore, the research of the communication implication of the educator's self-perception is framed by the social context and emotions on the basis of which the educators interpret their professional identity. The educator's "interpretation of open rational behaviour", his beliefs about self-efficacy and the educator's role are visible in communication patterns. Given the communication context and purpose of the research, the conceptual metaphor theory allows reaching for different original communication patterns to clarify more abstract concepts of professional identity. The purpose of this research is to analyse the self-perception of Croatian educators using metaphorical expressions about different areas of professional identity of educators. Therefore, research questions were asked: 1. What metaphors did Croatian educators shape to describe their understanding of their professional identity? 2. What metaphors were used in the perception of different areas that make up the professional identity of educators? 3. What metaphors did they use to express a positive, neutral or negative aspect about different areas of their professional identity? Primary and secondary school educators were selected for the research sample. The research was conducted by a qualitative research method, group interviews and a quantitative research method, a questionnaire. Both methods involved interpreting metaphors in the educator's communication patterns. Based on the results and theoretical framework, the communication implications of educators' self-perception are classified according to units of professional identity: previous educational experience, motives for work in school, relationship with students, relationship with colleagues, personal action, educational policies, material valorization, tasks, efficiency, belief in teaching, job satisfaction and substitution of the educator's profession.*

**Keywords:** *conceptual metaphor theory, educator's self-perception, professional identity, theory of self-perception*

### 1. INTRODUCTION

A key concept of research into the communication implications of educator self-perception is professional identity. Nickel and Crosby (2021) on the concept of professional identity cite several educational researchers whose starting point is Mead's (1934) view that identity develops through interactions in which we learn to understand ourselves by taking on other people's perspectives. Domović and Vizek-Vidović (2013, according to Beijgaard, Meijer and Verloop, 2004) define professional identity, among other things, as self-perception in a professional group that develops through social communication. Therefore, the research of the communication implication of the educator's self-perception is framed by the social context and emotions on the basis of which the educator interprets his professional identity. Thus, according to Daryl Bem's theory of self-perception, educators interpret their own open behaviour

rationally in the same way they try to explain other people's behaviour. Part of the professional identity consists of beliefs about oneself, one's own professional role and about students (Vizek-Vidović and Domović, 2013). These authors believe that educators' beliefs can be divided into several categories, and for communication implications are important beliefs about the role of educators "perception of educators as transmitters of knowledge or educators as promoters of learning" and beliefs about self-efficacy as "experience of competence in a particular field", and develop depending on a number of personal and environmental factors, the most important of which are: interpretation of one's own achievements, observation of role model behaviour, communication of expectations and persuasion of others, and observed emotional and physiological reactions during and after the task. Therefore, both methods, the interview and the survey questionnaire, included an analysis of metaphorical expression. Given the communication context and purpose of the research, the conceptual metaphor theory allows reaching for different original communication patterns to clarify more abstract concepts of professional identity. In communicational interaction, metaphor is noticed when an innovative metaphor is created. Both conceptual and innovative metaphors use the same thought mechanisms. Metaphors enable people to understand their environment and more complex constructions (Schon, 1993). The functionality of metaphors in understanding the role of educators in education has been demonstrated by various studies (Bullough, 1991; Cerit, 2008). Hunt (2006) and Thomas and Beauchamp (2011) found that shaping metaphors allows an individual to conceive professional identities not only on a superficial level but also on a deeper level. Inbar (1996) states that metaphors are creative results of theoretical thinking used to enrich our perceptions of the educational phenomenon. The purpose of this research is to analyse the intellectual image of Croatian educators using metaphorical expressions about different units of professional identity of educators. Therefore, research questions were asked: 1. What metaphors did Croatian teachers formulate to describe the understanding of their professional identity? 2. What metaphors were used in the perception of different units that make the professional identity of educators? 3. What metaphors did they use to express a positive, neutral or negative aspect about different units of their professional identity?

## 2. METHODOLOGY

The research was conducted by a qualitative research method, group interviews and a quantitative research method, a questionnaire. The survey was conducted during May 2022. Sixteen primary and secondary school educators employed in the Republic of Croatia participated. Heterogeneous groups consisted of two to five members with work experience in the education system from 2 to 38 years to create the most natural context for conversation for the participants in order to analyse their communication patterns and ways of perceiving professional identity (Table 1). The collected data were analysed by a statistical software data processing package, the SPSS.

*Table following on the next page*

<b>SEX</b>					
		<b>Frequency</b>	<b>Percent</b>	<b>Valid percent</b>	<b>Cumulative Percent</b>
Valid	<b>M</b>	4	25,0	25,0	25,0
	<b>F</b>	12	75,0	75,0	100,00
	<b>Total</b>	16	100,00	100,00	
<b>LENGTH OF SERVICE</b>					
Valid	<b>up to 10 yr.</b>	6	37,5	37,5	37,5
	<b>11-21 yr.</b>	5	31,3	31,3	68,8
	<b>22-40 yr.</b>	5	31,3	31,3	100,00
	<b>Total</b>	16	100,00	100,00	

*Table 1: Descriptive Statistic  
(Source: Authors' research)*

The interviews lasted between 65 minutes and 104 minutes. At the beginning of the interview, participants filled out a survey questionnaire. The questions in the interview and in the questionnaire were divided into 12 thematic units (previous educational experience, motives for work in school, relationship with students, relationship with colleagues, personal activities, educational policies, material valorisation of work, tasks, efficiency, belief in teaching, satisfaction work and substitution of the educator's profession). Each unit in the questionnaire contained a closed-ended question (yes/no answer), a Likert scale of 1-10 (self-assessment of the degree on a closed-ended question; 1 indicates "does not apply to me" and 10 indicates "completely applies to me") and an open-ended question (e.g., Educator is like... because...). The answers from the interview were transcribed and compared with the answers from the survey questionnaire, and the interpretation of the answers from the survey questionnaire was approached. In the presentation of data obtained by the research, pseudonyms were used to protect the personal data of research participants. All participants in the research gave their consent to participate in the research.

### 3. DISCUSSION

The thematic units in the interview and the questionnaire are identical, and each was carefully selected based on the analysed literature on professional identity presented in the introductory part of this paper, but also on authors' personal experience of working in the school. The interview and the questionnaire analysed the communication implications of teachers on the perception of their profession based on positive, negative and neutral aspects of metaphorical expressions, regardless of the type of metaphor, in order to identify which units of professional identity have a more positive, negative or neutral attitude. They complement previous research on the professional identity of educators through the theory of conceptual metaphor. To objectively analyse the educator's metaphorical expressions in the questionnaire, metaphorical expressions from open-ended questions, answers of closed-ended questions and a selected level on the Likert scale were correlated.

In this way, the problems of objectively analysing the communication expressions of the participants were solved. The explanation of the purpose of each question is described in the chapters according to the units of professional identity of educators hereinafter (Table 2).

A closed-ended question	Mean	Yes	No	No replies	Yes and no
The study influenced the development of professional identity.	7,94	16	0	0	0
I am motivated to work at school most of the time.	8,312	15	1	0	0
I have authority in the classroom. / I give my relationship with students...	8,93	16	0	0	0
I have a good relationship with colleagues. / I give my relationship with colleagues....	8,188	16	0	0	0
My work as an educator fulfils me. / The feeling that describes me as an educator is _____ on the scale (feelings listed in the questionnaire)	7,4	14	0	0	2
Changes in education policies are reflected in my work.	6,938	12	4	0	0
Do you think that the income you earn corresponds to the level of work invested in the school? / I estimate the satisfaction of the realised income...:	5,75	7	7	0	2
I have too many tasks to do. / To what extent do you feel "overwhelmed with work"?	6,5	9	7	0	0
I am efficient at work / To what extent are you effective?	8,27	16	0	0	0
I notice that my teaching strategies are changing. / To what extent are your teaching strategies changing?	7,938	15	1	0	0
Are you satisfied with the job you do? / Evaluate job satisfaction.	8,56	16	0	0	0
I would choose the same job again if I could choose again. I am sure I would choose the same job again by estimating...:	8,266	14	0	0	2

*Table 2: Descriptive Statistic  
(Source: Authors' research)*

### 3.1. Previous educational experience

Satisfaction with studies and student interest are some of the key factors in the quality of studies and determine satisfaction with studies (Reić, Ercegovic and Jukić, 2008). Accordingly, students' satisfaction with the study is higher if it arises from hedonistic motives in relation to utility motives (Kesić and Previšić, 1998). Therefore, the research participants thought about experiencing themselves at the beginning of their professional path while studying. All research participants believe that the study influenced the development of their professional identity. On a scale of 1-10, they estimated that the study affected them 7.94.

They presented the self-perception of their identity with metaphors in which they present themselves as persons of different feelings and perceptions as professionals. One participant described feeling “mostly confused because I was lost in translation.” Hana. They were aware it is the beginning in developing their professional identity, which one of the participants described as a “beginner because I was just acquiring new knowledge and thinking about what kind of educator I would be and whether I would get a job.” Veronika, or as “student who doesn't think about work.” Gita. In addition to the term “student”, the following statements are added: “student because that was the approach” Ivan, “free student because I always studied part-time” Tomica, “average student; in practice I realised that this is my final choice and that this is what I want. The subjects were interesting to me.” Katja. In addition, they experience themselves through entertainment: “a young person eager to have fun, in a big city.” Darko. Some research participants describe their experience of college in terms of laziness: “In college, I felt like I could do a lot more because I was lazy.” Esther and “lazy because I didn't go to all the lectures” Julia. On the other hand, research participants describe this period as a period of intellectual growth where they describe that they experienced “as an intellectual because I read a lot and came into contact with various ideas, because I was engaged in learning and intellectual work.” Gorana, or as one aware of the need to develop and learn: “someone who still has a lot to learn.” Janko, they are pleased with what they have received because “I received an education at the university that allowed me to understand the bigger picture of life” Vito. They saw a good perspective for the future and described themselves as “a person preparing for new challenges.” Ranka, “a promising linguist because I loved what I was studying.” Leona, “someone who will love her future job” Fani. In open-ended questions, thirteen respondents used the positive aspect of the metaphorical expression, two respondents used the negative aspect of the metaphorical expression, and one respondent used the neutral aspect of the metaphorical expression.

### **3.2. Motives for work in school**

The motivation of educators to work at school greatly affects their satisfaction with the work they do. The aim of this unit was to analyse what motivates them in their work and what motivates them to do their job in order to achieve the goal. It was found that almost all interviewees were motivated to work in the school. The average grade of participants for motivation to work in school is 8.31; only one participant responded that he was not motivated by work in school. Although there are various motives for most of the time, they want to do their job, the motive of wanting to work with young people and encourage them to acquire knowledge stands out: “I would describe my motives for working in the educational system as love for vocation, children and for transferring knowledge and experiences to younger people in order to see reality as realistically as possible.” Vita. If the motives do not refer to others, to students, they refer to themselves: they identify them as always present and persistent, fluid, stimulating, challenging due to changes in the education system; the motives “pushed them forward every day” or “‘pushed’ them to do something different every day in class.” Fani. Only one educator stated that their motives were existential in nature because they “help him survive.” Goran. Participants in their metaphorical expressions had positive aspects towards motives for work in school (n = 11) and four respondents retained a neutral aspect. One answer had negative aspects in the metaphorical expression.

### **3.3. Relationship with students**

Jurić (2004) attaches great importance to the relationship between educators and students because it is the basis for the entire educational work with students and is a prerequisite for educational activities. The educator-student relationship is an interpersonal relationship that is imbued with a personal and professional component.

Such a relationship is characterised by interaction and mutual influence, and a successful relationship requires educator empathy, positive attitudes in the form of sympathy, social perception and trust in the student (Posavec, Vlah, 2019). The conducted research confirms the same. Educators feel they have authority in the classroom and feel they are establishing a good relationship with them. They rate their relationship with students with an average grade of 8.9. In their statements, the participants in the research describe the students as a "product of society" Gita. They compare them to plants because of the need for continuous care, stating that the student is like "young fruit that should be tried to grow properly" Tomica and "plants because it needs a lot of watering and grounding to bloom" Veronica. At the same time, they associate them with "materials for shaping" Leona, and state that a student is like "clay that needs to be shaped and if you are honest and attentive, they will mostly love and respect you. The student is also like a board on which to write, to broaden his horizons, to teach them to think, to judge critically. And finally - eager for love." Katja and "diamond, because it needs to be refined to complete his personality" Esther. In relation to students, the development of values is encouraged: "obedient little man who should be guided and encouraged and developed positive, ethical and humane elements" Vito and educators identify students with the perception of their own child: "A student is like my child because I care for him as a child with all the virtues and flaws trying to have a positive effect on him and his development." Fani. It is also stated that "the disciple is like a candle that needs to be lit because it can transfer the flame to another candle" Iris. Thus, on the Likert scale, respondents chose a high level, regardless of the positive (n = 11), negative (n = 1) or neutral aspect (n = 3) of the metaphorical expression. One respondent did not answer an open-ended question.

### 3.4. Relationship with colleagues

Interpersonal relationships (cooperation, conflict, teamwork) are a vital part of every organisation, including schools (Blažević, 2014). Good relationships in the team contribute to job satisfaction and their efficiency in work, while on the other hand bad relationships with colleagues are one of major sources of stress in educators (Kyriacou, 2001). Participants in this study rate the relationship with colleagues with high marks. The average grade by which they assessed their relationship with colleagues is 8.18. The reasons for a positive relationship with colleagues are the willingness to help, the ability to discuss serious and less serious topics, cooperative behaviour, friendship, and psychological relief due to the opportunity to talk about problems and willingness to joke: "Colleagues I work with are friends who help each other to each other, smiling and sociable." Ranka, "(...) Humour is key." Katja. In addition, they emphasise maturity and diversity: "Colleagues I work with are like golden wheat because they are full of wealth and mature." Gorana, "Colleagues I work with are like leaves, flowers, grass, birds, termites, forests, foxes, ants, dialects because beauty is in diversity." Veronica. One educator also pointed out the possibility of surprise, whether positive or negative: "The colleagues I work with are like a box of chocolates because you'll never know what you got." Hana. Only one educator, in addition to the positive aspects, explicitly indicated the negative ones - intolerance within the collective. For one educator, although it is a positive relationship with colleagues, it was important to indicate the negative side of work in school through group identification: "Colleagues I work with are like me. Because we are in the same 'trouble'" Julia. Three educators took a neutral position in describing their relationships with colleagues: "The colleagues I work with are like colleagues, and you know what it means to be a colleague." Tomica, "The colleagues I work with are like all other people because I look at them that way." Ivan, "The colleagues I work with are like students." Gita. In the metaphorical expressions of the respondents there is a positive aspect (n = 10), and a neutral aspect (n = 3) and both a positive and a negative aspect (n = 2). One respondent did not answer the open-ended question.

### 3.5. Personal action

Feelings that describe the work of educators in school, contribute to their job satisfaction, and thus their effectiveness in work (Vidić, 2009). Therefore, the research participants were asked whether they were satisfied with their work as an educator in the school, to which they all answered in the affirmative. They listed the feelings that describe them as an educator, namely: satisfaction, pride, happiness, fulfilment, enthusiasm, presence, empathy, humour, expertise and gentleness, and rated the intensity of feelings with a score of 7.4. They state that the educator is the one who guides the students and is responsible for them: "I think that the educator is like a driver because he is responsible for the bus and for the passengers and for himself." Gorana. As an educator, they associate themselves with family roles and describe themselves as "older brother and parent at the same time because they need to balance with adolescent students." Darko, like "other parent" Fani, who "educates, understands, guides and helps children" Vita. They cite the importance of educators in connecting students with the subject they teach by describing themselves as an actor "who 'sells' the story because we educators sell the story, our subject" Tomica because "every lesson should be carefully prepared, watch the performance." Veronika. They believe that an educator is like a "birthday present because it brings news, pleasure and happiness in the form of knowledge." Janko. They believe that the results they achieve are not always predictable, so they describe the educator as "a builder who does not know how his building will turn out, regardless of all his competencies and skills." Gita. They describe themselves as important people who participate in the upbringing and education of each of their students, but also as a guide, friend, motivator, advisor because the educator is a key "motivator for learning and love for a subject." Katja, but they say that the educator is like "Flames because with his creativity and work he can create flames and light candles" Iris. Thus, in open-ended questions, a positive aspect (n = 14) and a neutral aspect (n = 1) are observed. One participant did not answer an open-ended question.

### 3.6. Educational policies

The success of the education system and educational reforms largely depends on the professional capacity and willingness of educators to implement new decisions in direct school practice (Fullan, 2007 and 2010, according to Kovač et al. 2014). Their view of education policy is not ideal, so with an average score of 6.94 they estimate that changes in education policy are reflected in the work of educators. The perception of instability stands out in the positive and negative aspects of education policy description. This instability is caused by frequent changes that affect the way educators work, and communication patterns are linked by the metaphor of wind, storm, fashion and change: "Education policy is like a constantly changing wind and we must act in that direction regardless of our experience and way of working" Katja, "(...) indicates what needs to change, which way to go." Leona, "Educational policy is like a storm because it comes abruptly and makes radical changes." Veronica, "Educational policy is another change in a series for which, now you know it won't last long." Gita, "Education policy is like fashion because it changes depending on the season." Hannah and "Education policy is mostly negatively marked because the teaching profession is under-respected in society" Iris. A very negative aspect (n = 7) was noticed in the communication expression of one educator: "Education policy is like an axe because it cuts into the body of the educational process." Gorana. The three educators imply a neutral aspect in metaphorical expressions: "Educational policy is a way of conducting education because that is how education is conducted." Ivan, "Educational policy is like bureaucracy" Darko, "Educational policy is applicable." Ranka. Three educators did not want to answer an open-ended question about educational policies, and one educator crossed out his already written answer in a questionnaire. The guiding aspect of education policy was suggested by two educators: "Education policy is a guideline because it indicates what needs to change, which way to go."



Leona, “Education policy is something that gives me a framework for work” Fani. Although one educator states that educational policies do not affect his work, he spoke positively about educational policy because of the “easier approach to teaching children and getting closer to reality” Vito. The positive aspect of metaphorical expressions was given by two respondents.

### **3.7. Material valorization of work**

The income that educators earn by working in school (Judge et al., 2001) is an extrinsic element of job satisfaction. Therefore, if educators believe that the income, they generate, corresponds to the level of effort invested, their job satisfaction is higher. The research found that educators believe that income only partially corresponds to the level of work invested in the school. Seven of them think that the realised income does not correspond to the level of the invested investment, an equal number of participants think that it corresponds, and the other 2 participants of the research state “neither yes nor no”. The average rating used to assess satisfaction with income is 5.75. They are generally dissatisfied with the material valorisation of their work at school. They describe it as a moderate cost-effectiveness that allows them to live a decent life, but it is too low. They say that it is a motivation for their work, but on the other hand it is not enough: “It should have been better, but it suits the ‘state average’” Darko. The research participant states that she is “like a cake without chocolate glaze because it is good, but not as it should be (juicy and fine cake as a reward for effort).” Veronika. Furthermore, through a negative view, they describe financial viability “like the expectation of Godot not coming!” Gita and “a stream in the summer because it is scarce, and there is a possibility that it will rain and be more abundant.” Goran. On the other hand, some of the research participants (n = 2) state that it is irrelevant in the story of education and work with children, because what they do, invest in people, belongs to the domain of spiritual satisfaction. Considering the metaphorical expressions of the respondents, the positive aspect (n = 2), the negative aspect (n = 6) and the neutral aspect (n = 5) were observed.

### **3.8. Task**

According to research (Hargraves, 2004; according to Chang, 2009), the causes of educators' frustration most often stem from extraordinary factors such as administrative work. Participants in the presented research believe that they are most interested in their work, and for the most part they focus on them in their answers. Nine educators feel they have too many teaching responsibilities and feel overwhelmed with work. In the self-perception of educators' tasks, there is a stable communication expression that confirms their average assessment (6.5): “Educators' tasks are like a bottomless pit... never ending tasks” Julia, “Educator's duties are like Sisyphus' job.” Gita, “Educator's duties are like Sisyphus' job because they repeat themselves like a bottomless pit, because they never end.” Leona, “Educator's tasks are like waves, sometimes too big and scary, and sometimes calm and pleasant.” Katja. The only instability in educators' tasks was noticed in the testimony of one educator, due to the sudden appearance of tasks, but as soon as they appear, they get a stable connotation: “Educators' tasks are like ants because they appear suddenly, and you can't get rid of them.” Gorana. Positive metaphorical expressions (n = 3) emphasise that educators' tasks are something that “serves” to organise work well, “in accordance with the needs of quality work”, “tasks as in any job”, “interesting”, “diverse” and “challenging”, “an inexhaustible source because there are new tasks every day”. One educator pointed out that teaching tasks are “determined by someone who has never worked in a school.” Darko. Negative and neutral aspects of metaphorical expressions were used by six respondents each. One respondent had both a negative and a positive aspect in his metaphorical expression.

### **3.9. Efficiency**

Lifelong educator education (Vizek Vidović, 2005) is one of the leading issues in every country, which includes formal education and professional development. Educator's education should last throughout the working life, because during the initial education, specific knowledge and skills for future jobs cannot be learned (Pastuović, 1999). One of the most important tasks of an educator is to be effective in teaching. In the conducted research, all educators perceive themselves as effective at work, and evaluate their effectiveness with an average grade of 8.27. Educators' competencies state that they must always improve, enable them to carry out their work successfully, give them attitude and self-confidence, and frame them. They emphasise the importance of continuous professional development, which they describe with metaphors: "Flowers because they need to be nurtured" Goran, "Something you grind and polish over time" Darko and "Stairs because they grow, increase, weigh heavier, can go down" Veronika. They describe them as "an addition to personality" Estera, and enable them to "achieve mutual satisfaction between students and educators" Vito. Eleven respondents used the positive aspect in metaphorical expressions, two respondents each for the negative and neutral aspects. One respondent did not answer an open-ended question.

### **3.10. Belief in teaching**

Teaching is a human activity whose goal is to help people learn. In the teaching process, the student is influenced in order to achieve changes in terms of knowledge, skills, habits, attitudes and prosocial behaviours. In school teaching, the educator appears not only in the role of a source of information, but also in the role of organiser and regulator of teaching and learning (Grgin, 1997). The research found that all participants believe that their teaching is changing, and their average score is 7.94. All research participants describe their teaching strategies as changing over time. They adapt to new circumstances, situations, and requirements in the educational context. Different metaphors were used to describe the teaching. Regardless of the differences in interpretation, the research participants state that everyone sees a positive side and that their work is focused on students and their growth and development in all life contexts. They say that teaching is like art "because it is creative". Hannah, and "because they require a few skills" Leon. There are metaphors from the plant world in the perception of the educators' relationship with students and educators' teaching strategies: "sunflower because it turns to the needs of students" Goran, and "planting seeds that will germinate if favourable conditions are created, but we must always plant in the hope that the seed will germinate" Tomica. Teaching is also described as "a joint journey through space and time" Fani, which aims to "complete the personalities of the little people we give wings to" Esther. Positive aspects (n = 12), negative aspects (n = 2) and neutral aspects (n = 1) were observed in metaphorical expressions. One respondent did not answer an open-ended question.

### **3.11. Job satisfaction**

Job satisfaction is defined as a pleasant emotional state associated with an individual's assessment of work and affective reactions to work and attitudes toward work (Platsidou, 2010). All participants in the survey express satisfaction with the work they do and rate it with an average score of 8.56. At the end of the workday, they describe their feelings as satisfaction and fulfilment. It makes them happy that they love the work they do and the positive impact they leave on children and teach them something new. In addition, they describe their feelings through exhaustion, which emphasises the complexity of the work they do and at the end of the day they feel like "sailors because I love the sea, but travel and work exhaust me" Goran and like "squeezed sponge because I'm tired and without energy (especially before the end of the school year)" Veronica.

In this unit, the largest number of metaphorical expressions with both negative and positive aspects ( $n = 5$ ) stands out, along with positive aspects ( $n = 7$ ) and negative aspects ( $n = 4$ ). There were no metaphorical expressions with a neutral aspect.

### 3.12. Substitution of the educator's profession

When asked if they could choose again if they would choose the same job they are doing now, almost all participants answered that they would (average participant rating is 8.27), with the remark of one of the participants who states she would but only with a slightly higher income. They list the different occupations they would be involved in if they were not educators. It is interesting to note that some of the participants cite the same occupations: farmers / family owners, doctors / nurses, translators and librarians. Research participants list the following activities: dog keeping, rock stars, pastry chef and lawyer. One participant concludes that regardless of the profession, "in my opinion, the most important element in life is justice" Vito. On the other hand, two research participants state that this is the only thing they want to do in life, so if they were not educators, they state that they would be unemployed. The aim of this open-ended question was to explore the educators' imagined situation: 14 respondents would choose the same occupation, and two respondents wrote yes and no.

## 4. CONCLUSION

Previous research (Jurčić Katunar, 2018; Vizek Vidović, 2013; Thomas and Beauchamp, 2011; Hunt, 2006; Resman, 2001; Inbar, 1996) has investigated the professional identity of educators and metaphors in educators' communication expressions. This paper contributed to this research because it investigated the communication implications of educators' self-perception in both interviews and questionnaires and compared educators' answers to open-ended and closed-ended questions with the Likert scale. One can easily see the correlation of positive, negative and neutral aspects of metaphorical expressions with the self-perception of educators' professional identity. Most metaphors appear in the context of topics that they attach the greatest importance to, i.e., those thematic areas that they are extremely satisfied with or, on the other hand, dissatisfied with. This confirms the introductory definition of metaphor as the possibility of meaningful analysis that can clarify a complex event or feeling. Inbar (1996) describes metaphors as creative results of theoretical thinking, which were also used in the presented research in the context of enriching the perception of educators about their professional identity. These results do not allow causal inference and generalisation because it is a small sample but can serve as guidelines for conducting future research on metaphorical expressions in the interaction of educators and students during the lesson and compare with metaphorical expressions of educators from the questionnaire to conclude on (non)existence of a connection between the educator's thinking about students and specific behaviour with students. Furthermore, researching the metaphorical expressions of educators employed in higher education would enable the analysis of differences and similarities in attitudes towards pupils and students, but also a comparison of self-perception of primary, secondary and university educators in their communication implications.

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