



21st International Joint Conference

**CENTRAL AND EASTERN EUROPE
IN THE CHANGING BUSINESS ENVIRONMENT**

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Faculty of Business Administration, Department of Marketing

and

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Faculty of Commerce, Department of Marketing
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The conference is jointly organized by the Prague University of Economics and Business (namely the Department of International Business of the Faculty of International Relations and the Department of Marketing of the Faculty of Business Administration) and the University of Economics in Bratislava (namely the Department of Marketing and Department of International Business of the Faculty of Commerce). The conference focuses on the whole region of the Central and Eastern Europe, since this region plays an increasingly important role within the economic development of the whole European continent. The main objectives of the conference are to identify and analyse the ways and strategies whereby globally operating businesses can maintain and foster their competitiveness regarding their foreign competitors.

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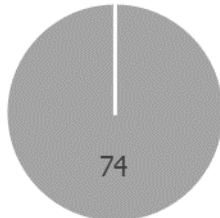
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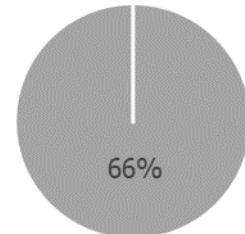
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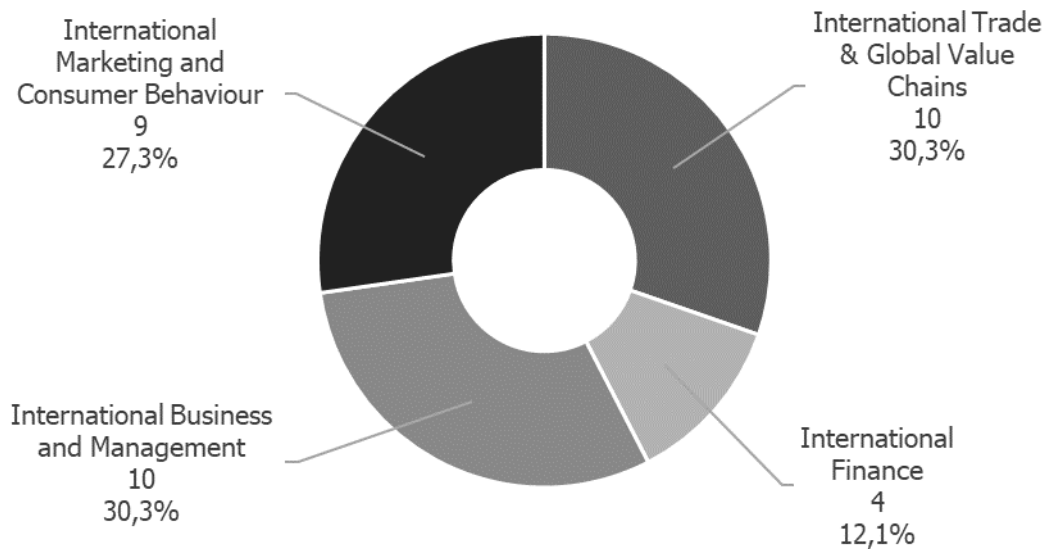
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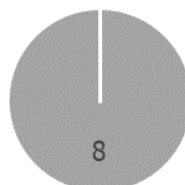


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Exploring the Attitude to Climate Change and Socio-Ecologically Responsible Consumption of the Slovaks

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Abstract: The aim of the presented article is fivefold: (1) measuring Slovaks' attitudes to climate change, (2) examining the influence of demographic factors on this rate, (3) measuring socio-ecological behaviour of Slovaks, as well as (4) examining the impact of demographic factors on this rate and (5) the relationship of Slovaks' attitudes to climate change and their socio-ecological behaviour. The study is supported by a primary survey based on 384 respondents who form a quota sample. Based on the objectives of the article, we created research questions and hypotheses, which we test based on ANOVA-test and linear regression analysis. In this work we use two scales – ACC and SRCB scale. Based on the results, we can state below-average to average interest of Slovaks in environmental behaviour and ecologically social sustainable consumption. The results of the study can be used in ecological, social, environmental as well as educational, marketing, and ecological areas.

Keywords: socially responsible consumption behaviour, consumer behaviour, ecology, climate change

JEL Classification codes: Q57, D91, M30

INTRODUCTION

One of the greatest challenges for the world in the 21st century is the shift of selfish and consumerist behaviour to environmentally conscious consumer behaviour and long-term sustainable consumption. In recent years, consumers have begun to realize the impact of their behaviour on the environment; especially the stages of shopping and post-buying one. The authors Abdul Wahid et al., (2011) concluded that consumer pressure is gradually forcing companies to offer products that are environmentally friendly. If companies ignore this pressure, they risk losing their competitive advantage. It is important for both producers and traders to realize that among the classic purchasing factors such as price, quality and country of origin, the ecological side of the product also comes to the fore (Binninger and Robert, 2008; Zakersalehi and Zakersalehi, 2012). Recent surveys show there is a growing segment of consumers who prefer the environmental aspect to the price (Sua et al., 2012).

Many scientific and professional articles focus on this issue from the perspective of companies. However, it is important to realize that one of the main players in the market are households

(consumers), and if companies want to be successful, they must be based primarily on the preferences and interests of their customers, who represent the alpha and omega of business.

Among the basic aspects that need to be examined in relation to consumer behaviour and ecological, environmental, and socially responsible behaviour are consumer attitudes, willingness to accept / reject ecological lifestyle (pro-environmental behaviour) and to master the basic elements of socially responsible consumption in consumer behaviour. It should be added that these aspects are conditioned by consumer knowledge as well as basic demographic factors.

The article has high goals that it examines in the conditions of Slovakia based on the primary survey. In general, it can be stated that there is no one general concept that would cover all aspects of the issue. Therefore, we will take a closer look at these aspects individually.

1 LITERATURE REVIEW

The topic of ecological, environmental, and social awareness in the context of consumer behaviour represents a new concept that deserves the closer attention of scientists and experts. As important authors (e.g., Courtenay-Hall and Rogers, 2002; Gough, 2002) emphasize, a model of consumer behaviour that encompasses all these aspects can only be interpreted in certain dimensions. As several models suggest, the basis for conscious behaviour is a sufficient cognitive level of the consumer which is subsequently reflected in his attitudes and leads to pro-environmental behaviour (Chan, 1998).

Knowledge is the basis of the presented model, but this cognitive component often follows the affective one (most often a feeling of fear and a sense of belonging). According to a study by Fliegenschnee and Schelakowsky (1998), it can be stated that unless the cognitive component manifests itself effectively (internal motives and feelings do not arise), knowledge does not provide a sufficient stimulus.

The cognitive and affective components can shape consumer attitudes. Attitudes can be understood as beliefs that can create a certain action or beliefs that affect us so that we do not create an act. We understand deed and action as a conative component that is the result of this model. Diekmann and Franzen (1997) point out that the more consumers must sacrifice (higher price, more time to search for products) in the context of environmental products, the lower the positive impact of attitude as well as the ability to act. The results of the survey shown that only in the category of small victims are consumers willing to act strongly pro-environmentally.

Roberts (1995, 1996a, 1996b) states that consumers are increasingly aware of their social and environmental responsibilities, which is reflected in their purchasing decisions.

Lifestyle in the context of the environment and awareness creates completely new areas. Currently, the concept is often mentioned socially responsible consumption. Webster (1975) defined socially conscious consumer "as a consumer who takes into account the public consequences of his or her private consumption or who attempts to use his or her purchasing power to bring about social change". Mohr et al. (2001) I understand socially responsible consumer „as a person basing his or her acquisition, usage and disposition of products on a desire to minimize or eliminate any harmful effects and maximize the long-run beneficial impact on society,,.

Socially responsible consumption is defined as "those consumer behaviours and purchase decisions which are related to environmental and resource-related problems and are motivated not only by a desire to satisfy personal needs but also by a concern for the welfare of society in general" (Antil 1984; Antil and Bennett 1979).

There are several studies that dealt with this issue, but only a small part took place in Slovakia. In Hungary, for example, several studies have addressed the issue (Székely et al., 2011; Csutora, 2012; Kraiciné Szokoly and Czippán, 2011), which point to the acute need to examine the issue and influence consumers to adopt pro-environmental behaviour.

2 METHODOLOGY

The aim of the article is fivefold: (1) measuring Slovaks' attitudes to climate change (based on Attitudes to Climate Changes Scale), and also (2) examining the influence of demographic factors on this rate, (3) measuring socio-ecological behaviour of Slovaks (based on Socially Responsible Consumption Behaviour Scale), as well as (4) examining the impact of demographic factors on this rate. At the same time, we will examine (5) the relationship of Slovaks' attitudes to climate change and their socio - ecological behaviour.

Creating research questions (RQ) and hypotheses (H):

Based on the stated goals, we created research questions and hypotheses:

RQ1: What is the rate of attitudes towards climate change? (based on ACC scale)

RQ2: What is the level of ecologically and socially responsible consumption? (based on SRCB)

RQ3: What effect do the selected demographic factors have on the ACC scale?

H1a: There is a relationship between the measured ACC value and age.

H1b: There is a relationship between the measured ACC value and gender.

RQ4: What effect do the selected demographic factors have on the SRCB scale?

H2a: There is a relationship between the measured value of the SRCB and age.

H2b: There is a relationship between the measured value of SRCB and gender.

RQ5: What is the direction and intensity of the relationship between ACC scale and SRCB scale?

H3: There is a relationship between the ACC value and the SRCB.

2.1 Sampling and data collection procedures

In the primary survey, we used a quantitative inquiry method to collect data. Basic population will be defined as Slovak consumers older than 15 years. There are several reasons for determining the lower limit of our base population for 15 years. As stated by Badzińska (2011) most important is that respondents older than 15 years have their own money and often decides on their own, without the involvement of parents about their purchases, deeds, and create their own attitudes as opposed to respondents younger than 15-year-old. Overall, from this age on, consumers perceive the world and have sufficient education to understand the environmental aspects of their behaviour.

Since the aim of the article is to examine demographic variables, we chose the method of non-probability sample - Quota sample, which captures the demographic characteristics of the basic set. Based on the choice of this type of data collection, the findings will be more accurate and relevant.

First stage was to determine quotas in basic population (see Tab. 1). Quotas for research were age and gender. Second stage was to apply quotas to create the sample (based on judgement and random sample - walk method, where the researcher addressed respondents according

to key factors and randomly found respondents who matched the characteristics of the target group) what can be seen in the Tab. 1. The basis for our research was 384 respondents.

Tab. 1 Quotas and their application

Factors		Quotas [%]	Quotas applied [pcs.]
Gender	Men	48.8	187
	Women	51.2	197
Age	15-39 years old	40.31	155
	40-64 years old	41.3	159
	Older than 65 years	18.39	70
Σ		100	384

Source: own calculation based on SOSR (2020).

As shown in Tab. 1, the sample surveyed represents a representative sample of the population of Slovakia older than 15 years according to the following quotas: age and gender. For a sample of 384 respondents, the maximum statistical error (with a 95 % confidence probability) was around 5 %.

2.2 Primary research - basic parameters

We conducted a standardized inquiry conducted by a research tool - a questionnaire. The questionnaire was created in a print and online form and consisted of three parts:

The first part of questionnaire focused on measuring the attitudes of Slovak consumers to climate change. This measurement was performed based on the ACC scale tool (Attitudes to Climate Change scale), which was created by Čvirik and Ölveczká (2020a) and tested on 500 respondents. The scale contains twelve statements, to which the respondent responds on a five-point Likert scale. The authors demonstrated a high degree of reliability and population, and a strong internal consistency of the scale (total Cronbach's alpha was 0.827), as well as a low rate of standard deviation for individual statements (max. 0.833 points). Overall, the presented tool appears as suitable for further research in the field of ecology and consumer behaviour, so we decided to adapt it in our article. The mean values, standard deviations and for individual ACC scale statements were recorded in the Tab. 2.

Tab. 2 ACC scale

ACC scale items*	Mean scores	Standard deviations	Cronbach 's alpha***
1. The global climate is changing.	2.88	1.35	0.781
2. Man is the cause of climate change.	2.39	1.01	0.805
3. The climate in Slovakia is changing significantly.	2.63	1.31	0.809
4. Climate change does not exist, it is just conspiracy theories. **	2.17	0.88	0.810
5. The importance of examining climate change is overestimated. **	2.55	1.29	0.780
6. The effects of climate change do not affect life on Earth. **	2.21	0.97	0.807
7. I am afraid of climate change and its consequences.	2.31	1.31	0.780

ACC scale items*	Mean scores	Standard deviations	Cronbach 's alpha***
8. I try to use ecological modes of transport.	2.67	1.70	0.795
9. It is warmer in Slovakia every year, which is caused by climate change.	2.67	1.33	0.808
10. It does not bother me that the world's seas and oceans are rising, because it does not affect me at all. **	2.33	1.16	0.804
11. I would be willing to pay more for products that do not contribute to climate change.	2.15	1.09	0.790
12. Urban public transport is greener, emits less emissions and that is why I prefer it.	2.47	1.22	0.804

Note: * Used 5-degree Likert scale (1 = strong disagreement, 5 = strong agreement).

** Negative / opposite evaluation.

*** Overall Cronbach 's alpha = 0.813

Source: Own calculations based on a scale from Čvirik and Ölveczká, 2020a

In the second part of the questionnaire we focus on measuring responsible consumption and environmental awareness in the consumer behaviour of Slovaks. To achieve this goal, we use the SRCB scale (Socially Responsible Consumption Behaviour), which was created by Antil and Bennett (1979) and subsequently tested in three steps in which they eliminated redundant claims. The scale contains forty statements to which the respondent responds with agreement / disagreement, the intensity of which is divided on a 5-point Likert scale. This version of the scale achieved high reliability (Cronbach's alpha = 0.920). Overall, the presented tool appears as suitable for further research in the field of ecology and consumer behaviour, so we decided to adapt it in our article. The mean values, standard deviations, and Cronbach 's alpha for individual SRCB scale statements were recorded in the Tab. 3. As we used the application of tools in the first and second part of the questionnaire, it was necessary to verify their reliability. Cronbach's alpha is used to investigate the reliability (accuracy and reliability of a research tool) within the internal consistency of the selected scale, while the value of Cronbach's alpha should be in the range of 0.750 - 0.950. (Tavakol and Dennick, 2011) As we can see in Table2, the total value of Cronbach's alpha value for ACC scale was 0.813, which can be interpreted as a high value. We can see in Table 3 that Cronbach's alpha value for SRCB scale is 0.911, which can be interpreted as a very good value. From a practical point of view, it should also be stated that if the Cronbach's alpha value for the individual statements is higher than a total, it is advisable to exclude this statement in future research. As this will increase the overall accuracy and reliability of the research tool – in our case of ACC scale. As we can see, it is not appropriate to rule out any of the statements. In the case of the SRCB scale, it is appropriate to examine arguments 15 and 33 in more detail. The standard deviation of the mean represents the dispersion of the calculated arithmetic mean across the different samples selected from one main population. The standard deviation shows to what extent the individual measured values are around the mean value. The smaller the standard deviation, the closer the measured values are around the mean one. If the variance is smaller, it can be understood that the statement was rated similarly by all respondents. As we can see, respondents' answers were more consistent on the ACC scale.

Tab. 3 SRCB scale

ACC scale items*	Mean scores	Standard deviations	Cronbach 's alpha***
1. People should be more concerned about reducing or limiting the noise in our society.	2.76	1.34	0.903
2. Every person should stop increasing their consumption of products so that our resources will last longer.	3.25	2.58	0.905
3. The benefits of modern consumer products are more important than the pollution which results from their production and use.**	4.19	1.63	0.907
4. Pollution is presently one of the most critical problems facing this nation.	2.99	2.08	0.902
5. I don't think we're doing enough to encourage manufacturers to use recyclable packages.	2.65	2.22	0.912
6. I think we are just not doing enough to save scarce natural resources from being used up.	2.29	1.27	0.906
7. Natural resources must be preserved even if people must do without some products.	2.74	1.52	0.907
8. All consumers should be interested in the environmental consequences of the products they purchase.	2.48	1.79	0.905
9. Pollution is not personally affecting my life.**	2.11	0.87	0.907
10. Consumers should be made to pay higher prices for products which pollute the environment.	2.93	1.86	0.907
11. It genuinely infuriates me to think that the government doesn't do more to help control pollution of the environment.	2.84	1.82	0.906
12. Nonreturnable bottles and cans for soft drinks and beer should be banned by law.	3.35	1.77	0.909
13. I would be willing to sign a petition or demonstrate for an environmental cause.	2.60	1.46	0.904
14. I have often thought that if we could just get by with a little less there would be more left for future generations.	3.36	2.13	0.907
15. The Federal government should subsidize research on technology for recycling waste products.	2.58	1.60	0.905
16. I'd be willing to ride a bicycle or take a bus to work in order to reduce air pollution.	2.77	2.06	0.905
17. I would probably never join a group or club which is concerned solely with ecological issues.*	2.65	2.06	0.906
18. I feel people worry too much about pesticides on food products.**	2.43	1.30	0.906
19. The whole pollution issue has never upset me too much since I feel it's somewhat overrated.**	2.33	1.33	0.905
20. I would donate a day's pay to a foundation to help improve the environment.	2.74	1.50	0.906

ACC scale items*	Mean scores	Standard deviations	Cronbach 's alpha***
21. I would be willing to have my laundry less white or bright in order to be sure that I was using a non-polluting laundry product.	2.50	1.79	0.905
22. Manufacturers should be forced to used recycled materials in their manufacturing and processing operations.	3.20	2.59	0.904
23. I think that a person should urge his/her friends not to use products that pollute or harm the environment.	2.72	1.81	0.904
24. Commercial advertising should be forced to mention the ecological disadvantages of products.	3.38	2.15	0.908
25. Much more fuss is being made about air and water pollution than is really justified.*	2.65	2.05	0.905
26. The government should provide each citizen with a list of agencies and organizations to which citizens could report grievances concerning pollution.	2.43	1.28	0.905
27. I would be willing to pay a 5 % increase in my taxes to support greater governmental control of pollution.	3.21	2.03	0.903
28. Trying to control water pollution is more trouble than it is worth.**	2.95	2.16	0.906
29. I become incensed when I think about the harm being done to plant and animal life by pollution.	3.00	2.66	0.906
30. People should urge their friends to limit their use of products made from scarce resources.	2.55	1.66	0.906
31. I would be willing to pay one dollar more each month for electricity if it meant cleaner air.	3.20	2.26	0.91
32. It would be wise for the government to devote much more money toward supporting a strong conservation program.	2.51	2.00	0.908
33. I would be willing to accept an increase in my family's total expenses of 50€ next year to promote the wise use of natural resources.	4.19	1.55	0.913
34. Products which during their manufacturing or use pollute the environment should be heavily taxed by the government.	3.01	1.21	0.907
35. People should be willing to accept smog in exchange for the convenience of automobiles.*	3.02	0.89	0.908
36. When I think of the ways industries are polluting I get frustrated and angry.	3.91	0.08	0.909
37. Our public schools should require all students to take a course dealing with environmental and conservation problems.	3.49	0.25	0.909
38. I would be willing to stop buying products from companies guilty of polluting the environment even though it might be inconvenient.	2.62	1.07	0.906
39. I'd be willing to make personal sacrifices for the sake of slowing down pollution even though the immediate results may not seem significant.	2.52	1.14	0.904

ACC scale items*	Mean scores	Standard deviations	Cronbach 's alpha***
40. I rarely ever worry about the effects of smog on myself and family.**	2.66	1.18	0.906

Note: * Used 5-degree Likert scale (1 = strong disagreement, 5 = strong agreement).

** Negative / opposite evaluation.

*** Overall Cronbach 's alpha = 0.911

Source: Own calculations based on a scale from Antil and Bennett, 1979

The last part of the questionnaire was focused on the identification of respondents (age, gender, and residence).

3 RESULTS AND DISCUSSION

3.1 Results

In the primary research we used a quantitative method to collect data. We conducted a standardized query using a research tool - the questionnaire. To achieve the main goal, we focused on solving partial goals, based on which we formulated hypotheses and research questions. In the next section we focus on answering research questions and verifying hypotheses.

RQ1: What is the rate of attitudes towards climate change? (based on ACC scale)

The scale used for the measurement contained 12 statements, with the respondent commenting on 5 points of the Likert type scale for each one. It follows that the resulting value can range from 5 to 60 points. The average value measured by us is 29.45 points (approximately 44.45 %), which is below average to the average value (the average of the scale is 32.5 points). The average calculation error is 0.433 points. The modus represents a value of 22 points and a median 28 points. Overall, we rate of the ACC scale in Slovakia as below-average / average.

RQ2: What is the level of ecologically and socially responsible consumption? (based on SRCB)

The average of SRCB investigated accounted for 115.77 points that is below the average in scale (scale average - 120; <40,200> scale). The average calculation error is 1.23 points. The modus represents a value of 128 points and a median 121 points. Overall, we rate the SRCB as below-average to average.

RQ3: What effect do the selected demographic factors have on the ACC scale?

H1a: There is a relationship between the measured ACC value and age.

H1b: There is a relationship between the measured ACC value and gender.

Age and gender were chosen as the selected demographic factors. Already the initial results suggest that there are significant differences. Males achieved an average ACC score of 26.32 points (st. dev. = 3.64) and females achieved an average ACC score of 32.42 points (st. dev. = 10.47). As we can see, the men's segment achieved a more consistent response.

From the point of view of age differences, we examined 3 segments, namely 15-39 years old, 40-64 years old and older than 65 years. Respondents between the ages of 15-39 achieved an average ACC score of 27.91 points with a standard deviation of 9.92 points. Respondents aged 40-64 achieved an average score of 33.40 points (st. dev. = 5.42) and respondents older than 65 years achieved an average ACC value of 23.87 points (st. dev. 6.26).

However, these results can only be understood as indicative. An important step is to test the hypotheses, which we did with the help of the ANOVA test. We recorded significant test results in Tab. 4.

Tab. 4 Hypotheses H1 Evaluation Results (ANOVA)

	F - value	F - crit.	F-F crit.	alpha	p-value	alpha - p-value
H1a	42.598	3.019	F > F crit.	0.05	0.000	Alpha > P-value
H1b	57.049	3.866	F > F crit.	0.05	0.000	Alpha > P-value

Source: own calculations

Based on the results given in Tab. 4 ($F > F_{\text{critical}}$), hypotheses H1a and H1b can be confirmed. The confirmation of the hypotheses is also supported by the fact that $\text{Alpha} > \text{P-value}$. This can be rejected as only a noise or a random factor, and we confirm the selected demographic factors (age and gender) as factors influencing attitudes towards climate change.

RQ4: What effect do the selected demographic factors have on the SRCB scale?

H2a: There is a relationship between the measured value of the SRCB and age.

H2b: There is a relationship between the measured value of SRCB and gender.

We examined two demographic factors - age and gender. The average score of men was 107.45 points with a standard deviation of 26.89 points and the average score of women was 123.56 points with a standard deviation of 17.92 points.

In terms of age difference, it can be stated that consumers aged 40-64 achieved the highest average score (average 125.77 points with a standard deviation of 17.24 points), followed by a segment of 15-39-year-old (average 113 points with a standard deviation of 25.97 points) and the lowest average score was obtained by consumers over 65 (average 98.42 points, st. dev. 22.05).

These results can be understood as indicative and therefore no clear conclusion can be drawn from them. Therefore, we decided to test the hypotheses based on the ANOVA test (see Tab. 5).

Tab. 5 Hypotheses H2 Evaluation Results (ANOVA)

	F - value	F - crit.	F-F crit.	alpha	p-value	alpha - p-value
H2a	38.933	3.019	F > F crit.	0.05	0.000	Alpha > P-value
H2b	47.494	3.866	F > F crit.	0.05	0.000	Alpha > P-value

Source: own calculations

Based on the results given in Tab. 5 ($F > F_{\text{critical}}$), hypotheses H2a and H2b can be confirmed. The confirmation of the hypotheses is also supported by the fact that $\text{Alpha} > \text{P-value}$. This can be rejected as only a noise or a random factor. And we confirm the selected demographic factors (age and gender) as factors influencing socio-ecological conscious consumption.

RQ5: What is the direction and intensity of the relationship between ACC scale and SRCB scale?

H3: There is a relationship between the ACC value and the SRCB.

To confirm (refuse) the hypotheses we chose the ANOVA one-way test. Based on the test, it can be stated that the $F\text{-value} > F\text{ crit. value}$, hypothesis can be confirmed (in all cases).

Confirmation of the hypothesis is also supported by the fact that $\alpha (0.05) > P\text{-value}$. In this way, it can be rejected that it was just a noise. We confirm that there is a relationship between ACC values and SRCB values. We used regression analysis to determine the direction and magnitude of this relationship (see Tab. 6).

Tab. 6 Results of regression analysis

	Regression Statistics			ANOVA			Regression function
	Multiple R	R Square	Standard Error	Alpha	P-value	Significance F	
H3	0.731	0.534	16.46	0.05	0.000	0.000	positive

Source: own processing

We can see a positive relationship between ACC values and SRCB values. In ANOVA, we test a null hypothesis that claims the model we have chosen to explain dependence (in our case linear regression line) is not appropriate (the alternative hypothesis argues the opposite). The F test is used to evaluate this claim. The significance $F \leq 0.05$ (α - significance level) that means that the model has been selected correctly. The null hypotheses that are tested in this analysis relate to the significance of the locating constant and the regression coefficient with the null-hypothesis asserting the insignificance of the relevant coefficient and the alternative hypothesis of its significance. The P-value for the locating constant is less than 0.05 (alpha), this suggests that the locating constant is statistically significant. As we can see, this is a strong relationship (Multiple $r = 0.731$), with the selected regression line explaining revenue variability to approximately 53%. Error (16.464) is acceptable given the depth of the variables examined. The regression function has a positive character. It can be stated that the more positive the rate of attitude towards climate change (ACC), the higher the level of sociological-ecological awareness (SRCB) among respondents.

3.2 Discussion

The results of the primary are comprehensive. We have shown that consumers have an average attitude towards climate change. While some are strongly positive, consumers are also diametrically opposed, creating overall average results. The scale captures mainly the cognitive (cognitive) dimension, which needs to be increased. Overall, it can be stated that from the point of view of ecological education and ecologically responsible behaviour, it is necessary to increase this number. This can be achieved e.g., consumer education and further complementary education.

The authors Čvirik - Ölveczká (2020a) concluded that "Slovaks have an average knowledge of the subject, and also achieve an average level of willingness to address (or mitigate the impacts) of climate change." We came to the same conclusion.

As we can say, women are more positive about climate change, which may be due to their higher interest in ecology, which is also linked to climate change. Respondents aged 40-64 reached the highest average ACC scale, which may be due to the fact that this is a generation that has enough information (from different fashions) and is also aware of its role in the ecological system. Respondents aged 15-39 achieved a lower score, who, although they have enough information, form their own opinions, which may not be exactly identical with the ecological intention. The 65+ generation did not have a relationship with ecology at a younger age, when ecological problems did not recur as often as they do today. It is therefore logical that it achieves the lowest average rate on the ACC scale. We believe that increasing the

knowledge component would also increase the rate of ACC, but it is necessary to choose the right communication strategy and media mix for each segment.

Socially and environmentally responsible consumption is currently one of the most important topics of conscious consumer behaviour.

From the available sources it can be stated that the topic of responsible consumption and ecological awareness in consumer behaviour in the conditions of Slovakia was dealt with by the authors Čvirik - Ölveczká (2020b), who measured a below-average level on the basis of SRCB. As we found out, the rate of the SRCB is currently on average to below average. It is necessary to increase this rate. From the point of view of individual statements of the scale, it can be stated that Slovak consumers feel that they are doing enough to protect scarce resources. At the same time, they have insufficient information about environmental consequences on the consumption of certain products; that pollution and pesticides do not affect their lives, which poses a direct risk to health.

It can be stated that women have more socially responsible consumption and are more aware of the environmental impact of consumption than men.

From the point of view of age, the lowest socially responsible consumption is achieved by respondents over 65 years of age, followed by respondents from 15 to 39 years of age, and the highest level of social and environmental responsibility is achieved by consumers between 40 and 64 years of age. The reason may be several, whether the time in which the generations live, the degree of ecological awareness, or interest in the issue.

Although the ACC and SRCB scale examine environmental issues from different perspectives, it can be stated that there is a strong positive relationship between them. This is a logical interpretation, as both concepts examine environmental and ecological aspects, while at a higher value, higher ecological awareness can be stated.

CONCLUSION

The aim of the article was fivefold: (1) measuring Slovaks' attitudes to climate change (based on Attitudes to Climate Changes Scale), and also (2) examining the influence of demographic factors on this rate, (3) measuring socio-ecological behaviour of Slovaks (based on Socially Responsible Consumption Behaviour Scale), as well as (4) examining the impact of demographic factors on this rate. At the same time, we would examine (5) the relationship of Slovaks' attitudes to climate change and their socio - ecological behaviour.

Based on the primary survey, it can be stated that the average value of both examined scales (ACC and SRCB) reaches below-average to average level. This result can serve as a basis for further research. It is necessary to realize that environmental conditions are constantly deteriorating, and it is also up to individuals to contribute their awareness of the issue to the one that will ultimately bring an increase in the quality of life.

It is possible to state the significance of demographic factors - age and gender - on the researched concepts. These results can be used mainly in communication, whether in the creation of communication strategies or in general in the creation of a communication policy that focuses on increasing the level of environmental awareness. Men and consumers over the age of 65 can be identified as critical segments in this area.

In the future, it would be appropriate to examine other demographic factors, but also psychological-behavioural ones, which would help in more accurate segmentation of consumers and thus identify potential critical segments that need to be worked with (raising awareness). At the same time, it would be appropriate to create a model that would contribute to raising awareness (environmental, social, and environmental).

The results of the work can be used both in marketing areas (product, price, distribution, and communication), as well as in consumer behaviour and consumer policy.

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China's Belt & Road Initiative in the EU: Perceptions, Differences and Influence on the Example of Germany and Italy

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Abstract: In 2013, the Chinese government announced the Belt & Road Initiative (BRI) with one of the major goals to improve connectivity across Eurasia. China has been signalling to the EU member states they are welcome to joint activities on BRI. This paper focuses on analysing China's recent initiative by explaining EU perspectives and the role of the BRI by example of Italy and Germany, i.e. two major EU economies. The results show that there are significant differences in perception of the BRI within these economies. While Italy has followed the CEE countries, which fully support BRI at both government and corporate level and record many investments, Germany has been much more sceptical, especially at the government level. Although China is making large investments in Germany, BRI has yielded no tangible investment activities there. Rather, BRI activities related to Germany have remained limited to railway operation projects connecting Germany and China.

Keywords: BRI, China, investment, Italy, Germany

JEL Classification codes: F10, F50, P45

INTRODUCTION

China is experiencing an unprecedented economic growth thanks to post-1978 reforms, the decline of ideological dogmas, and the opening up of many components of international business. These actions brought China the position of the world's third-largest economy in 2007 in terms of GDP. Since 2010, when China also overtook Japan, it is in the second place behind the USA. In 2020, the World Bank's International Comparison Program set a new purchasing power parity (PPP) with the reference year of 2017. The International Monetary Fund (IMF) has used a newly established PPP in the report - *World Economic Outlook* (2020) and admits that China, based on this methodology, overtook the US in terms of GDP generated in the so-called constant prices. However, it will take some time before China overtakes the USA in terms of GDP expressed in current prices, not adjusted for purchasing power. However, China, led by President Xi Jinping, does not hide its ambition to achieve this goal and become the largest, rich, and fully developed economy, which is supported in recent years by grand growth strategies.

The biggest not only geographically but also in terms of investment is a trillion-dollar revival of the Silk Road in the form of the Belt & Road Initiative (BRI). There is no official definition of BRI. According to China's National Development and Reform Commission (NDRC) action plan (2015), the initiative is „aimed to promoting the connectivity of Asian, European and African continents and their adjacent seas.” Ghiasy and Zhou (2017) better explain BRI as a Chinese proposal to interlink the countries and economies of the Eurasian continent through

a range of projects focused foremost on infrastructural development and connectivity, and coordination of national and regional development plans. The BRI should thus expand and interconnect transport networks and markets, disperse and improve Eurasia's production capacity, facilitate the transit of goods, capital, energy, raw materials as well as information, people and culture. They should achieve this through significant investments in road, rail, maritime, and aviation infrastructure, together with ancillary equipment such as power grids, power pipelines, and high-speed fiber optic cables. The BRI does not limit the number of participating countries, and this changes every year. The country's participation in the initiative is implemented through bilateral agreements - cooperation agreements and memorandums of understanding (MoU). There is no official list of countries and organizations that have already signed BRI MoU agreements with China. However, the official Chinese Belt & Road (2020) portal registers 138 participating countries.

The origins of the BRIs stem from the ancient trade „silk" routes that connected Asia and Europe, which is why the main trajectories of the initiative are primarily (but not only) aimed at connecting the Eurasian landmass and ports. However, this is not the only reason. According to Cornell and Swanström (2020) China and the EU are at the opposite ends of the Eurasian continent, yet this landmass is increasingly acting as a bridge rather than a barrier between them. Trade between these leading world powers has grown significantly in the last decade. Total foreign trade turnover rose from about \$365.4 billion in 2009 to \$704.6 billion in 2019, an increase of over 90%. China is the EU's second-biggest trading partner behind the US (and the most important trading partner outside the EU for most member countries). The EU is China's biggest trading partner (European Commission, 2020). The enormous amount of goods flowing between the EU and China represents the value of daily mutual trade on average more than \$1 billion. Several interim data suggest that in 2020, China should overtake the USA in the context of the coronavirus pandemic and become the EU's largest trading partner.

The initiative has gained popularity in many countries that fully support the Chinese idea of the New Silk Road. Promoting China's so-called „win-win" cooperation is more challenging in the EU than it might seem. The EU is not a homogeneous economy. It is an integration grouping – economic union of 27 countries with different economic levels, which is why this topic provides a space for detailed research in individual member states and a more practical explanation.

1 LITERATURE REVIEW

Since the introduction of the BRI, as an ever-evolving and open-ended project, many perspectives on its broad-spectrum issues have appeared in the literature. In relation to the EU according to Geeraerts (2019) as the endpoint and focus of China's BRI, the EU is well aware of its important role in the initiative. Therefore, the EU aims to take advantage of this opportunity under condition that the Chinese are willing to take into consideration its vital interests and conditions. But De Jonquières (2016) warns that the EU should see the BRI not as some giant leap forward - as the Chinese side often portrays - but as a series of small steps aimed at fostering steadily closer engagement with China. Baláž, Královičová, and Steinhäuser (2020) claimed that it will be crucial for the future of the EU to find a way to cooperate effectively with China so that it is a mutually beneficial cooperation, which will bring prosperity to both trade partners. On the other hand, Casarini (2016) talks about major political challenge for the EU. There is the risk, in fact, that a scramble for Chinese money could further divide the EU member states and make it difficult for Brussels to fashion a common position vis-à-vis Beijing. Gerstl (2020) examined governance along the New Silk Road through comparison of ASEAN, the EU and 17 + 1 and points out, however, the 17+1 (formerly 16+1) cooperation format, established by China in Central and Eastern Europe as an umbrella for its bilateral

relations, is embedded in the EU's governance system with strict standards and rules and regulates the Chinese presence in the region.

The authors also deal with the presence of the initiative, its impact, implementation, or consequences in individual countries around the world. Small (2017) marked Pakistan a China-Pakistan Economic Corridor (as the "flagship project" of the BRI), which constitutes the most expensive package of Chinese investments to be set in motion under its auspices to date. Nosov (2020) examines the history of the Chinese project, the reasons for its occurrence, and the problems arising in bilateral and global relations in the context of Russia's participation in it. Djankov and Miner (2016) reviewed three case studies of former Soviet countries that have become eager participants in the BRI: Kazakhstan, Georgia, and Russia to show how the initiative may fit into these countries' national development agendas. Iran's international position and its relations with the EU in the context of the awakening New Silk Road was examined by Baláž & Borovská (2019). They pointed that Iran has strengthened its trade relations with the EU and China which has resulted in participation in the New Silk Road and pointed that large infrastructure and logistics projects such as BRI, the construction of the Trans-Asian Highway and the fact that by activating its unique reserves of energy and other raw materials, Iran could restore its position as a strong business partner to its effective use. In the context of the Western Balkans region, Kašťáková, Drieniková & Zubaľová (2019) point out that BRI can lead to a debt crisis in the region and weaken already unstable countries in the region. Tzogopoulos (2017) examined the BRI as a plan to help China better explore the Mediterranean, intensify its relations with the countries concerned, and possibly help resolve conflicts across Eurasia, following the examples of Greece and Israel. He considers these countries to be pioneers in experiencing the Chinese „appetite for investment.“ In the case of the EU countries, the authors focus more on countries in the CEE region, e.g. Martura (2018) analysed the perceptions of the BRI initiative in Hungary and Slovakia or Kostecka-Tomaszewska & Czerewacz-Filipowicz (2019) called Poland a gate to the EU or a bottleneck in the BRI. These selected publications also confirm the claims of Baláž, Zábajník & Harvánek that the implementation of the BRI will have a significant impact on the geopolitical landscape.

2 METHODOLOGY

As evidenced by a selected review of the literature, there is a rising interest among academics and politicians about the potential economic impacts referring to the growing engagement of China in the EU. The EU faces new challenges in China's economic, political, and investment ambitions of China, which may strengthen their influence in the region and it provides a space for BRI's research in the EU Member States.

This study aims is to compare the presence of the Chinese initiative in Germany and Italy and its impact at various levels. Therefore, the basic research question was formulated:

- *What are the major differences in the BRI's presence in Germany and Italy?*

Thus, the current study hypothesized that:

H1: There is a different perception of the BRI at the government level in Germany and Italy.

H2: China is investing in different sectors in these countries.

H3: In Germany and Italy, China prefers infrastructure for different modes of transport as key for implementation of the BRI.

In the introduction, we briefly summarize the positions of China - its aims regarding the BRI initiative and justification for focusing on the EU. Furthermore, the article deals with the presence and explanation of the EU's different views on the initiative. The following sections focus on examining the initiative in two countries - Germany and Italy. In both cases, we

examine its presence in the country. With Germany, we are highlighting China's strategic interests in terms of access to technology, the direction of Chinese investment, the most important projects, and we are examining the government's approach and companies' approach to the initiative. In Italy, we are highlighting a different government approach, as well as the focus of investments, the most important projects, and the role of Italy in the initiative. Consequently, we provide a comparison of our major findings.

The paper draws on qualitative methods, consisting of secondary data and information analysis. It uses data provided by relevant institutions such as the EU institutions, the ITC Trademap, and official Chinese authorities. Given the struggle of transparency in Chinese investment, the article by China Global Investment Tracker (CGIT), compiled by The American Enterprise Institute and The Heritage Foundation, is applied to analyse individual investments in countries chosen by us. CGIT provides a comprehensive set of data on foreign direct investment (FDI) and China's construction contracts. The limitation is CGIT monitors China's construction activities and global investments valued at least \$100 mill. In particular, current press releases of individual investments were used to analyse the data obtained and to bring investment projects closer to them, as China does not disclose all the details of the implemented and planned projects. Other methods, such as deduction, induction, and especially comparison, were also used. Table and graphical representation were used to make the obtained data more clear. We supplemented the complex picture of the researched issue with comments and verbal descriptions of graphs, tables, and figures.

3 RESULTS AND DISCUSSION

The Chinese government has repeatedly stated that European countries, and other participating countries, can gain a lot of investments by supporting new projects along the New Silk Road, not only because the new infrastructure will facilitate trade flows between the European and Chinese markets. From the perspective of the EU, they have criticized the BRI for its poorly comprehensible policy framework. Not only that, although there has been significant improvement in the last decade of foreign trade relations between the two powers, which are considered "strategic partners", there are still notable differences between them in terms of political systems, ideas, values, and human rights. Moreover, trade and investment relations between China and the EU are accompanied by imbalances and non-reciprocity.

In 2016, the EU adopted a new strategy for China (European Commission, 2016). The strategy also promotes reciprocity, a level playing field, and fair competition in all areas of cooperation, with BRI cooperation conditioned by China's behaviour, as the EU calls for the declared goal of the project to become an open platform that respects market rules and international standards in order to bring benefits to all. It is also clear that the Xi Jinping administration is concentrating the BRI at the centre of its foreign policy and, regardless of the views of the EU institutions, is realizing its vision of renewing the Silk Road in this area as well.

Since the launch, the BRI has divided the EU into two groups. The split seems to run between the so-called core European states, especially France and Germany, who, alongside the EU institutions, are increasingly critical of China's engagement in Europe, and much of the so-called European periphery, the countries of South, South-Eastern (CEE) and Central-Eastern Europe, who see the engagement as 'reviving' their economies (Jakimów, 2019).

On the one hand, there are countries within the EU, especially the framework CEE 17 + 1, where are some the EU countries such as Bulgaria, Croatia, the Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Greece, and also Slovakia, that see the BRI positively, although there are advantages and disadvantages of the Chinese partnership. In deepening cooperation with China, economic factors motivated primarily the CEE countries. Many European countries facing economic problems are turning to China as a source of investment,

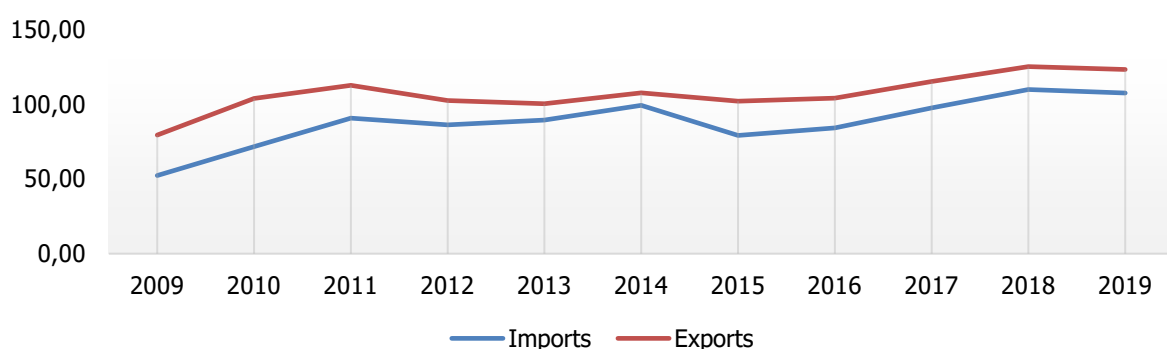
not as a first option, but as a last resort. An example is Greece. While other European creditors in Greece introduced austerity measures in 2010, China has invested in the port of Piraeus, it has been investing since 2009. Piraeus has become the biggest port, in terms of container traffic, in the Mediterranean and is one of the key hubs of the BRI. China made the most significant investment in 2016 when COSCO first bought a 51% stake and then a 67% stake for \$419.7 mil. (Stamouli, 2016). In August 2018, the Chinese and Greek Foreign Ministers signed a MoU on BRI cooperation (ChinaDaily, 2018), strengthening Greece's position as the gateway to the new "Silk roads" between Europe and Asia. Many of these countries, including the V4 countries, signed these MoUs as the first EU member states as early as 2015. Improving relations with China gives these smaller and weaker European states, which have historically been influenced by Russia and Germany, greater strategic and economic flexibility.

On the other hand, Europe's largest economies such as Germany or France share similar concerns with the EU institutions that key elements of China's trade and industrial policy, such as forced technology transfer, intellectual property theft, lack of investment transparency, and insufficient market reciprocity are economic threats to the EU. They also complain about the inflow of Chinese investment and its alleged consequences in terms of a political influence, control of key transport hubs, and access to sensitive technologies. Similarly, these countries have publicly criticized another large EU economy - Italy as the first G7 country to officially join the BRI. According to the Italian Minister of Economic Development, Luigi Di Maio, the aim is to correct trade imbalances between the two countries thanks to such cooperation (Astana Times, 2019). This calls on the question, what are the differences between the BRI in Germany and Italy?

3.1 Germany

Among the EU countries, Germany is China's largest trading partner with a foreign trade turnover of more than \$230 bil. in 2019. Since the post-crisis period, foreign trade has increased significantly, as shown in Fig 1. Interestingly, Germany does not have as high trade deficit as other European countries, which is mainly because Germany still belongs to the technological and engineering superpowers.

Fig. 1 Chinese trade with Germany (2009-2019, in billions of \$)



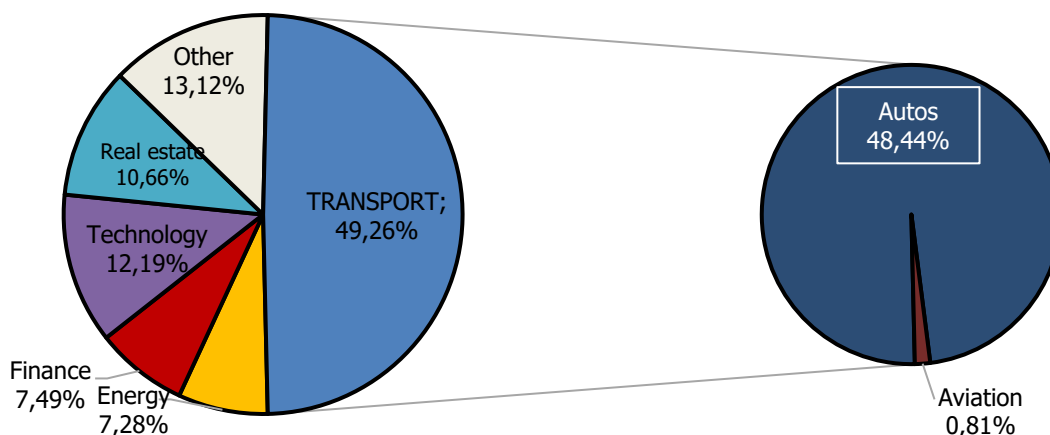
Source: Processed by the authors according the data from ITC Trade Map, 2020

But China is catching up. China has developed another strategy in the background of the BRI - Made in China 2025 (MiC 2025) strategy, which was presented in May 2015 by Chinese Prime Minister Li Keqiang. This 10-year comprehensive strategy for the period 2015-2025 focuses largely on R&D or production in strategic sectors and aims to secure China's position as a global power in technologically advanced industries (PRC Council, 2015). McBride and Chatzky

(2019) set out the basic tools by which China implements MiC 2025. First, there is a notable increase in direct support to the industry through low-interest loans for Chinese companies and investing in foreign companies, especially semiconductor companies, to gain access to advanced technologies. According to CGIT, China has made 47 acquisitions in Germany since 2015, each worth more than \$100 mill. Much of this investment comes from state-owned enterprises, companies, or funds supported by the Chinese government. Economic reforms in the 1990s reduced the role of state-owned companies in the economy, but still accounted for a 1/3 of GDP and about 2/3 of outgoing investments from China. The government supports many Chinese technology leaders on a global scale, such as Huawei and ZTE, although they are privately owned. Another important Chinese tool is the so-called "Forced Transfer Agreements". Foreign companies planning to invest or do business in China must enter joint ventures with Chinese companies on terms that require them to share sensitive intellectual property and advanced technological know-how. As Setser (2018) explained, China uses its joint venture rules to acquire external technologies from high-speed rail to energy or electric vehicle batteries. This limits the ability of European companies, in particular, to win large contracts, even though they have set up their companies in China. On the contrary, such joint ventures help China create its own successful companies.

According to the Rhodium Group (2020) Germany belongs to the so-called "Big Three" economies (together with a UK that left the EU in 2020 and France) as the top Chinese FDI destinations in the EU, largely due to a few large mergers and acquisitions (M&A) deals. A closer look at the investments based on data from CGIT (2020) shows that since 2013, China has invested more than \$42.4 bil. in Germany. These projects are mostly investments.

Fig. 2 Breakdown of Chinese construction contracts costs and investments in Germany by sectors between 2013 and 2020 (in %)



Source: Processed by the authors according the data from American Enterprise Institute, 2020

There is only 1 public investment contract financed by a Chinese bank in Germany. The breakdown of these Chinese investments by sectors is displayed in Fig.2. Out of the total investments and projected construction costs, half are budgeted for the transport sector (49.3%). Almost all investments (48%) in this sector concern the automotive industry, as it is Germany's number one sector. Germany also exports the most commodities from the group HS 87 (Vehicles other than railway or tramway rolling stock, and parts and accessories thereof) to China. Further significantly fewer investments are in the technology sector (12.2%). The real estate (10.7%), finance (7.5%) and energy (7.3%) sectors follow. Other are investments in various other sectors (health, metals, real estate, or tourism).

Chinese investment in Germany is mainly focused on gaining access to technology and know-how. This is reflected in the German Government's approach to the BRI. It is necessary to note that BRI has neither yielded infrastructure investments in Germany nor has it featured as a driver of Chinese mergers and acquisitions (M&A) and greenfield investment activities.

However, Germany is an important partner in the implementation of the BRI, mainly thanks to five German-Chinese railway connections (Li & Taube, 2019): Leipzig - Shenyang, Duisburg - Chongqing, Hamburg - Zhengzhou, Hamburg - Harbin, and Nuremberg - Chengdu. Perhaps the most remarkable railway within the BRI is Duisburg – Chongqing opened in 2012. Several times a week, a train departs from Chongqing in southwest China to Duisburg in western Germany, passing through five countries. It is one of the longest journeys in the world (11,179 kilometres) in 16 days. It is about half as few days as in the classic sea container transport through the USA. The goods from China in this case consist mainly of electrical engineering from multinational companies such as Foxconn, which is a supplier to companies such as Acer, Apple, or HP. These railway routes also proved to be extremely important during the corona crisis, when they are used for the rapid transport of various medical supplies. From January to May 2020, a total of 12,524 tons of anti-pandemic materials were sent by train from China to European countries. COSCO transported 35 containers with this material, which were manufactured in the Central Chinese province of Hubei to Duisburg in just over 10 days (Xinhua, 2020). In the grand scheme of the BRI, Duisburg's total impact on European-Chinese trade is relatively small, however, its impact has been significant. According to HSBC (2019), China-Europe freight trains account for 1% of the total trade between the two regions by weight and 2% by value. On the other hand, this railway is expected to have a positive effect on local employment. Around 300 logistics-oriented companies are based in the port of Duisburg. In total over 20,000 jobs in Duisburg depend on the port (Li, Bolton & Westphal, 2018). We can expect that in the future, Duisburg and its nearby region will attract more and more Chinese companies and also an increasing number of Chinese tourists.

As pointed out above, the German government has reason to criticize Chinese foreign trade policy, but given the scope of the BRI, the involvement of Germany as a leading European economy is essential. This was confirmed by German Chancellor A. Merkel herself, who identified the BRI as an important project in which Europeans want to participate but also considers it essential for EU countries to play an active role that must lead to a certain level of reciprocity (Reuters, 2019). The expansion of cooperation at the government level through the MoU is not yet planned. German Economy Minister P. Altmaier announced at the Beijing BRI Summit in April 2019 that Germany, France, Spain, and the United Kingdom (former member of the EU) will cooperate to implement BRI only jointly (Daly, 2019): "In the large EU states we have agreed that we don't want to sign any bilateral memorandums but together make necessary arrangements between the greater European Economic Area and the economic area of Greater China". This reaffirmed the country's caution against Chinese influence. On the other hand, Germany was one of the first EU members of the Asian Infrastructure Investment Bank (AIIB), a multilateral development bank whose initiation is linked to the BRI. It has been practically operating since 2016 with its headquarters in Beijing and its registered capital is more than \$100 bil. It is a global financial institution that is supposed to be a competitor of the World Bank because according to China, it is too "tied" with the USA and Japan. The AIIB has 103 members and is one of the most important institutions in terms of project financing along the BRI.

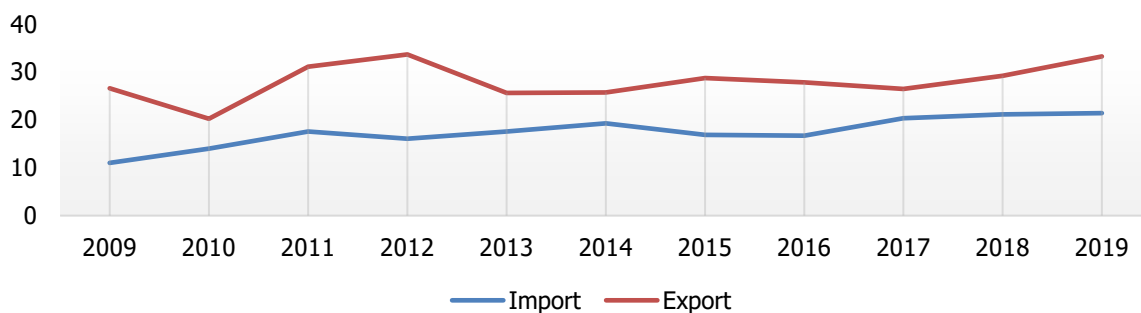
However, German companies and their associations have a different point of view, unlike the German government, which takes a cautious approach to the initiative. According to a representative of the Federal Association of German Silk Road Initiative, BRI's represent an opportunity to penetrate new markets, for example in Asia, Africa, and in Eastern and Southern Europe, which are not so well connected. China thus provides links, thus creating opportunities to expand markets for German companies (ChinaDaily, 2019 The New silk road Partnership –

Entrepreneur network has also been founded Small and Medium Enterprises New Silk Road Futures Award to raise awareness of the Silk Road's potential for German small and medium enterprises. A non-profit organization BRI-GERMANY was established in Germany, which aims to start interpersonal, interdisciplinary, and intercultural synergies between individuals, companies, organizations, academia, and associations that seek to achieve a positive impact through mutual exchange and cooperation along the BRI (BRI GERMANY, 2020). We can consider the signing of the MoU within the BRI in 2018 by Siemens and the NDRC for the most significant step taken by the German company in connection with the participation in the BRI (Siemens, 2018). Siemens has thus become the first international company to form a comprehensive partnership with the Chinese government, which again highlights the unique and unconventional way in which the Chinese government implements the BRI, penetrating various countries.

3.2 Italy

Italy has been a member of AIIB since 2016. In March 2019, Italy became the first country of the so-called G7 group, representing the world's seven most advanced economies that signed a new MoU on cooperation within the BRI. According to the official MoU text, this means translating, for both countries, their complementary strengths into the benefits of practical cooperation and sustainable growth, in order to achieve synergies between the BRI and the priorities of the Investment Plan for Europe and TEN-T (Italian Government, 2019). Italy's major goal is to support exports of "Made in Italy" products, to reduce the trade deficit with China which, based on the latest available data, is more than \$10 bil. (fig. 3) and to attract Chinese FDI. This should help Italy overcome the economic recession, which has also been deepened by the global pandemic.

Fig. 3 Chinese trade with Italy (2009-2019, in billions of \$)



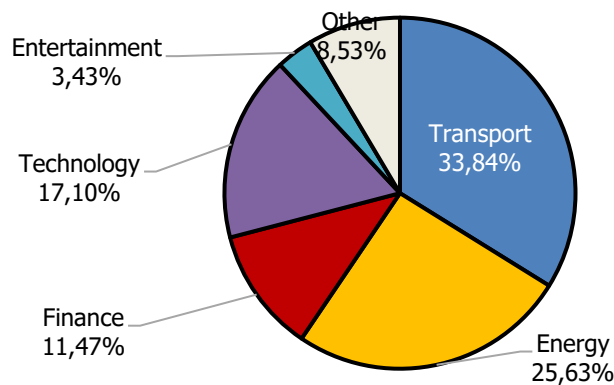
Source: Processed by the authors according the data from ITC Trade Map, 2020

In the context of this memorandum, 29 trade agreements worth \$2.8 billion were signed. Ministers signed deals over energy, finance, and agricultural produce, followed by the heads of big Italian gas and energy, and engineering firms - which will be offered entry into the Chinese market (BBC, 2019). The relatively young partnerships have seen significant projects. China Communication Construction Company (CCCC) is preparing agreements on cooperation in the joint development of port projects. They will collaborate on the modernization and reconstruction of the ports of Genoa and Trieste (Si, 2019). As part of the BRI, China is currently funding and building a network of ports and other coastal infrastructure projects from South and Southeast Asia to East Africa and the Mediterranean. Ports, however, cannot be efficient and reliable without a sound and modern railway system. The improvement of the Italian railway network is then another crucial step that should be taken for Italy to enjoy a

stronger position in the development of Eurasian connectivity (Prodi & Fardella, 2017). Unlike Germany, Italy still lacks a railway, which is considered a key to the BRI. A faster and cheaper railway connection could lower export costs and boost Italian trade.

Chinese goods are shipped through the Suez Canal, then in a wide loop through the Mediterranean, the Bay of Biscay, and the English Channel to ports on Europe's north-western coast, including Rotterdam, Antwerp, and Hamburg, from where they are dispatched by road and rail to inland cities. China is investing enormous sums in the renovation, and upgrade of rail systems in Southern and Eastern Europe. Once these projects are completed, Chinese products will go from the Suez Canal – which in 2014 doubled its capacity – directly to Piraeus to be loaded on to trains, reaching the markets in Central and Northern Europe through the Balkan high-speed rail link, cutting transit times from roughly 30 to 20 days (Huotari et al., 2016). Similarly, the Italian route will include both sea-based and land-based connections. Chinese shipping companies have a well-established presence in the Italian ports.

Fig. 4 Breakdown of Chinese construction contracts costs and investments in Italy by sectors between 2013 and 2019 (in %)



Source: Processed by the authors according the data from American Enterprise Institute, 2020

As we show in Fig.4, out of the total investments and projected construction costs, one-third is budgeted for transport (33.8%) and slightly less for the energy sector (25.6%). They are followed by the technology (17.1%) and finance (11.5%) sectors. They also record investments in other sectors such as real estate, health, entertainment, and logistic (12%).

Tab 1. List of Chinese investments and contracts in Italy that are part of the BRI

Year	Month	Chinese Entity	Mill. \$	Transaction Party	Sector
2014	March	SAFE	2 760	Eni, Enel	Energy
2014	November	State Grid	2 760	CDP Reti	Energy
2015	June	ChemChina, SAFE	7 860	Pirelli	Transport
2015	June	SAFE	1 220	Intesa Sanpaolo	Finance
2015	June	SAFE	820	Unicredit	Finance
2016	December	ZTE	1 010	-	Technology
2019	July	Huawei	1 250	-	Technology

Source: Processed by the authors according the data from American Enterprise Institute, 2020

However, unlike in Germany, there is a whole range of investments in Italy related to the BRI. We show the most important in the tab. 1. The most valuable BRI investment in Italy was announced in 2015, when Pirelli shareholders had accepted over \$7.8 bil. bid from China National Chemical Corporation (ChemChina) and took about 65 % share. Following the announcement investment, the Silk Road Fund - \$40 billion investment fund, which is one of the most important financial institutions for financing BRI projects in addition to AIIB, has joined ChemChina to co-finance the transaction. Since then, this investment is considered to be a project falling under the BRI (ChinaDaily, 2015). In 2017, one of the largest tire manufacturers in the world returned up to 40% of its capital to the market with an initial public offering, and the Chinese side has a share between 45 and 46.7% (is not officially specified) after this sale. In 2014, the Chinese State Administration of Foreign Exchange (SAFE) has acquired stakes of around 2% in Italian state-owned energy companies, Eni and Enel. These companies are the two largest in Italy and are among the top 100 largest companies by annual revenue according to Fortune Global 500 (2019).

Italy is not only publicly criticized by other EU member states but also, for example, by the USA, for deepening cooperation within the BRI. The major threat is that many of the projects financed by China are as loans, which can lead to increasing indebtedness of Italy and consequently its increasing economic dependence on China. Vulnerability to China's political influence is also increasing. China uses such a so-called debt trap strategy in several countries to consolidate its strategic interests.

3.3 Comparison of Italy and Germany in relation to BRI

When we look at the perception and scope of the initiative in these large EU economies, we find significant differences which are summarized in tab. 2.

Tab. 2 Overview of BRI-related features of Germany and Italy

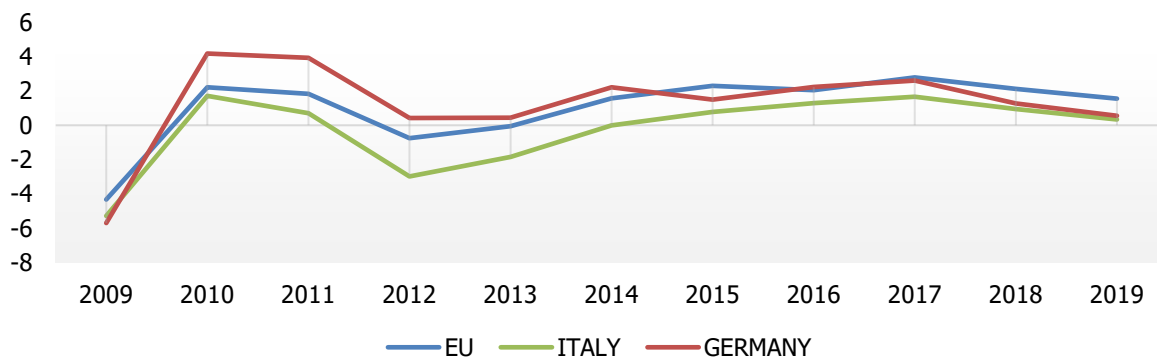
	AIIB membership	Governmental MoU on BRI	BRI related port projects	BRI related railway connections	BRI related investments	BRI related associations
GERMANY	X	-	-	X	-	X
ITALY	X	X	X	-	X	-

Source: Processed by the authors

Both countries have been members of the AIIB. As stated by Beeson (2018) the UK became the first major Western power to lodge an application to be a founding member, despite the clear unhappiness of the US. Britain's lead was rapidly followed by other key European countries, including Germany, France, and Italy. They also joined the AIIB in April 2015. Although Germany has concerns that AIIB serves Chinese economic and geopolitical interests, it saw an opportunity for European involvement to shape the AIIB into a real international financial institution, instead of being a bank with "Chinese characteristics" (Stanzel, 2017). Italy is one of the first of the largest economies to sign an intergovernmental MoU of cooperation, which is considered a symbol of open participation in the initiative. This MoU contains no legal implications, nor is it a treaty. It all depends on the ability of the Italian government to act as an effective partner with China, thus achieving the declared goals of mutual partnership and reciprocity. Germany is still one of the biggest critics of China's foreign policy which translates into a refusal to sign such a memorandum. On the other hand, it no

longer completely rejects, but rather calls for a coherent EU approach to BRI. Germany is an important transport hub thanks to the railways. Duisburg's railway port has become a key transport hub in the relationship with China, but China can expand trade influence in Germany. Italy does not yet have a rail connection related to BRI. However, because of its geographical location, it plays a very strategic role in the field of ports, which is why agreements have already been signed that allow Chinese companies to take part in the refurbishment of major Italian ports. For China, as well as for the trajectories of the initiative, this means acquiring additional key hubs in the Mediterranean, similar to Piraeus, which in the future could bring either an important logistical position for Italy or a prime influence of China. As we have shown in the article, China is making an enormous amount of investment in both countries. The difference is that none of the realized ones, especially mergers and acquisitions, are considered part of the BRI. Italy has a wide range of BRI-related investments, led by the acquisition of Pirelli. The not very positive response of the German government to China's ambition to renew the Silk Road has led to the establishment of several business associations that seek to promote the positive side, especially for companies. In our research, we did not find information about similar establishments in Italy.

Fig. 4 GDP growth between 2009 and 2019 (in annual %)



Source: Processed by the authors according the data from World Bank, 2020

CONCLUSION

China is actively pursuing its interests on the European continent which is largely represented by the EU. From the beginning of the implementation of the BRI, it seemed that there would be different perceptions between the so-called "strong EU economies" and "weaker or post-socialist" countries in the CEE region. However, it turns out that there is no consensus among the leading European economies either. In this study, we came to the following conclusions:

First, in recent years Italy has been actively developing intergovernmental cooperation on the initiative and has a positive perspective on participation. Germany does not consider formally joining the initiative. German officials call for greater reciprocity and have stricter conditions. However, SME organizations in this country see opportunities for their own development and seek to encourage involvement in the initiative. Therefore, we accept hypothesis 1, as there are obvious differences in the BRI's perception at the government level.

Second, it turned out that China is investing in the same sectors in both countries, so we reject hypothesis 2. Although China is interested in the same sectors, there are different intentions. It is clear that the economic problems are encouraging Italy to participate more intensively, which also includes many of these investments are under the heading of the BRI. In Germany,

on the other hand, China is making acquisitions that give it access to technology and no investment project has been recorded as part of the BRI.

Third, in these countries, the primary focus is currently on different modes of transport. Therefore, we accept hypothesis 3. A key infrastructure element in Germany is the railways with the port of Duisburg, which is used mainly by Chinese exporters. In Italy, China is focusing on ports that could complete its vision of the 21st Century Maritime Silk Road. However, there is still a lack of a more modern - key railway that could quickly and efficiently connect major Italian ports with other countries with lower export costs and boost Italian trade.

The problem in different attitudes can be the lack of a common strategy towards the Chinese BRI in the EU, which is somehow reflected in China's inconsistent approach to negotiations and cooperation with EU member states. The year 2020 brought a breakthrough in EU-China relations. The EU and China have managed to conclude negotiations on a new investment agreement, which would mean the implementation of a new trade agreement between these economies after over thirty years. As the agreement aims at better market access conditions, reciprocity and guarantees regarding the treatment of investors it may have a positive effect on the BRI negotiations.

The importance and dynamics of the topic offer the opportunity to analyse other countries within the EU to provide a comprehensive picture of the initiative. Over several years, provided that there is a sufficient amount of data, more exact empirical research can be demonstrated that can prove the impact of the initiative on the given countries.

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Corporate Taxation in the Context of Tax Competitiveness of EU States

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Abstract: The tax burden significantly affects the development of individual economies in EU member states. Despite efforts to harmonize and coordinate tax coordination, the tax burden can vary considerably between states. This difference may have an impact on the investment strategy of an investor who is interested in corporate taxation in a given state, among other factors. The aim of this paper was to empirically verify the impact of changes in corporate taxation on tax competitiveness in EU states for the period 2004-2019. The analysis was performed using the method of constant tax shares and the rate relation method. The research was complemented by the hypothesis that the new EU member states are more competitive than the old EU member states, and this was confirmed. In conclusion, we state that the decline in tax rates is related to the growth of tax competition between EU member states. Tax competitiveness will exist until full harmonization of the tax system.

Keywords: tax competitiveness, EU member states, corporate taxation, method of constant tax shares, method of rate relation

JEL Classification codes: F62, H26, O52

INTRODUCTION

The competitiveness of EU states is a central theme of the whole contribution, which states can use to attract investors in the context of changes in the tax burden. Tax competitiveness is a form of competition that has developed in the global economy. The process of gradual globalization is responsible for the emergence of functional relations between states and connections between economies, which also increases the responsibility of states for competitiveness. Legal and macroeconomic environment, the workforce in connection with tax burdens can create an environment in which the state can be more attractive to the investor it wants to attract. Under tax competition, we can imagine a process in which a state seeks to attract investment to the state by influencing the amount of the tax burden in the form of changes in tax rates. As a result of corporate taxation and income from financial capital, the importance of tax management in companies is increasing, while those that do so show lower indebtedness. It is the difference in corporate taxation that is one of the factors that interests investors in their investment strategy and may favor one state over another.

1 LITERATURE REVIEW

The problem of corporate tax, which is a corporate income tax, is extremely complicated. Corporate taxation in the state can result in both corporate investment and economic growth

in the economy as a whole. Despite competing with each other, national economies are becoming interdependent through globalization, internationalization and integration. Governments seek to maintain tax competition and transnational integrations seek to harmonize taxes.

The European Union has been addressing the issue of tax competition since its inception. According to Hameakers (1993), tax competition results in a spontaneous harmonizing effect. He considers tax rates, especially their reduction, to be a tool for states' competitiveness. EU member states are seeking to attract investors by reducing corporate tax rates, as evidenced by the fact that they have fallen sharply over the last decades. The free movement of capital between the borders of EU member states also contributes to increasing competition between states.

Tiebout (1956) was one of the first to carry out a tax competitiveness study on competition between local governments. The results showed that the tax base goes to a state where the ratio of the amount of public services and the tax burden reaches the optimal value. Bradford and Oates (1971) and Oates (1972) found that governments provide local public goods in an effort to attract mobile factors.

Authors such as Wilson (1999), Teera and Hudson (2004), Devereux et al. (2008), Devereux and Loretz (2012) and Haufler and Stähler (2013) dealt with tax competition. They are inclined to the fact that the level of the tax burden in the form of a statutory tax rate is, among other factors, one of the fundamental instruments of tax competitiveness. The authors agree that higher tax rates in the state may not immediately mean an unsuitable investment environment. The investor is also interested in the overall economic health in the state, such as quality and well-developed infrastructure, a long-term sustainable macroeconomic environment and good provision of public services. They also stress that low tax rates may not immediately mean the possibility of a suitable investment if they are not linked to the other factors already mentioned. However, according to Bunn and Asen (2019), a high tax burden in a state could lead to tax avoidance and could lead to investments being directed to another state.

If we summarize the authors' statements on the effects of tax competition, we find that they are clearly different. Authors such as Wigger and Wartha (2003), Smith (2008) and Kubátová (2014) consider it positive for economic growth. They argue that it has a positive effect on the growth of tax collection and the efficiency of public finances, while allowing the public sector to grow and limiting the growth of the private sector. Wilson (1999) and Stiglitz and Rosengard (2015) consider the impossibility of securing tax resource allocations, which weakens revenues, as negative effects of tax competition.

2 METHODOLOGY

The aim of the paper was to analyze the impact of changes in corporate taxation on tax competitiveness in EU states. The first part deals with the method of constant tax shares, which is used to assess the tax competitiveness of EU states. The second part evaluates the impact of changes in tax rates using the method of rate relation.

The stated goal of the analysis is followed by a hypothesis, which assumes that:

H1: The new EU member states are more competitive than the old EU member states.

The choice of methods is based on the theoretical knowledge of the authors: Tyzinski (1951), Richardson (1971), Ahmadi-Esfahani and Anderson (2006), Jiménez and Martín (2010) and Dyadkova and Momchilov (2014), who used the constant market share method to evaluate export economic growth. Authors such as Kubátová (2009, 2014) and Mihóková et al. (2018) in their research, among other things, applied the modified market share method to the

constant tax share method and dealt with the impact of tax rates on the change in tax competitiveness as well as on the change in tax revenues in EU states.

The EUROSTAT statistical database and European Commission documents provided the basic data needed to calculate the methods of constant tax shares and rates. Due to the achievement of the extreme value, Hungary was excluded from the calculations and in the paper we work with data from 27 EU member states. The period from 2004 to 2019 was monitored. The year 2004 is considered to be the initial year (t_0) in which a number of states that we consider to be new EU member states joined the EU, while the old member states are those that joined the EU. 2004. Due to the availability of data, 2019 represents the current year (t_1).

Method of constant market / tax shares

The method of constant market shares is used to calculate the export performance of economies. The method is applied to the analysis of exports in the state and compares it with competitors. As Dyadkova and Momchilov (2014) mention, the method analyzes whether there is a dependence between the competitiveness performance of one state and the growth of competitiveness in other states. The theory is based on the assumption of the "relative competitiveness" of each state's export share (Ahmadi-Esfahani & Anderson, 2006).

The variable designations are as follows:

e_i^t – export of the state (i) at time t ,

E^t – total exports of states at time t ,

s_i^t – export share of the state (i) at time t ,

while applicable: $s_i^t = \frac{e_i^t}{E^t}$, and therefore: $e_i^t = s_i^t \times E^t$.

They are still marked:

c_i^t – competitiveness of the state (i) at time t ,

C^t – competitiveness of all states at time t ,

$\frac{c_i^t}{C^t}$ – the share of the state's competitiveness (i).

We can denote it as a function of time $e_i^t = s_i^t \times E^t$, in case of $t = 0$ is the beginning of the period (in our case the year 2004) and $t = 1$ is the end of the period (in our case the year 2019). Then the increase in exports of the state (i) for a given period is expressed by a relationship $\Delta e_i = e_i^1 - e_i^0$.

We can also write the increment in the form:

$$\Delta e_i = s_i^0 \Delta E + E^1 \Delta s_i, \quad (1)$$

$$\Delta e_i = s_i^1 \Delta E + E^0 \Delta s_i, \quad (2)$$

where $\Delta E = E^1 - E^0$ and $\Delta s_i = s_i^1 - s_i^0$.

From relations (1) and (2) it is clear that the increase in exports of a given state (i) depends on the growth of exports of all states and the competitiveness of the state, which means the export share of a particular state (i) is expressed as a function of its relative competitiveness, i.e. $s_i^t = f_i^t(\frac{c_i^t}{C^t})$ and therefore $\Delta s_i^t = \Delta f_i^t(\frac{c_i^t}{C^t})$.

Kubátová (2009, 2014) used Richardson's record (1971) to determine tax competitiveness in the field of corporate tax. The introduction of the method of constant market shares for the area of taxes creates the method of constant tax shares. She applied the method in the field

of taxation for some EU states. She used an analogous record of corporate tax revenue with exports. Just as a state's exports depend on the growth of a state's total exports and "export competitiveness", the state's corporate tax revenue depends on the growth of total revenue and its "tax competitiveness".

The designations for the area of corporate taxation are as follows:

cit_i – corporate tax revenues of the state (i),

CIT – corporate tax revenues of competing states (including the state (i)),

$s_i = \frac{cit_i}{CIT}$ – state share (i) on total corporate tax revenues (relative competitiveness).

Based on the designations, the relationship for the increase in corporate tax revenues looks as follows:

$$\Delta cit_i = cit_i^1 - cit_i^0 = s_i^0 \Delta CIT + CIT^1 \Delta s_i. \quad (4)$$

For the needs of the work, the following two relationships are derived, namely the impact of total tax revenue: $\frac{s_i^0 \Delta CIT}{\Delta cit}$, and the impact of tax competitiveness: $\frac{CIT^1 \Delta s}{\Delta cit}$.

Method of rate relation

The method of rate relation was developed analogously by Kubátová (2009) from the authors Junz and Rhomberg (1965). The method analyzes changes in corporate tax rates and their impact on corporate tax revenues. At the same time, it offers an answer to the question of whether states' competitiveness is related to changes in tax rates. Rate relations examine whether changes in the corporate tax rate have an impact on tax revenues and, as a result, contribute to a change in tax competitiveness. The relationship that determines whether there has been an improvement or a deterioration of the rate relation during the observed period is as follows:

$$\Delta p_i = p_i^1 - p_i^0 = \frac{tr_i^1}{\sum_i tr_i^1 \times \frac{cit_i^1}{CIT^1}} - \frac{tr_i^0}{\sum_i tr_i^0 \times \frac{cit_i^0}{CIT^0}}, \quad (5)$$

in which it applies:

p_i^0 and p_i^1 – rate relation of state (i) at time $t = 0$ and $t = 1$,

tr_i^0 – state rate (i) at time $t = 0$ and tr_i^1 – state rate (i) at time $t = 1$,

cit_i^0 and cit_i^1 – corporate tax revenue at time $t = 0$ and $t = 1$,

CIT^0 and CIT^1 – total tax revenues over time $t = 0$ and $t = 1$, in all competing states (including state (i)).

State rate relation we express it in relation to competitors:

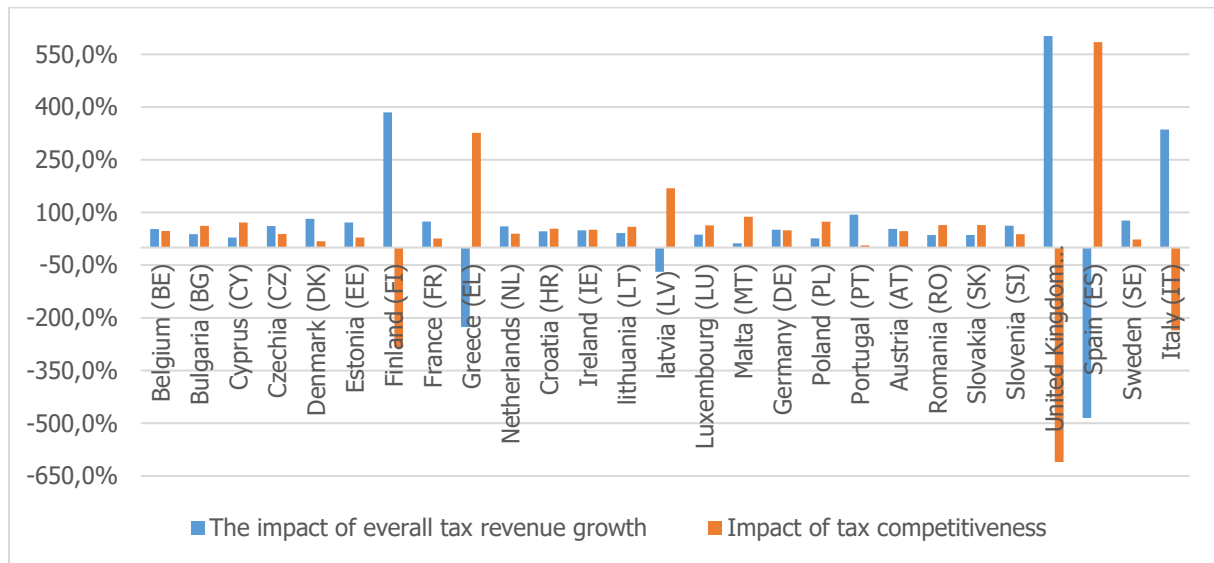
$$\frac{tr_i}{\sum_i tr_i \times \frac{cit_i}{CIT}}, \quad (6)$$

which determines the share rate relation to the weighted average rate of competitors.

3 RESULTS AND DISCUSSION

The method of constant tax shares monitors tax competitiveness, where the change in tax revenues in individual states is monitored by two indicators, namely the impact of total tax revenue and the impact of tax competitiveness.

Fig. 1 Impact of overall revenue growth and competitiveness on corporate revenue growth in EU member states



Source: own processing according to Eurostat and European Commission

The least competitive states on the chart (Figure. 1) are United Kingdom, Finland and Italy, despite the significantly higher impact of overall revenue growth, which may have been due to lower statutory rates in those states. On the other hand, the opposite is represented by the states of Spain and Greece, which, with their high impact of competitiveness, achieve negative values of the impact of total tax revenue.

In the table (Table. 1) we can see that increments from corporate tax in absolute terms in the EU states for the compared two periods (2004 and 2019) increased with the exception of three states, namely the old member states Greece and Spain and the new ones. Member states Latvia. Based on the positive values of the indicator of the impact of the overall growth of tax revenue within the 25 EU states, we can assess that it has a positive effect on the growth of tax revenue in these states. The positive impact ranged from 12,4% in Malta to 710,2% in United Kingdom. The impact of total tax revenue with a negative impact ranged from -68,9% in Latvia to -484,8% in Spain. If we compare the total values of the new and old member states, both have a positive effect, but the old member states achieved a higher value, namely 109,5% compared to the new member states with a value of 37,5%.

The second indicator of the impact of tax competitiveness assesses whether competitiveness causes an increase or decrease in tax revenues in the state. From the calculated values in the table (Table. 1) it is clear that tax competitiveness contributed to the decline in tax revenues in three states (Finland, United Kingdom and Italy). The range of negative impact is from -235,8% in the Italy to -610,2% in United Kingdom. In the other 24 states, the positive growth in tax revenue was driven by the impact of tax competitiveness, ranging from 6,4% in Portugal to 584,8% in Spain. The analysis showed that there is a difference between the old and new member states in the given indicator. The new member states recorded a positive impact of tax competitiveness on the change in tax revenues of 62,5%, while the average level is 67,4%. In contrast, the old member states had a negative impact of a total of -9,5% with an average of 10%. Another result was Cassette and Patty (2008), whose study of tax competitiveness showed that EU-15 countries (our old member states) are more committed to tax competition than the rest of the EU.

If we look at the share of individual corporate revenues of countries in the total corporate tax revenue of all EU countries, we find that the share of the new member states increased by

2.8% from 4.9% to 7.7%. In the old member states, the share of total revenue decreased by 2.8% from 95.1% to 92.3%.

Table. 1 Impact of overall revenue growth and competitiveness on corporate revenue growth in EU member states and change of rate relation

State (state code)	Corporate tax revenues cit_i		Impact of total tax revenue $\frac{s^0 \Delta CIT}{\Delta cit}$	Impact of tax competitiveness $\frac{CIT^1 \Delta s}{\Delta cit}$	Statutory tax rate in % tr_i		Change of rate relation $\frac{p_i^1 - p_i^0}{p_i^0}$
	2004	2019			2004	2019	
Belgium (BE)	8985,9	17684,5	52,8%	47,2%	34,0	29,6	-0,23
Bulgaria (BG)	519,4	1212,2	38,3%	61,7%	19,5	10,0	-0,35
Cyprus (CY)	468,1	1304,2	28,6%	71,4%	10,0	12,5	-0,46
Czechia (CZ)	4034,5	7384,2	61,6%	38,4%	28,0	19,0	-0,17
Denmark (DK)	5879,9	9549,3	81,9%	18,1%	30,0	22,0	-0,07
Estonia (EE)	54,5	93,6	71,3%	28,7%	26,0	20,0	-0,12
Finland (FI)	5357,0	6069,0	384,6%	-284,6%	29,0	20,0	0,33
France (FR)	40584,0	68517,0	74,3%	25,7%	35,4	34,4	-0,10
Greece (EL)	5259,0	4071,0	-226,3%	326,3%	35,0	28,0	0,95
Netherlands (NL)	16266,0	30001,0	60,5%	39,5%	34,5	25,0	-0,18
Croatia (HR)	612,0	1285,4	46,4%	53,6%	20,0	18,0	-0,28
Ireland (IE)	5335,0	10892,8	49,1%	50,9%	12,5	12,5	-0,26
Lithuania (LT)	338,5	759,1	41,1%	58,9%	15,0	15,0	-0,33
Latvia (LV)	185,1	47,7	-68,9%	168,9%	15,0	20,0	4,87
Luxembourg (LU)	1571,1	3761,1	36,7%	63,3%	30,4	24,9	-0,37
Malta (MT)	128,1	657,1	12,4%	87,6%	35,0	35,0	-0,71
Germany (DE)	45218,0	90458,0	51,1%	48,9%	38,3	29,9	-0,24
Poland (PL)	4003,7	11775,6	26,3%	73,7%	19,0	19,0	-0,49
Portugal (PT)	4308,5	6662,1	93,6%	6,4%	27,5	31,5	-0,02
Austria (AT)	5607,0	10983,8	53,3%	46,7%	34,0	25,0	-0,23
Romania (RO)	1934,9	4685,2	36,0%	64,0%	25,0	16,0	-0,38
Slovakia (SK)	1172,0	2840,5	35,9%	64,1%	19,0	21,0	-0,38
Slovenia (SI)	522,9	953,5	62,1%	37,9%	25,0	19,0	-0,17
United Kingdom (UK)	57159,7	61273,5	710,2%	-610,2%	30,0	19,0	0,41
Spain (ES)	28793,0	25757,0	-484,8%	584,8%	35,0	25,0	0,69
Sweden (SE)	8511,4	14169,2	76,9%	23,1%	28,0	21,4	-0,09
Italy (IT)	30123,0	34708,0	335,8%	-235,8%	37,3	27,8	0,31
Sum of all EU states	282932,1	427555,6			26,9*	22,2*	0,07*
New member states	13973,6	32998,3	37,5%	62,5%	21,4*	18,7*	0,09*
Old member states	268958,5	394557,2	109,5%	-9,5%	31,4*	25,1*	0,06*

Source: own processing according to Eurostat and European Commission

In the table (Table. 1) * are marked average values. Tax competition is strong in EU states, as evidenced by the decline in average tax rates (Crabbé & Vandenbussche, 2013). At the statutory rate, we can see its average decline from 26,9% to 22,2% within the EU member states. When dividing states into new and old member states, a more significant decrease is visible in the old states, from 31,4% to 25,1%. However, for the new member states, the average value of the statutory rate is comparatively lower. As Clausing (2011) points out, tax competitiveness in the area of lower tax rates may affect the business and investment environment, creating a more attractive space for the investor, which may result in higher tax revenues.

Kubátová (2009) and Mihóková et al. (2018) state in their studies that the new member states that joined the EU after 2004 are more competitive than the old member states. States are often criticized for their tax policies and lower tax rates. Our analysis, based on empirical data, has shown that the new member states are more competitive than the old member states, and thus confirms the authors' assertion. The old member states have been trying to increase corporate tax revenues since the new member states have joined the EU and have shown a greater degree of competitiveness, as indicated by the reduction in statutory rates. However, they did not show a sufficient degree of competitiveness to overcome the new member states. The result is complemented by the average statutory rates of the old member states, which decreased during the period under review, which can be considered an indication of competition, but were still comparably higher than in the new member states. The finding of Devereux et al. (2008) that states with higher tax rates are more responsive to changes in other states' rates.

The method of rate relations reveals whether changes in corporate tax rates in the period under review affect corporate income and whether there has been a change in tax competitiveness. Based on the method, the values of the rate relations for 2004 and 2019 were compared (Table. 1). The growth of rate relations was recorded in six states, of which Latvia, Greece and Spain had significant values. The decrease was recorded in twenty-one states, where Cyprus, Malta and Poland had the lowest values. The range of rate relations is from a maximum of 478% in Latvia to -71% in Malta. Within the division of the old (10 states) and new (11 states) member states, negative values dominate. The positive changes in rate relations were dominated by the five old member states.

The impact of total tax revenue and the impact of tax competitiveness, together with the change in rate relations on the increment of corporate revenues, were divided into three groups based on their mutual impact (Table. 2). The first group consists of the most significant number of twenty-one states, while the number of old (10 states) and new (11 states) member states is almost the same. It is presented by a negative change in rate relation, which together with the positive impact of total tax revenues and the impact of tax competitiveness. This combination has led to an increase increment in tax revenues. The results of the first group agree with the results of Mihóková et al. (2018), which emphasize the positive impact of total tax revenue along with the impact of competitiveness on tax revenue growth. The three old member states represent the second group. There is a positive change in the rate relation together with the impact of total tax revenue with a negative impact of competitiveness, which causes a positive change in tax revenues. The last third group is represented by three states, where only one is a new member state. The decrease in the increment in tax revenues within this group was influenced by the overall decrease in tax revenues, although the value of the rate relation was positive together with the positive impact of tax competitiveness.

Table. 2 Mutual interaction of indicators

States EU-27		$\frac{s^0 \Delta CIT}{\Delta cit}$	$\frac{CIT^1 \Delta s}{\Delta cit}$	Δp_i	Δcit_i
Old member states EU-15	New member states EU-12				
BE, DK, FR, NL, IE, LU, DE, PT, AT, SE	BG, CY, CZ, EE, HR, LT, MT, PL, RO, SK, SI	+	+	-	+
FI, UK, IT	-	+	-	+	+
EL, ES	LV	-	+	+	-

Source: own processing according to Eurostat and European Commission

Following the accession of new member states to the EU, there was a clear reduction in statutory tax rates, which had the effect of increasing tax competitiveness (Podvieszko et al., 2019). Based on the rate relation method, we can conclude that changes in rate relations are significant and thus have an impact on the tax competitiveness of states. This is also confirmed by statutory tax rates, the changes in which have affected the growth or decline in the competitiveness of states. Mihóková et al. (2018) came to the opposite conclusion, where they claimed that the change in tax competitiveness and the change in tax revenue in the state are not affected by a negative resp. positive rate relation. At the same time, Kubátová (2009) states that it is clearly not possible to use tax competitiveness in EU states, accompanied by lower tax rates, to achieve an increase in the share of corporate tax revenues.

CONCLUSION

Since its inception, the European Union wants to achieve harmonization and the creation of an effective corporate tax system. The aim of the effort is to ensure support for the sustainable growth of states with a balanced tax burden. Despite many years of efforts, tax harmonization has not yet taken place due to the diverse structure of tax systems. Member states want to attract as much investment as possible, which can increase corporate tax revenue. The situation creates space for tax competitiveness between EU states.

Using the methods of constant tax shares and rate relations, we tried to achieve the set goal based on empirical data, namely whether changes in corporate taxation have an impact on the tax competitiveness of EU states. The method of constant tax shares, which includes an analysis of the impact of tax revenue and the impact of tax competitiveness on tax revenue in EU states, has shown that tax revenues in the old member states are higher in absolute terms than in the new Member States, but the increment in revenue growth is in the old member states 46,7%, while in the new member states it is higher at 136,1%. The set goal was complemented by the hypothesis, which was confirmed, namely that the new member states are more competitive than the old EU member states. Any change in the rate relations and statutory tax rate has shown an impact on the change in the tax competitiveness of states, while in the twenty-four EU states it has led to an increase increment in corporate tax revenue. The presence of a decline in the rate relation affected tax competitiveness in twenty-one EU states. The conclusion of the thesis is the finding that changes in corporate tax have an impact on the tax competitiveness of EU states.

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Open Innovation in the Visegrád Four Countries: A Literature Review

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Abstract: The aim of the paper is to analyze and systematize existing body of literature concerning the concept of Open Innovation in the Visegrád Four countries. The extent of research papers and articles focusing specifically on the Open Innovation in the V4 countries is rather limited. They tend to be included in the larger research samples of the EU member states which limits the possibility of their comparison with other European or non-European countries. 11 sub-topics of the Open Innovation were identified in 36 studies which were analyzed for the purpose of this paper. Nevertheless, it is rather difficult to establish differences or similarities of the Open Innovation approach among all of the V4 countries because overlapping of the research topics in different studies is not very significant. Further research might be therefore focused on the comparison of different Open Innovation sub-topics across all four Visegrád countries.

Keywords: Open Innovation, Visegrád Four, literature review

JEL Classification codes: O36, O32

INTRODUCTION

Open innovation (OI) is a theoretical concept which was first characterised by Chesbrough (2003). In today's highly competitive markets and rapidly changing environment, this idea did not lose any of its relevance. The idea of cooperation with internal and external environment provides not only for more sources of innovative ideas but also for risk-sharing with partner entities and more possibilities to gain finance needed to develop and commercialise these ideas.

The countries of the Visegrád Group are similar in many aspects of their economic development and structure. After the fall of the Iron Curtain their common goals were to make the transition from the centrally-planned to market economies and to join the European Union. Both of these goals were achieved successfully. All four states have become large exporters and have (with a slight exception of Poland) a high degree of openness of economy. However, their export success is dependent on foreign investment to a large extent. The transition to economies led by innovations with high value-added is not without problems.

The Open Innovation concept might be therefore useful for these countries in terms of access to new promising innovative ideas as well as external finance sources. Given that the Visegrád Group states are large recipients of the EU funds this benefit of Open Innovation might be of high importance.

However, the V4 cannot be considered as a homogeneous group of countries because there are also differences in respective aspects of their business environment. These states are often competing for the same foreign investment and as the importance of competitive advantage based on innovation grows even more, the ability of companies to cooperate and source innovative ideas from different environments will be key for their future success.

The paper consists of literature review, methodology section explaining the method and the construction of the research sample. Results and discussion section summarizes the main topics and findings of the studies in the research sample. Conclusion part specifies the purpose and usefulness of the findings, limitations of the methodology and further research proposals.

1 LITERATURE REVIEW

Open Innovation has become a popular topic of the management research since the important work of Chesbrough was first published in 2003. Chesbrough (2003) defines Open Innovation in the following context: "valuable ideas can come from inside or outside the company and can go to market from inside or outside the company as well".

However, there are many subcategories connected to Open Innovation which are examined by other authors. Several studies have dealt with the relation between Open Innovation and company culture. According to Alassaf et al. (2020), openness of the company culture increases the probability of adoption of the OI concept (including both outside-in and inside-out types). Employees' knowledge and rewards for OI activities also have positive impact. Success in development of a functioning OI model depends on company goals, capabilities and maturity (Podmetina et al., 2018). Entrepreneurial culture focused on the flexibility and experimenting creates space for radical innovations (Knošková, 2015). Mazur and Zaborek (2016) innovative culture had positive effect on the scope of OI sources of the SMEs in Poland. The relation between innovative culture and percentage of sales from new and modified products as a metric of innovativeness was not proven.

One of the most important issues related to the Open Innovation (and innovation in general) are intellectual property rights. Battisti et al. (2015) state that leading innovators tend to internationalize their activities and use intellectual property rights to protect their innovations. Dodourova and Bevis (2014) think that network leadership is crucial for OI as well protection of intellectual property rights and support infrastructure.

Radical innovation is present in the companies with specific features. Radical innovators are open to explore new ideas in the external environment and these companies build external and internal networks and link their innovation projects to company strategy. Their entrepreneurial culture is focused on the flexibility, experimenting and creating space for radical innovations. (Knošková, 2015). According to Greco et al. (2016), larger companies have better chances to develop radical innovations. Radical innovation is present mainly in knowledge-intensive R&D sectors (Battisti et al., 2015).

Some authors also focused their research on a specific kind of innovation – eco-innovation. The open-eco-innovation led to new and green products but the communication barriers decelerated the implementation and solution process (Civelek et al., 2020). Positive effect of inbound OI practices on eco-innovative performance was confirmed in the study by Leitão et al. (2020). Eco-innovation activities focused at new products and production processes contributed to the higher R&D intensity in the Czech SMEs (Kmecová – Vokoun, 2020).

Another issue examined in the papers was the usage of the OI concept in the different stages of the value or innovation chain. Dodourova and Bevis (2014) have found out that mature segments of the automotive industry display lower propensity to OI as compared to emerging segments such as design and development of electrical vehicles. According to Dries et al.

(2013; 2014), OI in the Hungarian wine sector occurred in the idea generation phase in 63% of the surveyed companies. In the development and commercialization phases the share of OI decreased to 55% and 43%, respectively. OI approach is present in high-tech but also non-high-tech industries as well (Dziurski - Sopińska, 2020).

Three articles have investigated OI in the manufacturing sector. Lesáková et al. (2018) state that Slovak SMEs in the sector "Manufacture of machinery and equipment not elsewhere classified" consider cooperation with external partners in innovation as a factor of low importance. On the other hand, collaboration is crucial for the innovation process and public financing supporting this cooperation is significant in the Czech manufacturing (Prokop – Stejskal – Kuba, 2019). Enterprises in the Czech Republic's machinery industry that cooperate with universities and public research centers demonstrate a greater positive influence on their overall performance (Stejskal et al., 2016).

Cooperation with public institutions such as universities is an issue which is extensively covered by many authors. According to Prokop, Stejskalová, and Hudec (2019), CEE economies have a low ability to cooperate with industry, public institutions and knowledge institutions. Standard Western innovation performance approaches are not applicable. Cooperation with government agencies is very low among Slovak manufacturing companies (Lesáková et al., 2018). However, Matulová et al. (2018) state that OI helps to build trust in the regional public administration. This is the case of the Open Innovation Session, a platform created by the regional government of the South Moravian region in Czechia which was set up with the aim of knowledge transfer facilitation. Another possible cooperation partners are schools and universities. 9.2% of family businesses surveyed by Urbaníková et al. (2020) in Slovakia plan to cooperate with secondary schools, and 22.5% of companies plan to cooperate with universities. However, 74.5% of companies do not plan to cooperate with schools. On the other hand, universities represent important collaborative partners in the Czech Republic's machinery industry (Stejskal et al., 2016). From another point of view, Slovak universities are not exceptionally stimulated to cooperate with the business sector because of public funds being more stable and easier to obtain (Klasová et al., 2019).

2 METHODOLOGY

The aim of the paper is to analyze and systematize existing body of literature concerning the concept of Open Innovation in the Visegrád Four countries. The review was conducted using the principles outlined by Tranfield et al. (2003). Papers and articles published between 2013 and 2021 were considered for the purpose of this paper. The time span was chosen in order to focus on the up-to-date information because Open Innovation is a very dynamic research area. Thus, the first ten years after the initial work on Open Innovation by Chesbrough (2003) were not taken into account.

The keywords which were used to search for relevant studies were "Open Innovation" along with various combinations of terms "Visegrad", "Visegrad Four", "Czechia" (or "Czech Republic"), "Hungary", "Poland" and "Slovakia". The studies had to focus on at least one of the Visegrád Four countries in their results (those which have only mentioned any of the countries were not chosen for the final sample). Studies which mentioned "Open Innovation" only in the literature review with no subsequent follow-up on the topic in the results were also excluded. Google Scholar was used as a database.

No type of research output was excluded. The body of literature which was examined includes articles in scientific journals, books, book chapters, and conference proceedings. The sample was then filtered to contain only research really focusing on the Open Innovation or any of its aspects (predominantly cooperation) in at least one of the Visegrád Four countries.

Finally, 36 studies fulfilling the criteria were considered for the literature review itself. Among them, 20 were single-country studies, 2 studies focusing on several or all V4 states but not other countries and 14 studies in which some or all Visegrád countries were part of the larger sample.

The studies were subsequently compared in order to find their common topics, with cooperation as the most mentioned of all (13 cases out of 36). Nevertheless, one research can also deal with several topics at once. Special emphasis was put on the research focusing solely on V4, as these studies have a larger potential to describe the specific features of these countries than the larger-sample research.

More detailed approach to literature review - e.g., article by Teixeira (2014) on National Systems of Innovation which combined main trends, scientific roots and influence of the literature - might be used also for the Open Innovation concept. However, this complex approach is more suitable for a larger and more in-depth works which are not strictly limited by the length of the paper.

3 RESULTS AND DISCUSSION

The literature review has shown two main findings. There are 11 sub-topics of Open Innovation examined in various studies, with cooperation/collaboration being the leading research area. This is in line with the definition of the Open Innovation by Chesbrough (2003) that places internal and external ideas and paths to market on the same level. The sub-topics are specified later in this part of the paper.

The second main result is that even though there are quite many single-country studies of the Open Innovation in the V4 states, there are only a few which are focused on the intra-group comparison. This is an important issue because it is rather difficult to establish differences or similarities of the Open Innovation approach among all of the V4 countries.

The research on Open Innovation in the V4 countries can be divided into two groups. The first one contains studies in which the Visegrád Four are only a part of the larger research sample (larger-sample studies). As the findings of these papers are usually generalised and not specific for each of the countries in the sample, they have only a limited informative value in depiction of Open Innovation in the V4. The second group of research is focused exclusively on the V4. They are either single-country studies or papers dealing with at least two of the V4 states. However, the rarest are studies which investigate all four countries of the group. Among the single-country studies, Czechia is represented by 5 research papers, Hungary by 3, and Poland and Slovakia are the focus of 6 studies each.

6 of the larger-sample studies have used the secondary data from the Community Innovation Survey (CIS). However, this data does not include information on Polish enterprises throughout different editions. 11 studies have focused specifically on the SMEs. Open innovation might be suitable to overcome their often limited resources and thus the focus on this group is justified. Sectoral approach was used only for the wine industry (2 papers of the same authors) and for the manufacturing (4 studies).

There are several groups of authors who are doing research on Open Innovation in one or several V4 countries, e. g., Lisowska – Stanisławski, Prokop – Stejskal or Greco – Grimaldi – Cricelli. Due to the rapidly changing environment, the continuity of the research is important to get the up-to-date results.

11 sub-topics were identified within the concept of OI in the studies reviewed: cooperation/collaboration (13 studies), involvement with public institutions (6), public funding (5), size of the companies engaged in OI (5), sectoral approach (4), culture of the companies

(5), radical innovation (3), eco-innovation (3), information sources (2), intellectual property (2) and drivers of OI (2).

Overview of the papers focused only on one or several V4 states (mainly single country studies) is presented in table 1.

Tab. 1 Open Innovation single-country studies/studies focusing solely on the V4 countries

Authors	Countries involved among V4	Main findings
Bobenič Hintošová – Bruothová, 2019	SK	Innovation performance expressed as gross expenditure on research and development is negatively influenced by FDI inflows, especially in the case of greenfield investment.
Dries et al., 2013; 2014	HU	OI in the Hungarian wine sector occurred in the idea generation phase in 63% of the surveyed companies. in the development and commercialisation phases the share of OI decreased to 55% and 43%, respectively. OI is influenced by regional and also company-specific factors. Larger and younger companies are more likely to engage in OI.
Chandler – Krajcsák, 2021	HU	Based on the sample of 1056 university students in Hungary, there are four components supporting intrapreneurial behaviour: Planning on results, Bearing the burden, Innovating for others and Learning from mistakes.
Dvouletý, 2019	CZ	Based on the secondary data during 2005 – 2017, self-employed workers accounted for 12% of economically active population in Czechia whereas job creators represented only 3.2%. The overall engagement in entrepreneurship and self-employment was higher (15.2%) than the EU average (13%).
Dziurski – Sopińska, 2020	PL	OI approach is present in high-tech but also non-high-tech industries as well. The most important drivers are market-driven whereas the barriers are legal and financial issues.
Klasová et al., 2019	SK	Slovak universities are not exceptionally stimulated to cooperate with the business sector because of public funds being more stable and easier to obtain.
Kmecová – Vokoun, 2020	CZ	Cooperation increases the innovation activity of SMEs. They are also more active in terms of R&D expenditures per one employee.
Knošková, 2015	SK	Radical innovators are open to explore new ideas in the external environment and these companies build external and internal networks and link their innovation projects to company strategy. Their entrepreneurial culture is focused on the flexibility, experimenting and creating space for radical innovations.
Lesáková et al., 2018	SK	Slovak SMEs in the sector "Manufacture of machinery and equipment not elsewhere classified" (68.62% of enterprises in the sample) consider cooperation with external partners in innovation as a factor of low importance. The main partners for cooperation are customers and suppliers. Cooperation with government agencies is very low.
Lisowska – Stanisławski, 2015	PL	Cooperation of Polish SMEs with business environment institutions in the context of OI is at a low level.

Authors	Countries involved among V4	Main findings
Matulová et al., 2018	CZ	OI support in the form of Open Innovation Session platform for knowledge transfer helps to create new partnerships, reduces transaction costs and builds trust in the regional public administration.
Mazur – Zaborek, 2016	PL	Innovative culture had positive effect on the scope of OI sources, the relation between innovative culture and percentage of sales from new and modified products as a metric of innovativeness was not proven.
Mielcarek, 2015	PL	The OI concept has resulted in a creation of joint venture and a new business model.
Odei – Stejskal - Prokop, 2020	CZ, HU, PL, SK	Microenterprises are the least innovative of all the company sizes. Larger firms are product and process innovators.
Prokop et al., 2017	CZ, HU, SK	The investment to internal research and development affects revenues from innovated products in the Czech Republic and Hungary but not in Slovakia. Investment in external research and development affects this type of turnover only in Hungary. Similarly, public financing had a positive impact on revenues from innovated products only in Hungary but not in the Czech Republic and Slovakia.
Prokop - Stejskal - Kuba, 2019	CZ	Collaboration is crucial for the innovation process and public financing supporting this cooperation is significant in the Czech manufacturing. Cooperation among companies has led to technical innovation activity and increase in revenues.
Stanisławski – Lisowska, 2015	PL	Innovation of Polish SMEs is relatively low. There are two main causes of this situation: the low potential of the enterprises (their limited resources) and relatively low innovation openness (OI, measured by the tendency for cooperation with the environment - other companies, business or research institutions). The aim of SMEs is, therefore, to seek greater openness to the environment in order to acquire new knowledge. Operation of closed enterprises seems to be impossible in the long run.
Stanisławski, 2020	PL	Among the Polish SMEs, market is the main external determinant influencing the use of OI. As for the internal determinants, willingness to improve internal innovativeness and to attract new customers are the most important.
Stejskal et al., 2016	CZ	Enterprises in the Czech Republic's machinery industry that cooperate with universities and public research centers demonstrate a greater positive influence on their overall performance. Universities represent important collaborative partners in the Czech Republic's machinery industry. These collaborations between enterprises and universities positively affect enterprises' creation of innovation – both product and process. Inefficient provision of public aid in the machinery

Authors	Countries involved among V4	Main findings
		industry in the Czech Republic is possibly caused by excessively granting public funding without directly monitoring its impact.
Urbaníková et al., 2020	SK	21.3% of the surveyed family companies in Slovakia cooperated with other companies or institutions on the development of innovations. 9.2% of family businesses plan to cooperate with secondary schools, and 22.5% of companies plan to cooperate with universities. Surprisingly, 74.5% of companies do not plan to cooperate with schools.
Zajko, 2017	SK	Research and Innovation Strategy for Smart Specialization (RIS3) in Slovakia for 2014 – 2020 does not deal with OI concept. Awareness of OI among Slovak companies is not high, especially in the case of SMEs.

Source: own elaboration based on the findings of the authors cited

The overlapping of the research topics is not very significant. Among the similar findings, larger companies seem to be more willing to engage in OI (Dries et al., 2013; 2014 and Odei et al., 2020). Cooperation of Polish and Slovak SMEs with entities as government agencies and business environment institutions is at a low level (Lesáková et al., 2018; Lisowska – Stanisławski, 2015). Market drivers including attraction of new customers are the most important for the Polish companies according to two different studies by Stanisławski (2020) and Dziurski and Sopińska (2020).

There are also some notable differences among the countries. Different types of financing can have very different outcomes in each country as can be seen in the work by Prokop et al. (2017). Hungary has embedded OI in its innovation strategies which is not the case of Slovakia (Zajko, 2017). Innovation performance was negatively influenced by FDI in the case of Slovakia (Bobenič Hintošová – Bruothová, 2019). Czech companies in the manufacturing sector that cooperate with universities display positive influence on their performance (Stejskal et al., 2016). On the other hand, only 22.5% of family companies in Slovakia surveyed by Urbaníková et al. (2020) plan to cooperate with universities. This opinion seems to be mutual as the willingness of Slovak universities to cooperate with businesses is not high because public funds are more stable and easier to obtain (Klasová et al., 2019). The public funding for Czech manufacturing companies is not efficient according to Stejskal et al. (2016) due to its large size and absence of direct monitoring.

CONCLUSION

This paper is probably the first attempt to summarize the body of literature on the Open Innovation in the Visegrád countries. Its findings might be used in further research on this topic or in other literature reviews which might focus either on different sub-topics of the Open Innovation or they might examine solely one of the V4 countries.

The research gap seems to be in the comparison of all V4 countries in the field of Open Innovation. Visegrád states are often included in the larger research samples in studies on Open Innovation. This makes it more difficult to outline any specific conclusions for these countries. The single country studies are focused on many different aspects, such as cooperation, funding or culture. Due to their large variety of sub-topics, it is rather difficult to draw a common conclusion on Open Innovation in these countries in general. However, there

are some notable inter-country differences, e.g., in the effectiveness of different sources of finance or cooperation with public institutions.

It would be also interesting to compare how the countries have used the the EU funds in the 2014 – 2020 programming period in terms of innovative projects. The same can be said about the Recovery and Resilience Plans which should be heavily focused on the innovation and green economy. The use of sectoral approach might be interesting to compare e.g., the companies with domestic and foreign owners in the same country or SMEs and large companies in the same sector.

Limitations of the research and methodology include the dynamism of the research field and the relatively small number of the single-country studies or studies focusing solely on the V4 states. Open innovation and innovation in general are very dynamic research topics. The results of the studies are not necessarily valid for long periods of time and they need to be repeated often because of the rapidly changing environment. OI research should be therefore regularly repeated even on the issues which were already examined in detail. The single-country studies and studies focused solely on the V4 countries are important because their findings allow for the comparison with other states and identification of their potential differences in terms of Open Innovation.

Further research might be focused on the comparison of different sub-topics mentioned in the results and discussion part of the paper across all Visegrád countries. Another possibility is to examine the Open Innovation across several sub-topics in a single-country study. The case study approach is also underutilized even though it might bring important and useful information about the specific companies and their approaches to open innovation.

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Education for Sustainability in Higher Education

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Abstract: Education is the most powerful instrument that can be used to change the world. Business students of today are future executives in companies and governments. Therefore, their education for sustainability needs to be carefully considered. Education for sustainability in higher education has gained strongly increasing attention. The purpose of this paper is to describe the components of a sustainability education: (1) university management (2) academics and pedagogies and (3) students, with specific focus on students in business management/marketing. Using the "Responsibility assignment matrix (RACI MATRIX)" we describe responsibility of these three components for activities supporting education for sustainability. This article also argues that education for sustainability is urgently needed to provide but also describe barriers for change in higher education for sustainable development.

Keywords: education, higher education institutions, sustainable development

JEL Classification codes: M31

INTRODUCTION

Societies across the globe are facing new challenges arising from the pace of technological progress and globalization. These include growing complexity and uncertainty, increasing individualization and social diversity, expanding economic and cultural uniformity, degrading ecosystem services upon which societies depend, and heightened vulnerability and exposure to natural and technological hazards.

Additionally, these societies now have a vast and continuous stream of information at their disposal. The complexity of these challenges - including the variety of actors involved, the situation and the courses of action - does not allow for straightforward problem-solving processes and instead necessitates creative and self-organized action.

In this new reality, universities should operate as knowledge and reflection institutions developing critical and systemic thinking and not only as teaching institutions that transfer knowledge (Filho et al., 2008)

In order to contribute to sustainable development, students need to learn how to understand the complex world in which they live, and how to deal with uncertainties, trade-offs, risks and the high velocity of societal (global) change. They need to be able to collaborate, speak up and act for positive change within the world (Wals, 2015; Wals & Lenglet, 2016).

The concept of education for sustainable development was born from the need for education to address the growing environmental challenges facing the planet. In order to do this, education must change to provide the knowledge, skills, values and attitudes that empower learners to contribute to sustainable development. At the same time, education must be strengthened in all agendas, programs and activities that promote sustainable development.

In short, sustainable development must be integrated into education and education must be integrated into sustainable development (UNESCO, 2014).

Education for sustainable development aims to produce learning outcomes that include core competencies such as critical and systemic thinking, collaborative decision-making, and taking responsibility for present and future generations.

1 LITERATURE REVIEW

Since the concept of sustainable development was presented in the Brundtland report 'Our Common Future' (WCED, 1987), education has increasingly been called upon to integrate issues of sustainability, and to contribute to a sustainability transition process in society.

Education for sustainable development was a United Nations program that defined as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and just society for all (UNESCO, 2014).

Since traditional single-directional delivery of knowledge is no longer sufficient to inspire learners to take action as responsible citizens, education for sustainable development entails rethinking the learning environment, physical and virtual.

For UNESCO, education for sustainable development involves integrating key sustainable development issues into teaching and learning. This may include, for example, instruction about climate change, disaster risk reduction, biodiversity and poverty reduction and sustainable consumption.

It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviors and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

One definition of Education for Sustainable Development is an "interdisciplinary learning methodology covering the integrated social, economic, and environmental aspects of formal and informal curriculum" (UNESCO, 2014).

Universities have a strategic role in the world, especially in respect of sustainable development and their work to prevent a global collapse (Bilodeau et al., 2014; Ferrer-Balas et al., 2009; Howlett et al., 2016; Filho et al., 2015; Moore, 2005). Teaching, research, operations, and relations with local communities should be thought of as activities integrated to reflect the principles of sustainability. According to Filho et al. (2015), about 600 universities around the world have adopted this new vision of education for sustainability.

According to Klimková (2017), despite the relatively long tradition of environmentally oriented trade unions in the countries of Central and Eastern Europe, it turns out that the concept of "Education for Sustainable Development" has not been adopted in the Slovak context.

Klimková (2017) performed a content analysis of documents of selected study programs of teachers, which showed:

- (1.) for competences of sustainable development are not given attention generally,
- (2.) there are obvious fundamental gaps and shortcomings of university practical professional training of teachers towards sustainability, which represents barriers for its implementation in school practice.

As some experts and theorists have stated, the reason why this is so will, it seems, be hidden in the fact that it is a fundamentally new type of education, transdisciplinary, open. "Complex social problems require hybrid solutions" (Vladyková, 2015), which presupposes constant

discourses and cooperation taking place across the natural sciences, social sciences and humanities, and the practical sphere of civil society. It is an educational concept (interdisciplinary in nature), which is relatively difficult to transform into specific educational and study programs and which places high demands on the diverse competencies of teachers, related to creativity and the development of noncognitive skills much more than theoretical expertise. At the same time, it presents a challenge and requirements to implement the concepts of sustainability and sustainable development into the undergraduate teacher training, regardless of approvals, for all study programs (Klimková, 2017).

2 METHODOLOGY

Education for sustainability in higher education has gained strongly increasing attention. In this context, the paper aims to evaluate and concentrate on the current knowledge base in the field of education for sustainable development and to clarify the basic approaches and strategies of sustainable education in higher education institutions.

Theoretical background of the paper presents topics based on relevant literature sources. This article reviews the literature regarding components of a sustainability education: (1) university management (2) academics and pedagogies and (3) value of students. Numerous views have been adopted in the education design. However, very scarce attention has been devoted to the students themselves whose capabilities and characteristics affect the reception of new views and are at the core in terms of achieving the sustainability goals (Bask et al., 2020).

The main methods used in this paper include analysis, comparative method, synthesis and deduction. The method of deduction was used to logically justify the conclusions from the generally valid pragmatic experience abroad.

In section discussion we used "Responsibility assignment matrix (RACI MATRIX)" to describe responsibility for activities supporting education for sustainability. RACI MATRIX describes the participation by various roles in completing tasks or deliverables for a project or business process. RACI is an acronym derived from the four key responsibilities most typically used: R- responsible (those who do the work to complete the task), A – accountable (final approving authority/ an accountable must approve work that responsible provides), C- consulted (those whose opinions are sought), and I- informed (those who are kept up to date on progress).

3 RESULTS AND DISCUSSION

3.1 University management

The integration of sustainability, e.g., by means of competences for sustainable development, requires an organizational change process in higher education institutions (Lambrechts, 2018).

According to Filho et al. (2008) an increasing societal awareness on sustainable development challenges, as well as the urgency required to tackle them, contrast with limited progress in the integration of sustainable development in university curricula. Ramos et al. (2015) remarked that despite the efforts of many universities in integrating sustainable development into the curricula, it has been recognized that changes have been little and that they have been occurring at a slow pace (Watson et al., 2013).

According to Lambrechts et al. (2018) transformation in learning in education for sustainability requires the commitment of faculty and academics. With their efforts, motivation, and innovative ideas, change in content and methods can materialize. Examples of whole curriculum reform and its reorientation towards sustainability are relatively limited (Von

Blottnitz et al., 2015). It is worth highlighting that in higher education institutions there is often no adequate institutional support and incentives for those academics willing to integrate sustainable development in their activities (Hoover and Harder, 2014), and most of the efforts lie primarily on overcommitted academics (Krizek et al., 2012).

The combination of both strategies (whole curriculum reform and individual specialized courses) have been indicated as beneficial for embedding sustainable development in higher educational institutions (Mulder et al., 2012).

Whole university approaches, connecting different functions such as teaching, research, campus operation and strategies aimed at communities and stakeholders' engagement and participation, have been indicated as essential for embedding sustainability in higher educational institutions (Lozano et al., 2015; Sterling, 2013)

Based on Sterling (2011) change in sustainability education can be executed on three levels, ranging from a weak to a strong view of sustainability. His work is based on Bateson's (1972), cited in Sterling (2011) three orders of learning and change.

First-order change refers to "more of the same", in other words change within a special area without questioning the assumptions or beliefs of the learner and the aim is to "do things better" and improve existing systems. According to Sterling (2011), most teaching in higher education based on transmissive pedagogies represents this level, the aim being to transfer knowledge rather than to challenge paradigms or students' beliefs.

The second-order change, or level 2 of learning also recognizes other than the dominant paradigm and aims at "doing better things". Learners are already required to review their values critically and possibly even to change them. This is a challenge for the student, who must consider all information, including what has previously been learned, from a critical perspective. The goal on the first-order level is to increase efficiency, whereas on the second-order level it is to find out what purposes the increased efficiency serves. The learning on this latter level is transformative.

The third level is even more challenging: Sterling (2011) describes it as "seeing things differently" and it involves a paradigm change.

3.2 Academics and pedagogies

Individual values of academics in higher education institutions influence the content, learning outcomes and pedagogy used in teaching. Values play a key role in the way an academic will respond to proposals to educate for sustainable development and influence how their disciplines develop (Thomas, 2016).

We need a new generation of professionals that think and take decisions within this new perspective and it is necessary to modernize higher education structures towards sustainability (Bilodeau et al., 2014; Filho et al., 2015).

Scott (2002) describes different responsibilities for educators:

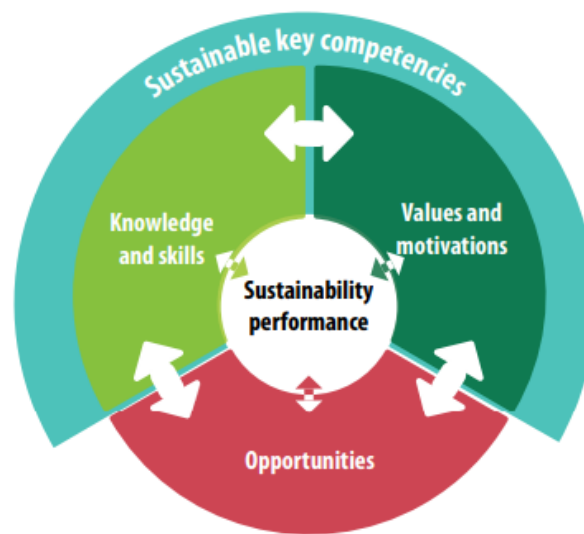
- (1) To help learners understand why the idea of SD ought to be of interest to them;
- (2) To help learners gain plural perspectives on issues from a range of cultural stances;
- (3) To provide opportunities for an active consideration of issues through appropriate pedagogies which, for example, might begin from learners' and teachers' different interests, helping pupils understand what they are learning and its significance.
- (4) To encourage students to continue to think about what to do, individually and socially, and to keep their own and other people's options open.

Opinions are divided regarding sustainability competences; whether to integrate 'new' competences, or to reorient existing competences within a framework of sustainability (Lambrechts, 2017).

Competences for sustainable development have been defined as a way to enable students to cope with the complexity and uncertainty of sustainability issues, thereby strongly opposed to classical educational models, focusing on more knowledge transfer (Wiek et al., 2014).

Specifically, in the context of management education, sustainability competences have been analyzed as well, focusing on the competences of (corporate) change agents for sustainability (Hesselbarth et al., 2015). Within an analysis of bachelor programs in business management, (Lambrechts et al., 2018) concluded that competences related to systems thinking, future thinking, action skills and personal involvement.

Fig. 1 Key competencies and performance of sustainability citizens



Source: Leicht et al., 2018, p. 46

According to Leicht et al. (2018) sustainability performance depends on the interplay of knowledge and skills, values and motivational drivers, and opportunities. The interrelation of these dimensions influences personal behavior (Figure 1).

The transformation in higher education towards sustainability should encourage inter and transdisciplinary approaches (Ferrer-Balas et al., 2009; Moore, 2005; Remington-Doucette et al., 2013; Sterling, 2013), the integration of theory and practice (Moore, 2005), the ethical discussions and reflections (Howlett et al., 2016) and the adoption of critical thinking (Ferrer-Balas et al., 2009; Howlett et al., 2016).

- **transdisciplinary approaches**

Transdisciplinary approach is increasingly accepted as necessary in addressing complex, multi-stakeholder real-life problems with high social and environmental relevance such as those characterizing sustainable development. These principles can be successfully integrated into innovative teaching practices.

Despite the lessons learned from best practices in implementing an inter-transdisciplinary approach by changes integrated into curricula, teaching and collaboration with community,

threats to these processes are being identified within several studies regarding barriers to integration of sustainability in universities (Dyment, 2015). Roots of those challenges are often found in the traditional departmental, compartmentalized structure of universities (Savelyeva, 2012) and its disciplinary boundaries (Moore, 2005). Traditional division of sciences and disciplinary orientations in universities reflect general fragmentation of learning, still prevailing at all the levels of education and in various research areas, contradicting requirements from education and teaching to contribute to "transformation of society for XXI century". Self-reflection on transformative potential of universities and the role of teachers and other change actors is necessary but not sufficient for overcoming disciplinary barriers.

In efforts to bridge the gap between traditional and newly projected role of universities, authors often see the solution in the quality of teaching, adding significant responsibility to the already complex role of teachers.

- **integration of theory and practice**

The integration between practice and theory can be done by two general forms: the approach between university and community and the use of the campus as a learning laboratory (Ferrer-Balas et al., 2009; Wiek et al., 2014). Higher education institutions can develop local or even global communities of practice for sustainability learning. This interdisciplinary working groups can list the problems experienced by the community and they can become topics to be debated in the classroom. Educators and students can use the theory taught in the discipline to perform the real projects mentioned (Barber, 2014; Ferrer-Balas, 2009; Wiek, 2014). Besides, the inclusion of students in the dialogue with communities can present opportunities to learn and understand different points of view (Too, 2015).

Besides of the two general forms mentioned above, it is worth highlighting service-learning in the framework of internship programs placing students in developing countries in collaboration with international and local NGOs. These initiatives encourage students to put into practice the theoretical knowledge acquired and to find practical relevance in what they have studied in these sometimes 'extreme' experiences in developing countries. Boni et al. (2015) pointed out that these experiences have a strong impact on student's assumptions and worldview.

Student engagement through service-learning with local or international communities have a clear transformative potential for students, challenging their own stereotypes and personal values, which involves learning as change throughout the educational community is a shift towards higher order learning (Sterling, 2013).

- **critical thinking**

Critical thinking skills and information literacy are key issues to be integrated in higher education (Peters, 2017). As such, critical inquiry should be framed within the context of wicked sustainability issues, characterized by their complexity and uncertainty (Lambrecht, 2018).

Therefore, rather than introducing knowledge-based sustainability education, the selfregulated learning approaches should be combined with an extensive focus on developing critical and interpretational competences.

The author stressed the inclusion of dimensions such as ethics, aesthetics and culture, also non-material values such as mutual help, solidarity and compassion are emerging issues that have been neglected in previous approaches.

3.3 Value of students

Generally, it is stated in the literature that students have very low understandings of sustainability (Chaplin, 2014) or reduce sustainability issues to environmental issues, thereby lacking a systemic perspective (Clark & Zeegers, 2015). Yet the environmental dimension of sustainability is most frequently identified and described in the literature (Cotton & Alcock, 2013).

Regarding student engagement in sustainability, it is clear that values as well as attitude shaping (Zsoka et al., 2013) are important for sustainability behaviors. However, a value action gap is perceived: while students believe sustainable living is important, they are hesitant to take personal action, mostly due to the displacement of responsibility to other people or organizations and reluctance to think about lifestyle changes in favor of sustainability (Chaplin, 2014).

The student perspective in business management study programs is often linked to a focus on the bottom line and self-serving characteristics, instead of the triple bottom line, commonly used in CSR settings (Lambrechts et al., 2018)

Lambrechts et al., (2018) identify different segments in the student population. Results of the segmentation study reveal that there is no universal students' perspective on sustainability. Within the group of business management/marketing students, four different segments could be identified, each with specific attitudes toward sustainability (Figure 2).

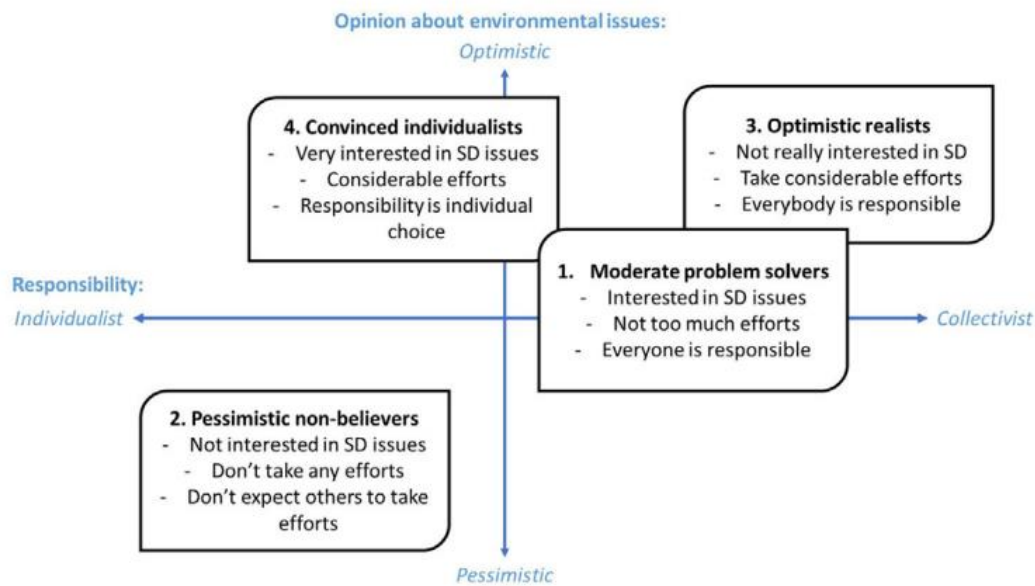
The first segment (26%) thinks humans can solve environmental problems. Respondents in this segment are interested in environmental issues and read and talk about it. Nevertheless, they don't avoid over-consumption and they are not saving energy. Their efforts toward sustainability are oriented toward food. Furthermore, they think everyone should contribute to sustainability. This segment can be labeled as the "Moderate problem solvers".

The second segment (22%) is rather pessimistic, as they think that environmental issues cannot be solved. The respondents within this segment are not interested in environmental issues and are not willing to take efforts to be sustainable, they do not expect this from other people either. This segment can be labeled as the "Pessimistic non-believers".

The third segment (36%) is rather optimistic about the possibilities of humans to solve environmental issues. Respondents within this segment do not read or talk about environmental issues but they deliver efforts to be sustainable: they avoid overconsumption, they save energy and they try to eat sustainable. Furthermore, they think everyone should pay efforts to be more sustainable. This segment can be labeled as the "Optimistic realists".

The fourth segment (16%) thinks humans could solve environmental issues. Respondents within this segment are very interested in environmental issues and read and talk about it. They are sustainable in trying to avoid over-consumption and saving energy, but don't do efforts regarding food. Also, they do not expect everyone to contribute to the sustainability transition. This segment can be labeled as the "Convinced individualists".

Fig. 2 Schematic overview of segmentation of business management/marketing students



Source: Lambrechts, 2018, p. 568

The segmentation study points out that some segments are more oriented toward collective goals and challenges, while other segments are more individually oriented. This is in line with the results of the study of Ng and Burke (2010) who found out that students who are more collective-oriented, tend to be more supportive of sustainable business practices.

3.4 Discussion

Sustainability is no longer an optional activity but has become a basic requirement to keep pace with rapid technological development. In academia these efforts include the program itself as well as the staff members (management, administrators, teachers, and researchers), students and workplace (Shafeek, 2020).

In this section, we will discuss the responsibilities of individual participants for the implementation of sustainability in education activities related to it. We will use "Responsibility assignment matrix (RACI MATRIX)" to fulfill this goal (Table 1).

Tab. 1 Responsibility for activities supporting education for sustainability with use RACI Matrix

Activities	Management	Teachers/ Researchers	Students
Campus green practice	A, R	I	C
University green practice	A, R	I	C
Involvement NGO/ stakeholders	A	R	C
Curriculum/ New subject	A	R	C
Curriculum / Existing subject	A	R	C
Implementation of critical thinking	A	R	C
Implementation of interdisciplinary approach	A	R	C

Activities	Management	Teachers/ Researchers	Students
Implementation theory and practice	A	R	C

Source: author's own table

R- responsible (those who do the work to complete the task), A – accountable (final approving authority/ an accountable must approve work that responsible provides), C- consulted (those whose opinions are sought), and I- informed (those who are kept up to date on progress)

The table shows that the greatest responsibility lies with the management and teachers. The role of students is to create pressure to applying concepts of sustainability to the campus and university program. It gives students an impactful way to deeper their commitment to sustainability by using the campus as learning lab for example, to help the waste prevention goals. Implementing items of sustainability on campus can happen quickly but creating a culture of sustainability needs a long time (Shafeek, 2020). There is a shortage of events that promote students to develop sustainable behaviors.

Also, there is a shortage of encouragement from the institution's top management for promotion of social tasks that consider local communities. Cooperation with local NGOs, companies, start-ups or other organizations such as garages, campuses, incubators, funding agencies, coworking spaces, accelerators and innovation centres extend the students' understanding of how each organization contributes to the ecosystem (Chong et.al, 2021).

From previous literature review the most common challenge which faced education sustainability is implementation subjects to university curriculum. Sustainable subjects are discussed only in certain fields in a narrow area. We suggest introducing new subjects into study programs and at the same time/or change existing ones (Table 2).

Tab. 2 Subjects supporting education for sustainability for the program marketing/management.

Examples of subjects for marketing/management	
New	Corporate social responsibility
	Global citizenship
	Circular economy
	Sustainable development/ Introduction to sustainability
	Driving business towards the sustainable development goals
Modified	Sustainable marketing
	Green logistics / Reverse logistics
	Socially Responsible Investing
	Responsible leadership
	Sustainable customer behavior
	Sustainability branding
	Strategy and sustainability / Green business strategy
	Inclusive Leadership: The Power of Workplace Diversity
	Cause-related marketing / Social marketing
	Sustainability innovation

Examples of subjects for marketing/management	
Supported	Critical thinking/ Creative thinking
	Problem-based learning / Design Thinking
	Skills for 21st century

Source: author's own table

The main responsibility for changing or committing new subjects lies with the teachers. This requires their constant education in the field of sustainability. We also recommended focusing on skills through active learning courses such as critical thinking, creative thinking, problem solving skills, teamwork. These can be separate, or their principles will be implemented in individual subjects.

Universities across the world are committed to enhancing the role of education for sustainability in the pursuit of sustainable development. There is reason to be confident that the future of education for sustainability will be as rich as its present and past.

CONCLUSION

The results of this paper are a serious response to the growing need to include sustainability in university curricula: the importance of integrating of transdisciplinary approaches, critical thinking and integration of theory and practice and the importance of knowing about students' values and attitudes needs to be emphasized so that instructors can smartly direct and customize their teaching.

The theoretical contributions are related to introducing the Sterling's three levels of sustainability education and Lambrechts's competences for sustainable development.

Using the "Responsibility assignment matrix (RACI MATRIX)" we describe responsibility for activities supporting education for sustainability. The greatest responsibility lies with the management and teachers to implement subjects supported sustainability to university curriculum. The role of students is to create pressure to applying concepts of sustainability.

Further research could be oriented toward surveys in other higher education institutions, and other study programs, in order to compare different groups of students in different countries. Other recommendations for further research are linking the results of the segmentation studies (Lambrecht) with personal leadership styles, linking the results with specific learning and assessment oriented toward the acquisition of sustainability competences; and linking the results between higher education institutions and efforts to integrate these competences in hiring strategies of companies.

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Specific Forms of Interpretation of Cultural Heritage for Tourists with Various Forms of Disability

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Abstract: The article analyses the development of new technologies in tourism for disadvantage persons and focuses on their application in the interpretation of cultural heritage in the Czech Republic. It briefly presents a survey of methods of cultural heritage interpretation for people with disabilities (PwD) and outlines the trends and challenges in accessible tourism using ICTs.

The article presents the results of a follow-up research focused on the technological aspects of the interpretation of cultural heritage for individual groups of visitors with different types of disabilities. The survey was conducted in the period 2018-2020 using a combined method of a desk research and structured interviews. The result of the data analysis was the identification and detailed characteristics of the specific needs of all PwD groups. The field research method was used to determine the current state of ICT use to make interpretation available for PwD. Key findings: ICT is a useful tool for solving specific needs of PwD, but the level of its utilization is still very low in the Czech Republic.

Keywords: interpretation, cultural heritage, people with disabilities, ICT, accessible tourism

JEL Classification codes: O33, O35, Z32

INTRODUCTION

The basic long-term trend of the tourism market is its growth and democratization. When the period before the COVID-19 pandemic situation is considered, the growth in the tourism demand can be seen in the growing number of travels, higher travel expenses and wider diversification of the demand. Tourism is increasingly accessible for more and more people with different interests and demands, people from different parts of the world and from heterogeneous social background. There is a growing number of requests to offer travel experience to anybody irrespective of their physical limits, health disability or age. Providers of tourism services respond to these demands with the effort to dismantle any barriers and promote tourism services and products among other segments of clients.

According to World Health Organization about 15 % of the world's population lives with some form of disability (WHO, 2018). This global estimate for disability is on the rise due to population ageing and the rapid spread of chronic diseases. The increasing number of PwD in population is supposed to account also for an increase in the number of PwD among travellers. Although it stated in the World Bank report that employment, level of income and thus also the purchasing power of PwD is lower in average than among people without disabilities (World Bank, 2020), the number of PwD participating in tourism is growing. This is a result of various

general programmes focused on supporting the quality of PwD life and software supporting tourism accessible for all. In addition to barrier-free access necessary for implementation of a journey, PwD should have access to as many services and experiences as possible. This requires adjustment of even accompanying services to the needs of travellers with diverse disabilities.

Exploration and learning are an important motive for travelling. As the head of the charity fund for visually impaired people says, the travelling increases self-reliance and self-esteem, it gives people a feeling of freedom and their own choice (Vejvodová, 2020). A range of various interpretation methods is prepared for familiarization of a visitor with the values of the site visited.

The Tourism Department of the Faculty for International Relations at the Prague University of Economics and Business was a coordinator of the international Erasmus+ project "Methodology of Interpretation of European Cultural Heritage through Attractions in Tourism" (implemented in 2017–2020). The project examined the current methodology of cultural heritage interpretation in tourism, both tangible and intangible heritage: architecture, music, fine arts, religious monuments, folk traditions, and gastronomy. As mentioned above, interpretation methods must be applied with respect to the needs of individual segments of visitors. The crucial characteristic features are the country of origin and cultural background of the visitor, their motivation and depth of interest in learning and age. Physical and mental abilities of the visitor must be considered too.

With the growing emphasis on the inclusion of PwD in tourism, it is also desirable to adapt the methods of interpretation of the segment of PwD visitors. This article presents the summary results of an independent follow-up research carried out in connection with the solved project. The aim of this research was to identify the specific needs of people with various forms of disability in the interpretation of cultural heritage and evaluate the options and state of implementation of ICT in this area.

1 LITERATURE REVIEW

A meta-analysis on the topic has not been carried out, as the topic is narrowly specific. A comparable study dealing with the topic could not be traced. On the contrary, there is a huge amount of professional scientific articles and current studies on the topic of tourism for all, ICT in tourism, and inclusion of PwD in tourism and in society (Gillovic & McIntosh, 2020; Huang & Lau, 2020). These topics have been processed systematically for decades; from the most recent works, the theoretical framework of this chapter was created.

Tourism for all includes concepts like social, responsible and accessible tourism. Its aim is to create such conditions that all people would be able to participate in tourism, which means that nobody would be expelled from consumption due to health or social barriers ("Tourism for all - Internal Market, Industry, Entrepreneurship and SMEs - European Commission", 2021) (Travel for all, 2020). Social tourism is based on solidarity and support to economically and socially disadvantaged segments and on making tourism services available to these segments (low-income families, seniors, youth, or people with health disabilities) (ISTO, 2020). It covers activities organized by NGOs, by employers for their employees, by the government, local administrations, charity organizations, etc., which will help socially disadvantaged people overcome the barrier and travel. Accessible tourism (barrier-free tourism) adjusts physical accessibility of attractions, creates barrier-free environment. It includes activities improving accessibility of tourist destinations, facilities and services and facilitates their comfortable and safe utilization to all potential clients without any additional assistance or necessity of additional adjustments (Buhalis and Darcy, 2011) (Zorková, Vaníček, 2017). Taleb Rifai, Secretary General of the UNWTO, highlighted the role of accessible tourism as a central

element of any responsible and sustainable tourism policy: *"It is both a human rights imperative, and exceptional business opportunity. Above all, we must come to appreciate that accessible tourism does not only benefit persons with disabilities or special needs, but it also benefits us all."* (ENAT, 2010).

The information and communication technologies (ICT) play a crucial role in overcoming the several travel constraints that people with disability face when planning and undertaking a trip. Technologies assist people with disability with mental, sensory, voice and speech, neuro-musculoskeletal and movement functions (Rodriguez Moreno, 2016). ICT include technologies, systems, activities and processes involved in the display, processing, storage and transmission of information and data by electronic means. It intervenes in all successive actions in the process of supply, demand and consumption of travel services. ICTs help to raise knowledge of destinations, promote the offer to tourists and enable consumers to participate in rating, sharing and experiencing systems. The basic pillar of ICT, enabling its existence and use, is the telecommunications and Internet infrastructure. The access, its speed and the means by which the connection is made are key for the transfer of information via the Internet (Jarolímková, Chaloupková 2018).

In general, computers and mobile phones are the most widely used tools by the public. Widespread and affordable broadband access is one of the means of promoting a knowledge-based and informed society. Thank to rising Internet accessibility as well as its decreasing cost, 89 % of EU households had an Internet access in 2018. Ten years ago, this number was only 60 % (Eurostat, 2019). In addition, the number of individuals who used a website or an app to arrange a travel service has been increasing in the past decade. In 2018, the share of European individuals (aged 16-74) who booked the accommodation online was 19 % (from 44 % in Luxembourg to 3 % in Cyprus and 5 % in Czechia) (Eurostat, 2019).

According to Statista, in 2017 around 13,2 % of the U.S. population had some type of disability (problems with mobility, hearing, vision or cognition). Disability is more common among older individuals (65 years and older), who use the Internet and ICT less than younger people. 95 % of Internet users between 25 and 34 years of age use the Internet every day, but only 76 % in the age 55+ use the Internet daily (Statista, 2016).

2 METHODOLOGY

The chapter examines a very narrow topic, which is an intersection of four very wide topics: tourism – cultural heritage interpretation – specific needs of PwD – ICT. The survey was conducted in the period 2018–2020. Various methods of data collection and processing were used in the completing of the chapter. The methods of a desk research and structured interviews were used for identification and characterization of 4 main PwD travellers' groups:

- PwD with limited mobility.
- PwD with impairment of senses – Hard-of-hearing impairment or deaf visitors.
- PwD with impairment of senses – Visual impairment and blind visitors.
- PwD with mental disabilities.

Application of modern technologies in tourism has been elaborated in the previous research (Jarolímková, Chaloupková, 2018). Its results have been supplemented by current desk research (professional articles and studies from 2015-2020), which provided an overview of the assistive technologies of using ICT for the disabled people during travel.

The topic of interpretation of cultural heritage was researched comprehensively within the international project coordinated by our workplace (2017–2020) (Jarolímková and MIECAT

project team, 2020). An overview of the specific needs of individual segments of PwD in the field of interpretation of cultural heritage was created based on a compilation of the results of studies on general needs of PwD and structured interviews with representatives of 6 Czech organizations focused on PwD carried out during December 2019. The setting of interpretation methods for PwD and their evaluation were investigated by a field research and data analysis in information systems for PwD at selected important Czech monuments carried out during the period November 2019-April 2020.

3 RESULTS AND DISCUSSION

Trends and challenges in accessible tourism using ICT.

As more and more aspects of life are moving to online environment, there has been a shift in the use of mobile Internet, which allows to be online all the time and almost everywhere. In this connection, we speak about so-called Smart Travel, a new era of travelling thanks to the development of IT. When it comes to mobile apps, we can witness a growing dependence of tourist destinations and tourists on new forms of ICTs (Chaloupková, Jarolímková, 2018), which benefit from virtual reality, gamification, and geo-location. These apps show service providers the past behaviour and individual preferences of their users and potential clients. The technological shift towards Smart tourism is huge and the tourism industry will be pioneer in utilization of IT even in future (Gretzel, 2015). Live-videos and video-advertisements are currently considered to be standard, compared to static billboards and poster forms (Socialreport.com, 2018).

According to the European Commission, more than 80 million people are affected by some form of disability - sensory, physical, intellectual or mental. Nevertheless, less than 10 % of websites in Europe are accessible for persons with disabilities (European Commission, 2019). In this context, importance of web accessibility must be mentioned (European Commission, 2019).

Ways to help these people contemporary can be different. For deaf or people with hearing problems, text could be followed by captions, subtitles. Those who are blind, can use screen reader, a digital audio file as podcast. Colour blind would welcome text and images with significant contrast ratio. There are systems which can help dyslexic people avoid and correct mistakes. For unstable users with stress injury or with cognitive disability are helpful keyboard navigation and predictable (easy to read content) navigation; etc. ICT is not always perceived as a positive tool. Many professionals talk about ICT as a barrier to social relations for disabled youth (Marshall, Kendall, 2009).

PwD are participating more and more frequently in tourism activities because of their growing level of economic and social integration. In EU, accessible tourism market is estimated at approximately 27 % of the total population and 12 % of the tourism market (UNWTO, 2016).

Assistive technology

PwD need certain assistive devices to work fully on the computer. These devices help them improve physical and mental functions and facilitate them communication with the computer. That can be used not only by PwD, but seniors using the Internet can find them useful as well.

People with visual impairment need special devices or programs like Speech-to-Text software or software to magnify the text. There is a special touch keyboard, monitor showing the text in the Braille, etc. People with hearing impairment can search for information quite well. Thanks to the development of IT, there are new and improved devices, which facilitate communication between those with and without disabilities (e-mails, SMSs, chats). Watching the news, these people can use various hearing aids - the news is often interpreted

simultaneously into the sign language or are accompanied with subtitles. Persons with heavy physical disability, when they are almost immobile and work on the PC, can use e.g. a trackball or joystick, sip and puff systems. People with mental disabilities and learning disorders form another category. They usually use specialized dictionaries and spell-checkers, Intel-Readers or Speech-to-Text software.

Social media, access to social networks and travel blogs

Social networks used daily by the broad public have become the most important digital media. The highest level of social networks utilization is in the USA. More than 246 million Americans (70 %) visited or founded their account there in 2019. The most common activities on these platforms are posting photos, sending private messages, comments or giving "likes" to the content (Clement, 2020). Regularly used platforms on the American market are Facebook, Instagram, Snapchat, YouTube, Pinterest, WhatsApp, Twitter, Tumblr, WordPress, Yelp, TripAdvisor, LinkedIn etc.

The mainstream social media such as Facebook, Instagram or Twitter have created tools that differently abled people use to have full access to these websites without any trouble. The Facebook invests into video captioning and Artificial intelligence to make the website a leader in tech accessibility. Its automatic photo-captioning tool describes objects in photos to blind people. New face recognition features help people with vision loss to know more about who is in their photos. Facebook also has several closed captioning features to help people who are hearing impaired: closed captions for videos on Facebook via text file upload, automatic video captioning for ads and Pages in the US, and real-time captioning in Facebook Live broadcasts (Facebook @accessibility, 2020). In 2018, the Instagram introduced two new improvements to make it easier for people with visual impairments to use the app. The Instagram estimates more than 285 million people in the world who have some visual impairment. Therefore, it has prepared an automatic alternative text so that these people can hear descriptions of photos through screen reader when using the Feed, Explore and Profile. Furthermore, the app has created custom alternative text to add a richer description of photos for uploading a photo. People using screen readers will be able to hear this description (Instagram, 2018). The Twitter also gives an option to compose a description of images, so the content is accessible to more people, including blind or low vision (Twitter, 2020). Although generally the websites are constantly updated, the special tools that were created for PwD are often forgotten and not updated in accordance with these websites, making them unusable (Griffith University, 2017).

In the market there are many portals sharing experience of travellers and professional providers of travel packages. One of the most popular travel webs all over the world is TripAdvisor, which obtains a forum for travellers with disabilities, containing an accessibility checklist for hotel accommodation, travel recommendations about rights of travellers with disabilities, their travel insurance, air travel with medicaments, etc. This community offers more than 1.500 topics (Tripadvisor, 2020). Like the TripAdvisor, but for accessible and inclusive travel, is an online guide "Travel for All," incorporating a community and providing detailed accessible travel information, discussion forums and a blog included. Travellers with accessibility needs have access to trustful and verified information to plan, book and experience travel with confidence (Travel for all, 2020). Trying to copy the TripAdvisor for PwD, the app "Access Earth" provides clear and separate information about places – if the place is barrier-free, how wide the doors are, if there are private bathrooms available, etc. They can get turn-by-turn navigation to a place using their preferred travel app (apps Uber and Lyft are integrated) (Access Earth, 2020).

Smart maps

App with geo-locating data provides information about barrier-free regions suitable for people on wheelchairs. People with a limited mobility must consider their journey from two points of view. The first one is the journey to the destination itself. The Tube Map in London by Mapway

is a good option. The other one is accessible locations. The application Wheelmap provides and summary of wheelchair accessible hotels, landmarks and attractive places. It can be downloaded from the Apple, OS or Google Play. All apps have their limits. The Wheelmap contains information from European countries and towns (Wheelmap, 2020). As well as any common traveller, wheelchair travellers need information about public toilets and parking lots for PwD. The interactive map WheelMate with information about more than 35 thousand places from 45 countries can help with this. Even though almost 17 thousand people have downloaded this app, some of them complain about an insufficient number of data (WheelMate, 2020).

Not only wheelchair travellers can explore the destination thanks to the app called Disway. developed in the Czech Republic. It shows them an overview of barrier-free locations, including advice and comments from other users and contains gamification (Disway, 2020).

Voice technology

A further development of other digital media focuses on the voice and their spread in broad public can be predicted. Artificial intelligence such as Amazon Alexa, Google Assistant and Apple HomePod, have been developed for the consumer market for a long time not only for the purpose of being spread among users with visual impairment and so the user satisfaction has been confirmed (socialreport.com, 2018). Broader public has been getting familiar with article podcasts, which they can listen to anytime, in case they prefer listening to reading. Thus, there is a massive use of voice technology and at the same time increasing amount of content accessible to visually impaired people.

As mentioned above, social networks Facebook, Instagram, Twitter and many others have offered a technological solution in form of a screen reader for people who lost the vision. Amazon Alexa technology as a part of smart household can interact with a voice, replay music, create a list of tasks, set up alarms, stream podcasts, replay audiobooks, provide information about weather, traffic, sport and news in real time (Amazon Alexa, 2020). A specific voice app for travellers with hearing impairment is RogerVoice, which transforms mobile phone calls into text format. Deaf people can easily read telephone messages from their partners on the screen. This software distinguishes a speech includes voice conversion into several languages and so it also helps people with translation in a foreign country (RogerVoice, 2020).

Video technology

A so-called Life streaming has become a part of daily life of the public. Approximately 80 % of consumers would prefer watching a live video made by a given brand than reading a blog and 82 % would prefer live video to a written form of social websites upgrade (DeMers, 2017). So-called live video-talks (e.g. app "Be my Eyes") also help blind persons. Mentioned app is based on the principle of a friendly approach to PwD, where volunteers describe the picture.

Unlike the others, the deaf must deal with two disabilities during their travels – they do not hear and there is a lack of sources of information in sign language. The sign language is specific in each country and is not easy to understand. The Czech team wanted to change it and in 2018 they created the first travel guide application DeafTravel which was launched in 2019. This app interprets some video guides into the international sign system, which is artificially created for communication of the deaf from all over the world (DeafTravel, 2020).

Virtual and augmented reality in tourism

One can see the virtual reality as an epochal technology, thanks to which people with mobility limitations can explore foreign destinations and visit historical and cultural sites. Almost all travellers all over the world could experience – due to covid-19 lock down – the feeling when physical travelling is limited. Many providers of tourism services (in particular, hotel owners and historic and cultural attractions) have stated with digitalization of their products. The

intermediators of these travel also paid attention to virtual versions of trips, activities or tours. Examples are TripAdvisor's Viator – project called #RoamFromHome, creating over 100 virtual experiences, that range from home cooking courses to digital walks around city centres or landmarks (Viator.com, 2020), AirBnB, Headout, and CityMe through the StayCurious account on Instagram. Virtual travellers pay a participant fee for these experiences. Up to 80 % of the money raised in this way go for the support of SMEs, which were most hit by the coronavirus outbreak.

Spread of technological innovations in the form of virtual reality influenced perception of tourist destinations. Virtual 3D world offers sightseeing of destinations to potential visitors and opportunities for new forms of tourist experience-oriented communication with target markets and organizations of destination management (Huang & Backman & Backman & Chang, 2015). The aim of this technology is to create sense experiences for visitors, which would involve as many senses as possible - sight, touch, hear, smell and even taste. Nevertheless, the user needs specific hardware equipment for such perception, e.g. a display placed on the head, earphone base, etc.

Virtual reality, mobile phones and its applications and games use haptic technology, for more comfortable control. A typical feature for this technology is extreme sensitivity to touch, with the recognition of the touch degree, resp. what force you push. The most used map portal Mapy.cz in the Czech Republic made an internet map available for blind people and covering a whole world. The so-called haptic maps are the result of a unique technology that generates data for tactile maps based on visual maps (Wolf, 2019).

Automatization and Robotization

Current professional discussions reflect the current development in the field of automatization and robotization and concern creation of new models in industries. The "Industry 4.0" in Germany and France including Internet networks 5G covers utilization of new technical opportunities such as artificial intelligence, robots, sharing of networks and work with so-called big data. Although the number of robots used in households is increasing in the field of cleaning and entertainment, assistive robots for elderly or handicapped people remain a rarity now and it seems for the foreseeable future (Richter, 2017). Nevertheless, the future belongs to these solutions in daily lives of handicapped people and on their journeys both real and those virtual ones.

In these days, robot design is less about the hardware and more about developing algorithms. As technology improves, it is becoming a powerful tool to influence positively the lives of PwD. Robotic systems are used as tools in healthcare as prosthetic limbs, robotic exoskeletons, assistant robots and brain-to-machine interfaces. While these assistive technologies are improving, people with disabilities are also helping scientists to more precisely understand how to teach machines to learn, which is helping to improve their lives and robot design (McSweeney, 2019).

Cultural heritage interpretation

Cultural tourism can be defined as a form of tourism whose participants mainly want to learn about the cultural heritage and culture of the respective country and its citizens. The intention to participate in some form of cultural activity is present in approximately 57 % of all multiple day journeys of international tourists; in about 39 % of journeys cultural activities are the dominating reason for travelling. Culture is a significant factor in the life of the civil society and significantly helps its integration. It contributes to the development of intellectual, emotional, and moral level of every citizen and functions as an educative element (Richards, 2018). Several studies show that knowledge of the culture of other spaces is one of the main motivations that drive tourists. Exploiting cultural heritage through tourism activity becomes a

fundamental means for the development of places where this heritage is located (UNWTO, 2018). Cultural tourism has a positive economic and social impact, it launches and strengthens identity, helps to conserve cultural heritage, it facilitates harmony and understanding among people, supports culture and helps to further development of tourism. Cultural tourism has several goals that must be fulfilled within the context of sustainable development, such as preservation of cultural sources, correct interpretation of cultural heritage, authentic experience of visitors and stimulation of revenue from cultural sources. It also must consider the impact of tourism on villages and regions and the achievement of economic and social benefits (McKercher, Du Cros, 2002). The European Commission set priorities in its policy to promote cultural heritage (European commission, 2018).

It is necessary to provide quality interpretation of cultural heritage. The leitmotif of cultural tourism is getting familiar with the place visited. The exploration involves not only learning about the facts, but also understanding the context of cultural and historic events and their influence on the past and current life of local inhabitants. During their stay, visitors build their attitude to the destination and local people, their culture and cultural heritage. It is therefore, in the interest of both the destination and visitor that the cultural heritage is correctly interpreted (Vaníček, Jarolímková, 2019).

Forms of cultural heritage interpretation

As the results based on our investigation have showed, interpretation is provided in different ways. The choice of the form is mostly influenced by the characteristics of the monument, goals of the interpretation and technical, financial and organizational possibilities of the provider. It should also respect specific needs and preferences of individual segments of visitors. A combination of different methods and tools of interpretation offered is usually used and so a visitor can choose the one, which meets their needs and current preferences best.

Interpretation of cultural heritage has two basic forms – personal and non-personal. In personal interpretation, the interpreter meets the visitor directly. It can be a guided tour, shows and workshops with a lecturer, living history, etc. This form of interpretation is considered most efficient and is preferred by majority of visitors. According to the survey more than 80 % respondents across all age groups prefer this type. Personal interpretation offers an opportunity to respond flexibly to the needs and interests of visitors and the timely situation; it is live, up to the date, authentic and persuasive. However, it has high demands on the qualification of interpreters and demanding is also its organization. It has its limits, as the capacity, language competence of the interpreter and time accessibility of the service. Adjustment of personal interpretation to the needs of PwD is possible thanks to high flexibility; however, the interpreters need to be trained specially for communication with PwD.

Non-personal interpretation uses different technical aids and media, e.g. printed materials, interpretation panels, audio-visual tools, digital media and projection in virtual reality. The visitor can choose his or her own pace of the visit, as well as the depth and content of the information, which he will use. The advantage of non-personal interpretation is its almost unlimited accessibility (information can be obtained almost anywhere and anytime). Its limit is little flexibility and difficulty with ongoing changes of the content. The visitor lacks a personal contact with a live representative of the destination. Non-personal interpretation is popular among visitors who prefer individual programme, independence, piece and personalized pace of the tour.

ICT can be beneficial also in interpretation for PwD as they can facilitate a tour of places, which are inaccessible due different barriers, or they can facilitate specific communication. Interpretation is provided mostly at the attraction itself, that means in-situ. Modern technologies bring the opportunity to interpret cultural heritage in an interesting and quality way even ex-situ, which is very important especially for people with limited mobility.

The most often used methods of interpretation are: guided tours, printed materials, interpretation panels, audio-guides, multimedia guides/mobile apps, video-spots, virtual reality, augmented reality, visitors/interpretation centres and exhibitions, shows, presentations, tastings, concerts, workshops, working lists, living history, dramatization, gamification. Other forms of spreading the information sometimes connected with interpretation are discussions, conferences, educative programmes.

Development of society and tourism market obviously also influences the approaches to the interpretation of cultural heritage. Very important is e.g. the process of globalization, changes of the demographic and socio-cultural structure of the society, development of information and communicational technologies and deepening process of digitalization (Jarolímková and MIECAT project team, 2020).

Basic trends in the interpretation of cultural heritage are changes in the content of the information (shift from artistic and historic content of the message to message in a broader social, geographical and historical context), interactivity, haptic elements, utilization of technologies in interpretation, during interpretation, gamification.

Potential of interpretation methods for implementation of ICT for PwD

Technologies have been used in interpretation since the first computers, TV screens were installed, and the first audio-guides and information kiosks with static screens were introduced. Today, however, the scope of tools is dynamically growing and touch screens, audio-visual systems, projection technology and video-mapping, and mobile equipment with access to the Internet, applications, multimedia, virtual reality, and QR codes are available. New media open new indefinite opportunities and possibilities and result in the shift from static text panels at exhibitions to visualisation and interactivity (Šobánková, 2014). Some authors (Davies 2014, Činčera a kol., 2018) speak about the birth of "digital interpretation". The main advantage of efficient use of technologies is the possibility to adjust the interpreted content by displaying various levels of information and language versions. This can help to answer one of the most important current challenges - individualization (Koutoura, 2014).

When planning interpretation for PwD segments it is necessary not only convert the information into a digital form, but it is often necessary to adjust the content into a form accessible and understandable for PwD (to simplify the message, use different words, increase visualization, etc.). Printed interpretation materials in a common form are not suitable for some PwD segments. But they can be transformed into a digital form and adjusted for communication with PwD.

Interpretation panels are most often permanently placed in the terrain near important sites. Their goal is to attract the visitor to the site and to provide basic information and so to help the visitor understand the importance of the place and provoke the interest and curiosity leading to searching for further information. Panels can be placed independently and separately near the monuments (e.g. memorial tables on the facades of houses) or they can be placed along a heritage trail and their information follows the previous one.

Information panels can be accessible also in a digital form on the websites of their administrator. There might be a word-by-word transcription of the text from the panel, or the description on the website is more detailed. In some case there is only a digital form of information and in the terrain, there is placed only an QR code (Quick Response code) instead of an interpretation panel. The place of the panel, its size or design is often unsuitable for PwD. The solution to this is conversion of the information into a digital form and adjustment of its form for communication with PwD. Adjustment of the content is usually easy.

Audio-guide is a presentation of a guide recorded in the device, which can be operated by a visitor him/herself according to his/her interest. The recording contains a spoken word, which can be completed with some other sounds (music, "sounds of the street", etc.). Besides the presentation of a guide, it can contain also interviews with experts, elderly witnesses, timely recordings e.g. of old radio broadcasting) or dramatization. There are usually three levels of comprehensiveness and the visitor can choose the level and thus amount of information they are ready to listen to and of course their own pace of the tour. Audio-guides can be offered in many language versions; it is only a question of how much money the management is willing to invest into it. The visitor can borrow the device, or they can download the recording into their mobile phones.

Another option are stationary kiosks, where a visitor can play the recording from an in-built tape-recorder. At some exhibitions, earphones are available and so other visitors are not disturbed. A disadvantage is a limited capacity of earphones. A disadvantage is technical discomfort – the use of earphones is uncomfortable for some visitors; reproduction of the voice is not always clear. An audio-guide is popular especially with visitors to museums and exhibitions, often also for individual sightseeing tours of a town. Regarding PwD, an audio-guide is suitable for people with limited mobility, as they will appreciate their own pace of the tour. Another advantage is that the content is easily adjustable to visitors with visual impairment or with mental disability.

Videos in interpretation are common in the form of films, slide shows, video mapping, projection on water, etc. The presentation can be complemented with photos and video-sequences. Film and photo recordings are appealing to visitors and can facilitate various topics, e.g. documentation of historic moments, traditional feasts, moments from the life of an important personality, recordings of interviews with witnesses. Information and details, which a visitor cannot experience because they are not well accessible, can be shown with a film. Films are often used at the beginning of an exhibition as a lead-in tool; videos showing traditional handicrafts are performed on the screens placed at different places of an exhibition. Films at the end of an exhibition, mostly bibliographical documentaries give further details to the interpretation.

If videos are used for PwD with limited mobility, some changes in the lay out of the room are necessary – easily accessible seats, zones for wheelchairs). Video equipped with a translation into the sign language is necessary for people with hearing impairment. A multimedia guide is based on more advanced technologies as it combines the above-mentioned forms of interpretation. It represents a higher level of interpretation.

Mobile applications represent another alternative to a tourist guide. They provide their users with a wide range of information about monuments and destinations. Apps are usually linked with maps and a calendar of events. The information can easily be updated. They work online and are interactive, so they can locate the user and respond to the change of user's position. Most of the apps can work off-line. The content is at the border between the information service, interpretation, promotion, sales promotion and game. It is a modern medium, which is used by more than 40% of visitors on holiday (Haušková, 2013).

The use for PwD is similar as in the case of audio-guides, videos and multimedia guides. The tour can be undertaken in one's own pace. The content can easily be adjusted to different needs of PwD.

Virtual reality is a 3D environment created with a computer. It is based on the scan of a real environment, which can be experienced thanks to special software and reading device. The visitor is moving in a virtual space and feels to be its part, the picture responds to the visitor's activity. The visitor gets a very authentic experience and idea of the interpreted place (Gosalia, 2018).

The use of virtual reality is useful especially for places, which cannot be visited in person. These are inaccessible places, places with difficult access for people with limited mobility or with visual impairment, places with limited capacity of visitors.

Augmented reality is a virtual reality complemented with elements created with the computer. In the interpretation of cultural heritage, AR is used to simulate original equipment of the interiors, reconstruction of unpreserved parts of structures, or a person of a virtual guide. The use of augmented reality is beneficial for monuments, which have been destroyed or lost (e.g. archaeological sites, ruins of castles, etc.). Augmented reality visualizes the original monument (e.g. digital reconstruction of the ancient temple in Olympia). Other technical solutions, e.g. 3D projection for basic visual idea or video mapping (e.g. reconstruction of a church in Belgium) can be used for the same purpose (Kubů, 2019).

Visitor's/interpretation centres and exhibitions offer modern multifunctional space with permanent interactive items familiarizing visitors with cultural heritage. These centres are designed as barrier-free and have the best prepared methods for interpretation for PwD.

Gamification: games are designed as contests, quizzes (the visitor is searching for answers to questions), quests (riddles, the visitor tries to find references in the field to solve these riddles), rally (a game in the field, when the visitor must solve various tasks in the field), assembling models, etc. All these activities help to learn and understand the destination by playing. (Blohm, 2013, Bulencea, 2017). The game can be based on printed materials, it can use mobile apps or downloaded in the tablet. It is usually not difficult to adjust the game for PwD.

The presented study is an initial overview of the situation in the Czech Republic. Research into the extension of different methods of interpreting cultural heritage for PwD will continue. The current survey shows that in the future it would be desirable to prepare a more detailed benchmarking analysis of the use of ICT tools in the interpretation for PwD in Germany, in Belgium and Spain, which have more advanced solutions to the situation. Another necessary direction is the standardization of information on the accessibility of services for PwD travellers and the design of a model for planning interpretation for PwD for the most visited types of monuments.

CONCLUSION

Evaluation of ICT tools used for facilitation of cultural heritage interpretation to disadvantage persons is an intersection of three very wide topics – tourism, needs of PwD and ICT. The contribution of tourism to create an inclusive society requires the adoption of new approaches and strategies that promote the accessibility of tourism destinations, allowing all people, regardless of their health condition, to enjoy tourism experiences.

Trends of tourism development and demographic development indicate that travelling of PwD will grow and PwD will become an important segment of travellers. PwD have specific needs when they travel and when they participate in the interpretation of cultural heritage. Destination should therefore reflect these needs in their offer of interpretation methods.

Information about travelling of PwD are provided by different stakeholders with a lack of coordination:

- Destination (Czech Tourism, regional organisation of destination management) prepare general information about accessibility of services in the destination. Most information is focused on persons with limited mobility, other PwD are neglected.
- Tourist destinations, monuments: it is estimated that more than a half of tourist destinations and attractions in the Czech Republic includes information for PwD in

their information materials. Again, mostly for people with limited mobility. Information for other PwD segments is very rare.

- Open, collectively created sources are information/interpretations created by travellers. Information is practical and fully respond to the needs of PwD. However, they are created by fans without knowledge of interpretation principles.
- There are foundations supporting selected programmes for the improvement of the life of PwD. Since 2006, Vodafone Foundation has supported more than 500 projects and divided CZK 200 million among projects, which significantly improve lives of people. The app Signslate, helping to people with hearing impairment gathers interpreters into the sign language. Whenever a deaf person needs, they can use their service in real time. (Nadace Vodafone, 2020). Foundation Světluška (Lightning bug) supports travelling and hiking of people with visual impairment.

Evaluating the interpretation methods for PwD we made the following conclusions. Interpretation of cultural heritage uses various methods of personal and non-personal interpretation. Utilization of ICT for higher quality interpretation is a current trend. Even though the range of methods is wide, and utilization of ICT might really help to make interpretation more accessible for everyone, we can witness that in real life only rarely. ICT is a useful tool for solving specific needs of PwD, but the level of its utilization is still very low. There are three reasons for this situation. Underestimation of the PwD segment of visitors and little or no knowledge of their needs. High costs of interpretation using ICT and low return of investments, other financial priorities and little experience with using ICT. Little pressure from the demand side for the improvement. Interpretation adjusted for the needs of PwD is considered a pleasant luxury service. Nevertheless, its non-existence does not discourage people from the visit. Most PwD who like travelling are used to integrating with public and are satisfied with the services offered, even though they cannot fully use all services. PwD themselves are not always convinced that investments into this field should be a priority and they prefer subsidies for improvement of conditions for their daily activities.

All stakeholders in the tourism industry should consider travelling of PwD as a great challenge. The development in providing better tourism services meeting the needs of PwD so far is promising, but still very slow and does not reflect the great potential of this segment. The chapter contributes to promotion of the knowledge of ICTs that can help to adapt the interpretation of cultural monuments to PwD.

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Antidumping Investigations of the European Union in the Time of Pandemic COVID-19

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Abstract: Antidumping policy of the EU aims at protecting EU producers against unfair practices of foreign companies supplying the EU market. The economic recession could stimulate either the utilization of unfair practices by the foreign businesses, or also the effort of domestic companies to obtain the protection against the foreign competition. As a result, there may be an increase in the number of antidumping investigations. The aim of this paper is to find out how the COVID-19 pandemic and the following economic recession has affected the antidumping investigations in the EU. We found that the number of antidumping initiations has not significantly increased in 2020 compared to previous years. However, pandemic COVID-19 may have negative impact on antidumping investigations duration due to restrictions concerning spot verifications as well as time-limits prolongations. This may limit the ability of the EU to respond quickly to unfair practices by foreign suppliers.

Keywords: antidumping measures, investigation, pandemics, European Union

JEL Classification codes: F13, F31, F44

INTRODUCTION

As the global trade is changing and more subjects step into the spheres of international business, each of them are trying to fix their positions and financial statuses. However, some of them are using the illegal forms of strengthening their sales. To be concrete, besides the subsidies, side "supports" from their governments they often also choose the dumping way of doing business. It is the method when the product is exported from some country at a price lower than the price that is normally charged on the domestic market. As a way to decline the negative impacts of the import of dumped products, the antidumping measures are initiated. However, this type of measures is allowed to use only if there is significant damage to the industry in the region where dumped products are being imported. The rate of damage must be found out by the detailed investigation according to specific rules (Szatmári, 2020). The European Commission, as the responsible body for the Trade policy of European Union, heads these investigations against unfair dumping practices of foreign businesses supplying the EU market. However, as the COVID-19 pandemics influences all spheres of the lives, the international trade is also affected by its negative impacts, mainly by the economic recession. It could strengthen the pressure on the economic subjects which suffer from the negative recessive economic impacts to use the unfair dumping practices. According to this fact, the recession can also support the domestic businesses to obtain the effective protection against the illegal trade operations. During the recession, there is a possibility that both numbers of illegal dumping activities and antidumping investigation initiations would increase.

Concerning the structure, firstly, the paper maps existing literature in the field of the antidumping investigations affected by the economic recession. Thereinafter, we observe the development of GDP affected by the COVID-19 pandemics and the number of the antidumping investigations initiated in particular period, and this number is compared with the data available for the period before the pandemics. Consequently, the conclusion is implicated, whether COVID-19 pandemics had an impact on the antidumping investigations.

1 LITERATURE REVIEW

The antidumping investigations of the European Union may be done under the WTO and GATT conditions. According to Jallab (2007), the antidumping measures consist of three stages: the admissibility of the claim is examined; the dumping margin is estimated, and the size and nature of the damage is assessed. While considering the period of dumping existence investigation, the 1994 GATT agreement states that the period is normally one year, but should not be less than six months. On the other hand, the investigations meant for assessing the damages should cover the 3 years, but they can cover a shorter period. In his research, Jallab dealt with the hypothesis applied for both United States and the European Union that there is a possibility of decrease of the number of inquiries opened with an increase in the rate of growth of the import country's real GDP. He worked also with the potential fact that the sensitivity of the firms to perceived foreign unfair trading activities is increased in an economic recession as is the motivation of foreign firms to decrease prices in order to maintain potential export volumes. Simultaneously, importing country seems it easier to prove an economic injury during the economic recession. In his research, he evaluates the influence of the business cycle with variations in real GDP or the index of the industrial production. The average growth rate of GDP as well as of the industrial production index is used, either over the previous year or over a three-year period before the date of submission. The data for his work were drawn from the WTO Trade Policies Review Division and, at the same time, the data on initiations of antidumping actions in observed period (1990-2002) came from the WTO antidumping database. Based on this research, the economic situations influenced by the recession bring the potential to strengthen the demand for protection, thus contributing to increase of the protectionist tendencies. On the other hand, the periods of economic "boom" are likely to further liberalization of trade. When talking about the causality relationship, it can be expected that submissions are negatively related to the business cycle status – the deeper recession occurred, the more antidumping procedures initiated. However, the results, according to Jallab's research say that "short variations in the level of general economic activity or in the level of industrial activity...have no significant impact on the number of openings of antidumping procedures."

Knetter & Prusa, 2003 dealt with the relationship between macroeconomic factors and antidumping submissions. This empirical work uses data on antidumping submissions from Australia, Canada, the European Union, and the United States. The starting point of the study are two criteria that must be met in order to impose duties on foreign companies using illegal dumping prices. There must be evidence that domestic industry has suffered relevant material injury as a result of foreign imports. On the other hand, the foreign firms must be found to be pricing at less than fair value which means that the price charged in the domestic market by the foreign firm is below the price charged for the same type of product on other markets. Moreover, the price charged in the domestic market is below the level of estimated costs plus normal returns. The determination of each of these criteria could be affected by the macroeconomic factors in general and fluctuations in real exchange rates. The response of a particular foreign firm to a real exchange rate changes increases the possibility that at least one of the criteria, that were already mentioned, will be satisfied. The research deals with the fact that fluctuation in economic activity might affect the decisions for submissions. According

to Knetter & Prusa, it is clear that the economic recession in the importing country causes poor performance of domestic firms. All in all, this could facilitate a finding of material injury. Moreover, there is a possibility for foreign firms to reduce prices on particular shipments to the country of destination, especially below fair value. They worked with the hypothesis that GDP of import country will be related to the submissions negatively. Oppositely, they do not see clear relationship between export country GDP and the submissions. There is a possibility of lowering the prices by the foreign firms if there is a weak foreign economy to maintain overall levels of output. This situation could cause injury to domestic firms, but it is not clear that it would launch the pricing below the fair value. The reason is that foreign companies would presumably be lowering prices to all markets, not only to only one or some particular. One of the main findings of this study is that domestic real GDP growth has statistically significant impact on submissions. One-standard deviation fall in domestic real GDP increases submissions by 23% according to this study.

The issues concerning the relation between the AD criteria and exchange rates were examined also by Robert Feinberg (1989). The research of the changing country pattern of dumping complaints by the businesses based in USA during the period observed (1982-1987) suggested that the exchange rate fluctuations are marginal factor in determining the case submission. According to him, the prevalence of "unfair trade" is not exogenous with respect to broader macroeconomic considerations. In his later research Feinberg (2003) found that growth in GDP has negative impact on the number of submissions. In his research he used a negative binomial model in order to estimate particular determinants of antidumping submissions in the US in the observed period (1981-1998) quarterly. The results of his research show that US antidumping submissions rose with the appreciation of the US dollar.

Bown & Crowley (2013) have used the quarterly data for the 5 chosen countries – USA, EU, Australia, Canada and South Korea with the aim to estimate the impact of macroeconomic fluctuation on the trade protection policies over the year 1988. Using an empirical model, they have found the evidence of a strong countercyclical trade policy response in the pre-Great Recession period. In this time, increases in domestic unemployment rates, real appreciations in bilateral exchange rates and declines in the GDP growth rates of bilateral partners caused the substantial increase in new temporary trade barriers. According to these facts, the results of their research could be presented in a way, that a countercyclical relationship between domestic macroeconomic shocks (domestic unemployment rates increase or domestic real GDP growth reduction) and governments initiating new temporary trade barrier investigations over significantly more imported products per particular trading partner per quarter is apparent.

Barattieri et al. (2021) study the macroeconomic effect on protectionism using the high-frequency trade policy data in their paper. However, even the research deals with the relationship between trade barriers, to be concrete antidumping duties, global safeguards and countervailing duties, and real GDP increase, the direction of the connection is opposite than in our research, as we are investigating the effect of GDP increase on the number of AD investigations. By using the vector autoregressions, they investigate the short-run effects of trade policy on the macroeconomic outcomes. They construct monthly and quarterly measures of temporary trade barriers for chosen country, Canada. According to their research, the trade barriers, which have been already mentioned, were used as the primary policy tool to implement the trade restrictions during the last 20 years. They focused on the AD investigations as the vast majority of trade barriers which led to the imposition of AD tariffs and used the data on inflation, GDP, industrial production, trade balance or the real exchange rate to identify the effects of trade policy shocks by exploiting institutional features of AD regulation. There are three conclusions emerge from the empirical research: protectionism is recessionary, inflationary, and has a small positive effect on the trade balance or GDP ratio.

The other authors, such as Curran (2015) or Park (2009) dealt with the issue of AD investigations of the EU illustrated in particular case, namely the case of the impact of AD investigations on the global production networks of the solar panels, resp. the effect of AD actions on the trade with China. Felbermayr & Sandkamp (2021) also illustrated the issue of AD investigation on the case of firm-level evidence from China. Moreover, Sandkamp (2020) also dealt with the AD investigations and duties, but also from the side of trade effects. This implies that majority of studies concern AD investigations or measures, but only in general or they deal with the specific case. According to this, some knowledge gap occurred in the field of study examined in our paper. Concerning the fact, that so far no study has examined whether and what impact the recession due to the pandemics has on anti-dumping investigations or may have in the future.

2 METHODOLOGY

The aim of the paper is to find out how the COVID-19 pandemic and the following economic recession has affected the antidumping (AD) investigations in the EU. The authors wanted to prove if the economic recession either increased the number of AD investigations in the EU or the impact of this stage of business cycle on the investigations was not particularly significant. According to this reason, an effective methodology that helped to express the causal relationship between the decline in GDP and the number of AD investigations and expiry review investigations initiated by the EU had to be adopted. The article draws on qualitative methods involving secondary data and information analysis. All data was gained from published sources, mainly the foreign articles, as well as from the internet databases.

Firstly, the authors analyzed the whole process of EU AD investigations following the official EU documents and proceedings. While observing the development of investigations according to their stages, the statistical data from the database of European Commission was presented in the table, while the graphic illustrations helped the better illustration of the issue. We analyzed the commodity structure of trade operations belonging to the group of potentially dumped ones, pointing out the most dangerous commodities which were tried to import to the EU. The base for the observation of the relationship between the GDP decrease and AD investigations was "Quarterly GDP indicator" of five countries that were included in the AD investigations process the most. This data was processed graphically where the comparison of GDP changes of particular countries was illustrated. Finally, the issue of influence of COVID-19 pandemics on the spot verifications and AD investigations duration too was proceed following the official documents of the EU, namely the EU Regulations. The synthesis of this information provides the overview of the relationship between economic situation and dumping trade operations that could bring the possibility for domestic subjects to request the protection against the foreign competition. Other methods, such as induction and deduction were also used.

3 RESULTS AND DISCUSSION

While participating in international trade, some foreign subjects have dumping behaviour, when they are trying to push the domestic manufacturers or small firms out of the market by reducing prices in short term while the level of the reduced prices is often based under their production costs. In this case, the intervention of the particular body, in the case of EU it is the European Commission, is needed. In this matter, the EU should prevent the market from dumping behaviour of foreign companies or international business chains (Baláž, P. et al., 2019).

This is done by antidumping investigation of the EU. This type of investigation is the process of determination whether the goods being imported into the EU area are being sold at the level that is below the price in the country of production, or this level is under the costs of production. If the industry from the country within the EU send a valid complaint including sufficient evidence of the injury that is caused by the business activity of foreign company, it is obligatory for European Commission (EC) to launch an antidumping investigation. According to the official EC document, "the investigation examines whether:

- dumping is taking place from the country/countries concerned;
- material injury has been suffered by the EU industry;
- it is the dumping that is causing the injury;
- it would be against the economic interests of the EU to impose measures (which are usually in the form of an anti-dumping duty)" (European Commission, 2014).

The investigation must start after 45 days from receiving the official submission from potentially injured subject. After the initiation, the questionnaires are sent to the exporters in the countries concerned, EU producers and also to the importers and users in the EU who have the deadline for replies to the questionnaires, at least 30 days. If the subject does not reply or do not cooperate in other ways, it will be regarded as not cooperating within the investigation (European Commission, 2014). After at the most 13 months, the publication of definitive measures must be done. During the mentioned 13-month period, provisional duties or other provisional measures could be imposed and other side findings and comments are made. All in all, the usual procedure is to investigate whether or not dumping is taking place over a 6 to 13-month period, including also the process of spot verifications.

However, as researched, restrictions due to the COVID-19 pandemics influences the mentioned spot verifications and the whole AD investigations duration too. According to the Article 16 of Regulation (EU) 2016/1036 of the European Parliament and of the Council of 8 June 2016 on protection against dumped imports from countries not members of the European Union, there is a possibility to carry out the visits to the particular countries where it is appropriate to examine the records of economic subjects (importers, exporters, traders, producers, agents etc.) and to verify all information provided before. However, taking into account the risk arising from pandemics, the Commission decided to suspend all non-essential travel to the areas with high level of infection thus preventing all subjects against the potential threats resulting from face-to-face meetings. Moreover, if the information provided by exporting subject located in the areas with high level of infection is not subject to verification on spot due to the safety measures or travel restrictions, the Commission "will endeavour to consider the information properly submitted by the parties and to cross-check such information with other information available if feasible." If the accuracy of information submitted is not satisfactory or complete, "the Commission have to base its findings only on the verified or other proven facts on the record of the investigation." Due to these matters, strictly cooperation is needed between all interested subjects simultaneously with the need of providing sufficiently detailed and properly certified information that can be crosschecked from independent sources. If such information cannot be provided, the Commission could make its findings and solutions based on the facts available in accordance with Articles 18 and 28 of the respective basic Regulations (European Commission, 2020).

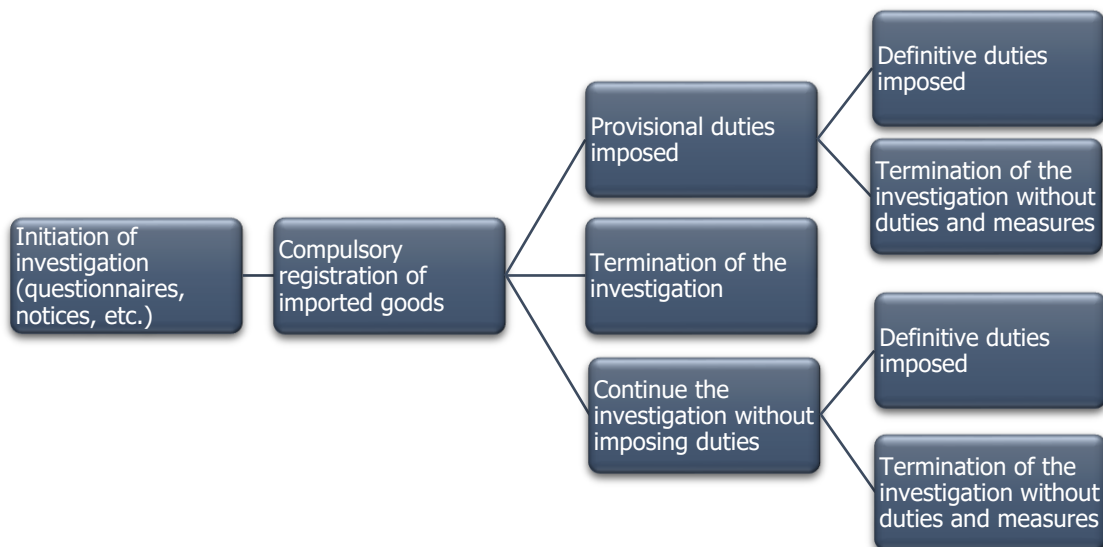
The ability of foreign economic subjects located in areas affected by pandemics to conduct business activities could be limited by the safety measures. It brings the impact on the ability of particular bodies to reply on time to important questionnaires or other requests for information needed in the process of AD investigation. The specific time limit for replying to questionnaires are listed in Articles 6(2) and 11(2) of the respective basic Regulations, while sections 5 – 9 of Notices of Initiation could set out additional provisions for the information

submission and could affect the timeline of investigation. Section 9 of Notices of Initiation states that there is a possibility to grant a 7-day extension in case of exceptional circumstances that can include also COVID-19 pandemics. It is because it could affect economic subjects from complying with the relevant deadlines for information submission as it could occur as an unforeseen event constituting "force majeure". Concerning this fact, the subjects requested for statement must explain how the COVID-19 measures affected their ability to provide all information needed. If there are business subjects located in regions particularly affected by COVID-19 pandemics, they may be subject to other substantial safety and health measures (quarantine, compulsory closures etc.). These measures limit the ability of subjects to comply with the requests of the Commission. In these cases, it may be decided to extraordinarily delay the time limit by other 7 days. The proof of the occurrence of such situation must be clearly provided and according to that, the Commission will assess the cases individually and decide about the extension period of other 7 days. According to the official announcement, "...if these longer extensions for force majeure or additional safety measures would risk jeopardising the timely conclusion of the investigation, the Commission may reject the extension requests or shorten the time granted." (European Commission, 2020).

Considering the facts above, both spot verifications and AD investigations duration can be affected negatively by the COVID-19 pandemics and by the resulting economic and health measures or restrictions.

The whole process of antidumping investigation could be divided into the main stages involving all the activities mentioned above. These stages of the procedure are illustrated by the Figure below.

Fig. 1 The stages of EU AD investigations



Source: Authors' own processing based on European Commission, 2014

As the Figure 1 shows, the AD investigations of the EU have specific sequences or stages. If there is no doubt about the legal import operations made by foreign subject, the investigation is terminated after the first stage. However, there could be two more situations – the provisional duties could be imposed on the one side, while on the other one the investigation could continue without imposing any duties or measures. Both of these stages could be terminated by one of the potential solutions – imposing or non-imposing the definitive duties or other measures. It is important to add that following the EU publication concerning the

impending expiry of the anti-dumping measures in force on import of particular goods, the country can request for the review of anti-dumping measures before their expiration (pursuant to Article 11(2) of Regulation (EU) 2016/1036 on protection against dumped imports from countries not members of the European Union). After the expiry review, the European Commission can impose new anti-dumping duty. Concerning this study, the EU AD investigations are divided according to their stages and are listed below, in Table 1.

Tab. 1 Number of the EU AD investigations according to their stages in the observed period (2015-2020)

Stage of investigation / Year	2015	2016	2017	2018	2019	2020
Standard AD investigation initiations started	7	9	5	4	7	10
Investigation proceedings terminated	N/A	1	N/A	1	1	2
Compulsory registered import of goods	1	1	2	2	3	3
Provisional AD duty imposed	5	6	2	1	2	3
Definitive AD duty imposed	5	9	10	3	2	7
Expiry review investigation initiations started	13	13	15	17	6	11
Definitive AD duty imposed according to expiry review	12	10	17	7	11	6

Source: authors' own processing based on European Commission Notices database

Table 1 shows the number of the EU antidumping investigations concerning their stages during the observed period of 6 years. According to the solutions we can consider that the development of all stages of EU investigations shows steady or balanced results, except the data collected for the year 2018. There is a significant decrease of number of definitive antidumping duty imposed in this year, which continued till 2019. In 2020, this indicator observed increase again. It is important to present the number of special investigations status – "Expiry review". The table illustrates the paradox, that the number of this type of initiated investigations was on its highest level during the year 2018, when most of the other indicators decreased. The strongest was the year 2016, when the number of imposed definitive AD duty and also the number of definitive AD duty imposed according to the results of expiry review were on their highest levels. Table 1 will form the basis for the following Figure 2 concerning the initiations that started during the observed period.

Fig. 2 Development of AD initiations in the period of 2015-2020

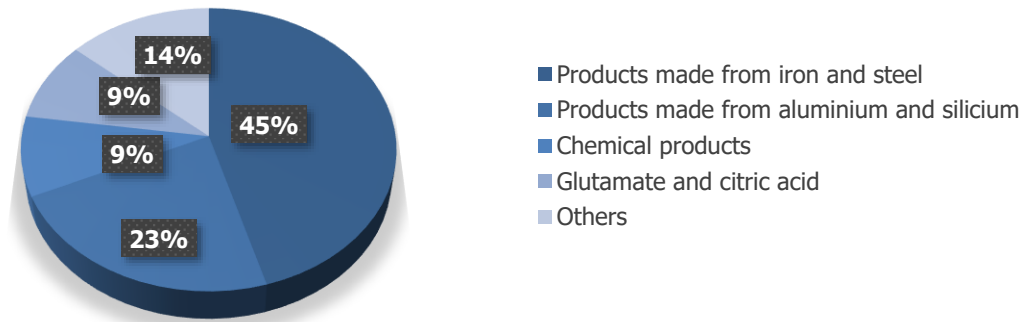


Source: Authors' own processing

Figure 2 illustrates the development of initiations of EU antidumping investigations during the observed period of years 2015-2020. In order to monitor the impact of the COVID-19 pandemics on EU AD investigations, it is important to observe this particular indicator considering the durations of the individual stages of the investigation. Considering the standard AD investigation initiations, the trend of this type was fluctuating. The highest levels were achieved in 2016 and 2020, when at least 9 antidumping investigations started. On the other hand, the lowest level of investigation initiations occurred in 2018, when only 4 of them started. However, taking into account the expiry review investigation initiations, the highest level was achieved in 2018. After this year, there was a striking decrease in 2019, when only 6 of them started. In 2020, the Graph shows a renewed increase in value of this type of investigations. It is important to point out that during 2020, the COVID-19 pandemics began. Despite this fact, the increase in the number of investigations during 2020, compared with 2019, was not significant, as for example during 2018. It shows that the COVID-19 pandemic may not have substantial negative or positive impact on the number of antidumping investigations of EU. However, there is still a risk of existence of potential unfair practices made by the foreign businesses during the economic recession which will be the issue to solve in next periods. This is evidenced by the fact that as early as the beginning of 2021, the European Union imposed a provisional anti-dumping duty as the preliminary result of initiation started during COVID-19 pandemics (May 2020) relating to imports of certain hot-rolled flat products of iron, non-alloy or other alloy steel originating in Turkey. (European Commission, 2021).

Concerning the commodity structure of potential dumping trade operations and expiry review process investigated by the European Commission, there is a variation of products involved. Based on the trade database of European Commission, the figure below illustrates the share of groups of such products on the whole number of products involved in the investigations initiated in 2020 together with the expiry review investigations initiated in 2020.

Fig. 3 Commodity structure of AD investigations and expiry review AD investigations in 2020

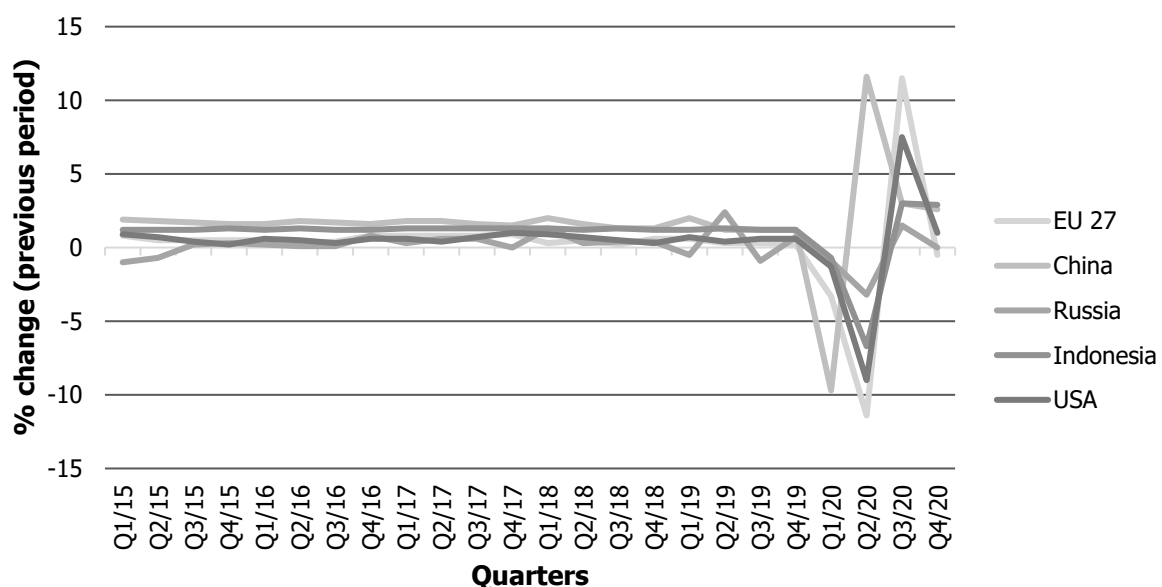


Source: authors' own processing based on European Commission, 2021

This figure shows that the commodity structure of AD investigations and expiry review AD investigations initiated in 2020 consists of most steel and iron products or components (45 %). Based on the general knowledge of international trade, these products are the most represented concerning the illegal trade operations. The group of products made from aluminium and silicon reached the level of 23 % in AD investigations and expiry review AD investigations, while chemical products, glutamate and citric acid were involved in the investigation process by 9 %. The group "Others" (14 %) consists of products that are assorted, e. g. biodiesel, optical fibre cables etc. In comparison with previous year, according to the Commission's statistics, the commodity structure of AD investigations and expiry review AD investigations has not changed significantly, as the dumping trade with such groups of products fluctuated from year to year relatively in the same way.

Taking into account the development of GDP, the statistics of percentage change in GDP of chosen countries that are involved the most in the process of EU AD investigations are shown in Figure 4 below. The data were researched quarterly, during the observed period of 6 years (2015-2020) while each indication is compared to the previous period.

Fig. 4 Percentage change in GDP quarterly compared to previous period (2015-2020)



Source: authors' own processing based on OECD, 2021

From the first quarter of 2015, there was not any significant percentual change in GDP till fourth quarter of year 2019. All researched subjects had relatively stable development of this change, except Russia which shows more fluctuating trend during the whole observed period. It is important to mention that the GDP of Russia was not significantly influenced by the COVID-19 pandemics, as there is only small decrease in GDP percentage change. While observing the GDP change in China, there is a deviation, when the significant percentual decrease occurred in first quarter of 2020 (-9.7%) and at the end of the second quarter, there was a significant percentual increase in GDP (11.6%). It was because China suffered from the COVID-19 pandemics earlier (as the country with the first case of disease) than the rest of the world. Indonesia had the most stable development of GDP from the first quarter of 2015 till 2020, when there is the decline in GDP due to the COVID-19 pandemics. The most significant percentual decrease in GDP compared to previous period had EU27 as a group. In the first quarter of 2020, there was 9.7% decrease in GDP, while in the second quarter the decrease in EU GDP reached 11.4%. After the first "wave" of COVID-19 pandemics, there was an increase in all observed countries, but after the second "wave" occurred, naturally, it brought the significant decrease in fourth quarter of 2020 again, except Indonesia and China where the GDP increased by 2.9% compared to previous period, resp. 2.6%. The specific situation occurred in USA, even the development of GDP was relatively stable till the first quarter of 2020 like in other countries, but after the GDP decrease by 9 % in second quarter of 2020, the second highest increase from all observed countries occurred in third quarter of 2020 (7.5 %).

CONCLUSION

Concerning the review of the literature, it offers both the theoretical rationale for the impact of the economic recession on the increase of AD investigations and several empirical studies are available to confirm or refute this relationship. Their results can be summarized in the sense of increasing the number of AD investigations when deeper economic recession occurs. Taking into consideration the short term view, the short changes in the business activity of particular subjects have no significant impact on the number of AD investigations initiated. According to the review, the GDP growth has negative impact on the number of AD submissions. In other words, according to one of the study, the fall in domestic real GDP increased the number of submissions by more than 20 %.

The aim of this paper was to find out how the COVID-19 pandemic and the following economic recession has affected the antidumping investigations in the EU. Primarily, the COVID-19 pandemics affected the whole process of investigations in the sense that there is no possibility of carrying out a spot verification by the EU bodies, as it is usually done physically, and it is necessary to protect human health and eliminate the spread of the virus. The duration of AD investigation is affected too. When the virus is mostly spread in particular country, the specific measures are implemented, including the lockdowns or closure of businesses, so the economic activity of the businesses from that country is suspended. Concerning this fact, the deadline for replying to the questionnaires could be extended by 7 days. If the situation regarding the pandemic is critical in the country, after providing all the evidence of the inability to cooperate with the EU, the deadline can be extended by another 7 days.

We have also compared whether there was an increase in the number of AD investigations initiated including the expiry review investigations in 2020 compared to previous years. As researched, the number of investigations mentioned was not significantly increased even though there was a significant GDP growth decrease in the observed countries in the second quarter of 2020, when the pandemics was spread the most. In more detail, the GDP growth decline occurred in EU27 (-11.4 %), but also in the countries from which the products being imported came from, namely in China, where the GDP growth decline reached almost -10%.

Oppositely, the lowest decline occurred in Russia (-3.2 %). It is important to add, that China has suffered from the GDP decline during the first quarter of 2020, not the second, as the country was the first with beating the COVID-19 pandemics.

All things considered, the COVID-19 pandemics has not led to an increase in the number of proceedings yet, which is in line with Jallab's findings. So far, this is a short-term recession or decline in GDP (but very significant). In the event that the pandemics and the subsequent economic recession persist for a longer period of time, we assume that it will also be reflected in an increase in the number of AD proceedings. In any case, we recommend further research in this area, especially in the case of ongoing hosp. recession.

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Slovakia's Foreign Trade with the Countries of the Integration Core of the Eurasian Economic Union

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Abstract: In the territorial composition of Slovakia's foreign trade, the European Union countries hold a dominant position. Slovakia has the highest negative trade balance with third countries. This fact has already been considered by the Slovak Strategy for External Economic Relations 2014-2020, which set out a pro-export orientation towards non-European territories. Russia, Belarus and Kazakhstan - the countries of integration core of the Eurasian Economic Union appertain to the priority interest of Slovakia. We examine the development of their foreign trade relations in terms of trade intensity index and intra-industry index. From the exporter's point of view, Slovakia achieved the highest trade intensity with Russia. Trade intensity with Belarus fluctuated at the same level in recent years and with Kazakhstan, there was a gradual decline. Intra-industry trade was recorded between Slovakia and selected countries within SITC 6 + 8, SITC 2 + 4 and SITC 5.

Keywords: Foreign trade, trade intensity index, intra-industry index, Slovakia, Russian federation, Kazakhstan, Belarus.

JEL Classification codes: F14, F15, F19

INTRODUCTION

The Eurasian Economic Union (EAEU) plays an eminent role in Slovak foreign trade relations. The EAEU was established in 2015 and includes the Russian Federation, Belarus, Kazakhstan, Kyrgyzstan and Armenia. These countries represent a considerable sales market for Slovak products. That is one of the disputes why it is remarkably important to develop mutual trade relations with these countries. While Slovakia, with its strategic location also embodies an attractive partner for the EAEU countries. The diversification of the territorial structure of the Slovak Republic's foreign trade into EAEU markets will help to fulfill the trade policy goals of the pro-export strategy.

Foreign trade relations of the Slovak Republic are set out in the government document Strategy of External Economic Relations of the Slovak Republic for the period 2014 - 2020 (FER strategy), which is currently being updated for the period 2020 - 2030. The FER strategy aims to ensure a stable position of the Slovak Republic in international economic relations supporting the economic and social development of the country, the growth of the living standard of the population and the promotion of economic interests abroad. The FER strategy defined territorial priorities, which focused on supporting exports mainly to non-European markets and specified countries of priority interest. From the countries of the Eurasian Economic Union, the first group included the Russian Federation, Belarus and Kazakhstan. Armenia was in the second group. The division of countries set on the expected importance based on a multi-

factor analysis, which included an evaluation of the specific interests of Slovak exporters, the selection of regions in terms of global economic development and current state intentions.

1 LITERATURE REVIEW

One indicator for determining the potential of mutual foreign trade is the trade intensity index. The intensity of trade depends on many factors, such as the size of economies, their level of development, the structure of GDP, their geographical location and the distance associated with transport costs or other cultural and institutional spheres. It also depends on the signed mutual trade agreements or trade barriers between the studied countries. The development tendencies of trade intensity create space for the valuation of bilateral relations from both sides on the supply and demand. This indicator was initially designed by Brown (1949) and later by Kojima (1964). They defined trade intensity as bilateral trade between two countries concerning total world trade and its share in it. Calderón & Chong & Stein (2007) analyzed effects of trade intensity on business cycle correlation. According to their findings, a significant difference in the impact of trade intensity on business cycle synchronization between industrial and developing-country pairs is explained by differences in the structures of production and the degree of intra-industry trade. They suggested that approximately 40 % of these differences can be attributed to asymmetries in structures of production.

In foreign trade, there is an exchange of goods between and also within individual sectors. Based on this aspect, the level of their foreign trade interaction is divided between intra-industry and inter-industry trade. Inter-industry trade is an exchange of goods between different sectors. Intra-industry trade refers to an exchange of goods within the same sector. The beginnings of the study of intra-industry trade lead to the authors Grubel and Lloyd, who in 1971 brought a new perspective on the quantitative assessment of foreign trade flows within individual product groups between countries. Hamilton & Kniest (1991), Brühlhart (1994) Thom & McDowell (1999), Crespo & Fontoura (2004) and others later devoted themselves to the development of the idea of intra-industry trade. Several authors investigated the consequences of intra-industry trade for the political economy of trade (Lipson 1982; Milner 1997; Manger 2012; Kim 2017). Results of Baccini&Dür&Elsig (2018) reveal that the effect of intra-industry trade on tariff reduction is highly heterogeneous across countries.

2 METHODOLOGY

The paper aims to examine the development of Slovakia's foreign trade relations with the countries of the integration core of the Eurasian Economic Union in terms of the trade intensity index and the intra-industry index.

The trade intensity index (TII) is one of the methods used to assess whether trade volumes between two countries are larger or smaller than would be expected based on their position in the world economy. It is defined as the share of one country's exports to a partner country, divided by the share of world exports to the partner country (World Bank, 2010). The formula is defined as follows:

$$TII_{ij} = \frac{\frac{X_{ij}}{X_{it}}}{\frac{X_{wj}}{X_{wt}}} \quad (1)$$

where the individual variables have the following interpretation:

x_{ij} – value of exports from country i to country j ;

x_{it} – the value of the country's i total exports to the world;

x_{wj} – the value of total world exports to country j ;

X_{wt} – value of total world exports.

The index ranges from zero to infinity. If the value of the index is 1, it means that the country i exports to country j the exact ratio of exports that country j belongs to, in terms of its share of world imports. If the value of the index is higher than 1, trade flows between the studied countries are at a higher level than would be expected given the importance of the economy in the world economy. It means that country i exports more to country j than the rest of the world, which indicates an intensive business relationship. If the value is less than 1, the trading intensity is at a lower level than would be expected. (World Bank, 2013)

Based on the development of this index we could assess changes in the trade intensity during the reporting period. We examine the intensity of trade between EAEU countries and the Slovak Republic.

For the calculation of intra-industry trade, we used the original specification of the Grubel-Lloyd's index, which can be expressed as:

$$GL_i = \frac{(X_i + M_i) - |X_i - M_i|}{X_i + M_i} = 1 - \frac{|X_i - M_i|}{X_i + M_i} ; 0 \leq GL_i \leq 1 \quad (2)$$

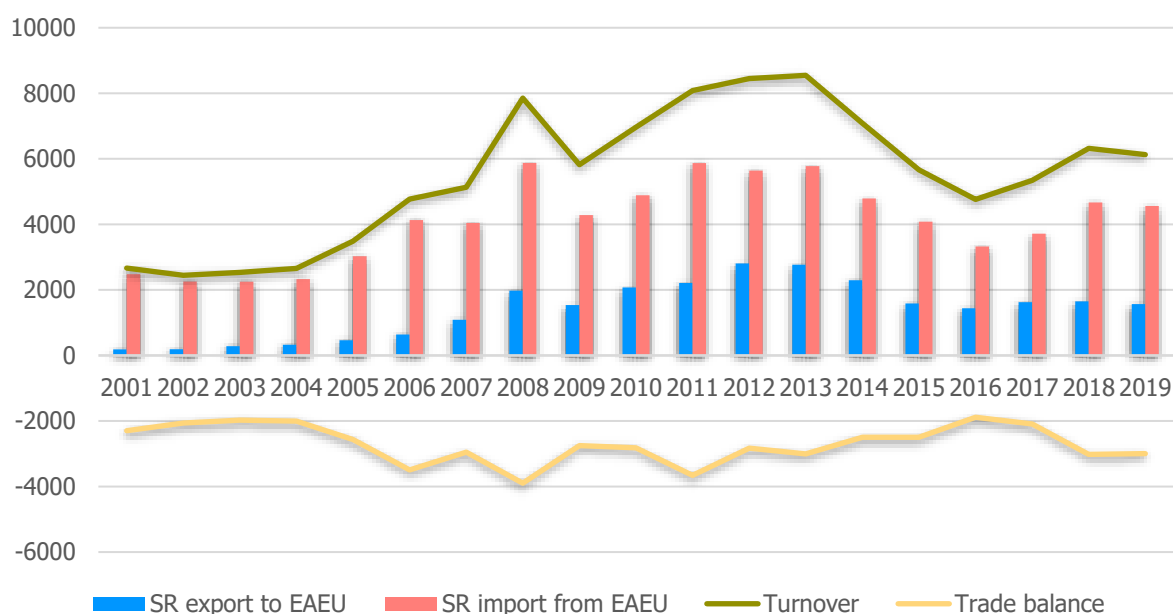
Where X_i expresses the export of goods in the commodity group and M_i the import of goods in the commodity group. The index acquires values ranging from 0 to 1. If the value of the index is equal to 1, this indicates the existence of intra-industry trade. If the value of the index is equal to 0, then there is no intra-industry trade between the countries. This indicates the presence of inter-industry trade. From the above, it can be concluded the following causal link. The higher the value of the index, the higher the level of specialization of trade-in intra-industry exchange. Conversely, a lower index value suggests that foreign trade is closer to inter-industry trade (Greenaway & Egger, 2005).

The limitation of the research was set from 2001 to 2019 and the statistics were drawn from the International Trade Center (ITC) and Eurostat.

3 RESULTS AND DISCUSSION

A partial update of the FER Strategy set the priorities of the Pro-Export Policy of the Slovak Republic for the period 2018 - 2020 and under the influence of geopolitical changes adjusted the territorial priorities. Priority areas for Slovak export orientation include the countries of the Western Balkans (especially Serbia and Northern Macedonia). Then there are the countries of the Commonwealth of Independent States (mainly Russia, Belarus, Ukraine, Kazakhstan and other Central Asian countries), followed by Southeast Asia (China, Vietnam, Indonesia) and last but not least the countries such as India, USA, Canada, Brazil and Cuba. Given that the EAEU countries are among the important territorial strategies of the Slovak Republic, a detailed overview of the development of the trade involved is in the following figure 1.

Fig. 1 Development of foreign trade between the Slovak Republic and the EAEU in the years 2001 - 2019, mil. EUR



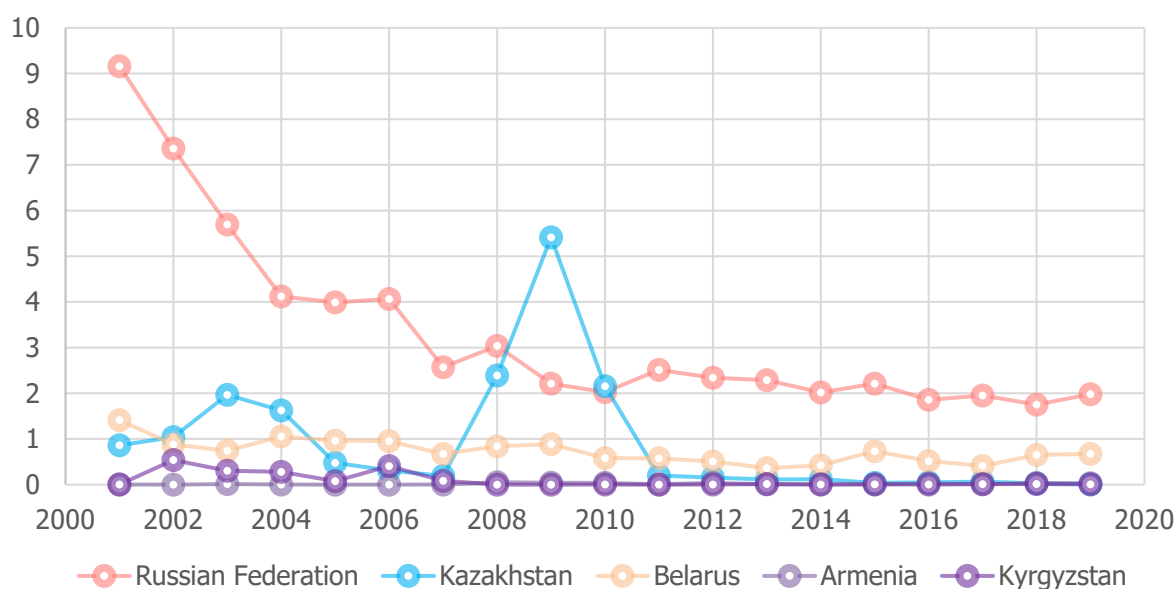
Source: author's own processing based on ITC data, 2021

Figure 1 shows the development of foreign trade between the Slovak Republic and the Eurasian Economic Union for 2001 - 2019. Until 2008, the growth trend of foreign trade prevailed, with a significant recess after 2008. Subsequently, their mutual trade showed permanent growth until 2013. After 2014, we can observe a continuous decline with a revival after 2016. During the period 2011 to 2014, the highest values of Slovak exports were observed. In 2019, the trade turnover of the Slovak Republic with the EAEU was at the level of 6127.934 mil. EUR. Slovakia had a negative foreign trade balance throughout the period under review.

3.1 Trade intensity index of the EAEU countries with the Slovak Republic

To evaluate the development of bilateral trade relations between the EAEU countries and Slovakia, concerning their involvement in international trade, the trade intensity index was used. In figure 2 is the development of the trade intensity from the point of view of the Slovak Republic as an importer from the EAEU. Among the EAEU countries, the Russian Federation had the highest trade intensity with the Slovak Republic during almost the entire period under review. In 2009-2010, Russia was overtaken by Kazakhstan. The Russian Federation reached values in the range of 1.75 – 9.16 (from the lowest to the highest) as an exporter. As higher values than 1 were achieved, the Russian export volumes are higher than expected. Nevertheless, the index has a continuing declining trend.

Fig. 2 Development of the trade intensity index by the EAEU countries to Slovakia in the years 2001 – 2019



Source: author's own processing based on ITC data, 2021

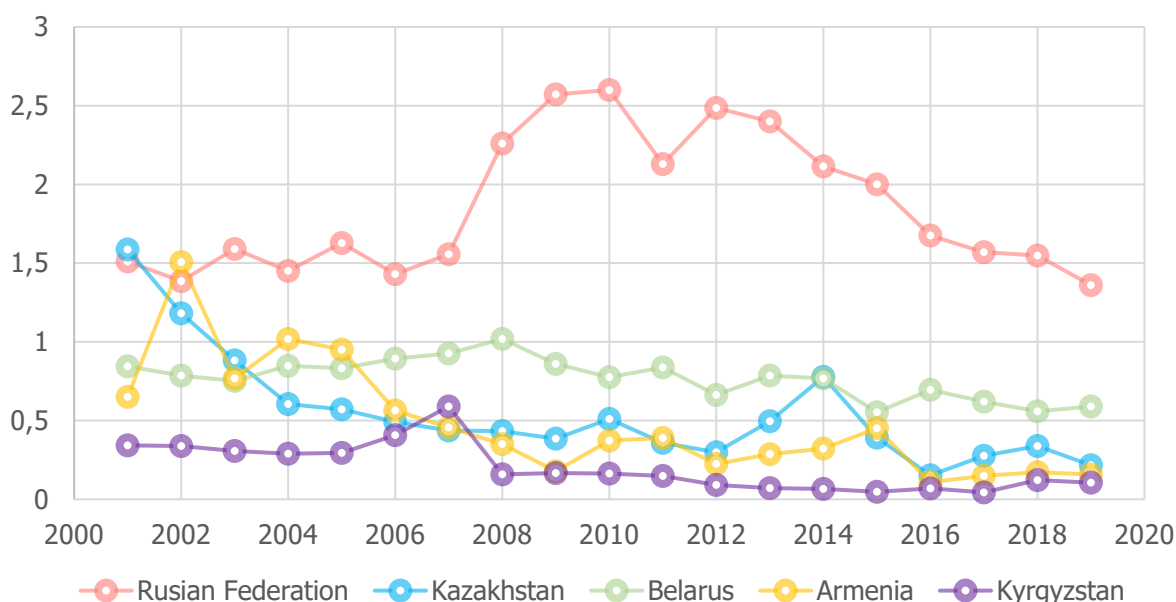
Among the EAEU countries, Belarus can be classified as the second country with the highest trade intensity with the Slovak Republic. As the figure shows, in contrast to the Russian Federation, its development oscillated at approximately one level without extreme fluctuations in the range of 0.40 - 1.44. The index reached values above 1 for only two years during the reviewed period, in 2001 and 2004. Meanwhile, in recent years, the intensity of trade by Belarus as an exporter was below 1. The development of the intensity of Kazakh's trade with the Slovak Republic has been on a declining trend since 2011. This is largely due to the changing position of Kazakhstan in the world economy. Over the last nine years, Kazakhstan has more than doubled its exports compared to previous periods. The values of the intensity index varied in the range from 0.02 to 5.41. During the last two years, the intensity of trade was at the lowest level. The intensity of trade was very low in terms of exports from Armenia and Kyrgyzstan. Armenia ranged from 0 to 0.05 during the period and Kyrgyzstan from 0 to 0.53. On this basis, it can be stated that their intensity is very low, which is understandable to the geographical distance and economic dimension of the countries.

3.2 Trade intensity index of the Slovak republic with the EAEU

The following figure offers us an insight into the development of the trade intensity index by Slovakia as an exporter. As in the case of imports, the Russian Federation is in the first place. During the entire period under review, the index was above level 1. This allows us to state that the volume of Slovak exports to the Russian Federation is higher than would be expected from its position in the world economy. The highest value of the index 2.59, was reached in 2010 and the lowest 1.36 in 2019. The value of the index with Kazakhstan was above level 1 at the beginning of the period under review. Subsequently, however, it gradually decreased, except in 2010 and 2014, but even then the index did not exceed 1. In 2019, the intensity of trade of the Slovak Republic with Kazakhstan was 0.21 points. The intensity of trade with Belarus did not fall below 0.55 points throughout the period under review. It was above level 1 only once, in 2008. Surprisingly, the trade intensity index with Armenia also reached values above 1, that was in 2002 and 2004. Recent years display a gradual decline. In 2019, their

trade intensity index was 0.15 points. Among the EAEU countries, Slovakia has the lowest trade intensity with Kyrgyzstan. The range of intensity index values ranged from 0.04 to 0.58. In the case of Kyrgyzstan, we can see a growing trend over the last three years.

Fig. 3 Development of the trade intensity index by Slovakia to EAEU countries, 2001 - 2019



Source: author's own processing based on ITC data, 2021

Based on the analysis of trade intensity indices between the Slovak Republic and the EAEU countries, we can reach the following conclusions. In the case of Slovakia as an exporter and importer, we could observe that until 2009 (the first half of the period under review) the intensity developed more favorably than the next ten years. Among the EAEU countries, only the Russian Federation has been identified as a trading partner with a higher volume of trade than expected given its position in the world economy. During the last five years, the intensity of the Slovak Republic as an exporter to Belarus, Kazakhstan, Kyrgyzstan and Armenia was higher than their export positions. Simultaneously we must state a declining trend in the development of indices, although since 2016, there have been some signs of growth from both sides.

3.3 Intra-industry trade between the Slovak Republic and selected the EAEU countries

In this section, we assess the degree of trade cooperation within sectors between the Slovak Republic and selected countries of the EAEU. The results of the evaluation of the intra-industry index are in tables 1, 2 and 3. Table 1 presents the values of intra-industry trade between the Slovak Republic and the Russian Federation. In 2019, the highest value of the index was 0.79 in the SITC 2 + 4 group (raw materials). In recent years, there has been a growing trend in this group, therefore the presence of intra-industry trade can be assessed. Based on a closer analysis at the HS2 level, it can be further defined that this is mainly intra-industry trade in groups HS 40 (rubber and articles thereof), HS 25 (ores, slag and ash), HS 72 (iron and steel). and HS 73 (articles of iron or steel).

Tab. 1 Intra - industry trade between the Slovak Republic and the Russian Federation in the years 2008 - 2019

SITC	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0+1	0.040	0.117	0.136	0.073	0.050	0.078	0.061	0.089	0.110	0.074	0.072	0.040
2+4	0.797	0.503	0.420	0.498	0.539	0.467	0.479	0.461	0.591	0.556	0.613	0.797
3	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.004	0.000	0.000	0.000
5	0.611	0.932	0.946	0.972	0.774	0.790	0.868	0.959	0.774	0.762	0.891	0.611
6+8	0.274	0.449	0.286	0.223	0.143	0.205	0.287	0.188	0.243	0.354	0.279	0.274
7	0.086	0.086	0.129	0.131	0.121	0.132	0.095	0.192	0.124	0.173	0.139	0.086
9	X	X	0	X	0E+00	0E+00	2E-05	0E+00	3E-05	5E-05	3E-05	X

Source: author's own processing based on Eurostat data, 2021

Note: 0+1 – Food, drinks and tobacco, 2+4 – Raw materials, 3 – Mineral fuels, lubricants and related materials, 5 – Chemicals and related products, n.e.s., 7 – Machinery and transport equipment, 6+8 – Other manufactured goods, 9 – Commodities and transactions not classified elsewhere in the SITC.

During the years 2009 to 2018, the high value of the index within the SITC 5 group (chemicals) was observed. Although it decreased significantly in 2019, given the proven trend, intra-industry trade can also be recognized within this group. At the HS2 level, it concerned the highest intra-industry trade in groups HS 30 (pharmaceutical products) and HS 28 (inorganic chemicals). Within the groups SITC 0 + 1 (food, beverages and tobacco), SITC 3 (mineral fuels), SITC 6 + 8 (industrial products) and SITC 7 (machinery and transport equipment), the value of the index was low, ergo we can classify the trade of these groups at the inter-industry level. In SITC 9 (other commodities and transactions not classified in any of the SITC groups), no trade in goods was recorded during some years, consequently, it was not possible to express the intra-industry trade index.

Tab. 2 Intra - industry trade between the Slovak Republic and Kazakhstan in the years 2008 – 2019

SITC	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0+1	0.000	0.000	0.000	0.000	0.033	0.000	0.096	0.259	0.556	0.860	0.113	0.202
2+4	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.035	0.127	0.214	0.001	0.086
3	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.011	0.005	0.000
5	0.507	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.370	0.375	0.979	0.786
6+8	0.748	0.257	0.908	0.867	0.000	0.001	0.014	0.000	0.056	0.104	0.000	0.117
7	0.002	0.003	0.000	0.001	0.000	0.000	0.019	0.069	0.201	0.133	0.048	0.024
9	X	X	X	X	0	X	X	X	X	X	0	0

Source: author's own processing based on Eurostat data, 2021

Note: 0+1 – Food, drinks and tobacco, 2+4 – Raw materials, 3 – Mineral fuels, lubricants and related materials, 5 – Chemicals and related products, n.e.s., 7 – Machinery and transport equipment, 6+8 – Other manufactured goods, 9 – Commodities and transactions not classified elsewhere in the SITC.

We also monitor the development of the index of intra-industry trade between the Slovak Republic and Kazakhstan. Throughout the period under review, the index values are relatively low. Until 2012, intra-industry trade was recorded in the SITC 6 + 8 group (other manufactured goods). In recent years trade between the Slovak Republic and Kazakhstan was limited

to inter-industry trade. On the contrary, the presence of intra-industry trade in SITC 5 (chemicals) has appeared in the last two years. Within the other groups, the inter-industry exchange is observed. As in the previous case, it was not possible to express the index for SITC group 9 (other commodities and transactions not classified in any SITC groups) due to the absence of trade flows.

With Belarus, The Slovak Republic achieved a relatively high intra-industry trade within several groups (table 3). The highest values were recorded in SITC 5 (chemicals), although it decreased in 2019. The increase in intra-industry trade can be observed in SITC 2 + 4 (raw materials) and SITC 6 + 8 (other manufactured goods). Inter-industry trade is detected in SITC 0 + 1 (food, beverages and tobacco), SITC 3 (mineral fuels) and SITC 7 (machinery and transport equipment). It was not possible to express the index in the SITC 9 (commodities and transactions not classified elsewhere in the SITC).

Tab. 3 Intra - industry trade between the Slovak Republic and Belarus in the years 2008 – 2019

SITC	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0+1	0.107	0.026	0.059	0.010	0.067	0.028	0.008	0.009	0.022	0.009	0.038	0.040
2+4	0.818	0.756	0.831	0.697	0.888	0.977	0.978	0.886	0.773	0.924	0.883	0.699
3	0.002	0.006	0.003	0.001	0.001	0.023	0.101	0.005	0.068	0.024	0.000	0.000
5	0.740	0.225	0.403	0.340	0.368	0.372	0.497	0.799	0.834	0.954	0.989	0.737
6+8	0.801	0.744	0.795	0.598	0.689	0.768	0.673	0.582	0.641	0.673	0.638	0.713
7	0.225	0.205	0.088	0.092	0.030	0.034	0.068	0.136	0.079	0.172	0.057	0.182
9	X	X	X	X	0	X	X	0	X	0	X	X

Source: author's own processing based on Eurostat data, 2021

Note: 0+1 – Food, drinks and tobacco, 2+4 – Raw materials, 3 – Mineral fuels, lubricants and related materials, 5 – Chemicals and related products, n.e.s., 7 – Machinery and transport equipment, 6+8 – Other manufactured goods, 9 – Commodities and transactions not classified elsewhere in the SITC.

The performed analysis of the intra-industry index between selected EAEU countries and the Slovak Republic provided a clearer picture of the nature of their foreign trade participation at the sectoral level. It pointed to certain peculiarities of trade relations between the Slovak Republic and selected countries. Slovakia's intra-industry trade with these countries differed from each other. In general, it can be concluded that it mainly concerned the sectors: SITC 6 + 8 (other manufactured goods), SITC 2 + 4 (raw materials) and SITC 5 (chemicals).

CONCLUSION

Based on the examination of the development of Slovakia's foreign trade with the countries of the integration core of the EAEU in terms of trade intensity and intra-industry trade, we can draw the following conclusions.

Until 2009, the trade intensity index developed more favorably than the following ten years. In terms of trade intensity, only the Russian Federation has been identified among the EAEU countries as a trading partner with a higher volume of trade than expected given their position in the world economy. During the last five years, the intensity of the Slovak Republic as an exporter to Belarus, Kazakhstan, was higher than their export positions. Afterward, we observed a declining trend in the development of indices, despite that there have been some signs of growth from both sides since 2016.

The assessment of the level of trade based on Grubel-Lloyd's approach between the EAEU countries and the Slovak Republic pointed to the growing presence of intra-industry trade with Kazakhstan and the Russian Federation. In general, it can be concluded that it mainly concerned the sectors: SITC 6 + 8 (other manufactured goods), SITC 2 + 4 (raw materials) and SITC 5 (chemicals).

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Examination of the Corporate Role of Social Media – Slovak Case Study

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Abstract: Social media is one of the most important corporate tools of the 21st century. In today's knowledge-based society, the most effective source of contact is the Internet, and within it, social media. The timeliness of our topic is that nowadays social media is one of the easiest solution for a company to reach the target audience, get feedback on its products/services, initiate instant communication that contributes to customer loyalty and it provides them free advertising opportunity. The aim of our research is to examine the role of social media in the life of enterprises in the Nitra district within Slovakia. The methodology of our study is based on a quantitative questionnaire survey. Our research covers small and medium-sized enterprises operating in Nitra district. In our study, as a first step, the development path of social media is presented, and then the methodology of the work, the results of the research, and the possible future directions of the study are presented. Our results provide the SME sector a comprehensive picture of why it is worthwhile to integrate social media into corporate life nowadays.

Keywords: corporate social media, small and medium-sized enterprises, integration, Slovakia, marketing strategy, corporate benefits

JEL Classification codes: M21, M30, M31

INTRODUCTION

The corporate importance of social media is on an ever-increasing trend. In terms of marketing, social media, in addition to being an optional element of the promotional mix, is a key component of the marketing strategy of many businesses. The businesses that are present on each social media platforms face a number of difficulties and challenges. The word of social media is changing at an extremely fast pace and it can be defined as a space where users expected to answer their questions within hours. If the company ignores this, it can provoke a global debate about the weaknesses of products/services that cause them economic harm. Companies need to place great emphasis on using innovative methods in the online space in order to reach their target audience on social media platforms. It can be useful for them to set goals such as the number of posts, the number of interactions, and the average response time. One of the main benefits of using social media in a business is that it can be measure a success of the organization. Examples of such metrics include the number of visits, page views, interaction rates, and the average time visitors spent on the corporate website. Various product overview websites, blogs and forums can be considered as a suitable learning tool from a corporate point of view, as on these platforms consumers share their individual experiences with the product/service. In addition to being valuable for the flow of information, social media

also plays a key role in product development, collaborative projects, and the creation of social networks. However, it is not enough for a business to have only a presence on social media platforms, it is important that they respond to the changing needs of their target audience in order for their presence to be effective. From a corporate perspective, social media activities require strategic plans, clear internal rules, dedicated staff, and the right employees. (Aichner & Jacob, 2015)

By using social media, businesses can use their organizational knowledge to create value for their customers in the form of extremely valuable public information that can help them make better decisions. Social media also allows businesses to customize the information they provide to customers, both in terms of content and appearance. This type of marketing activity creates an opportunity to improve the value chain of the business and creates added value in terms of both financial benefits and intangible assets (better network connections, proper communication). However, this wave of communication poses challenges and risks in developing new communication channels between businesses and their target audiences. Today, consumers demand that organizations listen to their opinions, reflect on them and incorporate them into organizational operations. (Roblek et al., 2013)

The impact of social media on the activities of organizations is significant and profound, which can be felt both at the level of marketing and information & communication technologies. However, the online space has certain drawbacks on the user side that businesses need to consider when designing their marketing strategy. These activities include, for example, reputation loss, the unpredictability of the impact of people, the inability to manage the generational divide. (Georgescu-Popescu, 2015)

Over the past decade, social media has shown an ever-increasing trends in terms of the number of users. As a result, companies that have taken advantage of the opportunity and switched to the online space have been able to access information that they could use in product design, to facilitate brand communication, or even to market research, recruitment, networking and reputation management. (Risius & Beck, 2015)

Based on these, the main goal of our study is to provide a comprehensive picture of the importance that small and medium-sized enterprises in the study region attach to corporate social media today, and thus to provide an insight into the opportunities and challenges of social media.

1 LITERATURE REVIEW

1.1 The path of social media development in slovakia

In the Slovak Internet environment, the supply of social media is decreasing. The main reason is probably found in language barriers. As a result, only global platforms that exist in the Slovak or Czech language versions (Facebook) or services that do not require foreign language skills (Youtube). (Murár, 2011)

With regard to Slovakia, five social media platforms are worth mentioning, which are:

- Spolužáci.cz
- Lidé.cz
- Líbímseti.cz
- Azet.sk
- Birdz.sk (Bazalová, 2012)

The first such social media platform is Seznam Spolužáci, which was an Internet social server whose goals included transforming classmates into a community. The platform also included a notice board that could be found on the class's home page. This allowed them to insert text messages and add photos and videos, that were visible for everyone. Students also had an opportunity to edit their profile, insert a photo of themselves, and give themselves a nickname. They could initiate a conversation with someone other than their classmates. The website also provided an opportunity to organize class meetings. The site established relationship with people with whom one used to be in a class. The website was mostly used by the 25-35 age group. (Čapek, online)

In 2018, the website ceased operations after 14 years. At the beginning of 2018, the platform was used by more than 20,000 people a day, however the number of new users has been steadily declining, which the company began to feel in 2015. Although the service was primary intended for students, it can be said that it was much more used by graduates who maintained their relationships with each other through the site. As a result of the regulation on the protection of personal data, the managers had to completely change the service, which was too financially burdensome for them. The service operated until May 24, 2018, after which it was no longer possible to register a new user or upload a new photo. Until the end of August, all classes had the opportunity to download documents and photographs, and on September 1, the service was permanently discontinued. (Aneta, 2018)

The Lidé.cz community server started operating in 1997. As more and more social platform appeared in the country, interest in the website began to decline. In 2014, due to this, the site underwent a radical change, as the platform started operating as a dating site from then on. However, this change did not save it either. Two years after Spolužáci, Seznam closed another community platform. (Slížek, online)

The Líbímseti is based on a concept whose essence is that users have the opportunity to vote on how much they like other users on the platform. The Czech site, like Myspace, lost its popularity where it aroused interest. After a while, users are simply bored with the service, which is a good example for businesses that if they don't do enough to grow and get better, they won't be successful on social media because nothing lasts forever. The Czech service quickly attracted attention. However, with the advent of Facebook, the interest in the site began to decline. It was eventually sold in late 2010, when it had about 50,000 users a day. According to the creators, the biggest problem was that it focused on regions. (Tyinternety, online)

The next Slovak web portal is none other than Azet.sk. There are several milestones in the life of the company. In 1997, its founder, Milan Dubac, set up a Slovak dating service. Two years later Pocek.sk was established, which by 2001 became the most visited community site in Slovakia. The establishment of Azet.sk can be traced back to the year 2000. In 2005, Azet.sk launched the news sites Aktuality.sk as well as Sport.sk. Three years later, the founder of the competitor Zoznam.sk, Ivan Debnár, became the technical director of Azet.sk. In 2009 the company launched mapy.azet.sk, Najmama.sk and Kalendar.sk, acquired Slovník.sk and Horoskopy.sk, and began working with Meteo.sk and Reality.sk. In 2010, the company acquired CPress Media, Žive.sk, and Mobilmania.sk, and acquired Hyperinzercia.sk for advertising services, which was redesigned and renamed to Bazar.sk. In 2012 the website Nehnutelnosti.sk with real estate ads was launched, as well as the website of the Slovak daily Cas.sk-Nový Čas. In 2013, they launched Byty.sk, Bistro.sk, and acquired Autovia.sk, as well as Superdeal.sk. In 2017, they bought DajmeJedlo.sk. In the same year, the acquisition of Autobazar.EU, Topreality.sk, was announced. In 2015, the company achieved a turnover of 14 million euros. (Azet.sk, online)

The last worth mentioning website is Birdz.sk. On December 4, 2000, Tomáš Abaffy created an online magazine with articles for students. The name of the magazine was changed 1 year

later, from which time it operated under the name BIRDZ.SK. At the time, the site was just an online magazine where articles were written by the founder, and several other editors. It was introduced in 2002 as the website's slogan, which was: search your world. The brand gained its final form by 2003, which became a red sphere with the inscription BIRDZ inside. From the year 2004, BIRDZ started to become a community site. The very first community feature was dating. A year later, the slogan of the website changed to: your world. On the company's fifth anniversary, it transformed into a community portal where users could register, create their own profiles, upload photos, write blogs, and communicate with each other. In 2006, new features were added to the platforms, such as the Forum. Two years later, a strategic investor joined BIRDZ.SK, as the majority of the portal was acquired by Northcliffe International, an international media group. In the same year, BIRDZ allowed users to change the design of their own user account. It was the first company to launch a microblogging system. From the year 2009, BIRDZ became increasingly popular with users of video blogs, TV shows who were happy to answer other users' questions. In 2013, the creators of the platform simplified the design, moving to adaptive web design, which allowed the site to be used on both mobile phones and tablets. In 2015, BIRDZ underwent a huge transformation, with new features appearing thanks to Python. (Birdz, online)

1.2 Opportunities and challenges in social media

Social media allows companies to expand their marketing communication capabilities. Organizations need to monitor emerging community platforms in order to impact their target audience. Traditional marketing communications can be divided into paid and owned devices. In contrast, social media improves the ability of consumers to communicate with each other, by which earned media is also included in the marketing communication mix. As a result of community dialogues, a large amount of information is spread on each platform about the company's products/services. It is extremely important for organizations to learn how to respond to these dialogues. With the help of social media, they have the opportunity to listen to their customers on a wide scale, communicate with them, get them enthusiastic, and work with them to develop a product/service. Marketing managers have the opportunity and ability to observe and influence conversations in social media, communication becomes two-way. Companies need to treat a social media as a strategic tool, a long-term strategy that requires a sustained effort. Relevance, uniqueness, and creativity play a key role on social platforms. (Csordás et al., 2013)

Social media is a tool for people who usually have a common interest. Platforms provide a tremendous amount of opportunities for users to interact with each other. A user profile allows a company to obtain information about people with similar interests. This type of network provides an opportunity for targeted marketing. This type of activity can contribute to the successful operation of a company. One of the main benefits of social media is that the company is able to actively interact with consumers and also receive direct feedback from them through individual websites. To combination of so-called CRM (Customer Relationship Management) and social network provides an opportunity for businesses to take measurements of their social media activities. There are strategies to help organizations make better use of community platforms:

- Managing social networks as a new channel within CRM – Businesses need to seize the opportunity and use different CRM solutions to manage communications. You should continue to use client management tools after these activities move into the online world.
- Extending CRM through social networks

- Using CRM and social networking sites together to get information about consumers to the company that they can analyze and respond to appropriately.

Social media marketing can be very beneficial for businesses. Creating communities around a particular product/service can be defined as a kind of potential strategy for building brand loyalty. Community platforms can help organizations to reach new consumers, build a brand, and conduct market research. Communication on social media encourages customers to listen to each other, review products/services, and access information. Social media provides a financially advantageous opportunity for companies to promote their company without having to create a huge marketing team. (Assaad & Gómez, 2011)

Researchers agree that one of the most important features of social media is that they can generate and disseminate information from the user themselves, while in case of traditional media, the mode of dissemination is mainly one-way. While social media offers many opportunities, businesses also face a number of challenges. The rapid development of social media tracking a major challenge for businesses. It is a challenge for them to know exactly what information needs to be tracked and developed to perform the proper analyzes. From financial point of view, the return on online activities is not clear either, as sales do not always follow consumer needs, and it is important to pay attention to avoid mistakes, as a post can have a huge impact on the organization's reputation and credibility. In the case of social media, it is also important to mention certain ethical limitations. Recruiting and encouraging businesses as key users to influence brand communication leads to loss of credibility. Organizations need to keep in mind that this type of activity must also create social value in addition to commercial purposes. The privacy of users also raises ethical issues, as many people are unaware that they are being monitored. Misinterpretation of monitoring data can also be a challenge, as these messages can be interpreted in many ways. As a result of misinterpretation, the interpretation of monitoring data can be critical. In summary, in order to meet the challenges mentioned, it is important to have a good knowledge of the monitoring process, to find appropriate solutions, and to set clear goals. Challenges can become opportunities through appropriate solutions that are identified in front of competitors. (Zhang & Vos, 2014)

2 METHODOLOGY

In our secondary research, we found few studies dealing with the development path of Slovak social media platforms and the importance that companies attach to the presence of social media in the country. As a result, the main aim of our study is to expand the literature on how social media in Slovakia has progressed to its current state and to provide answers to the question of how small and medium-sized enterprises operating in the Nitra district think about the corporate use of social media. The practical part of our research is based on a quantitative survey. In January 2021, we surveyed the importance of social media in the SME sector with the help of a questionnaire. As a first step, the questionnaire underwent a test phase, after which it was sent in the form of "direct mail" to the research subjects. Our quantitative survey was conducted using Survio and Google Form Builder software. The filling was done on the Internet in an anonymous form. Our questionnaire contained 27 questions. Our questions were divided into five categories, which are presented in Table 1.

Tab. 1 Structure of a quantitative survey

Question group 1.	Question group 2.	Question group 3.	Question group 4.	Question group 5.
General information	Issues related to presence on social media	Use of feedback information	Future plans for social media	Success of previously used marketing tools

Source: own editing

In our study, 311 responses were received from small and medium-sized enterprises. The first step in our analysis was to encode the returned data using Microsoft Excel. The evaluation was performed using SPSS program. In examining our hypothesis, we used descriptive statistical methods, including cross-tabulation analysis. A significance level of 5% was determined during the evaluation. Chi-square test was used to analyze the variables, on the basis of which the Assymp Sig helped to determine whether the null hypothesis or the alternative hypothesis is accepted for the given hypothesis.

3 RESULTS AND DISCUSSION

In this chapter of our study, the results of our research are presented. After reviewing the literature, the following research questions were formulated in us:

RQ1: Nowadays, to what extend do small and medium-sized enterprises consider the use of social media at the enterprise level

In our study, we would like to get an answer to the question of the extend to which the corporate application of social media is considered important by the managers of small and medium-sized enterprises operating in the Nitra district.

RQ2: What future plans do the research subjects have for corporate social media?

Our study also aims to explore the future plans of SME sector leaders for the enterprise application of social media. The answers to the research questions provide a comprehensive picture of how small and medium-sized enterprises in Nitra district think about the development direction of the corporate application of social media.

3.1 Hypothesis testing

The following hypothesis have been formulated on this topic:

Tab. 2 The formulated hypothesis

H1	Small businesses are much more likely to be present on social media than medium-sized enterprises.
H2	Businesses that plan to expand the organization's presence on social media would most likely implement their plans by involving influencers.

Source: Owned editing

When analyzing the first hypothesis, we obtained the following results:

Tab. 3 Analysis of the first hypothesis

Chi-Square Test			
Statistics	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,032 ^a	2	,597
Likelihood Ratio	1,021	2	,600
N of Valid Cases	311		
Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	,058	,597
	Cramer's V	,058	,597
	Contingency Coefficient	,058	,597
N of Valid Cases		311	

Source: own editing based on primary data collection

In the case of the first hypothesis, it is clear that number of valid answers is 311. In this case, we hypothesized a relationship between the size of firms and their presence on social media. Our results demonstrate that a relationship can be found between the two variables, as Pearson Chi-Square result in the cross-tabulation analysis is more than the specified 5% significance level. Based on these, it can be said that the null hypothesis, which does not assume a relationship between the variables, is discarded and the alternative hypothesis is accepted. The symmetric indicators in the table represents the strength of the relationship between the variables.

The results of our second hypothesis are shown in Table 4.

Tab. 4 Analysis of the second hypothesis

Chi-Square Test			
Statistics	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	135,177 ^a	21	,000
Likelihood Ratio	165,348	21	,000
N of Valid Cases	311		
Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	,659	,000
	Cramer's V	,659	,000
	Contingency Coefficient	,550	,000
N of Valid Cases		311	

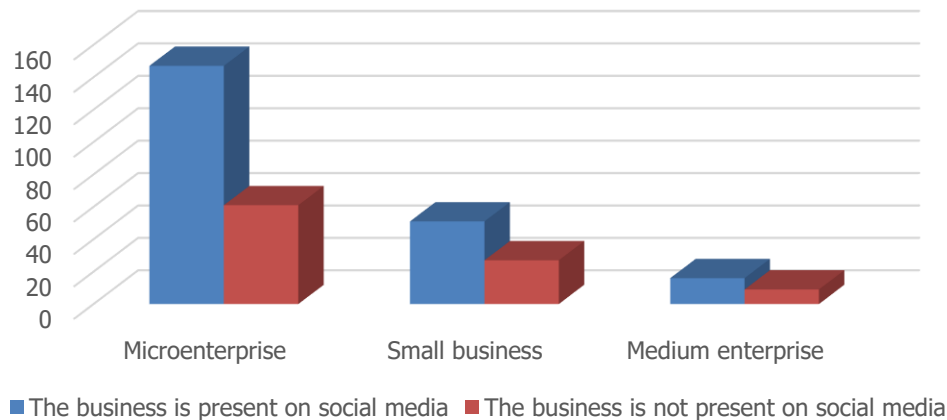
Source: own editing based on primary data collection

In the case of our second hypothesis, we assumed a relationship between the expansion of the future presence in social media and the ways to implement it. In this case, too, the number of valid answers was 311, but based on our results, it can be said that there is no significant relationship between the two variables we examined, because $p < 0.05$. Thus, in the case of the second hypothesis, the null hypothesis is accepted.

CONCLUSION

In the practical part of our study, two research question and two hypotheses were formulated in connection with the topic. In conducting our research, we sought answers to the question of the role of social media in the life of businesses in Nitra district. The first figure shows the distribution of social media presence by company size. Based on the figure, it can be said that the largest number of micro-enterprises are present on social media, followed by small enterprises, and in the third place are medium-sized enterprises. Thus, in the district under study, presence on social media is the most important for micro-enterprises. The result supports the assumption that if a company is small, its presence on social media is more important to it, which is mainly due to the fact that active presence in social media is a suitable solution for branding, communication and also cost effective. Only a small percentage of medium-sized enterprises use social media and the primary reason for which is that in their opinion it is not necessary to expand the number of their target audience, continuous communication is solved in other ways, and they think that the situation is right for them and they do not would like to change. However, the health crisis situation that still exist today is a good example of situations where a business needs to respond extremely quickly to the environmental changes, in which social media can help. It is clear from the figure that most small and medium-sized enterprises are not present on social media, they are not aware of the opportunities provided by social media. For them, we recommend that they should take the opportunity and move into the online space, be the first impression in the hands of the businesses. An online presence makes the organization visible, they can access accurate and up-to-date information about their target audience (which can be a key factor in today's extremely fast-changing world), and they can communicate with consumers. It is important to be aware that the only thing more expensive than advertising is if the business does not advertise. We recommend companies to use platforms where their target audience is present in the largest number. With regard to social media activities, organizations have the opportunity to train their employees as well as employ young, ambitious trainees. It is also important to place a strong emphasis on examining their competitors as they encourage the organization to perform better on a day-to-day basis. In addition, one of the most important factors is the feedback from consumers, which is worth considering and using, as this activity contributes to increasing efficiency and, in the long run, to increasing the existing consumer base.

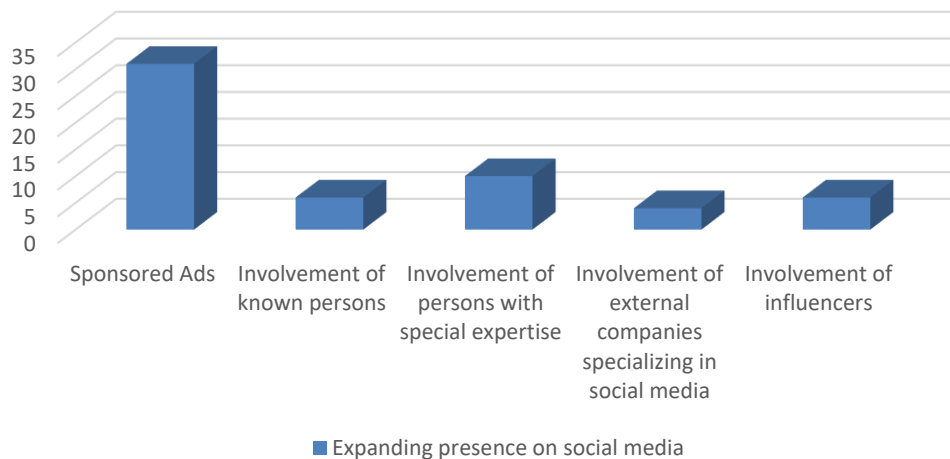
Fig. 1 Distribution of social media presence by business size



Source: Owned editing based on primary data collection

Our second research question was about what future plans does the research subject have with social media. The results are shown in Figure 2. 43% of respondents would be willing to expand their presence on social media in the future.

Fig. 2 Distribution of ways to implement future expansion of social media presence



Source: Owned editing based on primary data collection

It is clear that most respondents would implement presence expansion with sponsored ads. This is followed by the involvement of persons with special expertise. We also encourage businesses to appear on other community platforms as well as involve influencers in their related marketing activities. It is important to emphasize that this will only be successful if they include the selected influencer in your current campaign with which the majority of their target audience can identify. In addition, we recommend that they should not be afraid to move into the online space, it is never too late to start working in social media.

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The Price of Shared Accommodation in Bratislava and Its Dependence on the Number of Visitors to Bratislava

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Abstract: Through shared accommodation, the shared economy occupies a full position in many economies of the world and the extent of its influence can be expressed in various ways. In addition, the price of accommodation appears to be a sufficiently objective, measurable, and comparable element with other statistical tools of the economic environment. In the article, we use statistical methods of correlation and regression analysis to express the relationships between the dependent variable in the form of the price of shared accommodation in Slovakia and the number of visitors, which thus represent a separate variable. The results are expressed numerically and graphically.

Keywords: Airbnb Price, Airbnb in Bratislava, Shared Accommodation Prices

JEL Classification codes: L83

INTRODUCTION

Over the last decade, we have witnessed the growing popularity of the sharing economy, literally on a global scale (Sundararajan, 2016). Peer-to-peer (P2P) shared accommodation platforms have experienced a particularly strong increase in users and thus occupy a significant place in the sharing economy (PwC, 2015). Both parties benefit from the P2P system of shared accommodation - users can offer their services for a financial reward, while the platform administrator ensures the functionality of the place of the conflict of supply and demand (Botsman, 2013) and receives a commission for it. One of the most popular and most frequently discussed examples of this mechanism is Airbnb (Guttentag, 2015), with more than 2.9 million hosts and more than 7 million seats offered in 100,000 cities, respectively. in 220 countries (Deane, 2020). Similar shared accommodation services are offered by competitors such as Houseswap, OneFineStay, Windmu, Couchsurfing, and others. (Dredge & Gyimóthy, 2015).

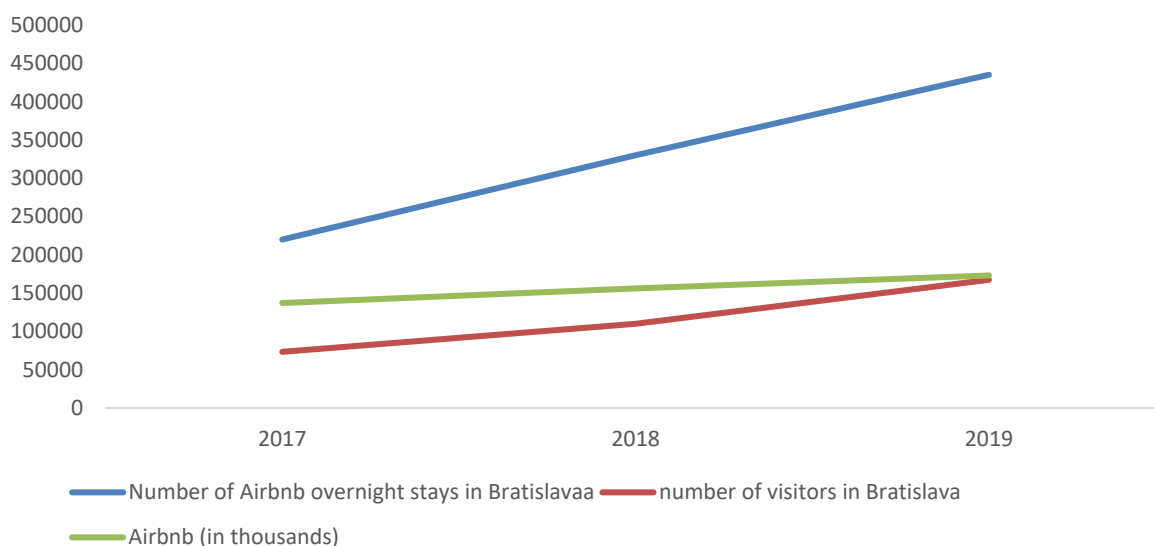
Platforms such as Airbnb allow individuals to take on the role of micro-entrepreneurs and act as hosts offering accommodation to tourism participants for a fee (Sundararajan, 2014). In fact, depending on the attractiveness of the offer, the location, the type of accommodation offered (dormitory, private room, or entire unit), and the length of the rental (in the order of days, weeks, or even months), Airbnb hosts can generate significant revenue (Jung et al., 2016). The hosts thus have the opportunity for self-employment and its amount depends on the large demand for their supply. Demand can be influenced by changing the price of supply, the development of which should dynamically adapt to changes in the market (Singh, 2012).

But what should the providers of shared accommodation in the capital of Slovakia follow in pricing? How to analyze market developments and react flexibly to current market conditions by choosing the appropriate price change? Changes in the price level of the offer of shared accommodation may depend on the development of other indicators of tourism, and it is this idea that encouraged us to carry out the research described below in the following sections of this article.

1 LITERATURE REVIEW

Accommodation statistics mediated by the Airbnb platform record annual growth and it could be said that the constantly growing curve of visitors staying in Bratislava (Fig. 1) only copies the global trend.

Fig. 1 Number of overnight stays and number of Airbnb visitors (in Bratislava, respectively in America and Europe)



Source: own processing according to Koniar, 2019; Statista, 2021

During 2019, a total of 1,395,896 visitors visited Bratislava, who made 2,850,755 overnight stays, which is an average of 2.04 nights per visitor (VisitBratislava, 2020). Of this, 8.34% (167,300) were visitors accommodated through Airbnb. Their share of overnight stays is 51.13% (435,000) (Koniar, 2019), which is an average of 2.6 nights per visitor.

Based on the above data, it can be concluded that shared accommodation occupies an important primary position in the accommodation statistics of the capital's tourism with a higher share of overnight stays than the total number of all overnight stays in other facilities. It can also be argued on the basis of the average number of overnight stays that participants in tourism in the capital prefer longer-term accommodation in shared accommodation over accommodation in other accommodation establishments. Other types of accommodation (such as hotels) usually provide a wide range of additional services and therefore the client's discomfort is certainly not the criterion for which tourists prefer to choose shared accommodation. But the price can be the criterion. In Tab.2 we summarize the average price of shared accommodation in Bratislava within the observed period 01/11/2019 - 30/09/2020.

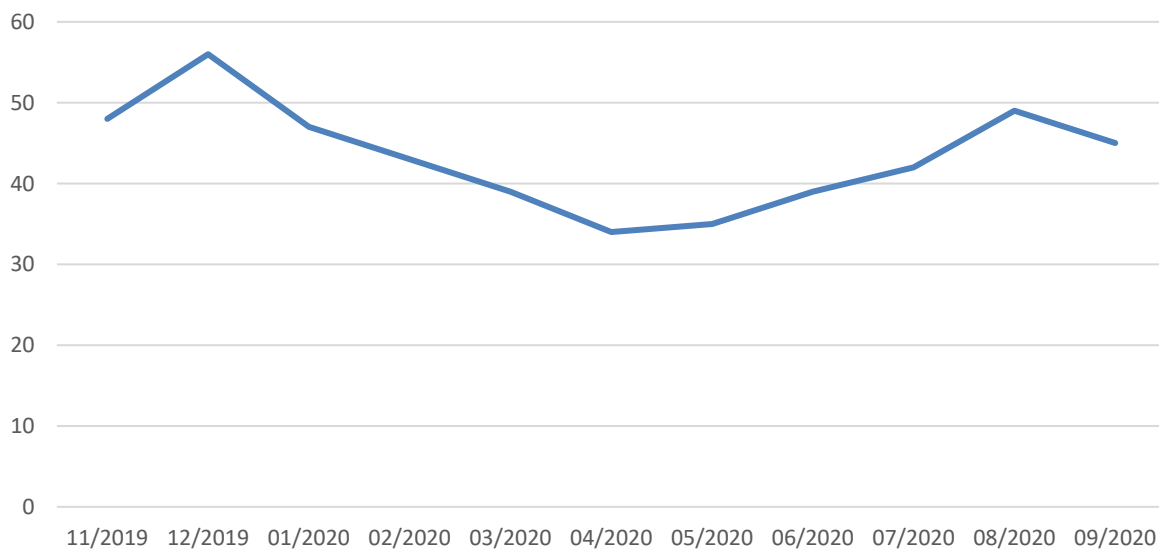
Tab. 2 The average price of Airbnb in Bratislava from 01/11/2019 to 30/09/2020 (in EUR)

Month	11/ 2019	12/ 2019	01/ 2020	02/ 2020	03/ 2020	04/ 2020	05/ 2020	06/ 2020	07/ 2020	08/ 2020	09/ 2020
Price	48	56	47	43	39	34	35	39	42	49	45

Source: Own processing according to Alltherooms (2021)

The graphical expression of the Tab. 2 is Fig. 3.

Fig. 3 Development of the average price of shared accommodation in Bratislava from 01/11/2019 to 30/09/2020 (in EUR)



Source: own processing according to Alltherooms, 2021

During the monitored period from 01/11/2019 to 30/09/2020, Bratislava recorded 595985 visitors. The structure of increments on a monthly basis is shown in Tab. 4.

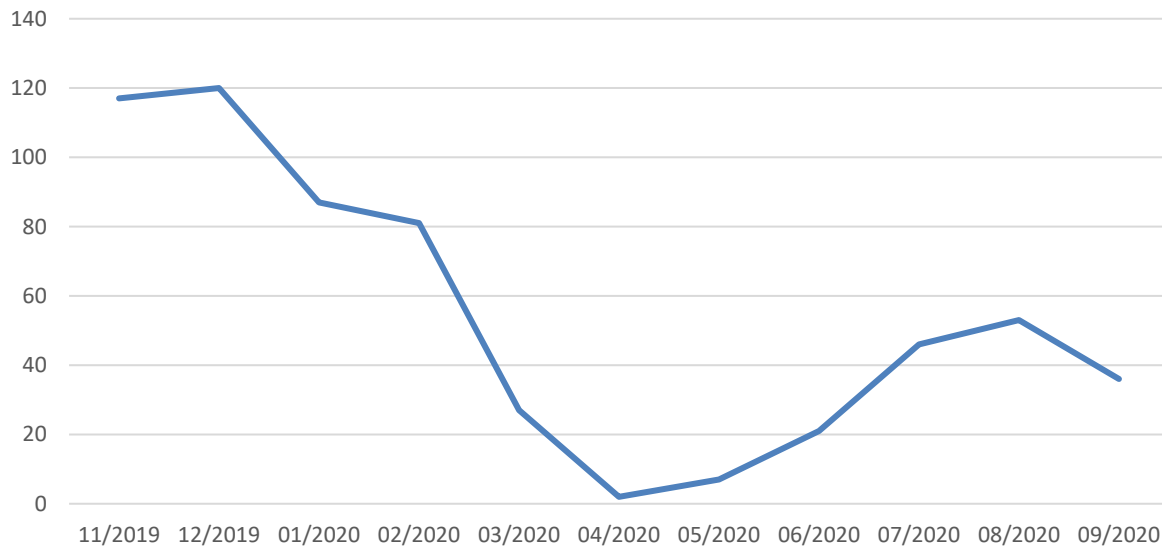
Tab. 4 Number of visitors to Bratislava from 01/11/2019 to 30/09/2020 (in thousands)

Month	11/ 2019	12/ 2019	01/ 2020	02/ 2020	03/ 2020	04/ 2020	05/ 2020	06/ 2020	07/ 2020	08/ 2020	09/ 2020
Number of visitors	117	120	87	81	27	2	7	21	46	53	36

Source: own processing according to VisitBratislava, 2020

The graphical expression of the Tab. 4 is Fig. 5.

Fig. 5 Development of the number of visitors to Bratislava from 01/11/2019 to 30/09/2020 (in thousands)



Source: Own processing according to VisitBratislava (2020)

Based on the summarized data, we approach the following sections of the paper to examine their relationships and analysis of dependencies through econometric models.

2 METHODOLOGY

The aim of the paper is to use econometric models to evaluate and explicitly express the relationship between the number of visitors to Bratislava and the average price of shared accommodation Airbnb in Bratislava.

In the paper, we initially apply general methods of data acquisition, which are analysis and deduction. The source of data are publications from databases of scientific journals, specialized statistical databases, theoretical articles, and research contributions of recognized experts focusing on the subject matter. We then select the information obtained based on their explanatory power, which leads to the creation of a relevant knowledge base, to which the part with the results of the paper can be linked.

In the part of the research results, we primarily deal with the summary of data on the number of visitors to Bratislava and the collection of data on the development of prices of shared accommodation in Bratislava. The data are then analysed in the next part using econometric models (specifically using regression and correlation analysis) and at the end of the article we derive the conclusions of the research.

The average price of shared Airbnb accommodation in Bratislava was determined for the dependent variable "y" and the number of visitors to Bratislava was determined for the independent variable "x".

The data collection period was set at 01/11/2019 - 30/09/2020. This choice was made based on the data availability of the dependent variable.

The following hypothesis was established (H_1):

H_1 : The number of visitors to Bratislava affects the average price of shared accommodation in Bratislava.

The hypothesis is verified by ANOVA. In this part of the output of the econometric analysis, we test the null hypothesis (H_0), which states that the model by which we explain the dependencies (in the case of this paper it is a linear regression line) is, resp. is not suitable, and we subsequently accept, resp. rejects the alternative hypothesis claiming the opposite. To evaluate the statement, the output parameter "Significance F" (equal to the value of P-value of the dependent variable) is used, whose value (significance level) lower than 0.05 (or in our case even value lower than 0.001) says that the model was chosen correctly, we reject H_0 and accept the alternative hypothesis (in our case, a hypothesis expressing the existence of a relationship between a dependent and an independent variable). A value greater than 0.05 indicates that the slope of the regression line may be zero and that there is insufficient evidence at the 95% confidence level that there is a significant linear relationship between the dependent and independent variables.

Within the paper, we further examine the degree of causal (causal) dependence of the monitored variables through regression and correlation analysis. The first part of the output ("Regression Statistics" section) is the results of the correlation analysis. The closer the value of the correlation coefficient (Multiple R) is to 1, the stronger the dependence of the positive relationship. Conversely, the closer this value is to -1, the stronger the dependence of the negative relationship. The value of the correlation coefficient approaching 0 means that the intensity of the relationship between the dependent and independent variables recedes, resp. until it expires. Individual intervals can be monitored in Tab. 6.

Tab. 6 Intervals of the dependence of correlation coefficient (Multiple R)

Multiple R	A very strong positive relationship
From + 0,70 to +1	Strong positive relationship
From + 0,40 to + 0,69	Slightly positive relationship
From + 0,30 to + 0,39	weak positive relationship
From + 0,20 to + 0,29	No or negligible relationship
From + 0,01 to + 0,19	No relationship (zero correlation)
0	No or negligible relationship
From – 0,01 to – 0,19	weak negative relationship
From – 0,20 to – 0,29	Moderately negative relationship
From – 0,30 to – 0,39	Strong negative relationship
From – 0,40 to – 0,69	A very strong negative relationship
From – 0,70 to – 1	A very strong positive relationship

Source: own processing according to Vijalapuram, 2019

The value "R Square" (R^2) (in the "Regression Statistics" output section) represents the coefficient of determination. This value, after multiplication by 100, indicates that the regression line chosen by us explains the dependent variable to XY%, and the other part (i.e. XZ%) the unexplained variability below which the influence of other random factors and other unspecified influences can be imagined. Again, this is an indicator whose value approaching 1 represents a result with a high degree of accuracy.

Formula 7 Calculation of the value of the coefficient of determination („R Square“ = R^2)

$$R^2 = \frac{\text{regression sum of squares}}{\text{total sum of squares}} \quad (1)$$

Source: Own processing according to Vijalapuram (2019)

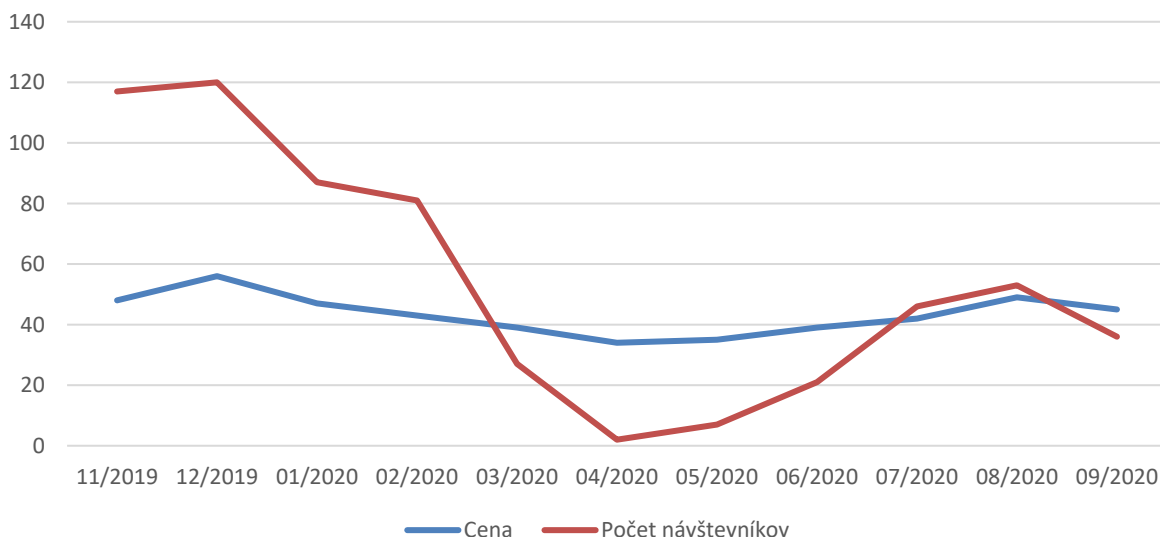
2.1 Limitations

There is a limitation that could skew our results. As part of the examination of alternative hypotheses predicting regression, a minimum number of measured elements of eight ($N = 8$) is recommended for a narrow data model (ie very low variation), and with a high variation of the variable, the minimum number of measured elements N is shifted to twenty-five ($N \approx 25$) (Jenkins & Quintana-Ascencio, 2020). For the time period specified by us (01/11/2019 - 30/11/2020), based on the monthly periodicity of the monitored indicators, the amount of data collected is at the level of twelve or less, and therefore the results may be skewed. Therefore, we propose to carry out further research in the future to verify the results we have achieved on a larger set of data.

3 RESULTS AND DISCUSSION

Market equilibrium can be defined as a constantly renewing system of relations between territorial and time-varying demand at a certain price level, and the mismatch between supply and demand leads to inflationary pressures (Strážovská, 2016), i.e. a change in price. Finding a match between the supply and demand of shared accommodation and the subsequent change in the price of accommodation encouraged us to conduct our research, which is to examine the relationship between the number of visitors to Bratislava and the average price of shared Airbnb accommodation in Bratislava.

Fig. 8 Development of the average price of shared accommodation and the number of visitors for the territory of Bratislava in the period 01/11/2019 - 30/09/2020



Source: own processing

Fig. 8 can be divided into four time periods in which the parallel direction of both variables can be monitored. In the period from 11/2019 to 12/2019, the growth of both indicators can be

monitored. From 12/2019 to 04/2020, the values of both variables decrease. From 04/2020 to 08/2020 both variables re-record growth, and from 08/2020 until the end of the observed period (09/2020) we register a decrease in the values of both variables.

The average price curve copies the number of visitors curve. Based on this, it is possible to assume the occurrence of dependence and therefore we proceed to perform regression and correlation analysis in the next part of the paper.

In Tab. 9 we present the results of econometric analysis.

Tab. 9 Regression results for the number of visitors variable (*) $p < .001$, ** $p < .01$, * $p < .05$)**

X - variable	Correlation coefficient (P-value)	R2	ANOVA (Significance F)
number of visitors	0,86828121***	0,75391227	0,00052704

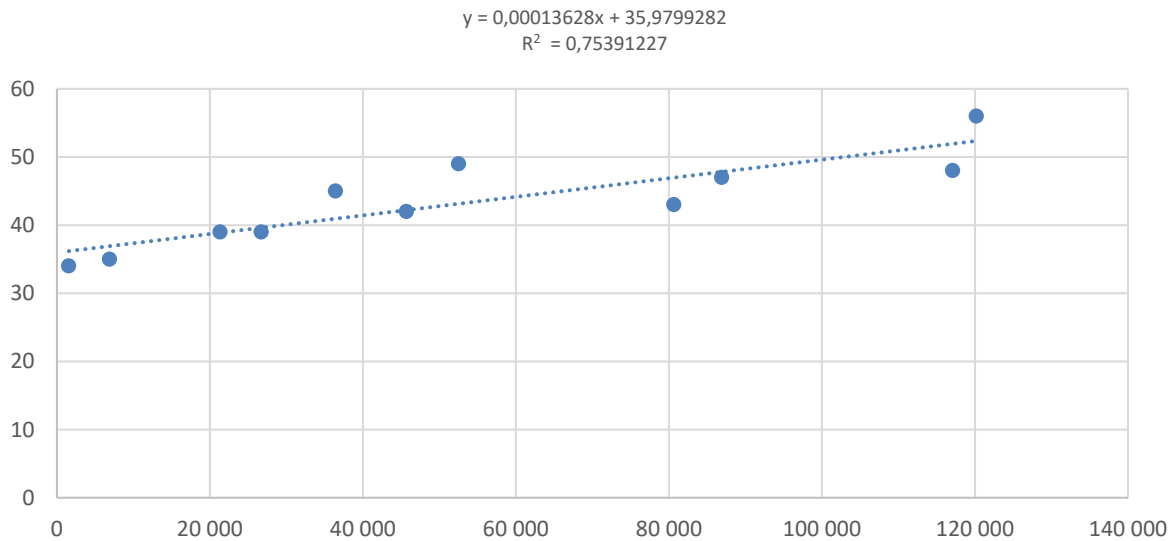
Source: own processing

As can be seen above, in the countries listed in Tab. 9 we register the dependence between the number of visitors to the capital and the average price of shared Airbnb accommodation in Bratislava. In this case, we assume that an increase in the number of visitors in the country will lead to an increase in the average price of shared accommodation in Bratislava and vice versa. Hypothesis H1 tested by us ("the number of visitors to Bratislava affects the average price of shared accommodation in Bratislava") is accepted based on the results of the analysis, as the ANOVA test results are lower than 0.05, which means that the selected model was correct (and we reject H0 in these cases). In addition, the P-value for the locating constant (independent variable) is not only less than 0.05, but less than 0.001 (in the table marked as "****" for $p < .001$), which only emphasizes the significance of this coefficient. It can be interpreted that the number of visitors to Bratislava affects the average price of shared accommodation in Bratislava with a probability of error of less than 0.1%.

The value of the correlation coefficient (Multiple R) is 0.86828121, which indicates a very strong positive relationship (Tab. 6). The last output of the econometric analysis is the coefficient of determination R Square (R2), which is equal to the value 0.75391227. It can be interpreted as meaning that the regression function explains the variability of the average price of shared accommodation to 75.39% and the other part (24.61%) is explained by the influence of other random factors and other unspecified influences.

The regression function has the form $y = 0.00013628x + 35.9799282$, which means that with zero attendance in Bratislava, the average price of shared accommodation in the capital is at the level of 35.98 EUR. If the number of visitors increases by one unit of measure (one visitor), then the average price of shared accommodation will increase by 0.00013628 EUR.

Fig. 10 Dependence of the average price of shared accommodation on the number of visitors



Source: own processing

CONCLUSION

In this paper, we examined changes in the average price of shared accommodation Airbnb in Bratislava caused by changes in the number of visitors to the city. To meet the goal of the paper, which was an explicit expression of the relationships between selected indicators, we chose the methodology of regression and correlation analysis under the conditions of using the ANOVA test, based on which we accepted the hypothesis.

It can be argued that the change in the number of visitors directly affects the average prices of shared accommodation in the capital, and to explicitly express this relationship, we also present the form of the regression function in the article.

Other industry factors can influence changes in the prices of shared accommodation both in Bratislava and in other tourist destinations where shared accommodation can be found, and therefore we propose to conduct similar research with other input data independently variable for example on the number of overnight stays in our chosen territorial unit of the capital of Slovakia - Bratislava.

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Development of the Trade Relations Intensity between the EU27 and the United Kingdom in the Context of Brexit with a Focus on the Member States

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Abstract: The future development of trade relations between the EU27 and the United Kingdom has received attention from the British referendum in 2016. As much as 64% of the EU's exports (intra + extra-regional exports) remain within the integration group. The aim of the paper is to examine, based on the development of the trade relations intensity between the EU27 and the United Kingdom, which EU member state are affected the most by Brexit. To examine trade intensity we calculated the trade intensity index based on the data of EUROSTAT and ITC. The intensity of trade relations has a declining trend on both sides. However, the result of the index showed higher intensity on the EU's side. An agreement on future trade relations is crucial for both partners. Ireland as the country with the highest trade intensity in trade with the UK is the EU member affected the mostly by Brexit in terms of its exports and imports.

Keywords: Brexit, European Union, member states, trade intensity

JEL Classification codes: F10, F15

INTRODUCTION

In the last two decades, the EU has had to face several challenges that have tested its coherence and unity, such as the global economic and financial crisis, the debt crisis in the euro area, the migration crisis, or the so-called Brexit. In the referendum in 2016, the British people decided to restore the country's sovereignty and take control over the economy by leaving the integration block. The uncertain process of Britain's withdrawal from the EU with a threefold postponement of Brexit, a decline in business investment, and foreign demand, led to a reduction in UK GDP growth from 2.4% in 2015 (pre-Brexit value) to 1.4% in 2019. In the case of the EU27 decline in GDP growth from 2.3% to 1.6% was recorded over the same period (Eurostat, 2020).

The United Kingdom (UK) formally left the EU on 31 January 2020. The transitional period lasted 11 months until December 2020. During this period, the EU and the UK have negotiated an agreement on future relations. In addition, the difficult negotiations on the EU27-UK agreement were complicated by restrictive measures. They were introduced by all economies to slow the COVID-19 pandemic spread. This has led to a downturn in global economic activity as a decline in business investment, industrial activity, or a drop in demand in almost all sectors of the economy. The British economy has been hit even harder by this situation because it faced a recession even before the COVID-crisis due to the uncertainty caused by the Brexit.

Because of the UK leaving, the EU has been losing its long-term strategic partner. Nevertheless, closer relations with the EU mean better economic prospects for Britain, as the EU27 has been one of the world's largest trade players for several decades. With the EU's gradual enlargement by new members, the economic and negotiating power of the bloc has increased, which has also strengthened the EU's competitiveness (Ružeková et al., 2020). Individual EU countries will be affected by Brexit in different ways and different extents. Since 1 January 2021 has been provisionally applied a new Trade and Cooperation Agreement (TCA), which can mitigate the effects of hard Brexit. This agreement goes beyond traditional free trade agreements and provides the basis for maintaining a long-standing partnership and cooperation. It can be expected that all EU countries will be touched to a greater or lesser extent by the political or economic Brexit impact. It depends on their historical ties with the UK, geographical distance, shares of mutual trade, or connections to specific industries and production. For this reason, we decided to examine the development of trade intensity between the EU27 and the UK, focusing also on selected member countries.

1 LITERATURE REVIEW

The EU represents a milestone of European stability and prosperity. The EU has achieved a strong position on the global trade scene. It results from the EU's speaking with one voice and its common trade strategies. According to Meunier (2005), the size of the European single market, combined with the collective nature of the common commercial policy, has made the EU a major competitor with enormous negotiating power. EU trade strategies are focused on growth, prosperity, and job creation for trade and investment, including for non-EU countries. The position of the EU as a trading power or a global player has been explored by several authors, e.g. Bretherton and Vogler (2006) or Kittová (2020).

This topic is still relevant in the context of current problems and challenges which the EU has to face, especially concerning Brexit (Smith, 2019). The arrangement of EU-UK trade relations after Brexit has naturally raised many questions about possible future scenarios and their impact on the economies of the EU Member States and the UK (European Parliament, 2018; Bertelsmann Foundation, 2019; Wenz, 2020). All available studies agree that either scenario would severely disrupt trade ties and incur economic costs on both sides. According to A. Belke and D. Gros (2017), these costs will be on both sides. On the EU side would be a lesser extent. Not only because it is economically approximately five times larger than the UK, but also for the greater market power of European companies.

The European Committee of the Regions (2018) considered the six key economic sectors of the EU27, which would be affected by the UK's withdrawal, namely transport vehicles; machinery; electronics; textile and furniture; vegetables, foodstuffs, and wood; chemicals and plastics. According to this study, the sector of transport vehicles was exported the most from Germany, Romania, and France. The machinery sector was exported by Germany and Italy. The Electronics sector was mainly exported to the UK by the Slovak Republic, Czech Republic, Romania. In the export of textiles and furniture sector dominated Italy, Portugal, and Bulgaria. The vegetables, food, and wood sector was exported from Greece and France, and the chemical and plastic sector from France and Germany.

KPMG study (2017) estimated which EU member states will be the most affected by the UK's exit from the single market based on their exports of goods and services. According to this study, Ireland, Slovakia, Spain, and Germany will be touched the most by the Brexit impact. Brexit barriers will affect many industries. The most commonly used example was German car production, 14% of car production in Germany was exported to Britain. According to KPMG's calculations, 14% of French wine, 10% of Belgian chocolate, 26% of Danish sausage, and 15% of Greek cheese were exported to the British market in 2015.

In Global Counsel study (2015), member states were divided into 4 groups from high to low exposure to Brexit. In the group of high exposure were included Netherlands (due to its FDI in Britain), Ireland (deeply integrated with the UK in terms of trade, supply chains, migration, language, and culture; the only member state with a land border with the UK) and Cyprus (due to historical and cultural factors as Cyprus was a British colony and still is a member of the Commonwealth). On the other side, there are countries in the south-east of the EU with a low exposure as Slovenia, Croatia, Romania, and Italy, which would reflect their distance and different political cultures. This does not, however, mean that they would be without any direct or indirect consequences of the Brexit. There are many other studies dealing with the Brexit impact, using different research techniques and data sets (Los et al., 2017; Billing et al., 2019). Chen et al. (2018) also confirmed that for EU member states and regions located in the south, far east, and far north of Europe, expected economic exposure to Brexit is a very minimal compared to countries and regions in continental Europe near the UK.

2 METHODOLOGY

The aim of the paper is to examine, based on the development of the trade relations intensity between the EU27 and the United Kingdom, which EU member state are affected the most by Brexit.

To achieve the aim several research methods were used, such as analysis, induction, deduction, comparison, and mathematical-statistical methods. Databases of the Eurostat and International Trade Centre (ITC) were used to obtain data for the analysis of the current state of the research topic, and for the calculation of the trade intensity index. Figures were processed with MS Excel. EU27 represents the current twenty-seven members of the integration block (without the UK) and serves to examine trade relations with the UK in the context of Brexit.

The Trade Intensity Index (TI) is used to assess the values of trade between two countries based on their world trade position and the size of the economy. It assesses whether countries' bilateral trade is greater or less than would be expected based on their position in the world economy. According to Ng and Yeats (2003), the main limitation of this index is that it does not distinguish between objective (geographical distance, the similarity in economic structure) and subjective barriers of trade (tariff and non-tariff barriers). Objective barriers affect the calculation of the trade intensity (geographically distant countries have a lower TI index), while subjective barriers can be reduced or eliminated in the short term (Bao & Chen, 2013). The TI is determined as the share of exports of country *i* to country *j* on total exports of country *i* to the world, divided by the proportion of total world exports to the country *i* to the total value of world exports (World Bank, 2010).

The trade intensity index is calculated as:

$$TI_{ij} = \frac{(x_{ij}/X_{it})}{(x_{wj}/X_{wt})} \quad (1)$$

where:

x_{ij} represents the value of exports from country *i* to country *j*;

X_{it} represents the value of the *i* country's total exports to the world;

x_{wj} represents the value of total world exports to country *j*;

X_{wt} represents the total value of world exports.

The TI reaches a value in the range $<0, +\infty>$. If the value of the index is equal to 1, it means that country *i* exports to country *j* the exact ratio of exports that country *j* belongs to, given

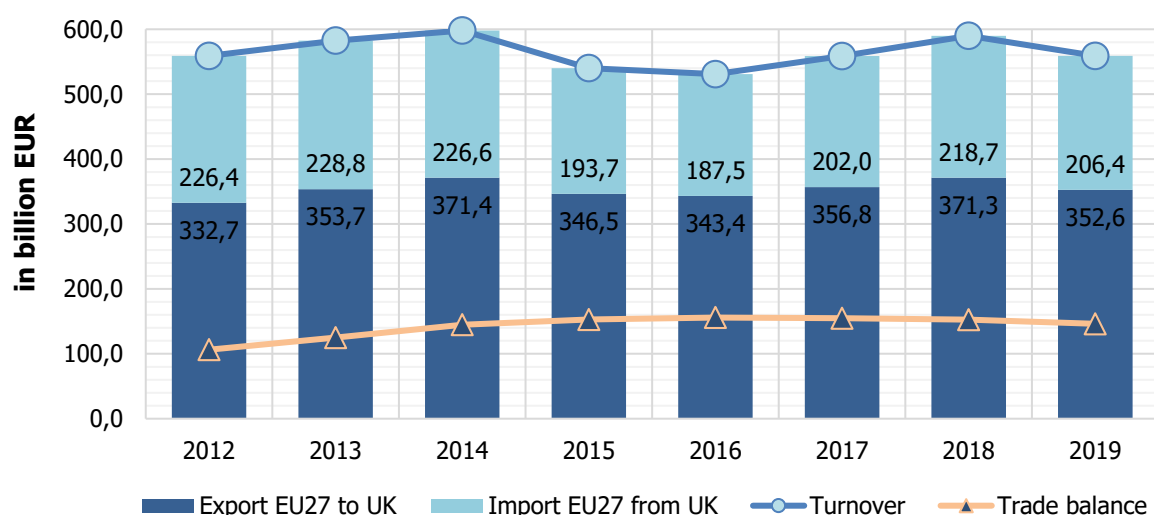
its share in world imports. If the value of the index is higher than 1, trade flows between the countries are more intense than would be expected given the importance of the partner country in the world economy. This means that the country *i* exports to the country *j* more goods than to the rest of the world. This means an intensive trade relationship. If the index value is less than 1, the intensity of trade is lower than would be expected given the importance of the economy in world trade (The World Bank, 2013).

3 RESULTS AND DISCUSSION

The turmoil in the world economy, the slowdown in economic growth, or the spread of populism are manifested more often in the sceptical of countries about the benefits of free trade. Vice versa, some countries rather support the idea of introducing protectionist trade policies. The EU was also touched by a significant disruption of previous liberalization and integration efforts when the British people decided in 2016 to vote for leaving the EU. The Brexit took place in January 2020. The UK has decided to leave the integration block after 43 years and take back control of its economy. The EU has lost a market of over 65 million population, but still represents the largest single market in the world economy.

The EU as an integration block is the UK's largest trading partner. In 2019, the UK exported up to 43% of its total exports to the EU. UK imports from the EU accounted for up to 52% of total imports. Exports of services to the EU in 2019 accounted for up to 42% of total British exports of services. In general, the decline of British exports share to the EU by 11 percentage points (since 2002) and imports share from the EU by 5 percentage points (since 2006) can be observed. The UK's withdrawal from the EU triggered a discussion on the future functioning of mutual trade relations, and therefore we examined the development of EU27-UK merchandise trade in 2012-2019 (Fig. 1).

Fig. 1 Development of EU27-UK trade in 2012 - 2019 (in billion EUR)



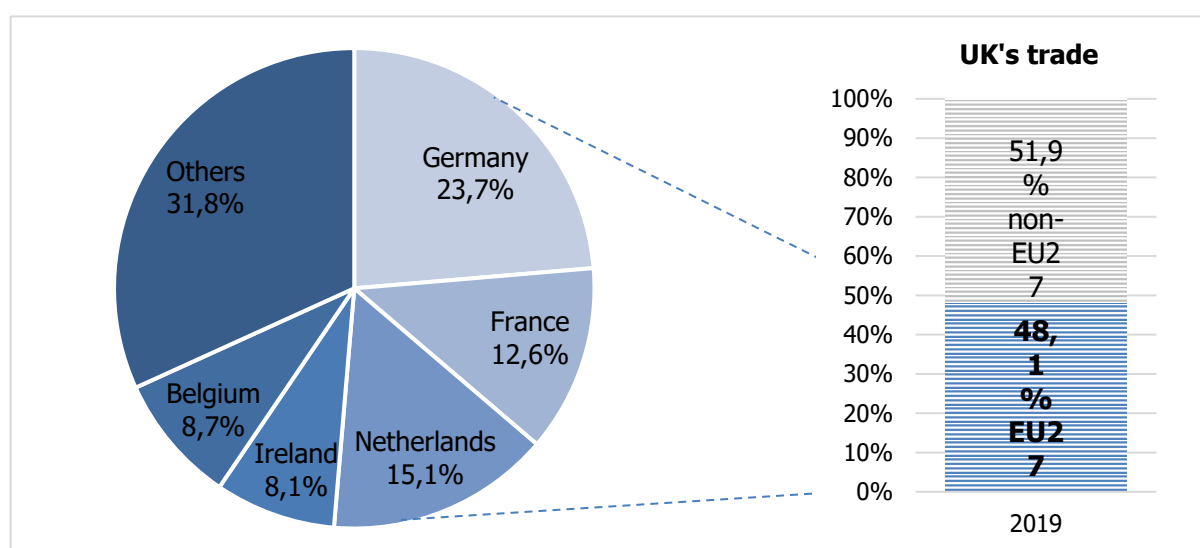
Source: own processing based on data from ITC, 2020

As it can be seen, the EU27 exported to the UK goods in volume of 332.7 billion EUR. By 2019, exports increased up to 352.6 billion EUR, which represents an increase of 6%. The highest export volumes were reached in 2014 (371.4 billion EUR). On the contrary, the lowest were reached in 2016 (EUR 343.4 billion). In the observed period, the EU27 exports to the UK had a growing trend. In 2012, the EU27 imported from the UK goods in volume of 226.4 billion

EUR. It decreased by almost 9% to 206.4 billion EUR by 2019. The lowest volumes of imported goods were in 2015 in the amount of 187.5 billion EUR. The EU27 imports from the UK were prone to volatility with a declining trend.

The UK's withdrawal from the EU can destabilize the individual economies of the Union, which are most involved in trade with the UK. In 2019, merchandise trade with the UK accounted for 4.9% of the EU27's foreign trade turnover. According to the UK's foreign trade turnover, the largest UK's trading partner was in 2019 the EU27 with a share of 48.1% (Fig. 2), which represented a volume of up to 498.3 billion EUR. The high share can be attributed to the strength of the integration block of 27 countries and the fact that until the end of 2020 the UK was still part of the Union and its trade was closely linked to EU Member States. The following Fig. 2 shows the UK's trading partners in the terms of their foreign trade turnover.

Fig. 2 The main trade partners of the UK based on foreign trade turnover in 2019 (in %)



Source: Own processing based on data from EUROSTAT, 2020.

The UK's most important trading partners from EU countries were Germany with a share of 23.7% in the total UK's foreign trade turnover with the EU27, the Netherlands (15.1%), France (12.6%), Belgium (8.7%) and Ireland (8.1%).

Examining EU27 exports, we found that the largest exporters of goods to the UK in terms of volume in 2019 were Germany (79.0 billion EUR), Netherlands (39.9 billion EUR), France (33.7 billion EUR), Belgium (30.3 billion EUR) and Ireland (15.8 billion EUR). In 2019, the largest importers of goods from the UK by volume of imports were Germany (37.9 billion EUR), Netherlands (24.7 billion EUR), France (21.2 billion EUR), Ireland (20.4 billion EUR), and Belgium (16.7 billion EUR) (ITC, 2020).

It is important to examine the volumes of the EU27-UK trade as in the previous paragraph. We also consider as important to examine trade shares of EU countries with the UK. Tab. 1 shows the EU Member States that have the largest share of exports to the UK concerning their total exports and the countries that have the largest share of imports from the UK in relation to their total imports.

Tab. 3 The EU's countries with the largest share of trade with the UK (in %)

The UK's Share in the Exports of the EU Members				The UK's Share in the Imports of the EU Members			
EU Member States		2018	2019	EU Member States		2018	2019
1	Ireland	11,4 %	10,3 % ↘	1	Ireland	21,9 %	22,5 % ↗
2	Netherlands	8,1 %	7,7 % ↘	2	Malta	8,3 %	18,5 % ↗
3	Belgium	7,9 %	7,6 % ↘	3	Cyprus	6,6 %	7,0 % ↗
4	France	6,8 %	6,8 % ↔	4	Netherlands	6,0 %	5,4 % ↘
5	Spain	6,3 %	6,5 % ↗	5	Sweden	5,0 %	4,5 % ↘

Source: own processing based on data from ITC, 2020

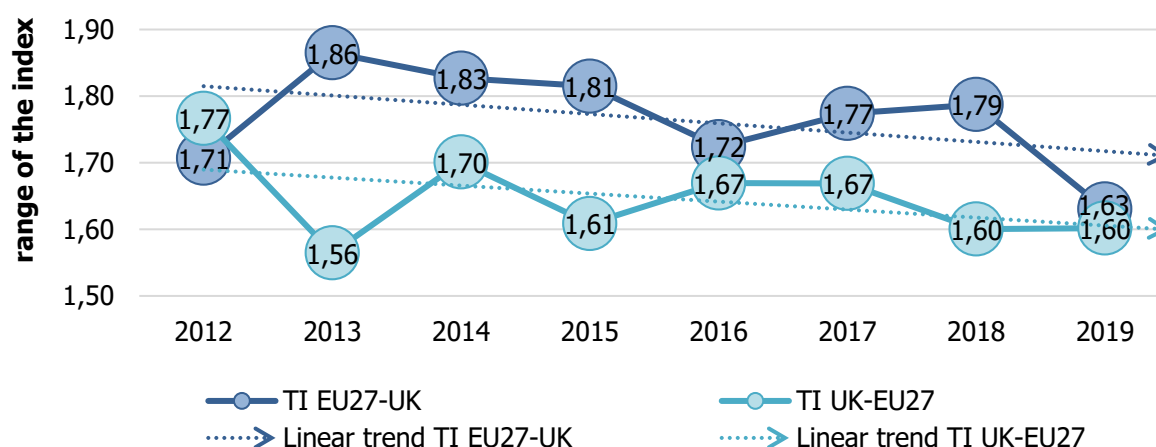
In 2019, Ireland had the highest share of exports to the UK in its total exports (10.3%), followed by the Netherlands (7.7%), Belgium (7.6%), France (6.8%), and Spain (6.5%). Only Spain recorded a slight increase of 0.2 percentage points compared to 2018.

In 2019, the highest share of imports from the UK in total member state's imports had Ireland (22.5%), followed by Malta (18.5%), Cyprus (7.0%), Netherlands (5.4%), and Sweden (4.5%). Compared to 2018, the share of imports increased by 0.6 percentage points in Ireland, by as much as 10.2 percentage points in Malta, and by 0.4 percentage points in Cyprus.

3.1 The trade intensity development of the EU27 and the United Kingdom

The TI was used to assess mutual EU27-UK merchandise trade. The index examines whether the value of trade between the EU27 and the UK is greater or less than would be expected based on their position in international trade. Fig. 3 shows the trade intensity of the EU27 and the UK in 2012-2019.

Fig. 3 Development of the EU27-UK and the UK-EU27 trade intensity in 2012 - 2019



Source: own processing based on data from ITC, 2020

Fig. 3 shows that in the observed period, the EU27-UK trade intensity was higher than 1. It indicates a high intensity of foreign trade. The values of the trade intensity index prove the existence of bilateral trade between partners, which also follows from the UK's membership

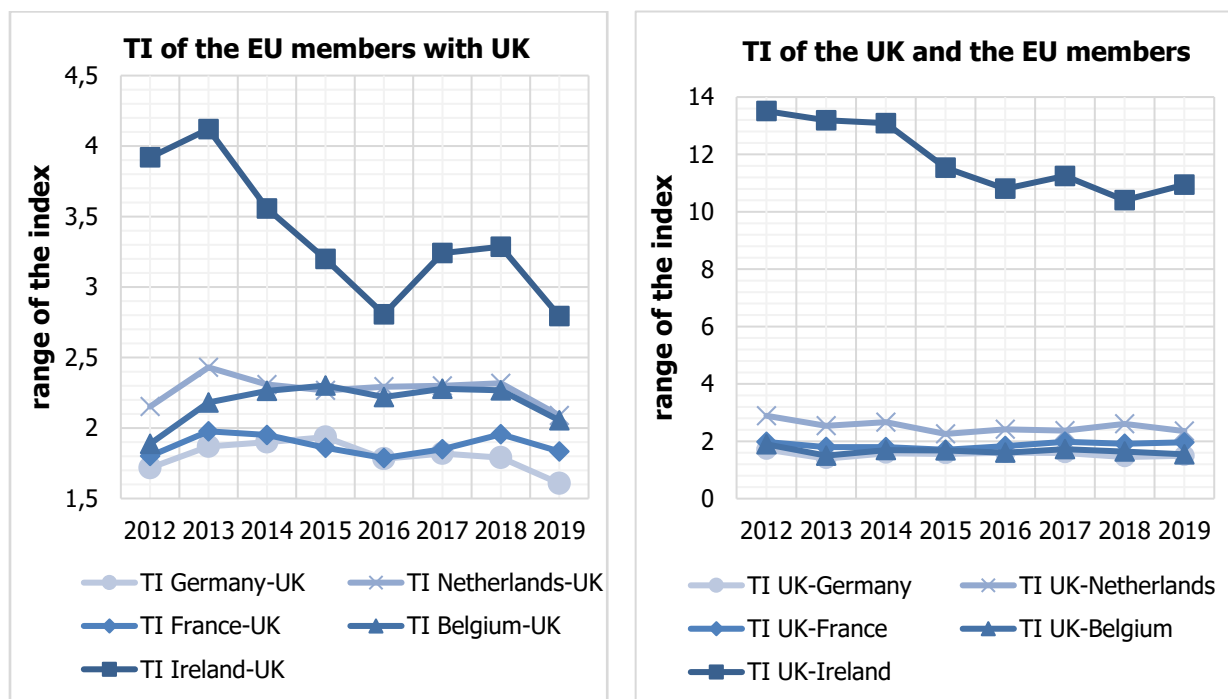
in the integration bloc. The index reached 1.86 points in 2013, which was the maximum in the observed period. Until 2016, it had a declining tendency. The value of the index rose again from 1.72 points in 2016 to 1.79 points in 2018. In 2019, the lowest index value in the observed period (1.63 points) was recorded. Despite fluctuations, the EU27 and the UK recorded intensive trade because index values did not fall below 1.0 point.

The value of the UK-EU27 trade intensity in 2012-2019 indicated intensive bilateral trade between them. The UK-EU27 trade intensity in 2012 even slightly exceeded the EU27-UK trade intensity in the same year. In 2013, compared to the previous year, there was a decrease by 0.21 points from 1.77 to 1.56 points, which was also the lowest value in the observed period. In 2014, the value of the index increased again to 1.70 points. In the following year, it fell again to 1.61 points. In 2016 and 2017, the value of the index maintained the same value of 1.67 points. In 2018, the value fell again to 1.60 points and maintained the same value also in 2019. Despite the volatility of the TI index values, we can still conclude that the UK and the EU27 have had intensive trade relations.

In the observed period, the average EU27-UK values of trade intensity reached 1.77 points, while the average of the UK-EU27 trade intensity was lower by 0.12 points and reached the value of 1.65 points. The averages of the TI index showed still intensive bilateral trade. The linear trend for both predicts a downturn. It can be caused by four years of uncertainty about Brexit, difficult negotiations, and lengthy negotiation processes on the trade agreement provisionally applied from January 2021.

We consider it important to note that the heterogeneity of the EU can lead to distorted the TI index results. It is caused by the averaging of values for 27 member states in the integration block. We are aware that the different member states may achieve different trade intensity values with the UK. Fig. 4 shows the trade intensity of selected EU27 member states (chosen based on the volume of their turnover with the UK) and the UK. The TI index was calculated for Germany, France, Ireland, Netherlands, and Belgium in 2012-2019.

Fig. 4 The trade intensity development of the EU27 member states and the UK in 2012 - 2019



Source: own processing based on data from ITC, 2020

The trade intensity of selected EU member states was greater than 1 in 2012-2019, which indicates intensive trade relations with the UK. In the observed period, the trade intensity of Germany, France, Belgium, and the Netherlands ranged from 1.6 to 2.4.

In 2019, all five countries recorded a decrease in intensity compared to the previous year. In 2019, the lowest intensity was reached by Germany (1.6) and France (1.8); the intensity of Belgium and the Netherlands was at the value of 2.1 points. The intensity of Ireland's trade relations with the UK was the highest in 2013 at 4.1 points. By 2016, it was downturned by one third to 2.8 points. In 2017 - 2018, their trade relations intensified again, but in 2019 eased to 2.8 points. The decline of Ireland's trade intensity with the UK was caused by the diversification of its exports, which means that Ireland increased trade with other partners. This was evident in trade with the USA, where Ireland's exports increased by 10.7 percentage points to 30.8% in 2019 compared to 2012 (ITC, 2020).

In 2012-2019, the trade intensity values of the UK and selected EU member states were also higher than 1, which indicates an intensive bilateral trade. The trade intensity between the UK and Germany, France, Belgium, and Netherlands ranged from 1.5 to 2.0 points. In 2012, the trade intensity of the UK with Ireland was 13.5 points, indicating very strong trade ties. Although by 2019, a decrease in intensity was reached, the value of trade intensity was still very (11.0 points).

CONCLUSION

Integrating countries into the EU has brought appropriate economic benefits to its member states. Despite this fact, increasing euroscepticism has begun to manifest itself in recent years. This mistrust of the EU's effectiveness and importance resulted in a British referendum in 2016. This is an unprecedented event in the EU's history. Brexit raised concerns about the departure of other members from the block and the possible disintegration of the EU.

The UK left the EU's single market and customs union on 1 January 2021. Despite the length of the difficult withdrawal process, the Trade and Cooperation Agreement has been reached, which has represented a significant step for the maintenance of a long-standing partnership between the EU27 and the UK. Almost until the end of the transitional period, hard Brexit threatened, which would lead to the reintroduction of tariffs and other trade barriers. The scenario without an agreement would have the greatest impact on the economies of individual member states and also on the British economy.

The aim of the paper was to examine, based on the development of the trade relations intensity between the EU27 and the United Kingdom, which EU member state are affected the most by Brexit. Germany, Netherlands, and France would be affected by Brexit impact the most based on trade volumes. Based on the UK's share of the total country's export/import and also based on trade intensity (determined by the TI), Ireland would be affected by Brexit impact the most. The high intensity of trade relations between Ireland and the UK resulted from historical ties, geographical proximity, and deep integration of EU member states.

The values of the trade intensity index showed that it makes sense for the EU27 and the UK to maintain preferential trade relations after Brexit. The reintroduction of trade barriers would disrupt natural trade flows, which will lead to negative effects on both sides. Trade and Cooperation agreement is beyond traditional free trade agreements, which only confirms that our assumptions are correct. To date, there has never been reached such a comprehensive agreement between the EU and a third country.

For the EU was the 2020 milestone in its history. In this crucial and challenging period, the EU showed there is still a strong sense of building an integration block. For decades, it was confirmed by the EU's leading position in international trade. The EU dispelled any doubts and

scepticism about the importance of integration. In 2020, the EU showed its strength in coherence and unity, in particular negotiations with the UK or in the fight against the COVID-19 pandemic.

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Industry 4.0 and Preparedness of the Workforce: A Bibliometric Analysis

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Abstract: The discussion related to the implementation of Industry 4.0 elements has brought researchers' attention to the changes of requirements on the workforce. The current research focuses on identifying the core competencies related to Industry 4.0 and strategies towards their development. The purpose of this article is to observe the topic of competencies, skills, and education amongst the research articles related to Industry 4.0, including its development over the last ten years, identify the current trends in the literature, and make suggestions for future research. Bibliometric analysis was conducted to conclude that research focus related to the workforce adaptation in terms of their skills, competencies, and the requirements from formal education associated with Industry 4.0 needs are not amongst the most discussed related to Industry 4.0.

Keywords: industry 4.0, digitalization, workforce, competencies, skills, education

JEL Classification codes: H52; M10; O33; I20

INTRODUCTION

One of the recent questions asked is whether the industry sectors can successfully operate in the digital environment and face future challenges. The World Economic Forum, WEF (2020) predicts that by 2025, humans' work and machines measured in time units will be equal. Tasks to be taken over by the robots are most commonly described as routine repetitive prone to error tasks (Deloitte, 2019), which result in handling over more complex tasks and problem-solving to the employees. Although the implementation of digital technologies eases work on all managerial levels, at the same time, it causes many new organizational challenges. Schneider (2018) concluded conformity in the practitioners' and academics' perspective on the most critical managerial challenges related to digital transformation. This being namely the openness to change, impact on working life, establishing a culture of experimentation, qualified employees, and building of digital capabilities. Companies' management needs to adopt decisions in strategy, planning and implementation, cooperations and network development, business models, challenge the changing environment and leadership questions, and last but not least, search for employees with the necessary hard and soft skills and competencies and manage human resources in general.

This article aims to present a comprehensive evaluation of the literature related to the requirements of the workforce's skills and competencies in the technologically evolving environment framed by Industry 4.0. Moreover, the emphasis is put on the education system and how it reflects the technological changes. The article is structured as follows. Firstly the main terms such as Industry 4.0, skills, and competencies are defined. The research questions

are derived from the literature review and addressed by using bibliometric analysis. Finally, the conclusion with recommendations for future research is suggested, followed by research limitations.

1 LITERATURE REVIEW

The term "Fourth Industrial Revolution" (4IR) has become commonly used in 2016. The digital transformation has been discussed already before when Klaus Schwab has published his eponymous book (Philbeck & Davis, 2018) as a broad term to frame and analyze the impact of emerging technologies on society in the 21st century, while Industry 4.0 refers to "recent technological advances where the internet and supporting technologies (e.g., embedded systems) serve as a backbone to integrate physical objects, human actors, intelligent machines, production lines, and processes across organizational boundaries to form a new kind of intelligent, networked and agile value chain" (Schumacher et al., 2016, p. 162).

The implementation of Industry 4.0 concepts results in what Dombrowski and Wangner (2014) describe as job profile shift from specific work tasks and execution of manufacturing to interdisciplinary cooperation and "process-oriented tasks with frequently changing content and the necessary change of the competencies from specific technical capabilities, clear thinking in single processes and accurate execution of the centrally planned work tasks to complexity, abstraction, and problem-solving abilities, thinking in overlapping processes and self-organization (Dombrowski & Wangner, 2014, p. 102).

Skills are defined in the European Qualification Framework, EQF, as "the ability to apply knowledge and use know-how to complete tasks and solve problems." In the context of the EQF, skills are described as cognitive or practical (EQF, 2017). Based on WEF future job survey (WEF, 2020), the current top ten skills are analytical thinking and innovation; active learning and learning strategies; complex problem-solving, critical thinking and analysis; creativity, originality, and initiative; leadership and social influence; technology use, monitoring, and control; technology design and programming; resilience, stress tolerance, and flexibility; reasoning, problem-solving and ideation.

Competencies are observed and evaluated in practical learning when identifying and solving a problem (Abele et al., 2017). Kinkel et al. (2017, p. 324) define competence as "the individual dispositional ability and readiness to act successfully and self-organized when facing novel, unstructured or complex situations or tasks and the ability to develop solutions for future cases". In the EQF, the competence is defined as "proven ability to use knowledge, skills and personal, social and methodological abilities, in work or study situations and professional and personal development" (EQF, 2017, Annex 1).

Skills and competencies are developed through education, training, and experience (Skinner et al., 2004). Although the WEF (2020) states that the skills gap remains to be high, there has been a significant shift in the education system in the developed countries towards the readiness for changes related to Industry 4.0 by bringing students and their needs to the center of education as opposed to the earlier teacher-centered focus, this being in many countries overcome (Miranda et al., 2019).

The changes related to Industry 4.0 are reflected in new study programs, new technologies being employed in education and training, and the quality of study programs and professional practice. The study programs in data science and analytics are emerging. Chen et al. (2012) stress that these study programs should be interdisciplinary, including analytical and IT skills, domain knowledge (e.g., business), and communication skills development. Analytical skills development should also be enhanced in existing programs, e.g., supply chain management,

where the analytical skills are taught together with the domain knowledge (Waller & Fawcett, 2013).

The use of technologies can support education and training. Technologies have been widely installed and used to share data amongst teachers and students (Bond et al., 2018). New learning methods based on technologies are being incorporated, and innovative facilities and labs are being created (Miranda et al., 2019, Mian et al., 2020, Ramirez-Mendoza et al., 2018). Researchers supporting the wide use of the virtual reality technology argue with improved outcomes of students (Merchant et al., 2013), working in the flow state of mind (Hwang, 2012), cost efficiency, and real environment situations training with possible adjustments to different environments or adaptations (Kaasinen et al., 2020). Learning factories can exist in the form of physical factories, digital factories focusing on planning or simulations, and hybrid factories. Competencies to be developed are mainly related to future problems solving (Abele et al., 2017; Kaasinen et al., 2020). There is potential for developing virtual training skills; the question remains, how best should the virtual training be targeted? It seems to be a complementary method to other teaching methods. Merchant et al. (2013) support the use of technology in education, still question whether the collaborative skills can be developed because "students performance is enhanced when they conduct the game play individually than in a group" (Merchant et al., 2013, p. 29).

The quality of education is another factor that should not be overlooked. On the one hand, talented young school children need to be supported to become experts in their fields (Subornik, 2011); on the other hand, attitude towards learning needs to be developed into lifelong learning. The literature suggests that the belief that technology in education can help build attitudes towards learning and ease the lifelong learning process inevitable in a fast-changing environment (Bond et al., 2018; Ciolacu et al., 2018). Concerning the qualitative aspects of education, creativity should not be limited by the teacher's personality restricting students' thoughts and expressions. The respect for seniority is still incorporated in some cultures (Buasuwan, 2018) but can be the case in individual cases elsewhere. High emphasis should also be put on cooperation and interdisciplinary project solving (Ramirez-Mendoza et al., 2018). Dash et al. (2019) highlight the importance of combining theoretical knowledge and practical experience. Nga & Shamuganathan (2010) support incorporating sustainability and social responsibility principles into higher education programs.

Industry 4.0 related competencies

The research of Hecklau et al. (2016) has gained attention by scholars (Quatrociocchi et al., 2018; Simic & Nedelko, 2019) by aggregating the competencies related to Industry 4.0 into four segments, namely social, personal, methodological, and technical. These were updated one year later as (i) social competencies including communication and cooperation skills and leadership competence; (ii) methodological competencies that encompass analytical competence, complex problem solving, and decision making; (iii) personal competencies including creativity, willingness to learn, flexibility and adaptability; and (iv) domain competencies with digital networks, digital security, process understanding, coding, and interdisciplinary competence. The authors conclude that the higher the technology integration, the more emphasis is placed on analytical competence (Hecklau et al., 2017).

Müller et al. (2018) suggest searching for drivers of the implementation of Industry 4.0 by working with the classification of adequate personal, social/interpersonal, action-related, and domain-related competencies.

Miranda et al. (2019) suggest the need to develop five predefined core competencies, namely, critical thinking, creativity and innovation, cooperation, collaboration, and communication. Critical thinking development leads to developed analytical skills; creativity and innovation being fundamental to develop new ideas; cooperation in practical exercise leads to independent work, responsibility, communication, and collaboration. The view of open

innovation laboratories presented by Miranda et al. (2019) is following the vision of Cioalacu et al. (2018), who promote engineering skills and competencies such as innovation, complex problem solving, knowing in action, modular quality control, artificial intelligence methods, and rapid prototyping, and leadership competencies such as creativity, people management, critical thinking, reflection in action, association and negotiation, and AI-based decision.

Kazancoglu and Ozkan-Ozen (2018) suggested new criteria for personnel selection environments according to the changes in job profiles due to Industry 4.0 from an operations management perspective. They have used 11 criteria based on the frequency used in the literature (Dombrowski & Wagner, 2014; Lorenz et al., 2015) and sorted the importance levels of selected criteria as follows (in descending order), concluding that for Industry 4.0, the teamwork and organizational understanding are priorities:

- the ability to deal with complexity and problem solving;
- thinking in the overlapping process;
- flexibility to adapt to new roles and work environments;
- continual interdisciplinary learning and cooperation;
- organizational and processual understanding;
- trust in new technologies;
- the ability of fault and error recovery;
- combining know-how related to a specific job or process;
- ability to interact with modern interfaces;
- awareness of IT security and data protection;
- knowledge on IT and production technologies.

There are several articles in which the core competencies and skills were identified in a systematic literature review (Hecklau et al., 2017; Hernandez-de-Menendez et al., 2020).

To the authors' best knowledge, no research was done to explore the importance of Industry 4.0 related education, skills, and competencies. Therefore, based on the indications from the literature review, the following research questions are suggested to fulfill the article objectives:

RQ1: What are the most researched topics related to Industry 4.0, and what is the position of formal education and skills & competencies associated with articles dedicated to Industry 4.0?

RQ2: To what extent has the approach towards the academic research of education and skills & competencies related to Industry 4.0 developed over the last ten years?

RQ3: What are the requirements for formal education and skills & competencies related to Industry 4.0 most frequently discussed in the literature associated with Industry 4.0?

2 METHODOLOGY

The methodology used in the current research is bibliometric analysis. Bibliometric studies are useful when there is a need to collect evidence from previously published research articles. The high number of articles published worldwide makes it impossible for researchers to remain current with global science (Aria & Cuccurullo, 2017). This approach makes it possible to map the continually changing science. The analysis was conducted in R software using a bibliometric package for comprehensive science mapping analysis after downloading the records into the BibTeX format.

To answer RQ1, the data were retrieved from the database Scopus and Web of Science (WoS) in January 2021. The search for the set phrase "industry 4.0" was conducted. The two databases were used to learn about the potential difference amongst the sources included in a different database. The search included the titles, keywords, and abstracts.

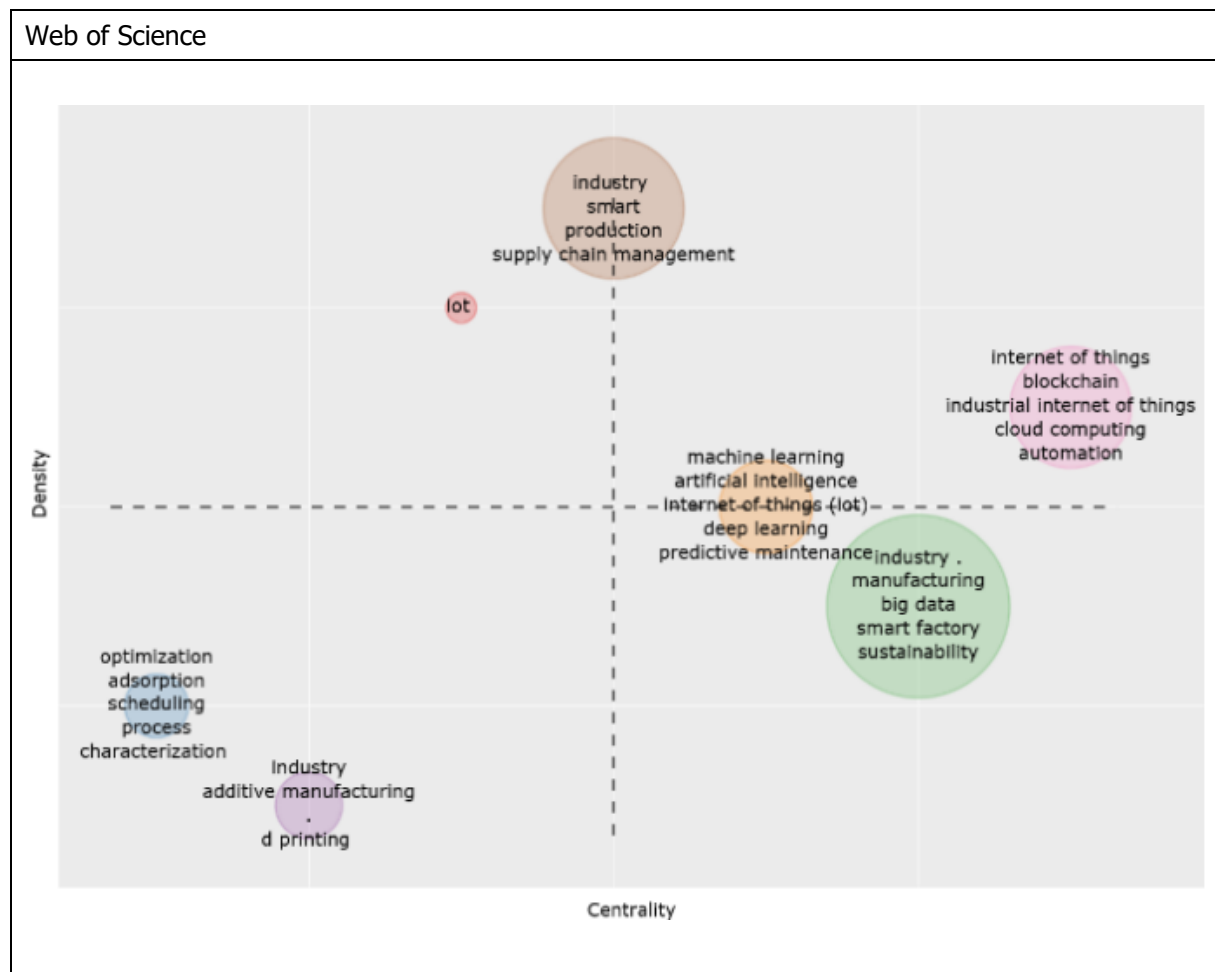
To answer RQ2 and RQ3, the query string was extended to capture Industry 4.0 phenomenon in a more extended period. The most relevant out of the top 20 keywords derived from research articles related to Industry 4.0 were used to substitute the term Industry 4.0. Words with a general meaning, such as manufacturing or sustainability, were excluded to prevent a large dataset that might result in much noise (Chen et al., 2021). From 9301 articles, only sources from social science and engineering were selected through the WoS categories. Visualization of results was done in R.

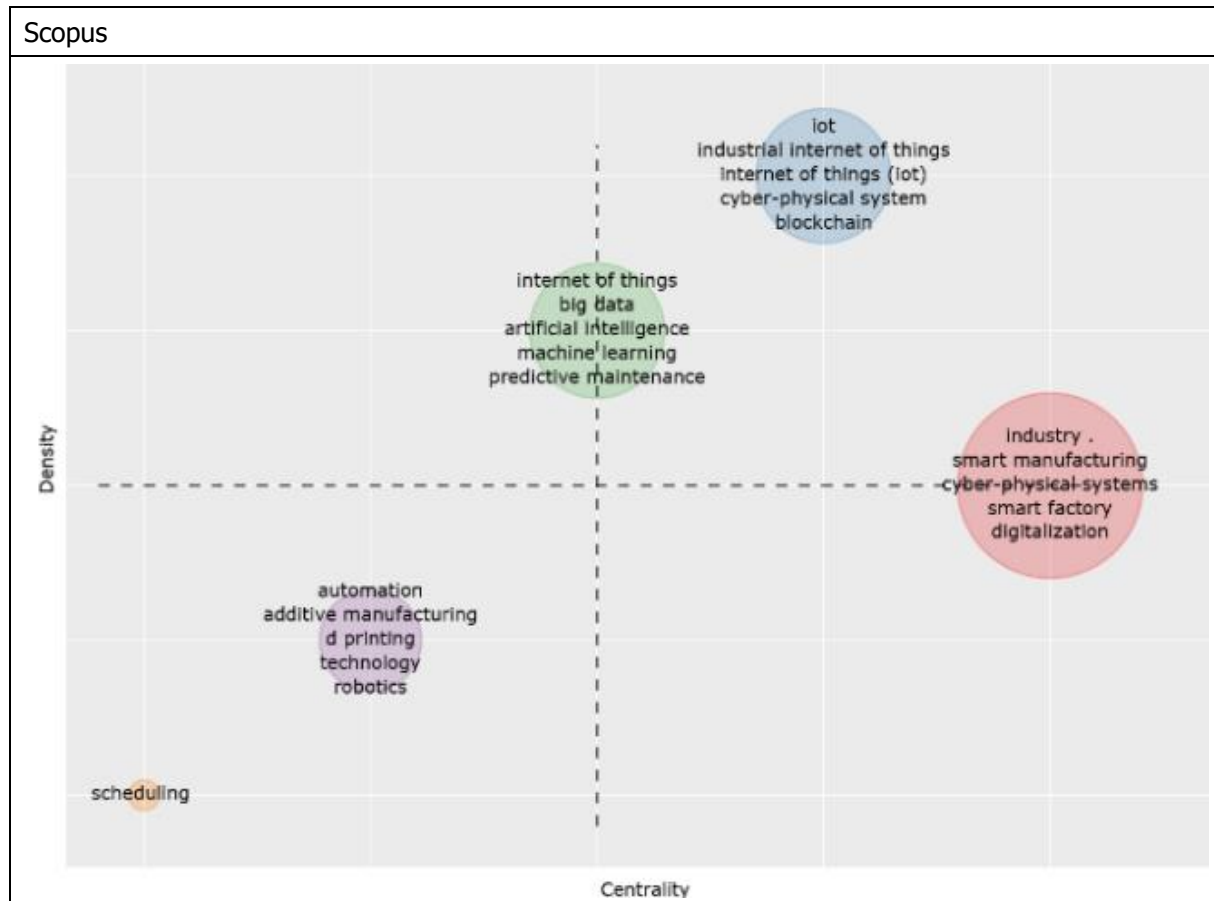
3 RESULTS AND DISCUSSION

To answer the **RQ1**: "What are the most researched topics related to Industry 4.0, and what is the position of formal education and skills & competencies associated with articles dedicated to Industry 4.0?" a search revealed 4673 records from WoS and 4417 from Scopus, all containing the phrase "Industry 4.0" in the title, keywords, or abstract.

The cluster analysis revealed the areas of research focus (Figure 1). The identified clusters in WoS are industry and smart production, manufacturing and big data, machine learning, artificial intelligence and IoT, internet of things and blockchain, optimization, and additive manufacturing. Similar results were derived from Scopus. Since there were no outcomes related to the workforce, capabilities, skills, or education found among the clusters, it can be concluded that the educational topics seemed to have less attention among the currently published Industry 4.0 articles.

Fig. 1 Clusters in Industry 4.0 search





Source: authors based on data from WoS and Scopus

The co-occurrence analysis of articles' keywords retrieved from WoS and Scopus (Figure 2) was done to confirm the above, showing that any words related to the RQ1 are not among those most frequently co-occurring with Industry 4.0 (Figure 2). The top 20 keywords are listed in Table 1.

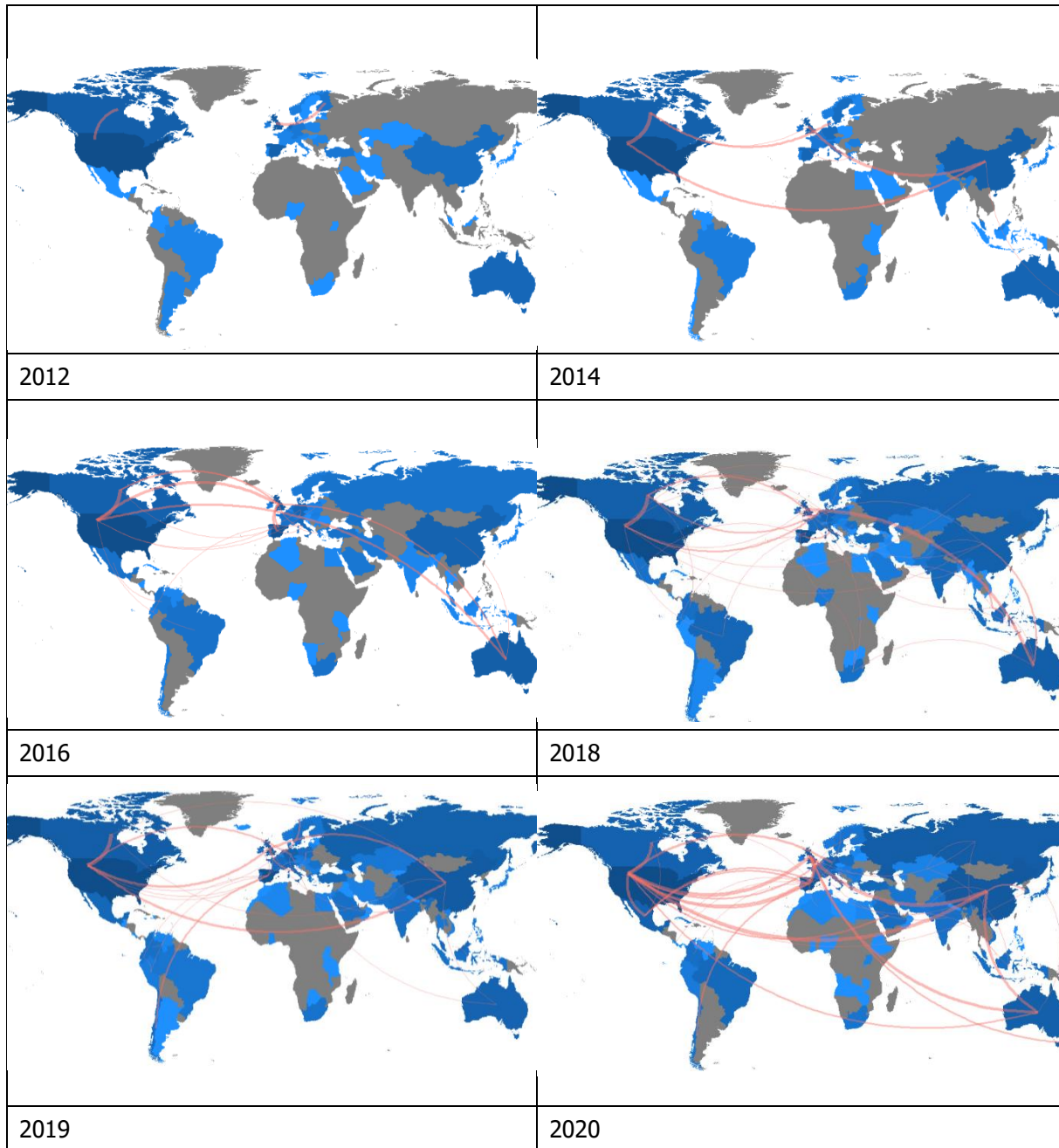
Tab. 1 Top 20 most frequently co-occurring articles' keywords related to Industry 4.0

Industry 4.0	1196	Digitalization	89	Optimization	58
Internet of things, IoT	267	Smart manufacturing	88	Cloud computing	57
Manufacturing	127	Machine learning	80	Industrial Internet of things	56
Big data	103	Innovation	78	Artificial intelligence	54
Sustainability	95	Industry	76	Simulation	54
Smart factory	93	Blockchain	62	Technology	52
Cyber-physical systems	92	Digital twin	60		

Source: authors based on data from WoS

related to Industry 4.0 and education, skills & capabilities was growing from 2015 to the peak in 2020, with 393 articles published and quoted in WoS in 2015, 385 in 2016, 533 in 2017, 582 in 2018, 753 in 2019, and 868 in 2020. Therefore, the topic is within the Industry 4.0 articles relatively new, and the growing number of articles over the past few years indicates increasing interest. The roots of the trend are in Europe and North American countries, with the worldwide spread that was in its early years encouraged by the collaboration of the first-mentioned and Chinese authors. In 2020, there were already authors in all the continents who published related articles.

Fig. 3 Country collaboration map



Source: Authors based on data from WoS

Further analysis of the data retrieved from WoS addresses the **RQ3** – “What are the requirements for formal education and skills & competencies related to Industry 4.0 most

frequently discussed in the literature associated with Industry 4.0?” At this stage, the analysis would present the citation analysis, subsequently being followed by the occurrence of articles’ keywords (Table 2).

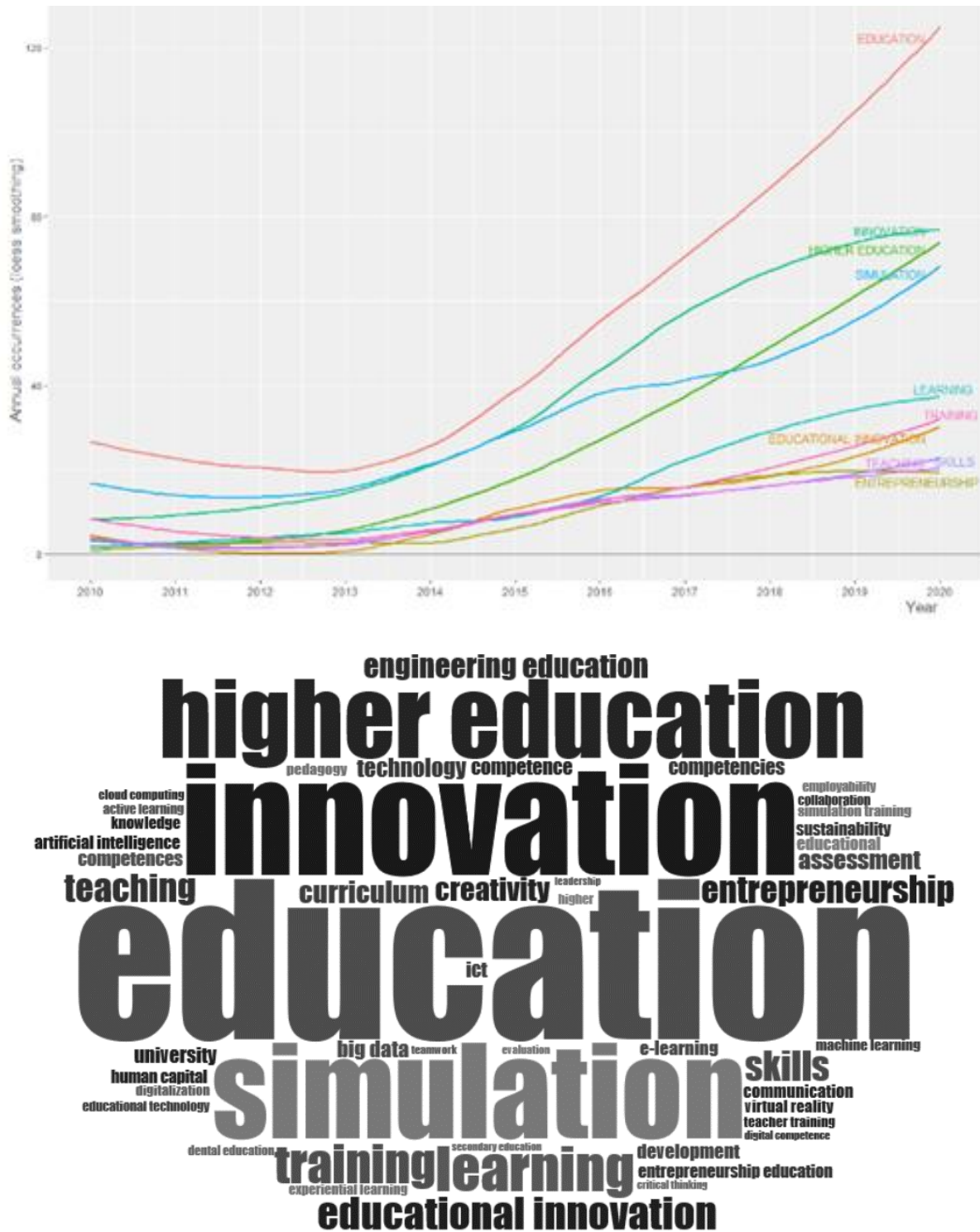
Tab. 2 The most cited articles published in the period related to education OR workforce readiness (2010 – 2021)

Rank	Document	Citations
1	MATPOWER: Steady-State Operations, Planning, and Analysis Tools for Power Systems Research and Education (Zimmerman et al., 2011)	2774
2	Business Intelligence and Analytics: From Big Data to Big Impact (Chen et al., 2012)	1764
3	Data Science, Predictive Analytics, and Big Data: A Revolution That Will Transform Supply Chain Design and Management (Waller & Fawcett, 2013)	453
4	Do Institutions Matter for Regional Development? (Rodríguez-Pose, 2013)	401
5	Effectiveness of virtual reality-based instruction on students’ learning outcomes in K-12 and higher education: A meta-analysis (Merchant et al., 2014)	387
6	Rethinking Giftedness and Gifted Education: A Proposed Direction Forward Based on Psychological Science (Subotnik et al., 2011)	304
7	Open Innovation: Past Research, Current Debates, and Future Directions (Lichtenthaler, 2011)	291
8	The Influence of Personality Traits and Demographic Factors on Social Entrepreneurship Start-Up Intentions (Nga & Shamuganathan, 2010)	210
9	Game-based learning and 21st-century skills: A review of recent research (Qian & Clarc, 2016)	184
10	An online game approach for improving students’ learning performance in web-based problem-solving activities (Hwang et al., 2012)	140

Source: authors based on data from WoS

The citation analysis and the analysis of articles’ keywords uncovered some major research topics related to Industry 4.0 with the focus on education and skills & competencies. The analysis confirmed that the emphasis is put on innovation, higher education, and educational innovation (Figure 4). Education is suggested as one of the institutions contributing to innovations (new technologies, products, and processes). It also determines the absorption of innovations generated elsewhere (Rodríguez-Pose, 2013). Innovative education can support readiness to adopt new technologies and decrease the risk of a lack of qualified employees. The growing number of articles published concerning education (Figure 4) reflects this field’s growing emphasis. The need to adapt the education and training programs to the changing conditions and requirements is present in most cited articles (Chen et al., 2012; Waller & Fawcett, 2013). Within innovative study programs, the emphasis is suggested on analytical skills development.

Fig. 4 Most relevant articles' keywords



Source: Authors based on data from WoS

In the keywords co-occurrence analysis, teacher's training is also cited with the direct link to digital competence, ICT (information and communication technology), higher education in general, and innovation. This finding is supported by the research of Waller and Fawcett (2013), who conclude with the statement that the focus on analytical skills connected with the domain knowledge is expected not only from the graduates but also from academics. Skilled and motivated educators are important for developing the competencies that will be needed

to manage work in the future (Miranda et al., 2020). Competence in the present study appears with creativity, communication, collaboration, data science, digitalization, and digital technology.

Technologies can support active learning. Amongst the used tools, most commonly cited is simulation that is co-occurring with training, virtual reality, engineering, and medical education. Working with more sophisticated technologies will pose new pressure and requirements on employees (Rauch, 2020). Even if employees have a positive attitude towards training in new technologies, there must be an evident and apparent use of the gained skills (Kaasinen et al., 2020). Professional training can also be enhanced using technologies such as simulations or virtual reality. These should be used the way to be adjusted to the individual needs and environments. In recent research, the pressure on developing the ability to learn and accelerate learning has been expressed (Rauch, 2020).

Essential skills and competencies related to Industry 4.0 have been defined. The top ten skills listed by WEF (2020) support the necessity to develop an attitude towards lifelong learning. Future study programs should initiate the attitude towards learning. With the right programs in place, the education system can partly take over the companies' burden in training, re-training, re-skilling, and life learning, supporting further cooperation between the business and education, and research sectors.

CONCLUSION

The current study suggests that the term Industry 4.0 is in the research articles linked to manufacturing, smart factories, supply chain management, technologies such as IoT, Big Data, digital technologies, artificial intelligence, blockchain, and cloud computing. The frequency of the articles exploring the education, skills & competencies related to Industry 4.0 is lower, and none of the education-related keywords was found amongst the vital topic associated with Industry 4.0. Still, the number of published articles in this field has been growing over the last few years and encompasses all continents. A growing research interest related to education is emphasizing higher education and innovation. Study programs need to proceed with the evolution and be adjusted to comply with society's future needs. Increased emphasis is in the research articles on analytical skills that support fast decision-making when massive data are available. Big data analytics should not be overestimated as domain knowledge is equally essential (Waller & Fawcett, 2013) and should go hand in hand with analytical skills.

To conclude, there is a space for further research related firstly to systematic literature review of the context of understanding the readiness of the education system to the changes faced by Industry 4.0, followed by case studies of the countries with the best fit of the education system and industry need, further explored by empirical research of the match between industry expectations and system readiness.

When evaluating the research results of the present article, the study limitations need to be considered. One of them is the methodology itself in terms of the inability to assess the search context. The search based on keywords can also produce articles that include the keywords in their title, keywords or abstracts, but are of a different focus (Saha et al., 2019). The selection of databases can also impact the research results.

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Domestic Tourism as a Factor of Survival and Recovery of Tourism in the V4 Countries (a comparative study)

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Abstract: From review of the official tourism authorities' documents and analysis (UNWTO, WTTC) comes out that domestic tourism is one the key factors of tourism businesses survival and the first step to recovery. The paper aims to map and characterize the current state of tourism of the V4 countries and to compare the potential of domestic tourism as a factor of survival and tourism recovery after COVID-19 pandemic. The methodology of the paper is based on comprehensive data analysis, descriptive statistics and comparison of the economical and tourism indicators and results. The paper combines different sources of data in order to analyse the situation from more perspectives. The results reveal that the best position of domestic tourism is in Slovakia and the Czech Republic. In both countries, the scorecard demonstrates the high potential of domestic tourism to be a significant factor of business survival and tourism recovery.

Keywords: tourism, tourism recovery, V4 group, COVID-19 pandemic

JEL Classification codes: L83, O57, Z30

INTRODUCTION

Global tourism according to the data from the World Tourism Organization (UNWTO) (2021a) suffered its deepest crises in history with a drop of 74% in 2020 in international arrivals (1 billion fewer) in comparison with the previous year 2019 due to the outbreak of the COVID-19 pandemic. This happened due to an unprecedented fall in demand and widespread travel restrictions. The impact of global economic crises (2008) during the year 2009 was only of the 4% decline in international arrivals. The collapse in international tourism represented also an estimated loss of USD 1.3 trillion in export revenues, which is more than 11 times the loss recorded during the year 2009 global economic crisis. This new health, social and economic crisis had also put between 100 and 120 million direct tourism jobs at risk, many of them in micro, small and medium-sized enterprises. All world regions and sub-regions were affected. In a short period, global tourism market faced the shift from overtourism (Diaz Parra, 2020) to non-tourism and the negative impact on the tourism and hospitality value chain (Gössling et al, 2020), which collapsed. Europe recorded a 70% decrease in arrivals in 2020 in comparison with 2019, despite a small and short-lived revival in the summer of 2020. The region suffered the largest drop in absolute terms, with over 500 million fewer international tourists in 2020 than in 2019 (UNWTO, 2021a). The more dependent the region, sub-region, or country itself are on international arrivals, the more they were impacted. Domestic tourism as well as intraregional tourism in many regions, subregions, and countries, plays a very important role in the pandemic and post-pandemic Covid-19 period. Both are considered to be

a recovery driver (Euromonitor, 2021) or an emergency exit in 2020, but will probably continue for 2021 as the COVID-19 crisis is far from over.

This paper brings the comparison of countries, which are members of the Visegrad Group (also known as the "Visegrad Four" or simply "V4"). V4 is the important regional grouping of the four Central European states: Czech Republic, Hungary, Poland, and Slovakia. It was established in 1991 when the V4 member states signed a declaration of close cooperation on the path to European integration (MV CR, 2019). Today, all V4 countries are members of the EU and focus on promoting cooperation and stability in the wider Central European region. The V4 countries have many common features: history, economy, interests, but also many differences. It also appears in the field of tourism. According to the UNWTO (2020a) regional division, the V4 countries belong to the Central / Eastern Europe subregion.

1 LITERATURE REVIEW

1.1 Factors of (domestic) tourism's development

The most frequently mentioned factors (Horner 1996, Palatkova 2006, Petru 2007) that affect tourism are mainly the political situation of the country, as well as economic, demographic, ecological, legislative, social, or material-technical factors. All these factors also operate in domestic tourism (Lim, 1997). In many countries, domestic tourism is dominant concerning with respect to international flows, in terms of both size and economic contribution (Massidda, 2012). One of the most important factors is, of course, the income of the population as an economic factor. Seddighi and Shearing (1997) and Garin-Munoz (2009) find that relative real income is one of the main determinants of domestic tourism. The effect is positive till a certain level though some research reveals that the inhabitants with growing incomes prefer foreign destinations to their home country (Athanasopoulos and Hyndman, 2008). Among non-economic factors, it is the motivation of travellers associated primarily with the natural and cultural-historical attractions of the country/destination. Motivation is one of the most important elements in the decision-making process (Swarbrook, 2007). The country's attractiveness is measured using the TTCI (Travel and Tourism Competitiveness Index). This research took into account the sub-index of natural and cultural resources. When choosing a destination, it is crucial that potential travellers feel safe. According to Holloway (2012), safety and security are also essential when it comes to the image of a tourist destination and the satisfaction of visitors. During the COVID-19 pandemic, the issue of health security plays a very important role in choosing a destination. The restrictions and hygiene standards were similar in all V4 countries and the health care systems are well developed. During the COVID-19 crisis, travellers prefer their own country when choosing a holiday, where they know the security risk better.

According to UNWTO (2020a) domestic tourism is over six times larger than international tourism (in numbers of overnight trips). Domestic tourism expenditure is higher than inbound spending in most large destinations. Statistical data do not include same-day trips, visits of friends and relatives as well as holidays/trips to second homes (private cottages, private countryside houses). Owning second homes or cottages greatly contributes to the development of domestic tourism outside its commercial form. Domestic tourism in this form is very developed, for example, in Sweden and France (Horner, 1996), as well as in the Czech Republic.

The literature focuses on the demand side of the market – tourists' motivation to spend holidays in their home country or the role of satisfaction. The situation in summer 2020 is unique. This research is putting together the macroeconomic criteria and tourism statistics.

1.2 Impact of the crisis on the tourism

Coronavirus disease (COVID-19) dominated 2020. As the year 2020 ended globally (WHO, 2021a) cases rose to 83,326,479 cases and 1,831,703 deaths. In both cases, Europe's share of these figures was 32%. The disease started in January 2020 in China. In March 2020, it continued to all continents in the world (in 146 countries), the spread slowed down in the summer period, and returned in the second wave in autumn 2020. By the end of 2020, the vaccines arrived but challenges continued as new COVID-19 strains appeared (AJMC, 2021). These can cause re-infection and faster spread of the virus in 2021. In 2020 international, regional, and local travel restrictions immediately affected national economics, including tourism systems, e. g. international travel, domestic tourism, and segments as air transport, cruises, accommodation, cafés and restaurants, conventions, festivals, meetings, or sports events. As a result of the pandemic, many countries (UNWTO, 2020b) imposed travel bans, closed borders, or introduced quarantine periods, which caused a decline of both international and domestic tourism. Until 2019 according to UNWTO (2020a), tourism was the key economic sector in many advanced and emerging economies. Tourism was also one of the largest and fastest-growing economic sectors in the world. Since 2017 the global picture of travel and tourism growth forecast was as 4% for each year for the following ten years (WTTC, 2017) that lasted until 2019. All this was happening despite terrorist attacks and political instabilities, health pandemic, and natural disasters. International tourism institutions and the tourism sector itself could not imagine a global health pandemic with such far-reaching consequences. An unprecedented tourism situation emerged: from a forecasted good 2020 season to an almost lost season and rather bleak prospects for the years thereafter (Gössling et al., 2020). Global tourism was the most affected economic sector by the COVID-19 pandemic, but on the other hand, due to the tourism globalisation, the COVID-19 has spread worldwide in a pandemic.

1.3 Recovery of tourism – strategies, possibilities, recommendations

The COVID-19 pandemic in 2020 was in two waves, and all countries and their governments were adopting their lockdowns. The majority of European countries were closing their economies in March 2020 with reopening in the middle or end of June 2020, having the short revival in summer months and new closures in September/October 2020 lasting till the end of 2020, and onwards. There were adopting measures for the economy and tourism recovery taking into consideration recommendations and guidelines of international bodies.

International institutions (WHO, OECD, European Commission) and tourism organizations (UNWTO, WTTC, ETC) during the year 2020 were coming with health recommendations and guidelines for recovery, different types of support of economies including the tourism industry. WHO (World Health Organization) concentrated its attention on health and security information, guidelines, and recommendation for travel (especially air travel), for workers, and staying at hotels and other accommodation establishments. At the European Union level, there is enhanced the role of regions, both in EU programmes (especially ERDF) as in national plans of EU member states. At the level of the EU, there will not be any direct fund for tourism in the new programming period 2021-2027 (Houska, 2019). Recommendation of EU (EC, 2020a) for state aid were including direct grants, selective tax advantages, and advance payments, state guarantees for loans taken by companies from banks, subsidised public loans to companies, safeguards for banks that channel State aid to the real economy, short-term export credit insurance. Most tourism businesses (around 80 %) are micro, small, and medium-sized (UNWTO, 2020a), which means that it was sometimes difficult for them to reach these supports. In EU guidance (EC, 2020b) is stated, that citizens should be connected to local

tourism offer and local attractions should be promoted. A voucher system was recommended to support tour operators, local hotels, and restaurants.

Among UNWTO's (2020b) recommendations for recovery and resilience of tourism, they are such responsible travel, solidarity, and supporting recovery. In UNWTO (2020b) COVID-19 tourism recovery package has mentioned the importance of domestic tourism for the recovery including a specific recommendation for domestic tourism marketing strategy with the important role of DMO (Destination Management Companies). WTTC (2020b) emphasizes the importance of safety in the tourism sector, even if 100% safety cannot be guaranteed. WTTC in cooperation with experts created protocols taking into account WHO (2020b) and CDC guidelines (2020) in general and for different sectors of the tourism industry (e.g. hospitality, airports, tour operators, attractions, etc.). The ETC, European Travel Commission (2020b) supported all measures to facilitate travel in Europe. The aim is to create a sustainable future for the travel and tourism ecosystem, to create a more resilient and sustainable destination Europe in the future. According to the ETC (2021), the vaccine roll-out and improved testing and tracing regime will provide some grounds for optimism for a gradual recovery in 2021. Nevertheless, the return to the typical international demand pattern will be gradual with 2019 levels predicted to return by 2023. The return to travel will, however, happen with new consumer habits, calling for strong adaptation and agile responses from the tourism sector. Ensuring safe travel opportunities should become a priority for destinations as potential travellers are likely to travel more slowly, closer to home, and lesser-known destinations. A quicker easing of restrictions for domestic travel and stronger demand from residents to travel locally provides some support to those hotels that remained open; however, a second wave of the COVID-19 outbreak placed a halt to the travel rebound.

Domestic tourism, which accounts for around 75 % of the tourism economy in OECD countries (OECD, 2020), as expected will recover more quickly after the COVID-19 pandemic. According to Euromonitor International research (2021), there will be a permanent change in consumer behaviour. Domestic tourism expenditures and average spend per trip in 2019-2024 will go up. Domestic tourism expenditure as a total % of the tourism in 2020 was 73 % (e.g., in China, U.S.A), up 9% in 2019. One of the key takeaways of this survey was, that in the short to mid- term, there will be more away from international travel to destinations closer to home with domestic tourism as a recovery driver.

2 METHODOLOGY

The paper aims to map and characterize the current state of tourism of the V4 countries and to compare the potential of domestic tourism as a factor of survival and its potential for tourism recovery after the COVID-19 pandemic.

The methodology of the paper is based on comprehensive data analysis, descriptive statistics, and comparison of the economical and tourism indicators and results. The paper combines different sources of data to analyse the situation from more perspectives. The sources were chosen and combined with regard to the availability of the data. The following data sources are used: World Bank, Eurostat, World Tourism and Travel Council (WTTC), World Tourism Organisation (UNWTO), Statistical offices of the individual countries, World Economic Forum (WEF).

To reach the aim of the paper, the following research questions are set:

- (1) What was the state of international and domestic tourism in the V4 countries before the COVID-19 pandemic?
- (2) What is the impact of the pandemic and the restrictions on international and domestic tourism?

- (3) What is reaction of the international and domestic markets in case the restrictions are being eased?
- (4) What is the potential of domestic tourism as a factor of survival and recovery of tourism?

Data from different sources are analysed, and domestic tourism and its potential are assessed from several points of view to answer these questions. A descriptive statistic is used to analyse the data that are relevant to the aim of the paper and an overall picture of the situation in tourism is described. As evaluation method a scorecard with an order of the countries in individual criteria was chosen. The robustness of the scorecard was examined in two ways to assure the relevance of research results. The first way includes the expert estimate of the weights based on the expected importance (1-10); the second way of testing was the number of ranks 1 and 2 in the criteria.

Even though the source methodologies differ, the individual comparisons of the indicators draw data from the same source. The only exception is data from the countries' statistical offices and which follow the recommended UNWTO methodology.

3 RESULTS AND DISCUSSION

3.1 Basic and economic indicators of V4 countries

This section brings an insight into the general characteristics and economic performance of the countries. It provides important information for the following analysis. The four countries are different in terms of number of inhabitants; however, they are similar in terms of economic performance. The purchasing power of the inhabitants expressed as GDP per capita is between EUR 14,889 and EUR 20,910. Compared to Germany (as an important source country), the V4 countries' purchasing power is still at around 35% of German level.

Tab. 1 Basic and economic indicators

	Number of inhabitants (million)	GDP (2019) (billion euros)	GDP per capita in EUR (2019)	Unemployment rate – July 2020, in %
Czech Republic	10.71	223.95	20,910.4	2,7
Slovakia	5.46	94.17	17,247.3	6,8
Poland	37.85	529.03	13,977.0	3,2
Hungary	9.66	143.83	14,889.2	7,2

Source: World Bank, Statista.com, own calculations

For assessing the potential of domestic tourism, we will take the GDP per capita into account. As the price levels in the countries are similar, the better the financial situation of the residents is, the more they can spend on travel.

3.2 Tourism in V4 countries from the economic perspective

Various sources of information are used for evaluation of the economic effect of tourism in the researched countries. The up-to-date data are not available in all sources. Most of the data is

drawn from the WTTC, if a deeper insight is required, the TSAs (Tourism satellite accounts) of the individual countries are used.

Tab. 2 Tourism indicators – economic performance

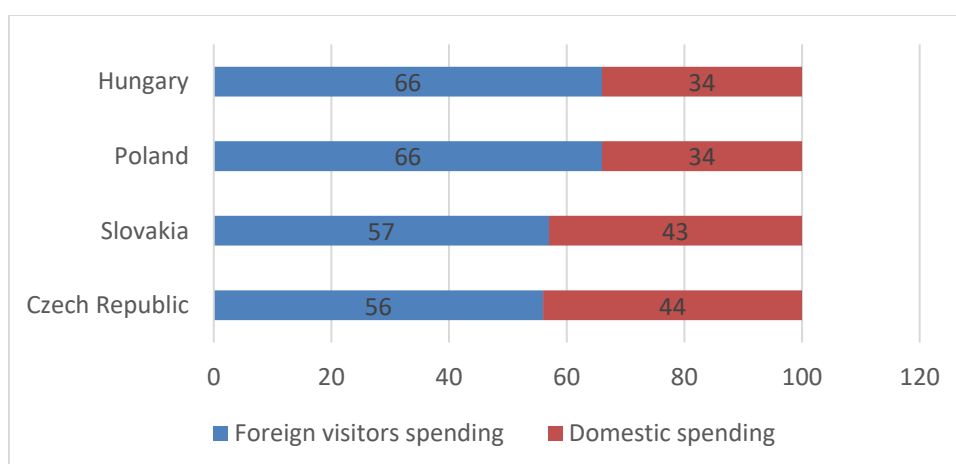
	Direct tourism contribution to GDP in % (2018)	Total tourism contribution to GDP in % (2019)	Tourism contribution to export in % in (2019)
Czech Republic	2.7	6.5	4.1
Slovakia	2.6	6.3	3.0
Poland	1.9	4.7	4.4
Hungary	2.6	8.3	6.4

Source: WTTC (2020), WTTC (2019), WEF (The Travel & Tourism Competitiveness Report 2019)

Tourism is in V4 countries an important part of the economy. Even if the direct contributions to the GDPs are not that significant (between 1.9% in Poland and 2.7% in the Czech Republic) (WEF, 2019), tourism is an important sector due to the multiplication effect. According to WTTC's Economic Impact Reports, the total travel and tourism's contribution to GDP was in 2019 between 4.7% (in Poland) and 8.3% (in Hungary). In Slovakia, it was 6.3% and in the Czech Republic, it was 6.5%. The total (direct and indirect) effect is taken into account (WTTC, 2020).

Inbound tourism is part of export (so-called invisible export) and in the V4 countries it creates between 3% (Slovakia) and 6.4% (Hungary) of the national exports. The next figure shows the distribution of travel and tourism's contribution to GDP. In the V4 countries, the share of domestic tourism's contribution is between 34% and 44%. The main part of the contribution is in all countries produced by inbound tourism.

Fig. 1 Distribution of travel and tourism direct contribution to GDP in 2017 (%) - TSA



Source: Eurostat, Data collection on TSA 2019

Worldwide the division of expenditures is significantly different: international tourism creates only 28.7% and domestic tourism 71.3% (WTTC, 2020, Travel & Tourism - Global Economic Impact & Trends 2020).

To evaluate the potential of domestic tourism for survival and recovery after the COVID-19 pandemic, it is important to know the financial results and comparison of inbound, domestic, and outbound tourism.

Tab. 3 Tourism indicators – financial performance

	Inbound tourism expenditures (million EUR) TSA-2017	Domestic tourism expenditures (million EUR) TSA-2017	Outbound tourism expenditure (million EUR) TSA-2017
Czech Republic	6.263	4.485	2.867
Slovakia	2.465	1.870	1.314
Poland	8.446	4.380	3.145
Hungary	4.147	2.146	2.208

Source: Eurostat (2019). Tourism Satellite Accounts in Europe, 2019 edition

All countries have a positive balance in regard to tourism expenditures. The foreign tourists coming to the V4 countries spend more money than the residents when going abroad. This fact indicates that it will be difficult to replace the inbound expenditure with an increase in domestic tourism.

3.3 Tourism in V4 countries

All the countries have a similar history – communist regime - and international tourism started developing in a larger scale after the revolution in 1989. The countries had to go a long way to their nowadays position. From the TTCI (Travel & Tourism Competitiveness Index) results that the most competitive country is the Czech Republic, followed by Poland, Hungary, and Slovakia. The index consists of four areas; in terms of country attractiveness for residents, the most important will be the natural and cultural resources (based on the prevailing motivation). From this point of view, Poland is the most competitive country.

Tab. 4 Travel & Tourism Competitiveness Index - 2019

	TTCI position (from 140)	TTCI score (max. 7)	Natural resources score	Cultural resources score	Natural and cultural resources
Czech Republic	38	4,3	2.5	2.4	2.5
Slovakia	60	4	3.4	1.6	2.5
Poland	42	4,2	3.2	3.0	3.1
Hungary	48	4,2	2.7	2.3	2.5

Source: World Economic Forum, (<https://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/>)

The highest number of collective accommodation establishments (CAE) is in Poland (11,251) (<https://stat.gov.pl>), followed by the Czech Republic (9,383) (www.czso.cz), Slovakia (www.statistics.sk) and Hungary (3,475) (www.ksh.hu). When we have a look at the number of rooms and beds, the situation slightly changes due to larger hotels on average in Hungary.

The next table shows the number of tourists in CAE and reveals also the proportion between international and domestic tourists. The larger the share of domestic tourists in the CAE, the smaller the gap in occupancy when the international tourism is restricted.

Tab. 5 Tourist arrivals at CAE - 2019

	Tourist arrivals at CAE total in 2019 (million)	International tourist arrivals at CAE in 2019 (million)	Domestic tourist arrivals at CAE in 2019 (million)	Share of domestic tourists in CAE (%)	Tourism intensity (overnights / inhabitant)
Czech Republic	20.698	9.590	11.108	53.7	5.34
Slovakia	6.483	2.475	3.957	61.0	2.04
Poland	35.668	7.471	28.198	79.1	2.34 (2018)
Hungary	12.920	6.169	6.751	52.3	3.22

Source: Eurostat, own calculations, Tourdata.cz, statista.com

All the V4 countries have more than 50% of residents in the CAE, in Poland the residents create even 79.1%. Tourism intensity is the ratio of nights spent at CAE relative to the total inhabitants of the country. The highest tourism intensity is in the Czech Republic. The higher the ratio, the more difficult will be to fill the capacity with only domestic tourists.

3.4 Tourism in V4 countries in 2020

The impact of the pandemic on tourism is devastating. Even if the governments support the businesses, the subsidy usually does not cover the costs. This section reveals the extent to which tourism in these countries has been affected by the COVID-19 pandemic. The table brings the results regarding the number of tourists in CAE. In all V4 countries, the number of guests in CAE dramatically dropped down.

Tab. 6 Tourist arrivals at CAE – analysis of available results from 2020 (in million)

	Tourist arrivals at CAE total	Index 2020/2019	International tourist arrivals at CAE	Index 2020/2019	Domestic tourist arrivals at CAE	Index 2020/2019
Czech Republic (till 9/2020)	10.070	0.581	2.658	0.321	7.411	0.821
Slovakia (till 8/2020)	2.575	0.590	0.734	0.429	1.841	0.695
Poland (till 9/2020)	15.455	0.556	1.986	0.345	13.466	0.611
Hungary (till 12/2020)	5.182	0.401	1.326	0.230	3.858	0.571

Source: Eurostat, own calculations

The most significant decrease in tourist arrivals in CAE was in Hungary. Numbers from Hungary represent the whole year and indicate the drop off by almost 60% in total. In Hungary, the longest-lasting lockdown most probably caused a large decrease in domestic tourists to 57.1%. International tourist arrivals declined in Hungary to 23% in comparison to 2019.

The other countries published numbers only for a part of the year, and therefore the results can be better as they do not include autumn lockdown and Christmas time.

The least affected tourism was domestic tourism in the Czech Republic (drop down to 82.1% in the first three quarters). Such numbers of tourist arrivals would enable majority of the hotels and businesses to survive. However, the change of tourists' structure leads to an uneven spread of the tourists among the regions. The worst data were in the destinations important for business travel, conferences, events, and the destinations important for international tourism (e.g., Prague).

The decline in all V4 countries was significant and approximately corresponding with the expected global numbers. Assumption of total world arrivals is the international arrivals decrease by 62%, for domestic by 37% (WTTC, Europe Economic Impact from COVID-19, 2020).

The above analysed data are from hotel statistics. If we focus on UNWTO statistics about international arrivals in the first three quarters of 2020, we observe the largest decline in international arrivals in the Czech Republic (-67.9%) and Hungary (-59.1) (UNWTO, 2021b). UNWTO also monitors the tourism receipts (equivalent to tourism expenditures from WTTC and TSA). The results from the first two quarters of 2020 show the largest decrease in Slovakia (-59%) and Hungary (-42.7%). The decline in receipts is not in line with the arrivals decline and the tourists decline in CAE. These decreases may be due to different monitoring periods. Receipts' statistical data do not include data from the main tourist season (July and August).

3.5 Potential of Domestic tourism for tourism survival and recovery

In general, the COVID-19 pandemic will have a much more significant effect on tourism and tourism businesses than expected at the beginning of the pandemic in March/April 2020. Based on the summer experiences of 2020, the pandemic brought not only travel restrictions but also changes in customers' behaviour. Tourism will recover slowly, and the expected time to return to the 2019 level is 2023 – 2024. Domestic tourists were taking a leading position in the recovery of global tourism (OECD, 2020). However, destinations/countries need to note that domestic travellers, which are bringing direct or indirect economic effects, could not replace international travellers and international tourism expenditure in all countries.

This section aims to evaluate and compare the domestic tourism position and its potential for the survival of tourism businesses and further recovery of tourism in the V4 countries. This section builds on the knowledge and data collected in previous parts, brings own analysis, and uses new information sources.

Concerning tourism, the residents in V4 countries have lower financial funds than the international tourists usually have. Germany is an important source country for all V4 countries (first or second position in arrivals). The only lower-income counties among the first three are Ukraine (third for Poland) and Romania (first for Hungary).

From the comparison of residents' tourism expenditures (outbound) and income from inbound tourism, it is evident that outbound expenditures of residents, if being spent in the home country, could not replace the total outage of international tourism. In all V4 countries, there was a period when the countries allowed international arrivals. On the other hand, during the summer period 2020, the residents were also allowed to travel abroad.

Tab. 7 Level to which the outbound expenditures can replace the inbound expenditures when spent in the home country

	Residents' outbound expenditure in comparison to inbound tourism expenditures (%)
Czech Republic	45,8
Slovakia	53,3
Poland	37,2
Hungary	53,2

Source: TSA of the individual countries, data from 2017

As shown in the table, the best position in this respect has domestic tourism in Slovakia and Hungary. The reasons are different – in Slovakia, the income from international tourism is relatively low; and in Hungary, the outbound expenditures are relatively high (it is the only V4 country with higher outbound than domestic tourism expenditures). Consumers' behavioral changes need to be considered: (1) the outbound expenditures are usually higher due to higher prices of the package tours, so the budget for domestic tourism can be lower on an individual bases and (2) many consumers have decided to postpone their foreign holidays until 2021 and not to spend the money saved on domestic holidays.

Analysing the CAE in table 5, a promising position of domestic tourism is in Poland. The gap to be covered by the domestic tourism after the outage of international arrivals is 20,1%. The second country is Slovakia with the share of international tourists in CAE of 39 %. However, if we return to table 3, despite the number of guests, domestic tourism does not generate as high income for the businesses and economy as the international tourists.

To evaluate the power of domestic tourism, the results from the 3rd quarter of 2020 will be analysed. The main season in the V4 countries is summer, the travel restrictions were eased July – September 2020 and the accommodation facilities were open (the only exception is Hungary where the second lockdown started on the 1st of September 2020). The state in summer 2020 can most likely illustrate the situation when international travel will be possible but still restricted.

Tab. 8 Tourists in CAE in the 3rd quarter in 2020 (million)

	Tourist arrivals at CAE total	Index 2020/ 2019	International tourist arrivals at CAE	Index 2020/ 2019	Domestic tourist arrivals at CAE	Index 2020/ 2019
Czech Republic	5.979	0.79	1.079	0.32	4.930	1,17
Slovakia	1.632	0,78	0.395	0.46	1.239	1,00
Poland	8.117	0.69	0.857	0.35	7.260	0.79
Hungary	2.370	0.54	0.411	0.20	1.959	0.84

Source: Statistical offices (www.czso.cz, www.statistics.sk, www.ksh.hu, <https://stat.gov.pl>)

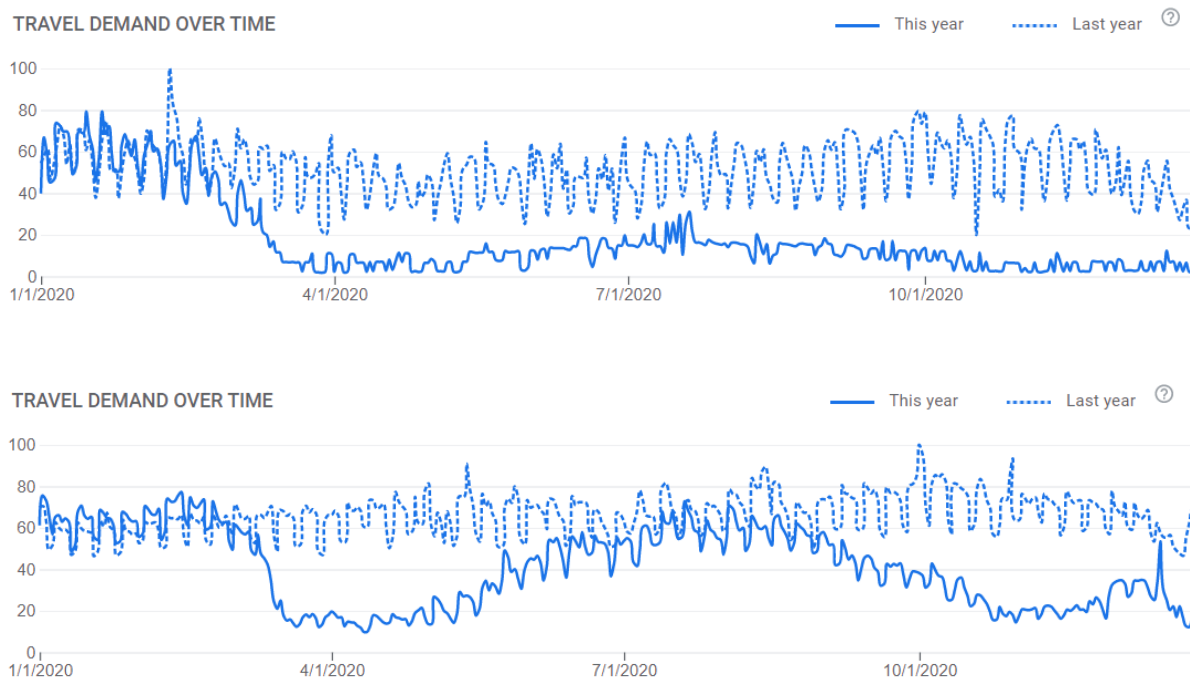
The table is showing, what was the segments' reaction after eased travel restrictions. International tourism stayed at a low level in all countries. The best situation was in Slovakia (46% of the respective period in 2019). The reason could be that the Czech Republic is an important source country for Slovakia, and tourism between these two countries is very natural

due to similar language, mixed families, a common history, etc. Poland came in second. However, the international tourists remained at the level of 35% of 2019.

Domestic tourism reached better results. In the Czech Republic, domestic tourism has played an important role in the survival of businesses, with a 17% increase compared to the 3rd quarter of 2019. In Slovakia, domestic tourism reached the level of 2019 in the respective period. These two countries had the best results concerning the drop off of the total tourist numbers. The total number of guests in the CAE in both countries reached 80% of 2019 in the period under review. It can be a good sign for the businesses' survival and the potential tourism recovery.

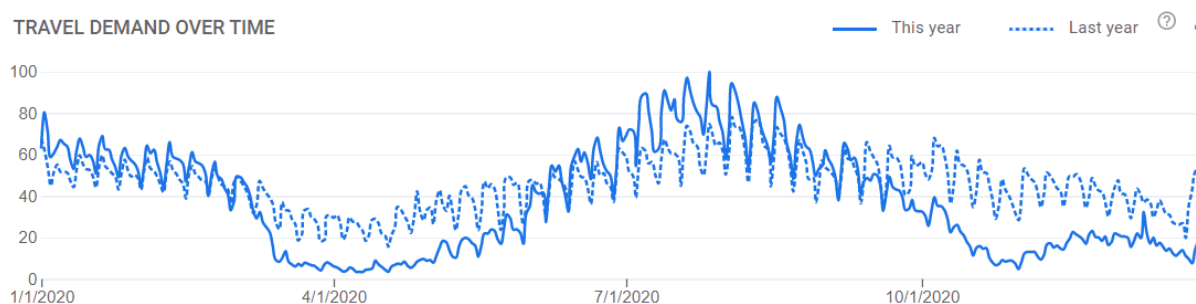
For an illustration of international and domestic demand reaction, was used an online tool. Google Destination Insights offers an analysis based on relevant keywords. The next figures show the response of the demand based on the relevant search queries.

Fig. 2 Travel demand (international and domestic) in the Czech Republic, comparison of 2019 and 2020



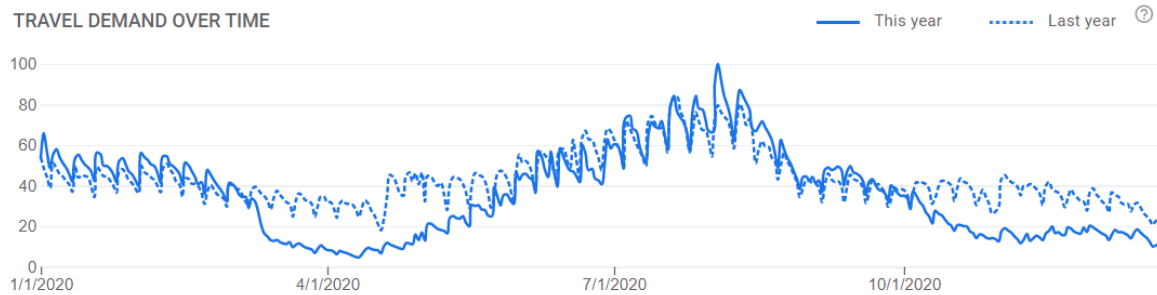
Source: <https://destinationinsights.withgoogle.com/> (18.02.2020)

Fig. 3 Travel demand (domestic) in Slovakia, comparison of 2019 and 2020



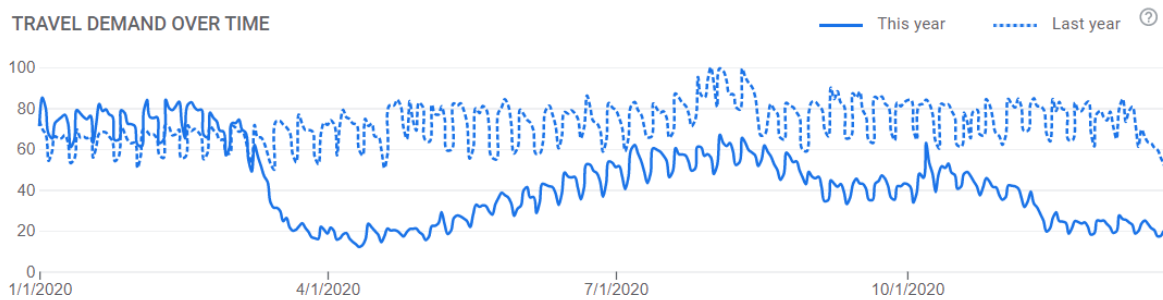
Source: <https://destinationinsights.withgoogle.com/> (18.02.2020)

Fig. 4 Travel demand (domestic) in Poland, comparison of 2019 and 2020



Source: <https://destinationinsights.withgoogle.com/> (18.02.2020)

Fig. 5 Travel demand (domestic) in Hungary, comparison of 2019 and 2020



Source: <https://destinationinsights.withgoogle.com/> (18.02.2020)

Because the international demand response in all V4 countries was very similar, so only figures from the Czech Republic are presented. The domestic demand, compared to 2019, is the highest in Slovakia, followed by Poland, the Czech Republic, and Hungary (with a significant decrease compared to 2019). We can see that, at the moment of opening the economy, the domestic demand quickly reached (and partially exceeded) the level of 2019 (except Hungary).

3.6 Comparison of the potential of domestic tourism in V4 countries

To compare the countries a simple scorecard with the placings of the countries in the individual criteria was created. As the scorecard presents the countries order, the lower is the number, the better is the country's position. As there is not enough literature to express the criteria's weight, the scorecard is only simple without the criteria's significance expression. The robustness of the scorecard was examined in two ways to assure the relevance of research results. Both approaches gave the same results. Therefore, the scorecard and the results can be considered relevant.

Tab. 9 Scorecard of the V4 countries

	Czech Republic	Slovakia	Poland	Hungary
GDP per capita	1	2	4	3
Distribution of travel and tourism direct contribution to GDP (international vs. domestic)	1	2	3	3

	Czech Republic	Slovakia	Poland	Hungary
Natural resources score TCI	4	1	3	2
Cultural resources score TCI	2	4	1	3
Share of domestic tourists in CAE	3	2	1	4
Tourism intensity	4	1	2	3
Outbound expenditure in comparison to inbound tourism expenditures	3	1	4	2
Total tourists in CAE in the 3rd quarter (change)	1	2	3	4
Domestic tourists in CAE in the 3rd quarter (change)	1	2	4	3
Domestic demand reaction from Destination insights	3	1	2	4
Total score (weighted score from the testing)	23 (147)	18 (112)	27 (179)	31 (195)

Source: own research

Based on the scorecard, it is evident that in Slovakia, domestic tourism has the best potential to help with the recovery and survival of businesses. The second-best position has domestic tourism in the Czech Republic. The third is Poland, and the weakest potential is in Hungary.

CONCLUSION

The main objective of the paper was to analyse and compare the domestic tourism potential in V4 countries as a factor of tourism survival, and recovery. The countries and their tourism were analysed from several perspectives and summarized in a simple scorecard. The paper contribution is the complex approach to the data, collection of the actual data from many sources, their comprehensive analysis, and putting the data into a broader context concerning domestic tourism.

The best situation regarding domestic tourism as a factor of tourism recovery and business survival is in Slovakia and the Czech Republic. However, even in these counties it is very unlikely, that the domestic tourism will replace outage of the international tourism in full scale. The financial receipts from international tourism play an important role for the economies.

The research was conducted with the available data at the time of writing. The domestic tourism is not researched in such details and it is very variable in different countries. The situation that the world is completely locked has never arose. Therefore, it was not possible to assign weight to individual criteria in the scorecard and the criteria are based on a combination of previous research, the available data and reasonable expectations. Nevertheless, the research brings a detailed picture of the situation in the V4 countries and a deep insight in the position and potential of domestic tourism. The future research can analyse the results from 2020 and 2021, it would be valuable to research the regional shifts and differences in the countries. The real results of tourism industry will be influenced also by the

government support, current economy performance, unemployment change, availability of vaccination etc.

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Takeover Law Regulations and Their Influence on the Takeover Premium – An Empirical Study of the OECD Member States

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Abstract: Almost all OECD and G20 countries have introduced a mandatory bid rule (MBR) in conjunction with a fair price regulation in their national takeover laws. MBRs require that a takeover bid must be made to all shareholders, if a certain control threshold is being exceeded. We show that takeovers that exceed such a threshold are associated with below-average takeover premiums. Other national characteristics of the MBR also show significant influences on the takeover premium. In addition, significantly higher premiums are paid when the buyer is seeking for between 20% and 40% of the shares after the takeover.

Keywords: merger & acquisitions, mandatory bid rule, fair price regulation

JEL Classification codes: G18

INTRODUCTION

The legislator has an interest in protecting minority shareholders and thus controlling the M&A market. With the Takeover Directive 2004/25/EC, the European legislator introduced a Mandatory Bid Rule (MBR) based on the concept originally derived from the City Code on Takeovers and Mergers in the UK. MBRs require that a takeover bid must be made to all shareholders if certain control thresholds are exceeded. The amount and number of these thresholds is at the discretion of the respective states. In combination with fair-price rules, MBRs are designed to ensure the rights of minority shareholders to potential premium offers. Almost all OECD and G20 countries have now introduced such regulations.

Pérez-Soba et. al. (2017) examine the bidding behavior in the Spanish market for partial control below the MBR. They distinguish primarily between those block transactions that result in obtaining a seat on the board or governing body from those transactions that do not. Or in other words, they distinguish between transactions that grant the opportunity for certain control and those that represent a mere financial investment. The authors could not find significant differences in premiums for both types of transactions. Nevertheless, if differentiated between those acquirers who have not yet gained any control over the company and those who already have a certain control, the former are willing to pay a significantly higher premium than the latter. In other words, crossing specific control thresholds has a specific value for the acquirers for which they are willing to pay a higher premium.

Using the difference-in-difference approach (DiD), Eswar (2019) is able to show that target values in terms of target-CARs increase for transactions crossing the MBR after the MBR was implemented by the respective legislation. Further, the author analyzes different value creation channels to research why the implementation of an MBR creates value for the target shareholders. Among other value creation channels, Eswar tests the overpayment or value transfer hypothesis. This channel postulates that values are transferred from the acquirer to the target. To test this hypothesis, the author applies the acquirer-CARs, but finds no significant value transfer. This is surprising in two ways: First, the author does not really include the overpayment in his analysis, since the premium is not recognized as an explaining variable. Instead, the author measures the capital market reaction, which is influenced by the premium itself. And second, the non-significance contradicts a large body of literature that repeatedly points to agency conflicts that could tempt the buyer's management to act against the interests of its own shareholders and should, as a consequence, reduce acquirer's value (e.g., Bruner, 2002, Martynova & Renneboog, 2008, Jensen & Ruback 1983, Andrade, Mitchell & Stafford, 2001, and Betton, Eckbo & Thorburn, 2008).

Even without an MBR, different takeover premiums would have to result for exceeding certain control thresholds. However, this behavior has only been studied below the MBR threshold by Pérez-Soba et. al. (2017) and far above the threshold by a number of earlier papers indicating the existence of control premiums (Zhu and Jog 2009, Damodaran 2005). Thus, the introduction of the MBR must have an effect on the acquirer's behavior, since the acquirers are now obliged to make a tender offer to all outstanding shareholders - possibly with the consequence of having to acquire further shares and gaining further control. The impact of the MBRs on the size of the takeover premium is, thus, currently understudied.

Our analysis shows significantly lower acquisitions premiums in deals exceeding the MBR threshold. Accordingly, we contribute a first time analysis of the impact of these rules to the acquirer's willingness to pay in a corporate takeover. In addition, in this analysis we control for the influence of the existing control over the target firm on the premium and the level of control achieved during the transaction. These aspects have been considered since the existence of a control premium has been demonstrated (Zhu and Jog 2009, Damodaran 2005).

Filling this research gap is relevant for advising companies considering a transaction that would result in the MBR threshold being exceeded. But the results can also be helpful and informative in the strategy process before any transaction is initiated and in the selection of a potential target. Furthermore, the present analysis is of interest to European and national legislators whose legislation should be subjected to an effectiveness review.

We contribute to the literature by analyzing for the first-time acquirer's behavior when the MBR threshold is exceeded. We are also the first to investigate to what extent the successive acquisition of control affects the takeover premiums offered.

The remainder of the paper is structured as follows. After the literature review, Section 2 shows the methodology and sample applied in this analysis. Section 3 shows the results, and section 4 concludes the paper.

1 LITERATURE REVIEW

The determinants of acquisition premiums in different markets have been a well-researched topic in recent decades. The following table summarizes the key findings. The variables in *italics* are later included as controls in the model.

Tab. 1 Literature and Variable Table

	Findings in the extant literature	References:
Acquisition of Control (MOCKTHxx)	The premiums for gaining controlling majorities are significantly higher in comparison to minority interests. Various studies show a positive correlation between the gaining of a controlling majority and the takeover premium.	Ouimet (2013); Zhu and Jog (2009); Williamson (1971); Williamson (1983); Williamson, Wachter & Harris (1975); Teece (1980)
Considerat. Structure (CONCASH) (CONSTOCK)	Transactions financed with cash gain higher premiums than stock swaps.	Dombret (2002); Wansley, Lane and Yang (1983); Davidson and Cheng (1997); Goergen and Renneboog (2004); Wansley, Lane and Yang (1987); Davidson and Cheng's (1997); Stulz (1988); Amihud, Lev and Travlos (1990); Ghosh and Ruland (1998)
Deal Attitude (ATTHOST) (ATTNEUT)	Due to higher competition between the bidders the level of the premium of hostile takeovers is higher than of friendly ones. The premiums for companies that use measures to defend against hostile takeovers like poison pills and golden parachutes are higher than for those targets that do not protect themselves against hostile takeovers.	Franks and Mayer (1996); Jensen (1988); Goergen and Renneboog (2004); Variaya (1987); Flanagan and O'Shaugnessy (2003)
Public Status (ACQPUS)	Private acquirers pay significantly lower premiums than public ones, which could be due to different ownership structures. The ownership of private companies is higher concentrated than of public ones.	Demsetz and Lehn (1985); Alexandridis (2013); Zhu and Jog (2009)
Industry (ACQIND) (TARIND)	The impact of the acquirers or targets industry on the acquisition premia is controversial. Some authors show in their studies significant differences in premiums between industries, and that intra-industry transactions are associated with higher premiums while others find no statistical evidence for these phenomena	Dutz (1989); Cakici, Hessel and Tandon (1991); Gaspar, Massa and Matos (2005); Alexandridis (2013); Zhu and Jog (2009)
Timing (YEARxxxx)	Merger and acquisition activity can be seen as a wave phenomenon over time. The different waves are triggered by e.g. macroeconomic factors, economic shocks, overvaluation of acquiring companies, and risk management through vertical integration. Prior exogenous shocks can trigger envious CEOs to acquire or merge with other companies, which can cause a wave effect.	Meier, Boysen-Hofgreffe & Spoida (2017); Lambrecht (2004); Schleifer & Vishny (2003); Rhodes-Kropf, Robinson and Vishwanathan (2005); Cai and Vijn (2007); Mitchell and Mulherin (1996); Garfinkel and Hankins (2011); Ovtchinnikov (2010); Goel and Thako (2010)

Deal Value (ln_DEAVAL)	In the acquisition process there are often few competitors on the acquirer's side when the target is a large company, who has often a high concentration of owners. The recent literature produced mixed findings, while some authors show that large deal volumes lead to a lower premium, others find a positive correlation between the level of premiums and the transaction size	Alexandridis et al. (2013); Demsetz & Lehn (1985); Bauguess, Moeller, Schlingemann & Zutter (2009); Moeller, Schlingemann and Stulz (2004); Morck, Shleifer and Vishny (1990); Grinstein and Hribar (2004); Herford and Li (2007); Zhu and Jog (2009)
Legislation	In domestic transactions, good shareholder protection leads to more M&A activity and subsequently to higher premiums. Accordingly, is the ownership concentration in states with low shareholder protection high, and thus M&A activity is low. For cross-border transactions it can be shown that acquirers have usually better shareholder protection and accounting standards than the targets which leads to a shift in the corporate governance system towards better protection. Various studies found that the premium paid is dependent on the target nation, ownership concentration, development of the capital market, and experience in the target market.	Levine (2002); Rossi and Volpin (2004); La Porta et. Al. (1997,1998); Dyck and Zingales (2004); Goergen and Renneboog (2004); Zhu and Jog (2009); Zhu and Jog (2011)

2 METHODOLOGY

The present study is based on those 46,032 transactions that were recorded for the period between January 2013 and December 2019 in the Refinitiv Eikon Dealscreener database. Transactions with a volume of less than USD 1 million were excluded in order to eliminate small deals from the sample due to their economic insignificance. Furthermore, only transactions where the target is listed could be considered. In combination with information on national MBR regimes from the OECD Corporate Governance Factbook (OECD 2014, 2015, 2017, 2019), 11,244 complete observations remained in the sample. As a result, only targets from the 42 OECD, G20, and Financial Stability Board member nations were included in the sample. After removal of small deals, deals without public takeover offer, deals outside OECD and deals with missing data, 11,244 deals remained in the sample.

In line with the extant literature (e.g. Antoniou, Arbour, and Zhao (2008)), the offered premium (*PREM4W*) for the purpose of this analysis is defined as the ratio between the offered price per share and the closing price four weeks before the announcement of the offer. To test the robustness of the model, the 1-week and 1-day premiums were also examined (not tabulated). In the latter two cases, it becomes more and more likely that information about the deal has already been leaked and is thus already integrated into the market price. Accordingly, the share price in these cases should already incorporate the information about the takeover, which means in most cases a dilution of the premium.

To test our hypothesis and to analyze the effect of exceeding the threshold in terms of the national MBR, a dummy (*EXCEEDTH*) is applied to the transactions that exceed the threshold. Additionally, mock thresholds were created to reflect the effect of increasing control over the target. For this purpose, nine dummy variables were created to represent the increase in control in 10% increments. *MOCK10*, shows transactions where the acquirer holds less than

10% of the target's shares beforehand and 10% or more thereafter. MOCK20 through MOCK90 are analogous.

The different aspects of the mandatory bid rules were represented by the following variables: the six levels of thresholds (*MINTH*) due to the according national MBR, a dummy for the presence of multiple thresholds (*MULTITH*), and a dummy variable for an ex post approach (*EXPOST*), in which a takeover bid must be made after the transaction in which the threshold was exceeded has been completed. In contrast to the latter, the an ex ante approach states that a takeover bid must be made before the transaction in which the threshold is crossed is completed.

The control variables for the consideration structure are CONCASH for a cash payment and CONSTOCK for a stock swap. These are reflected against a mixed payment. The deal attitude differentiates between a hostile takeover (ATTHOST) and a neutral takeover (ATTNEUT). Both are reflected against a friendly takeover. The acquirer public status is differentiated by private company (ACQSPR) and other (ACQPSOT), both reflected against public as a benchmark. The public status of the target is always public in public offers. The industry affiliation of the acquirer (ACQIND) and the target (TARIND) is in all cases reflected against consumer cyclicals and services. To include the size of completed transactions the deal volume is logarithmized (ln_DEALVAL).

Heteroskedasticity is assumed in the data set, therefore heteroskedasticity robust standard errors are applied in the following ordinary least squares (OLS) regression (White, 1980/Huber, 1967):

$$PREM4W_i = \text{const} + EXCEEDTH_i + EXPOST_i + MULTITH_i + \sum_a MINTH_{a,i} + \sum_b MOCKTH_{b,i} + CONTROLS + \varepsilon_i \quad (1)$$

In Model (2) we further differentiate the interaction effects of exceeding the threshold with the ex-post approach, with the respective minimum threshold and with the multi-threshold approach.

3 RESULTS AND DISCUSSION

The acquirers/targets belong to the following sectors: Cyclical Consumer Goods and Services (678/2,310), Basic Materials (522/1,368), Energy (240/408), Financials (5,982/1,644), Government Services (198/0), Healthcare (168/594), Industrials (1. 122/2,352), consumer non-cyclical goods and services (336/870), technology (378/1,140), telecom services (114/246), utilities (234/312), and unknown (1,272/0).

Of the 11,244 transactions, 7,878 were fully funded with cash, 402 were equity swaps, and the settlement of the remaining 2,964 transactions was mixed or unknown. 9,186 acquisitions were friendly, 48 were documented as hostile. Neutral or unknown were 2,010 takeovers.

A minimum threshold of 20% for the nation of the target is present in 654 transactions, and a minimum threshold of 25% is present in 1,698 transactions. A 30% threshold is present in 6,216 transactions, and 33% in 1,764. In 756 transactions, the threshold is 50%, and in 84 transactions, the threshold is 67%. In the remaining 72 cases, there is no threshold at which a takeover bid must be made. In 2,286 transactions, a threshold was exceeded. 8,958 transactions took place above or below it. In 9,174 transactions, the MBR follows the ex-post approach; in the remaining 2,070 transactions, the ex-ante approach is used. Multiple thresholds are present in 5,790 transactions and one threshold in 5454 transactions.

The descriptives of the non-winsorized and non- logarithmized metric variables are presented in Table 1.

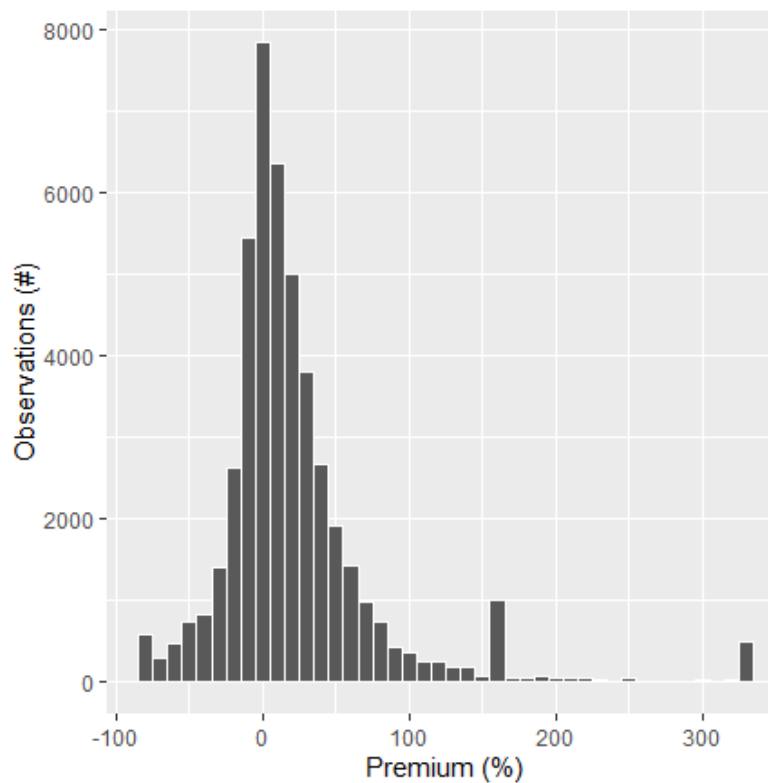
Tab. 2 Descriptive Statistics

	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
PREM4W	11,244	29.452	285.038	-99.880	-1.800	10.870	29.090	11,771.380
PREM1W	11,244	26.417	291.018	-99.880	-2.100	8.290	25.410	12,125.110
PREM1D	11,244	25.021	285.897	-99.880	-3.470	7.120	23.670	11,906.530
DEALVAL	11,244	267.867	1,215.445	1.010	9.160	34.828	128.970	31,879.490

The mean of the premiums deviates significantly from the median, indicating a skewed distribution of the premium, which is to be expected given the nature of these premiums. For the four-week premium, the median is 10.87%, for the one-week premium it is 8.29%, and for the one-day premium it is 7.12%. Obviously, leaked information and rumors affect the stock price, and the unannounced premium is gradually incorporated into the price.

The distribution of the winsorized 4-week premium is shown in Figure 1 and Table 3 below shows the results of the OLS regression.

Fig. 1 Histogram of the 4-week ahead Premia



Tab. 3 Model Results

PREM4W						
	(1)			(2)		
	Estimates	SE	p-value	Estimates	SE	p-value
Mandatory Bid Rule						
EXCEEDTH	-25.02 **	8.20	0.002	-90.88 **	28.25	0.001
EXPOST	-48.09 ***	8.95	<0.001	-46.80 ***	7.89	<0.001
MULTITH	-27.58 *	10.88	0.011	-32.58 **	11.93	0.006
EXCEEDTH x EXPOST				4.49	8.41	0.593
EXCEEDTH x MINTH				1.51 *	0.59	0.011
EXCEEDTH x MMULTITH				23.57 **	8.79	0.007
MINTH20	-75.01 ***	10.80	<0.001	-65.37 ***	9.33	<0.001
MINTH25	-81.58 ***	10.76	<0.001	-76.01 ***	9.24	<0.001
MINTH30	-52.71 ***	4.73	<0.001	-50.58 ***	4.35	<0.001
MINTH33	-51.71 ***	5.87	<0.001	-50.10 ***	5.58	<0.001
MINTH50	-94.52 ***	15.46	<0.001	-98.14 ***	16.67	<0.001
MINTH67	-31.27 ***	6.75	<0.001	-40.60 ***	5.89	<0.001
Acquisition of Control						
MOCKTH10	-10.67 *	4.18	0.011	-11.53 **	4.24	0.006
MOCKTH20	13.22 ***	3.49	<0.001	14.33 ***	3.71	<0.001
MOCKTH30	9.56	5.40	0.077	14.33 *	6.20	0.021
MOCKTH40	3.60	3.31	0.277	2.46	3.51	0.483
MOCKTH50	-2.49	2.73	0.363	-3.30	2.83	0.243
MOCKTH60	-7.94	4.41	0.072	-7.61	4.33	0.079
MOCKTH70	8.89 *	4.38	0.042	9.22 *	4.36	0.034
MOCKTH80	0.89	4.85	0.854	1.14	4.85	0.814
MOCKTH90	0.21	4.95	0.966	0.50	4.93	0.919
Consideration Structure						
CONCASH	3.80	4.67	0.416	4.30	4.86	0.376
CONSTOCK	27.2 **	10.46	0.009	27.96 **	10.56	0.008
Deal Attitude						
ATTHOST	-57.2 *	23.78	0.016	-56.17 *	23.32	0.016
ATTNEUT	-26.72 ***	5.19	<0.001	-27.37 ***	5.41	<0.001
Deal Value						
ln_DEAVAL	-3.12 *	1.27	0.014	-3.18 *	1.26	0.012
(Intercept)	112.85 ***	14.47	<0.001	112.9 ***	13.66	<0.001
Industry	√			√		
Timing	√			√		
Observations	11,244			11,244		
R ² / R ² adjusted	0.044 / 0.039			0.044 / 0.039		
* p<0.05 ** p<0.01 *** p<0.001						

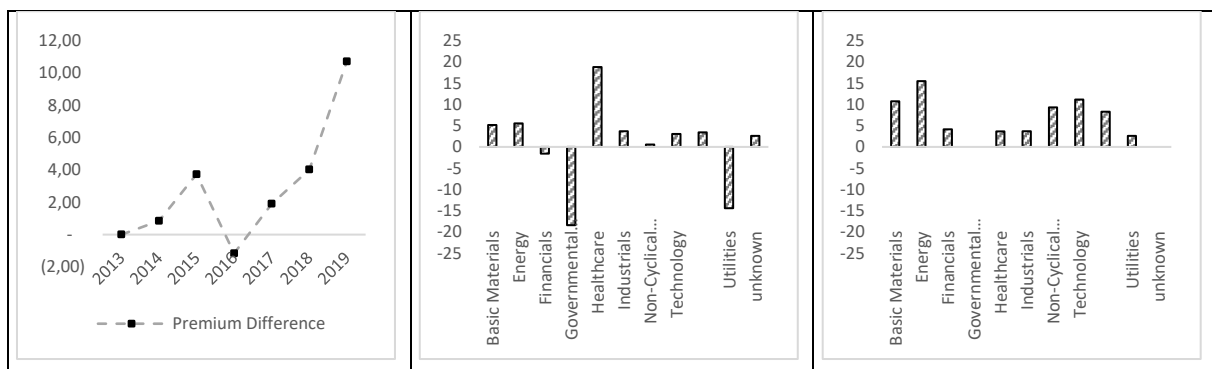
The exceeding of an MBR has a significantly negative impact on the acquisition premium in comparison to those transactions, where no threshold was exceeded. These transactions are priced on average 25.02 percentage points lower. This is probably due to the fact that investors are very cautious about pricing because of the MBR. Thus, through the existence of the MBR, all shareholders get the opportunity to participate in the transaction, but the prices are significantly lower than in transactions without MBR.

The coefficients and significances of the variables EXPOST, MULTITH and of the MINTH variables can only be interpreted very cautiously. They are likely to be largely due to the fact that the effects of different legislations are reflected by them. In general, it can be stated that in countries with an ex-post approach and countries with several thresholds, the takeover premiums are lower - which is then also expressed in the minimum thresholds. However, these variables can be better interpreted in Model 2 by combining them with the EXCEEDTH variable. Thus, when the threshold is exceeded in countries with an ex-post approach, the takeover premiums are 4.49 percentage points higher. However, this result is not significant. Significance, on the other hand, is shown by exceeding a minimum threshold value and a threshold value when multiple threshold values are present. In both cases the coefficients are positive, so that exceeding a threshold value in this form reduces the premiums less strongly.

The increase of control reflected by the 'artificial' mock-thresholds show that transactions where the buyer subsequently receives at least 10% have a negative impact on the premium. This can be due to a purely financial interest, as for instance Pérez-Soba et. al. (2017) argue. The acquirers do not strive to exert any influence on the company by acquiring the shares and therefore pay lower premiums. Acquirers who gain 20% or more with the transaction are willing to pay the highest premiums. The gain in influence is therefore estimated to be highest at this threshold. This may be due to the fact that these are purchases from acquirers who hold no prior shares in the company. In addition to financial aspects, they aim to gain influence on the company and pay for these additional privileges. Depending on the structure of the target, the acquirer is one of the major shareholders with 20%, which would also explain the relatively high premiums.

The effect of the deal size is significant. If the deal value increases by one percent the takeover premium decreases by -3,12 percentage points. The negative relationship between the deal volume and the premium corresponds to the findings of Alexandris et. al (2013). The regression models show significant differences in transaction years, reflecting the well known phenomenon of M&A-waves (Meier, Boysen-Hogrefe & Spoida, 2007), significant differences in premiums paid by acquirer industry, and significant premiums received by target industry.

Fig. 2 Premium differences against the year 2013 (left), Premium differences against consumer cyclicals and services as acquirer industry (middle), Premium differences against consumer cyclicals and services as target industry (right)



CONCLUSION

This study examines the influence of a mandatory bid rule on the takeover premium. Exceeding a mandatory bid threshold, which leads to a purchase offer for the shares of the remaining shareholders, has a significant negative impact on the premium. The aspects of an MBR are separated into three variables: dummies for the ex post approach and existence of multiple thresholds, and the levels of the thresholds. All three variables show a significant negative correlation with the acquisition premium. The positive effect of gaining additional control is analyzed in separate variables and shows that acquirers pay significantly more when they own between 20% and 40% of the shares after the transactions.

For the M&A strategy of companies it seems important, that acquisitions are obviously priced very cautiously when the MBR threshold is exceeded. A strategy corresponding to the national minimum price regulation must therefore already be prepared in the medium-term run-up to the exceeding of the threshold or tender offer in order to be able to carry out a cautious pricing.

There are also implications for the European legislator and the national counterparts. The intended protection of the shareholders of the target may work, but significantly lower premiums are paid than would be the case without an MBR. Thus, the question arises, whether the shareholder protection rights gained and the declining takeover premiums set-off each other. This leaves room for future research.

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The Role of Managerial Competencies in Foreign Direct Investments

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Abstract: Foreign direct investments (FDIs) are perceived to be the most advanced internationalization form. FDIs bring benefits not only to the country's economy but most importantly to the companies that make investments abroad. In case of Poland, the incoming FDI flow significantly outnumbers the Polish outward FDIs. One of the greatest barriers for Polish companies to invest abroad are lack or insufficient financials as well as investment risk aversion. Another crucial factor that can deter organizations from FDIs might be insufficient managerial competencies. The aim of the study is to verify if the managerial competencies are important for deciding and conducting FDIs as well as to determine what are the most crucial managerial competencies required in this process. The author conducted the literature review as well as in-depth interviews with managers, who participated in the process of foreign direct investments made by Polish companies in the period of 2010-2020. The results of the study confirm that there is imbalance between demand and supply for qualified managers. There are more Polish companies willing to invest abroad but they struggle to find competent managers as the knowledge, skills and experience related to the FDIs are very scarce. Respondents find international experience, industry knowledge, openness as well as cultural management skill as the most important managerial competencies in context of internationalization through FDI. The results of the study advance the knowledge in the field of international management. As far as the author is aware, previous works have not comprehensively considered the importance of managerial competencies in FDIs.

Keywords: FDI, foreign direct investment, competency-based management, internationalization.

JEL Classification codes: F21, M21

INTRODUCTION

Foreign direct investments (FDI) are perceived to be the most advanced way of internationalization. FDIs bring benefits not only for investing company but also for the economy of both countries involved. Among the benefits are e.g., the creation of the new workplaces, human capital development, the exchange of know-how and expertise, access to the new resources.

Despite the growing dynamics of international activity of Polish companies, Poland is still one of the largest recipients of FDI inflows in Central Europe. Every year about 300 investment projects is located in Poland. At the same time Polish companies conduct around 30 investments investment projects abroad (Crido, 2020). Although the fact that Polish organizations are very focused and successful in exporting goods and services, FDIs seem to be disregarded way of internationalization.

Although the fact that Poland is a market economy for 30 years and a member of European Union since 2004, the number and value of outward FDI can be perceived as low. According to UNCTAD's data (UNCTAD, 2020), FDI inflows to Poland remained stable in 2019, reaching PLN 52 billion (USD 13 billion). On the other hand, in 2019, the value of Polish outward direct investment transactions amounted to PLN 5,0 billion (USD 1,3 billion). In 2019, a relatively high value of transactions due to Polish outward direct investment was recorded in Czech Republic - PLN 11.4 bn and in Germany - PLN 5.8 bn (NBP, 2020). Because of the cultural and geographical proximity the Polish outward FDIs are located mostly in Europe.

There are several barriers for Polish companies to invest abroad. Firstly, it is the insufficient financial liquidity, lack or insufficient number of financial resources. Secondly, it is the investment risk that deters Polish companies from FDIs. Lastly, those might be managerial competencies and competency gaps that lower the chances of success in internationalization, mainly in form of FDIs.

The aim of this research is to verify what is the role of managerial competencies in FDIs. Moreover, the secondary goal is to detect and to analyse the most important managerial competencies that play crucial role during conducting greenfield and brownfield investments.

1 LITERATURE REVIEW

1.1 Polish Foreign Direct Investments

Foreign direct investment is defined as an international transfer of capital in order to establish a branch in another country and exercise control over it (Krugman, Obstfeld, 2012). FDI can be also described as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor) in an enterprise resident in an economy other than that of the foreign direct investor (OECD, 2008). The main goal of the investment is to obtain lasting interest by an investor from one country in an enterprise located in another country. The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the latter. Lasting interest is established when an investor obtains at least 10% of the ordinary shares (votes) - both directly and indirectly.

There are two basic types of direct foreign investments – greenfield and brownfield investments. Greenfield investment happens when a company builds its own facility from scratch. With brownfield investment, a company acquires or merges with an existing company (Krugman, Obstfeld, 2012). Moreover, we can distinguish direct horizontal and vertical investments. Horizontal investments consist in duplicating the investor's basic production process elsewhere in the world, while the latter involve relocating only part of the production chain to another country (Weresa, 2002).

Different forms of investment require a different preparation of a business plan, and thus a mix of managerial competences. Another resource of knowledge and skills will be required to take over a foreign company and incorporate it into the structures of an already operating enterprise than in the case of building a branch or factory outside the home country.

Poland is perceived as an attractive location for doing business in Central and Eastern Europe. Many foreign investments are located in the country. For example, in 2018, as many as 272 investment projects were implemented in Poland. For comparison, in this period Hungary attracted 101 investments (EY, 2019). Foreign investors have located production plants, company branches and outsourcing centres in Poland, thus obtaining benefits such as access

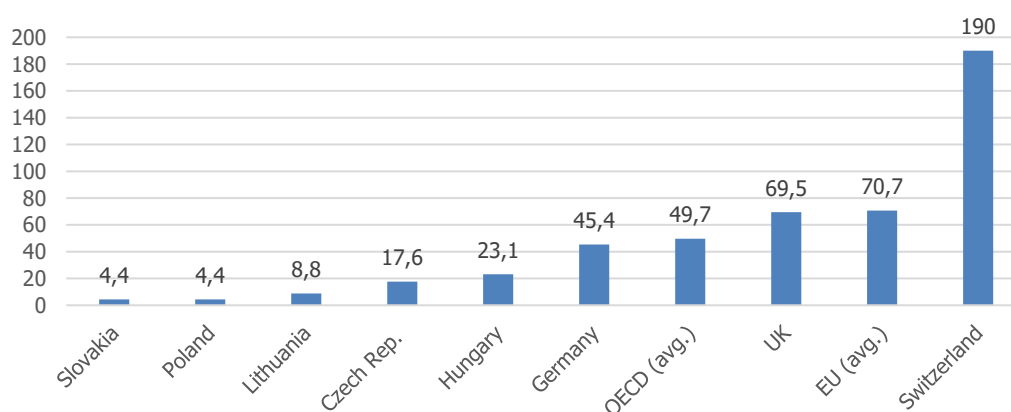
to qualified employees, the acquisition of well-known brands or sales and distribution channels. Similar opportunities and benefits can be achieved by Polish companies investing abroad.

Most of Polish FDIs are brownfield investment whereas greenfield are less common. Lug SA operating in the lighting industry is one example of a Polish company that decided to create its own factory abroad. In 2018, the company completed the construction of a factory in Argentina that has become a strategic expansion centre for the company in the South America region. As for the examples of companies that took over foreign companies recently, one can mention Elemental Holding, R22, Kross, Samasz. Elemental Holding has completed several foreign direct investments. In 2017, Elemental Holding took over the Lithuanian company UAB "EMP recycling". Then, in 2018, the company acquired 85% of the shares of the German company Recat. The purpose of this acquisition was to increase the scale of the group's operations on the market of recycling used car catalysts in Western Europe. In 2019, Elemental Holding invested in the United States, the company acquired 66% of the shares of the American company PGM of Texas LLC, which allowed to increase the development of the capital group on the largest catalyst recycling market. Another example is R22 Group operating in the technology industry. In 2018 the company acquired three Romanian firms operating in the area of hosting and domains. This step allowed R22 to gain a leadership position and get 25% share in the Romanian hosting and domain industry. A year later, in 2019, R22 took over the Croatian company Avalon. Thanks to this acquisition, R22 gained an approx. 30% share in the market and became the vice leader in the Croatian hosting and domain industry.

Every year, Polish enterprises make about 30 foreign investments, taking over foreign companies or creating their own production plants from scratch. At the end of 2019, the balance of receivables from Polish direct foreign investments amounted to PLN 96.5 billion and was higher by PLN 4.0 billion than in the previous year (NBP, 2020).

If we analyse the value of FDIs calculated as % of GDP, it turns out that Poland is almost at the end of the list. According to OECD data, foreign direct investment, calculated as % of GDP, amounted to 504,9% of GDP in Luxembourg, 309% in Netherlands and 190% of GDP in Switzerland in 2019. The average for the European Union countries was 70.7%, and the result for Poland was 4.4% of GDP. The low level of Polish FDIs is primarily due to the relatively low competitiveness of Polish enterprises on the global market, as well as institutional conditions, which to a small extent stimulate international expansion of enterprises. On the other hand, Polish companies are still in the early stage of internationalization. It means that they will gradually overcome the psychological barriers and lack of knowledge and international experience. Therefore, it can be argued that managerial competences can play an important role in FDIs (Karaszewski et al. 2010).

Fig. 1 FDI stocks outward as % of GDP in 2019



Source: OECD, 2020

The vast majority of Polish FDIs in 2019 fell to European Union countries (78.2%). This is mainly due to geographical and cultural proximity as well as political conditions, e.g. common, single EU market. The decision to locate Polish outward investments in European countries is mainly influenced by the knowledge of the specificity of running a business in these markets, knowledge of the language and culture. This regularity is also noticed among other investors from around the world. The first three places in terms of receivables from Polish FDI are Luxembourg, Cyprus and the Czech Republic, while Luxembourg's and Cyprus' high position is due to the fact that the frequent motivation for investing in this country is the optimization of structures and the use of regulatory arbitrage, i.e. the search for efficiency.

Tab. 1 Polish outward FDIs. Receivables by geographical region or country, 2019.

Geographical region or country	mIn EUR	%
All countries	22 669,6	100%
Europe	20 576,8	90,77%
UE-28	17 727,8	78,20%
OECD	14 054,4	62,00%
1. Luxembourg	4 508,9	19,89%
2. Cyprus	2 873,6	12,68%
3. Czech Republic	2 672,5	11,79%
4. Germany	2 364,2	10,43%
5. Hungary	1 334,1	5,88%
6. Netherlands	1 301,1	5,74%
7. Lithuania	1 103,4	4,87%
8. United Kingdom	1 013,7	4,47%
9. Romania	887,3	3,91%
10. Russia	732,7	3,23%

Source: NBP, 2020

The results of the research conducted by the Polish Economic Institute indicate that the tendency to locate Polish FDIs primarily in Europe will not change in the coming years. According to the declared investment plans, also in the years 2020-2021 most investments will be located in the European Union, most often in Germany and the Czech Republic (Polski Instytut Ekonomiczny, 2019).

1.2 The role of managerial competencies in international expansion

Foreign direct investment is considered to be the most advanced form of enterprise expansion. According to the Uppsala model of internationalization, this process runs in phases, sequences. The stage of irregular exports is followed by the stage of occasional exports, then exports through independent intermediaries. The next steps are the creation of a sales department and the creation of a branch (production department) (Johanson, Wiedersheim, 1975). The authors of this model pointed out in 1975 that the limitations of the internationalization process are primarily: lack of knowledge about foreign markets, lack of resources necessary for expansion, risk related to entering a foreign market, psychological distance between the home

market and the expansion market, most often correlated with geographical distance, transport costs, tariff and non-tariff barriers.

FDIs require good preparation and is also associated with many challenges. The effectiveness of activities undertaken abroad depends, *inter alia*, on the quality of human capital and on the competencies of the team of senior managers. In the literature one can find a few studies and research on the importance of managerial competencies in making FDIs or on the impact of competences on the results achieved outside the company's home country.

The general list of managerial competences was developed by an American psychologist – S. Motowidło. He listed ten skills that correspond to the tasks performed by management. The list includes leadership, teamwork, determination, negotiation skills, organizing, creativity, motivation, stress resistance, written and verbal communication (Pająk, 2003, p. 148-150). Other managerial competences described in the literature are technical, social, conceptual skills, interpersonal and diagnostic skills, communication skills, decision-making skills, and time management skills. In turn, the American researcher D. Goleman divided managerial skills into three categories. The first - purely technical skills such as accounting or business planning. The second - cognitive skills, such as analytical thinking. The third - skills that reflect emotional intelligence, such as good interaction with others and make changes efficiently (Griffin, 2007, p. 20-26).

The question arises, which of the general managerial competences will influence the propensity and ability to make decisions and the effectiveness of the process of conducting FDI? Research conducted in India on a sample of domestic production companies shows that managerial competencies influence the decisions regarding foreign capital expansion. Empirical studies have shown that previous experience of managers in international business is conducive to taking up FDI by organizations (Boermans, Roelfsema, 2013).

Researchers M.O Latukha and A. Y. Panibratov conducted research aimed at showing how managerial competencies affect the implementation of plans for foreign expansion. The survey was conducted among Russian companies operating in foreign markets. The results of the survey show that there is a strong correlation between the competences of the management and the effective implementation of the development strategy on foreign markets (also in the form of FDI). According to the researchers, the most important managerial competences are analytical skills, cognitive skills, the ability to create and use international contacts, project management skills, and the ability to establish intercultural relations (Latukha, Panibratov, 2015).

Moreover, the attitude of managers should be characterized by flexibility, adaptability and orientation towards quick learning. The competency profile of a global manager should also take into account sensitivity to cultural needs, the ability to adapt or acculturate, the ability to learn, entrepreneurship, and communication skills, especially intercultural communication (Pocztowski, 2002).

2 METHODOLOGY

To answer the research question the author conducted the literature review on FDIs and internationalisation searching for information about FDI barriers and role of managerial competencies in FDI. The second phase of the research was an empirical study that was conducted in form of in-depth interviews. The respondents target group were managers, who participated in the process of foreign direct investments made by Polish companies in the period of 2010-2020. The initial plan was to conduct 20 in-depth interviews with Polish managers, what turned out to be impossible because of the spread of Covid-19 pandemic. During the market turmoil, the majority of managers did not agree to participate in the

research. Although the fact, that the interview was conducted remotely the most common reason was lack of time or no answer to repeated contact attempts. The purposive sampling technique was used in order to reach to knowledgeable experts. Firstly, the list of Polish companies that invested abroad in 2010-2020 was prepared in order to figure out the list of managers who participated in the process. The potential respondents were contacted via message on LinkedIn platform, with use of Sales Navigator tool. The research sample consisted of 5 in-depth interviews. The interviews were conducted remotely in September and October 2020 with use of phone calls and internet communication platform Ms Teams. The interviews were recorded and analysed in order to search for patterns and common themes.

3 RESULTS AND DISCUSSION

When asked about the current state of Polish outward FDIs, the respondents emphasized that Polish companies still opt for less complicated forms of expansion, such as exports or joint ventures. One respondent noted that Polish companies are comfortable with operating in a very large internal market that provides access to a broad consumer base. The interviewee indicated that it is also a kind of limitation, as companies are not determined to look for their opportunities also outside Poland. He compared the motivation of companies from countries with small internal markets (such as Switzerland, Belgium, Austria), which must ensure an appropriate scale of operation and therefore also decide to invest abroad.

Polish companies usually focus mainly on export activities, considering it as a safe and beneficial form of expansion. There are numerous Polish companies that export as much as 80-90% of the production and do not intend to move on to the next stages of internationalization. Meanwhile, export advantages are usually based on geographical proximity, low logistics costs and low labour costs. Therefore, they are not permanent advantages.

The respondents underlined that Polish companies have gained only 30 years of experience in functioning on the market economy and that Polish firms have been active for 16 years on the EU Common Market. Undoubtedly, the EU accession in 2004 made Polish companies more internationally active.

One of the interviewees admitted that he had analysed the stages of his 30-year organization's internationalization process that took place in successive stages. From visiting foreign markets, learning about the trends and needs of consumers, as well as recognizing the law, through exhibiting at domestic and international fairs, first export successes, to joint ventures with foreign partners, and finally acquisitions of foreign companies. The respondent emphasized that the increasing involvement in international activities resulted in the development of the competences of the organization, as well as the knowledge and skills of employees and managers. Each subsequent step and more intense cooperation in the international arena deepened the knowledge about the specificity of individual markets and provided know-how related to internationalization. The interlocutor pointed out that without this experience he would not have been able to effectively manage the internationalization of the company.

All respondents admitted that lack or insufficient managerial competencies influence the international activity of Polish companies and might push or deter the firm from internationalization, especially in the form of FDI. The respondents stated that in Poland there are not many experienced managers, who participated in the process of investing abroad. Meanwhile, there are more and more companies interested or eager to invest abroad but they struggle to find experienced managers who could manage the investment process. It means that the demand for skilled managers exceeds the supply.

Respondents stated that some competencies are especially important in the internationalization process in form of FDI. They listed knowledge in finance, business management, sales, legal issues as well as knowledge in the specific industry. Among the most crucial skills they listed international and intercultural management skills, leadership skills, market research and analysis as well as product or services analysis skills. In the opinion of respondents, the following attitudes are essential: openness towards other people, flexibility, and the willingness to cooperate. The respondents admitted that this is not a typical textbook knowledge. Usually, knowledge is acquired with experience and through cooperation with diplomatic missions, chambers of commerce.

The interviewees also paid a lot of attention to the skills of international and intercultural management. The respondents indicated the importance of understanding and the ability to navigate in a culturally diverse environment. On the one hand, they spoke of a kind of experience in the international world. The lack of these competences usually translates into communication errors and a lack of mutual understanding or incorrect reading of the messages of a foreign business partner. The respondents emphasized that cultural differences should be considered broadly, not only as different customs or gestures, but above all as differences at the level of deeply rooted beliefs and value systems. The awareness of cultural diversity and the ability to adapt to different realities in a given country were considered to be very important skills. In addition to cultural differences affecting communication, the respondents mentioned that there are also still competency gaps in communication in foreign languages. According to the respondents, the scale of this phenomenon is smaller and smaller each year, but it still exists.

While talking about managerial competences in the context of FDI, the interviewees noticed that a different set of skills will be required for a greenfield investment and a different one for a brownfield investment. Greenfield investments require additional knowledge about administrative and legal rules in the foreign country. On the other hand, brownfield investments require the merging and integration skills. Usually, it is the process of merging two companies that determines business success or failure during investment process.

On the one hand, managers need knowledge acquired during university studies or post-graduate education (MBA courses), and on the other hand, they need international experience that is gained over the years. Polish managers have a chance to gain this kind of experience, when working in Polish companies on the processes related to internationalization. However, taking into account the fact that in Poland approximately 30 outgoing direct investments are carried out annually and the free market has been operating for 30 years, it can be concluded that the number of such opportunities for learning and acquiring knowledge is limited. Managers gain knowledge also by working for international corporations operating in Poland, where they can see how effective and proven internal processes of companies are organized, including those related to internationalization. Most often, however, it is the first foreign investment made that is the moment of gaining knowledge and experience. It is worth noting that in order to be considered competent in this topic, a manager must carry out at least a few such processes, often learning from mistakes made. One of the respondents additionally noted that Polish managers have a lot of experience gained in the markets of Eastern Europe, but they are doing worse on the markets of Western Europe.

Meanwhile, Polish enterprises are intensifying their international activities. The willingness to invest is increasing and the demand for managers who will be able to manage foreign investments is increasing. Training and learning managers are a process that takes longer than the development of a given business. Demand exceeds supply. In this context, the question arises what can be done to accelerate the process of accumulation of knowledge and experience and to develop the competences of the managerial staff. One of the respondents mentioned that, in his opinion, Polish curricula (e.g., during MBA studies) lack examples,

discussing case studies of Polish enterprises that have implemented investments outside Poland. The respondent stated that Poland lacked a system and opportunities to exchange business experiences, especially those that ended in failure. Information on FDIs made by Polish companies is usually provided mainly as press release informing about the successes of Polish organizations. Respondents indicated that it would be a good idea to create a platform for meetings and exchange of experiences. The question arises how to encourage entrepreneurs and managers to share this knowledge without disclosing the company's confidential information such as trade partners, financial situation or strategy. The best source of knowledge are companies and managers who have already participated in the processes of acquisitions of foreign companies or in the construction of plants outside Poland. They are the ones who know how the processes are going, and they are also aware of the most common mistakes. According to the respondents the organization of congresses or thematic discussion panels alone will not allow for deepening the knowledge in this field. One of ideas suggested was to organize an academy of foreign expansion, which could be coordinated by business support institutions. Closing the gap is a crucial challenge both for companies and the economy.

CONCLUSION

Despite the high dynamics of changes, Poland is still a recipient of foreign capital, as Polish enterprises only carry out about 30 foreign investments per annum. The current crisis related to the Covid-19 pandemic may slow down further internationalization processes and postpone the decision on FDI. The barriers to foreign capital expansion of Polish companies are not only market turbulences, financial constraints or aversion to taking risks, but also the insufficient competencies of the managers. The competencies of the managers, including knowledge, experience and attitudes, have an impact not only on the decision and motivation to undertake FDIs, but also on the long-term success of foreign expansion.

The results of the qualitative research conducted among Polish managers who participated in FDIs projects of Polish companies confirm that there is imbalance between demand and supply for qualified managers. The majority of the respondents believe that it is very important to have international professional experience and familiarity with other cultures, what helps to make contact and communicate in diverse business environment. Respondents find international experience, industry knowledge, openness as well as cultural management skill as the most important managerial competencies in context of internationalization through FDI. What is more, the results show that the Polish companies struggle to find competent managers because the knowledge, skills and experience related to the FDIs are very scarce.

It would be beneficial to set up a platform, where managers could share their knowledge and learn from experience of other companies. This could help to accumulate knowledge and accelerate the forming of international managers.

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Sustainability and Economic Attributes of Peer-To-Peer Accommodation: A Cross Country Perception of Asian Tourists

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Abstract: Peer-to-peer (P2P) accommodation has expanded the range of offerings in the tourism and hospitality sector. The study explores the familiarity, usage and overall perception towards P2P accommodation among tourists in the Philippines, Thailand and India. It investigates the association among perceived economic benefits, environmental sustainability and socio-demographic characteristics on tourists' overall perception. A web-based survey was deployed in the first quarter of 2020, right in the onset of Covid-19 pandemic. As the travel frequency of tourists cannot be initially ascertained and to capture their usage in the "normal" times, a recall query with respect to their usage over the past six months (June-December 2019) was utilized. Descriptive statistics and non-parametric statistical tests were employed for data analysis. The findings reveal that the familiarity of Thai tourists lags behind other nationalities. Majority have not used P2P accommodation for the past six months; however, overall perceptions remain positive for both active and non-active users. Across nationalities, respondents somewhat agreed on the nuance of economic benefits and environmental sustainability. Moreover, analysis shows its significant positive association with tourists' overall perception.

Keywords: Asia, collaborative consumption, peer-to-peer accommodation, perceptions, sharing economy, sustainability

JEL Classification codes: M30, M31, D16

INTRODUCTION

The concept of peer-to-peer (P2P) accommodation emerge as individuals offer their spare living spaces (i.e. private or shared room, entire apartment or house) to others in digital platforms usually in exchange for money. It is a leading sector in the realm of "sharing economy", a term associated with the phenomenon of sharing underutilized resources in online platforms with a possibility of monetary exchange (Frenken et al., 2014). Apparently, its

popularity has been elevated by Airbnb, the largest global player in P2P accommodation. Since its launching in 2008, growth has accelerated in a few years. It received 500,000 guests in 2011 and eventually captured 4 million guests in 2013 (PriceWaterhouseCoopers, 2015a). Recently, it has over 7 million accommodation listings and has received over 750 million guest arrivals around the globe since its establishment (Airbnb, 2020). Concurrently, data shows that P2P accommodation shares 7% of the total worldwide accommodation and is projected to grow by 31% in 2025, surpassing the growth rates of traditional lodging options (Bakker & Twining-Ward, 2018).

Guttentag et al. (2018) and Young et al. (2017) stipulate that the innovative P2P accommodation offering poses disruptions in tourism accommodation industry as it contends with traditional hotel stays. Chen & Chang (2018) note that this is attributable to its affordability in comparison with other lodging alternatives (hotels) which considerably attracts backpackers and/or economy travelers. Above all, it shares the mainstream promises of the sharing economy on its potential contribution to environmental sustainability and sustainable consumption (Retamal & Dominish, 2017). All these have stirred the attention of academic researchers, industry practitioners and policy makers as well.

Research studies on P2P accommodation phenomenon have been increasing (Belarmino & Koh, 2020; Medina-Hernandez et al., 2020; Prayag & Ozanne, 2018). A number of them intend to capture the complexities of consumers behavior, specifically on the determinants of consumer choice, intention, and usage of P2P accommodation (Amaro et al., 2019; Guttentag et al., 2018; Mahadevan, 2018; Pappas, 2017; Tussyadiah & Park, 2018; Yan et al., 2019; Young et al., 2017). Nevertheless, these studies largely focused on consumers in developed countries. This corroborates to the contentions of Retamal & Dominish (2017) that sharing economy literature is mostly represented in advanced economy context as most people have ample amounts of resources and can readily share these with others. The authors further remark that the sharing economy can be viewed differently in the developing world, specifically on easing the access of previously inaccessible resources. Hossain (2020) recent comprehensive review on sharing economy likewise suggests to carry-out investigation in developing countries to balance insights pertaining to the novel phenomenon. Moreover, stress that the growth rate of P2P accommodation is maturing in advanced economies, while, expansion is seen in the emerging markets (Bakker & Twining-Ward, 2018).

Given these, the study sets out an exploratory investigation on the familiarity, usage and overall perception towards P2P accommodation among tourists from emerging countries in Asia. The study was conducted in The Philippines, Thailand, and India due to their developing tourism industry as vouched by domestic tourism expansion and substantial international tourist arrivals. Furthermore, owing to the popular view on the economic benefits and sustainability impacts of P2P accommodation and the sharing economy as a whole, the study explicitly initiates a cross-country comparison of tourists' perceptions upon the aforementioned views. The association of perceived economic benefits, environmental sustainability, and socio-demographic characteristics on tourists overall positive perception was also investigated.

The study, therefore, offers initial insights on tourists' behavior towards P2P accommodation in the selected tourism hubs in Asia. Given the existing geographic and cultural differences of subjects, findings to some extent ascertain the ubiquity of economic benefits and environmental sustainability perceptions towards P2P accommodation and its association with tourists overall positive perceptions. Meanwhile, as positive perception about a product or service offering is integral to every purchase decision (Nam et al., 2017; Wee et al., 2014), the study provides insights to service and platform providers of P2P accommodation in designing effective business strategies.

1 LITERATURE REVIEW

Over the years, the development of the sharing economy has considerably caught the attention of various stakeholders including those from the academia. The concept is basically founded on an age-old practice of sharing which is an inherent activity since human existence (Belk, 2010). However, advances in technology (i.e. Internet and Web 2.0) have expanded and hastened sharing activities between people (Belk, 2014). Frenken et al. (2014) note that a clear-cut definition of the term "sharing economy" remains to be non-existent in literature. Nevertheless, it can be distinguished by stressing on access-based over ownership-based consumption of underutilized resources between consumers in digital platforms (Frenken et al., 2014; Habibi et al., 2017). For this reason, the term is also analogously associated with collaborative consumption, peer-to-peer sharing and gig economy (Codagnone & Martens, 2016). This means that any activities where individuals are temporarily sharing-in and sharing-out idle assets (e.g. spare accommodation, transportation, household goods, etc.) to other people via digital platforms are governed within realm of the sharing economy. Therefore, peer-to-peer accommodation as the central discourse in this study falls within this concept.

P2P accommodation is found to attract a specific generational cohort of consumers - the "millennials" (i.e. born 1980s to 2000s) (Bakker & Twining-Ward, 2018). PriceWaterhouseCoopers (2015b) indicate that millennial consumers perceived the economic benefits and environmental impacts of the sharing economy. Similarly, Hwang & Griffiths (2017) describe that they manifest greater awareness on societal and environmental issues, thus, supporting the trend of access-based consumption. Šiuškaitė et al. (2019) explain that these perceptions are induced by their education and exposure to advances in technology at early age. Aside from age, Buda et al. (2019) assert the importance of other socio-demographic variables (e.g. income, marital status, education, type of residential settlement) on consumers' receptivity towards sharing economy.

Moreover, as consumer participation in peer-to-peer accommodation continues to exhibit an upward trend, many researchers carried-out studies aiming to understand the consumers' perspective and the key drivers for their participation and/or usage. Indeed, the recent review findings of Belarmino & Koh (2020) on P2P accommodation pinpoint the vast majority of consumer behavior related studies. Past investigations found that consumers choice for accommodation stay is influenced by a number of factors. However, the framing of affordability makes a predominant appeal to consumers (Guttentag et al., 2018; Möhlmann, 2015; Tussyadiah, 2015). Likewise, Yan et al. (2019) claim that the opportunity for cost savings influence the switching behavior of consumers from booking hotel accommodation to P2P accommodation. Moreover, Pappas (2017) highlights the significance of pricing sensitivity in P2P accommodation as consumers sought accommodation options that offers a greater value for money. Amaro et al. (2019) argue the foregoing contentions by asserting that economic benefits are perceived to be less important especially for millennial consumers. The authors added to further examine the matter and track consumer behavior over time to verify extant claims.

Meanwhile, P2P accommodation and the sharing economy as a whole are commonly recognized for their implications towards environmental sustainability (Heinrichs, 2013; Voytenko Palgan et al., 2017). This is along the lines of efficiently utilizing idle resources through access-based consumption in digital platforms (Botsman & Rogers, 2010). Hence, it is presumed to mitigate unsustainable consumption practices, thereby, help obviate the eventualities of resource depletion associated with production of new goods (Pouri & Hilty, 2018). PriceWaterhouseCoopers (2015b) reveal that a large share of US consumers perceived the positive environmental implications of the sharing economy pertaining to waste reduction. Bakker & Twining-Ward (2018) point out that utilizing existing structures over building new ones for accommodation rentals contributes to environmental sustainability. Meanwhile,

Hamari et al. (2016), Möhlmann (2015), and Tussyadiah (2015) highlight that significant role of environmental sustainability as one of the main drivers of collaborative consumption among consumers. Kim & Jin (2020) likewise assert that as consumers manifest great concern for the environment, the more they will favor collaborative consumption. Thus, Toni et al. (2018) point out that consumers usage and sustainable behaviors can be further encouraged if P2P providers promote their disposition on environmental sustainability. In contrary to the prior claims, Garau-Vadell et al. (2019) reveal the insignificance of environmental perception in shaping Spanish residents to support P2P accommodation. Sung et al. (2018) also assert that sustainability solely matters for accommodation providers and not to accommodation seekers.

Given the information sought in the literature and the importance of perception in consumers purchase decision, therefore, the study carry-out an exploratory investigation to answer the following research questions:

- Do familiarity, usage and overall perception towards P2P accommodation differ among tourists in the selected countries?
- Do economic and environmental sustainability perceptions towards P2P accommodation differ among tourist nationalities? Are these associated to their overall positive perceptions of P2P accommodation services?
- Are socio-demographic variables associated with consumers perception towards P2P accommodation?

2 METHODOLOGY

The study implemented a web-based survey via Google forms platform between January and March 2020. The questionnaire mainly included items that capture the tourists' familiarity, past usage and perceptions towards P2P accommodation services. The assessment on the past usage of P2P accommodation services was stretched to cover for over the past 6 months as the travelling frequency of respondents cannot be initially ascertained. It is presumed that the 6 months recall question is enough to capture the usage for both frequent and non-frequent travelers or tourists. And in view of the substantial relationship of past behavior and future behavior (Ouellette & Wood, 1998), operationalizing past usage was deemed significant for inclusion in the study. Meanwhile, it should be noted that in some time during the conduct of the survey, some travel restrictions were enforced due to Covid-19 related pronouncements. Thus, to capture the respondents' usage in the "normal" times, the recall question for usage (i.e. usage for the past 6 months) was deemed suitable. Familiarity and past usage were measured dichotomously (i.e. Yes-No), while perceptions were measured using a 7-point Likert scale. English is considered an official language in the Philippines and India, thus, only the questionnaire administered to Thai respondents underwent translation procedures. The questionnaire was pre-tested to about 20 respondents after its initial development. After several modifications, distribution of the web survey link was carried out in social networking platforms following a convenience sampling procedure. The selection of respondents was based upon the considerations of accessibility, proximity, and availability. The research likewise pursued a collaboration with doctoral students residing on each of the selected countries. They were mainly instructed to disseminate the link of the survey questionnaire to their networks in their respective countries and supervise the data collection process. A total of 313 valid responses were collected across countries. For data analysis, descriptive analysis and non-parametric tests (i.e. Chi square statistics, Kruskal-Wallis H test, Mann-Whitney U test, Spearman rho) were operationalized using IBM SPSS version 23. The summary of demographic profile of respondents is presented in Table 1.

3 RESULTS AND DISCUSSION

This section primarily presents the survey findings with emphasis on the differences in familiarity, usage, perceived economic benefits, perceived environmental sustainability and ultimately the overall perception towards P2P accommodation among tourists from the selected emerging countries.

3.1 Familiarity, Usage and Overall Perception towards P2P Accommodation

The analysis shows that familiarity towards P2P accommodation services significantly differs among tourist nationalities ($\chi^2=20.187$, $p=0.000$). As reflected in Fig.1a, there are more respondents in India (75.2%) and the Philippines (62.8%) that are familiar with P2P accommodation than Thailand (44.4%). However, difference in usage is not significant across nationalities ($\chi^2=5.859$, $p>0.05$). Less than half of the respondents in each country have expressed their usage over the past 6 months. Among them, Indians, Thai, and Filipinos mostly used OYO rooms (45.3%), Booking.com (44.4%), and Airbnb (24.3%), respectively (Fig.1b). This reveals that Airbnb may not be the best choice in all selected tourist nationalities despite its global reach and popularity. Noticeably, commonly used accommodation platforms in India and Thailand do not purely provide P2P accommodation as they also offer accommodations from leased or franchised hotels as well. Overall perception towards P2P accommodation seems to be positive across nationalities ($\chi^2=3.663$, $p>0.05$) (Fig. 2a). The analysis also reveals that users have more positive perception than non-users ($U=6875$, $p=0.000$) (Fig.2b).

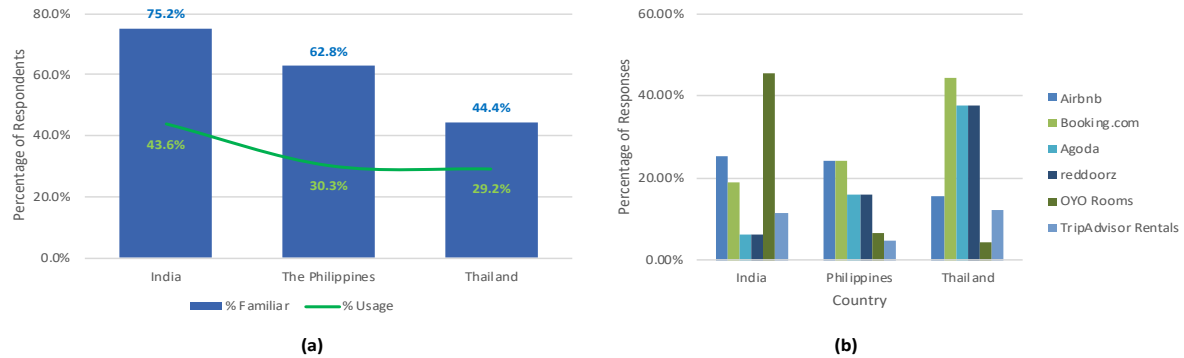
Tab. 1 Demographic profile of respondents

Demographic Variable	Country		
	India (n = 101)	Thailand (n = 99)	Philippines (n = 113)
Age (Mean)	22.59	26.52	25.30
18-25	84	60	69
26-34	16	22	37
35-44	1	14	6
45 and above	0	3	1
Educational Attainment			
Bachelor's degree	64	78	90
Doctoral Degree	1	3	3
Master's degree	36	18	20
Gender			
Male	54	30	32
Female	46	59	70
LGBGTQ+	1	10	11
Marital Status			
Divorced	1	1	1
Married	7	13	14
Single	93	85	98

Occupation			
Employed	11	29	74
Self Employed	6	9	4
Student	79	60	31
Unemployed	5	1	4

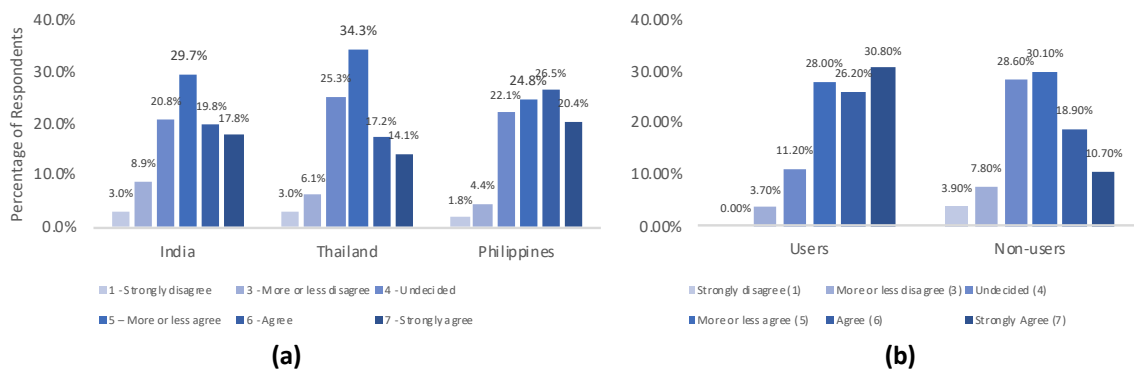
Source: own survey findings, January-March 2020

Fig. 1 P2P accommodation familiarity and usage (a) and platform used (b)



Source: own survey findings, Data Collection: January-March 2020

Fig. 2 Overall perception towards P2P accommodation per country (a) and usage (b)



Source: own survey findings, Data Collection: January-March 2020

Moreover, among demographic variables, findings show that only age demonstrates a significant difference in terms of familiarity ($U = 9,015, p = 0.001$), usage ($U = 8,779, p = 0.003$) and overall perception ($U = 8,942.5, p = 0.026$) towards P2P accommodation. Mean ranks show that older respondents are more familiar, are users and have positive perceptions towards P2P accommodation (Tab. 2). Educational attainment also turns out to be significantly different between familiar and non-familiar tourists ($U = 9,351.5, p = 0.000$). As reflected by mean rank values, it indicates that those who are familiar with P2P accommodation have higher educational attainment. Although, correlation among age and education towards overall perceptions are not found to be significant.

Tab. 2 Mann-Whitney's test mean rank results on age, education, familiarity, usage, and perception

Age	Familiarity	Mean Rank	Mann-Whitney U	p-value
	Yes	170.80	9015.000	0.001
	No	135.39		
	Usage			
	Yes	177.95	8779.000	0.003
	No	146.12		
	Perception			
	Positive	164.71	8942.500	0.026
	Negative	140.33		
Education	Familiarity			
	Yes	169.04	9351.500	0.000
	No	138.15		

Source: Own processing in IBM SPSS v23 Data Collection: January-March 2020

3.2 Economic and sustainability perceptions towards P2P accommodation

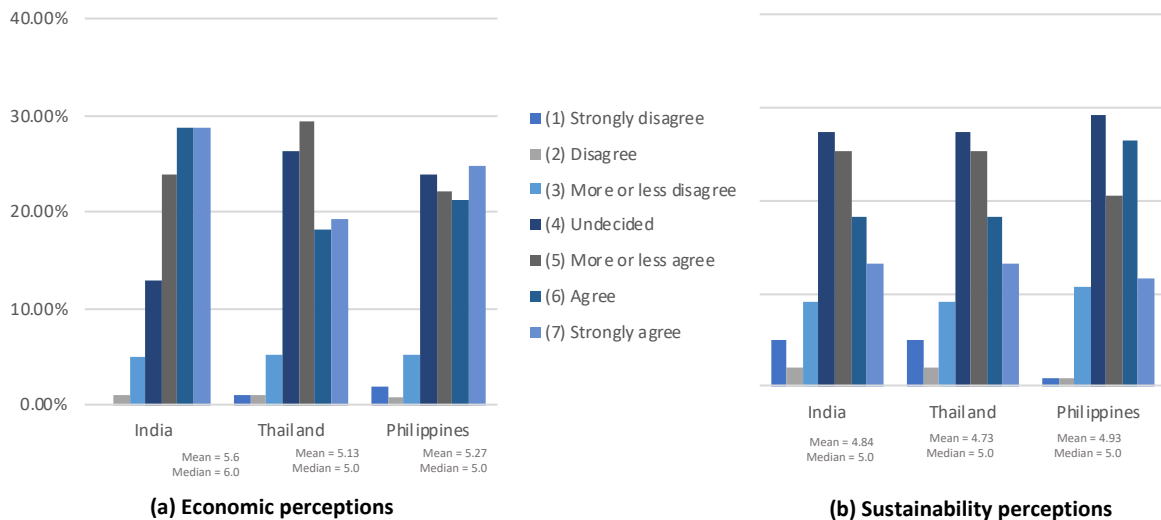
P2P accommodation is better known for its economic advantage over traditional accommodation alternatives. Extant studies supported this claim by specifying its relationship with consumers' choices, intentions, and actual behavior in using the service. Thus, the study investigates whether tourists from selected emerging countries have perceived these presumed economic benefits. Findings reveal that most respondent's express affirmation on the affordability of P2P accommodation (Fig. 3a). However, the analysis reveals a significant difference in perception among nationalities ($H=7.278$, $p=0.026$). Scrutinizing this difference, pairwise comparisons between countries indicate that respondents in Thailand and India differ on economic perceptions ($t=32.984$, $p=0.024$). This means that Indian tourists' perception on the economic benefits of P2P accommodation evidently exceeds than Thai tourists. On another note, sustainability perception on P2P accommodation remains mostly positive across nationalities. Fig. 3b shows that a considerable percentage of respondent's express agreement on its environmental implications specifically on its contributory effects in cutting-back the consumption of natural resources. These affirmations are also supplemented by the mean and median figures. However, evidence suggest that these perceptions do not significantly vary across nationalities ($H=0.522$, $p>0.05$).

Meanwhile, Tab. 3 displays the Spearman rho correlation results between perceived economic benefits and perceived environmental sustainability towards overall perception amongst nationalities. The results signify that economic and sustainability perception is significantly correlated with overall perception of tourists towards P2P accommodation. This implies that overall perception increases as economic and sustainability perception also increases. By carefully examining the strength of correlation on the basis of Hinkle & Wiersma (2009) guidelines, it turns out that the correlation is moderate between economic perception and overall perception for Thailand and Philippines. The same is also observed for Thailand regarding sustainability perception and overall perception. Nevertheless, despite these weak to moderate correlation, the findings put forward an evident manifestation that the economic value and sustainability implications of P2P accommodation are also diffused even to tourists

on the selected emerging countries. This further endorses that these aforementioned perceptions may shape tourists' appreciation towards P2P accommodation services.

Furthermore, the association of economic and sustainability perceptions across socio-demographic characteristics was examined. Results of the analysis indicate that only age and environmental sustainability have a significant negative association ($\rho = -0.117$, $p = 0.039$). This finding implies that as age increases, the level of perceived environmental sustainability decreases. In other words, young people perceived a higher level of environmental sustainability than the older ones.

Fig. 3 Economic (a) and sustainability (b) perceptions towards P2P accommodation



Source: Own survey findings, Data Collection: January-March 2020

Table 3. Correlation of economic benefits and environmental sustainability towards overall perception

Country	Economic benefits → Overall perception		Environmental sustainability → Overall Perception	
	Coefficient	Sig. (2-tailed)	Coefficient	Sig. (2-tailed)
India	.399**	0.000	.365**	0.000
Thailand	.465**	0.000	.432**	0.000
Philippines	.456**	0.000	.313**	0.001

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

Source: own processing in IBM SPSS v23

CONCLUSION

The exploratory investigation on familiarity, usage, and perceptions towards P2P accommodation among tourists from the selected emerging countries in Asia seems to be promising based on the study findings. The study underscores the following points to suffice the research questions set in the current investigation:

- Evidence shows that familiarity is relatively high among tourists from India and Philippines. Across nationalities, usage remains sluggish over the past six months even

prior the pronouncement of the Covid-19 pandemic in the first quarter of 2020. Meanwhile, respondents' overall perception towards the service remains positive across nationalities. It is revealed that there is no significant difference on the past usage and the overall positive perception towards P2P accommodation services across nationalities. In spite of these, it is argued that the concept of P2P accommodation has already diffused over the emerging markets as an alternative form of lodging service. Hybrid platform providers offering both hotel and P2P accommodation options are found to be dominating despite the popularity of Airbnb from the industry perspective. Moreover, as existing studies commonly associate P2P accommodation with Airbnb, the study offers a fresh insight to researchers to carry-out further investigations on the dynamics of hybrid platforms together with consumer behavior to grasp an all-inclusive knowledge to contribute to the literature.

- P2P accommodation and the sharing economy in general are notably positioned in the market over its economic advantages and sustainability implications. Evidence shows that these are grasped favorably by all tourists from the selected emerging countries. No significant differences were found on the economic and sustainability perceptions across nationalities. Furthermore, the analysis indicates that the aforementioned perceptions are found to be significantly correlated to their overall positive perception of P2P accommodation services. These affirmative perceptions may drive the actual usage among tourists on the service across nationalities. Besides, extant evidences claim the significance of environmental sustainability perceptions (Hamari et al., 2016; Möhlmann, 2015; Tussyadiah, 2015) and economic incentives (Guttentag et al., 2018; Möhlmann, 2015; Tussyadiah, 2015) in driving consumers to use P2P services, collaborative consumption and the sharing economy in general. Therefore, disclosing these popular notions to existing and prospective consumers through various media channels may enhance their perception and consequently their actual usage as well. Nevertheless, future investigation is required to examine and establish the causality between the aforesaid perceptions and actual consumer usage especially the incidence of Covid19 pandemic.
- Age and educational attainment of tourists appear to be associated with their overall positive perception on P2P accommodation services. This roughly conforms to existing evidence in the literature that P2P services highly attract young (Bakker & Twining-Ward, 2018; Hwang & Griffiths, 2017) and educated individuals (Buda et al., 2019; Šiuškaitė et al., 2019). Paying attention to consumer education and generation is crucial in designing strategies to expand customer base. Special focus should be given to the educated and young adults (i.e. ages 18-35 years) as they are more fascinated towards the service. Distinctively, young consumers seem to exceedingly perceive the environmental implications of P2P accommodation than the older ones.

Nonetheless, due to the exploratory nature of the study, it is necessary to demonstrate caution in generalizing the reported findings. It is advised to improve the sample characteristics and/or sample representativeness in future studies. Likewise, further studies should explore and examine other influences that drive and/or restrain the use of P2P accommodation. A more comprehensive investigation with a more robust approach needs to be carried-out to detail and uncover the specificities of tourists' consumption behavior towards P2P accommodation. Lastly, P2P accommodation and the global tourism industry in general are adversely hit by the COVID19 pandemic. This may also have altered travelers' consumption patterns. As states institute measures to reboot the industry, further research is necessary to understand the particularities of residents' accommodation booking decisions and the interplay of hygiene and sanitation factors in the post-pandemic scenario.

All in all, the study offers initial insights on the P2P accommodation phenomenon on the selected tourism hubs in the emerging countries of Asia. The study found support to economic

benefits and environmental sustainability as popularly claimed hallmarks of P2P accommodation which is within the realm of the sharing economy. The promising uptake towards P2P accommodation services among tourists across nationalities pose relevant implications to service and P2P platform providers locally and abroad. Evidence shows that P2P accommodation service seems to become a competitive alternative for services offered by traditional accommodation providers (i.e. hotels). This is owing to its affordability as compared to traditional counterparts. Moreover, as it is framed as an environmentally sustainable offering, conscious individuals may likewise be attracted to use the service. Thus, to further expand the usage of consumers locally and abroad, there is a need to further promote its economic and sustainability nuances in various media channels. Meanwhile, the boost in tourism across the selected countries implies the need for additional and more competitive accommodation services. Foreign P2P platforms (firms) can take advantage of this profound opportunity by providing the platforms that enable peer-to-peer sharing of accommodation. Concurrently, this will offer more income opportunities in the emerging countries, especially for people who possess and are willing to share-out their extra living spaces to others.

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The Impact of Economic Diplomacy on the Fulfilment of the Slovak Pro-export Policy Goals

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Abstract: For the Slovak, highly open and export-oriented economy, foreign trade is an important factor of economic growth. In the current global economic environment, the process of interconnecting economic relations between countries is constantly growing and the professional economic diplomacy, as a part of the foreign trade policy of each economy, plays an important role. Therefore, the aim of our research was to use scientific research methods to assess the impact of the Slovak economic diplomacy on the fulfilment of pro-export policy goals. At the same time, we try to evaluate how the performance of economic diplomats and models of economic diplomacy affect the development of the economy and export performance. We also focused on examining the task of the innovative diplomacy.

Keywords: Trade policy, export performance, international business, economic diplomacy.

JEL Classification codes: F10, F14, F20

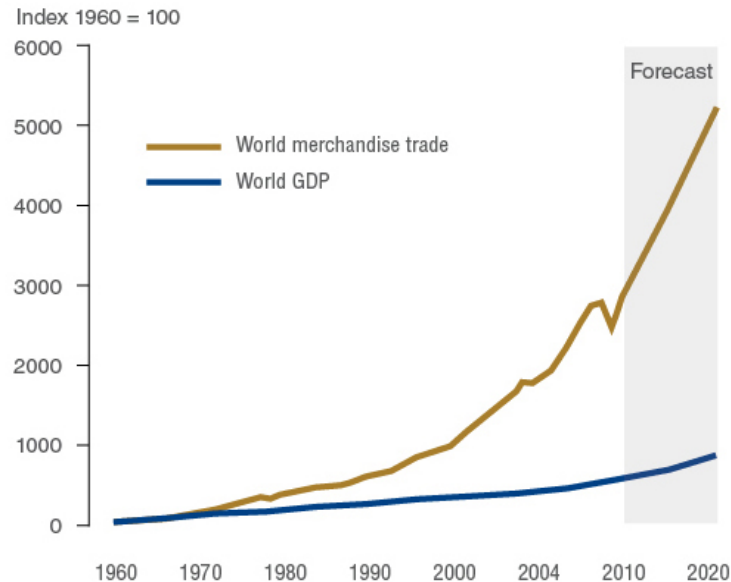
INTRODUCTION

The current world trade form is undoubtedly linked with an international division of labour. There is hardly a country excluded from or independent of international business characterised by high dynamics and great changes in the territorial and commodity structure. The international business growth, except low crisis deviations, has long been faster than world GDP growth. Between 1950 and 2020, the international business volume increased 60 times in the value expression and only 13 times in the physical expression, although the world GDP increased only 2 times. Between 1992 and 2015, an average pace of the export growth was almost 7 times faster than the GDP growth (2,6 %) as shown in the graph 1 (Baláž et al., 2020). Despite the economic growth demonstration, the global division of labour results in the division of the growth and consumption centres. The growth is noticeable in countries that produce more than consume, e.g., BRICS countries, and the consumption is observable in developed economies such as the US, EU or Australia, despite their arising problems to earn for their consumption.

Since the beginning of the 21st century, the world economic development has been facing a new challenge represented by deglobalisation causing a high degree of uncertainty in the liberalised trade. The deglobalisation tendencies may result in greater imbalance between the countries, loss of jobs or widespread of poverty in the problematic regions (CIGI, 2017). All this makes conditions for economic crises to occur repeatedly. Competition for investments, sources of energy, jobs and market shares lead to the question of holding or rising power or survival of the state. The foreign trade represents a way of connecting and interconnecting the national economy with the international economic environment, including comparative

advantages of the national economy and excluding its advantages. It creates an opportunity for state administration activities or business managers being responsible for the economic development of individual entities or the economy as a whole.

Fig. 1 World trade and GDP between 1960 & 2020



Source: Oxford Economics Report – The Economic Impact of Express Carriers in Europe

The international trade is no longer a matter of customs or business paths. It is the matter of state's intra-political security and stability. The economic diplomacy increases its prominence as it moves from the free trade policy to the militant forms of the international economic relations, i.e. economic warfare.

1 LITERATURE REVIEW

Under the influence of the globalisation, the 20th and the beginning of the 21st century saw new trends and quality changes in the world economy reflected in the international relations, international business and international trade. Industrial revolution caused decrease in production costs and increase in production volume exceeding the absorption ability of the domestic market (Baláž et al, 2020). The GDP increased and so did the export. A lot of world economists point at the direct relation with the GDP growth and the international trade growth (M. Porter, 2008), (A. Madisson, 2007) and demonstrate their improvement reflected in the world trade development and so in the international trade, foreign trade and vice versa. Positive development of foreign trade is an important indicator of economic growth, largely affecting effective functioning of the entire economy (Baláž, Zájbojník, Harvánek, 2019). The export and import are enormous, both for the economies and businesses conducting their activities therein. For the producers, it means increase in the production, growth in profits and sources of sale. For the national economies, it represents revenues, increase in pensions and subsequently growth in savings, employment as well as aggregate domestic market (Kašťáková, Ružeková, 2019). Slovakia is highly open economy due to its heavy dependence upon the foreign trade and significant sensitivity to the world economic environment changes. Developed industrial production is dependent upon raw materials imports on the one hand and is expected to sell its own production on the foreign markets due to relatively small internal market (Kittová & Steinhauser, 2017).

The export support may be described as a sum of tools and measures used via the third and superior party with the aim to facilitate the domestic exporters in making contacts with their foreign partners and concluding or conducting agreements (M. Csabay, 2007). An important role in the export support plays the economic diplomacy considered as an economic dimension of the foreign state policy and occupying a significant place in the diplomacy as such (Bayne, N., Woolcock, S. 2016). The economic diplomacy has always been an integral part of the classical diplomacy and as M. Csabay states, what makes it different from political economy is its relation or sensitivity to the market and its scope in the foreign economic and trade relations of the state (M. Csabay, 2007). Literature, whether domestic or international, offers a vast variety of definitions which may arise from preferences of their authors with academic or diplomatic practice. As OECD sets out, the economic diplomacy may be understood as a frame of support and services a state provides with its domestic entities with an aim to thrive on the foreign market (OECD, 2017). It is deeply integrated into the proexport policy conception of every market-oriented economy and its competences, branch foci, territorial interest priorities and institutional backgrounds arise from the comparative advantages of the national economy and its business-economic interests in the world (J. Štouračová, 2012). Traditionally, the economic diplomacy is viewed as decision-making, policymaking and advocating for business interests of the state. In K. Rana's words, it is a process through which countries tackle the outside world to maximise their national gain in all spectra of their activities, including trade, investment and other forms of economically beneficial exchanges where they enjoy comparative advantage; it has its bilateral, regional and multilateral dimensions, each being equally crucial (K. Rana, 2007).

In the 21st century, the economic diplomacy gets confronted with new challenges individual states must adapt to. D. A. Degterev, a Russian expert in the diplomacy, points at a fact, the economic diplomacy is currently multicriterial and multilevel, and implies that the macroeconomic diplomacy is inseparably linked with the microeconomic diplomacy in such a manner that the former one makes international opportunities and function space for the latter one (D.A. Degterev, 2007). Processes of the structural release, in the 21st century related to the changes in globalisation, deglobalisation, technological as well as information and other ones, have affected multiplication of the parties to the international relations and diplomacy, including the economic diplomacy (Z. Veselý, 2011). While the classical diplomacy was exclusively the domain of the state authorities, undergoing changes in the economic diplomacy have brought new parties Bayne & Woodcock divide into state parties and nonstate parties, both dynamically changing in the process of development. Assessment of the economic diplomacy participation and influence in achieving the proexport policy aims may be carried out via tasks and functions of the economic diplomacy. K. S. Rana distinguishes four pillars of the diplomat's economic diplomacy, i.e. export support, investment support, technology attraction and development aid management (Bayne a Woolcock, 2007). In Pajtinka's view, diplomat's tasks and functions are business relation support and development, investment support, economic-information and political-legislative function, assistance with development aid and country's promotion.

2 METHODOLOGY

One of the paper's aims is to assess the influence of the economic diplomacy on the achievement of the Slovak proexport aims. In order to achieve such an aim, a few theoretical methods were used, such as analysis and synthesis, induction and deduction as well as comparison. Subsequently, the Slovakia economic diplomacy is assessed in terms of the defined Slovak proexport policy aims between 2014 and 2019 ordered by the proexport policy, direct foreign investment support and innovation cooperation from abroad. Data was taken from the Slovakia's Statistical Office, Ministry of Economy and Ministry of Foreign and European

Affairs. As Slovakia is currently adopting a new Slovak proexport policy concept, the paper focuses on the prediction of the Slovak export until 2025 using a correlation regression analysis as part of the scholastic modelling. The analysis enables to project changes in the future with certain probability. The data was taken from the Slovakia's Statistical Office and the World Bank (export of goods and services at constant prices) with regard to the Slovak export and GDP as well as the world GDP between 2010 and 2019. The dependent variable is represented by the Slovak export, the independent variable is represented by the values of the Slovak and world GDP at constant prices between 2010 and 2019. The determination coefficient (R^2) expresses percentage of the dependent variable value variation Y is a result of the independent variables variation X. The model predicts the development of the Slovak export between 2020 and 2025. The prediction of the Slovak future export development as well as the analysis of the achieved results for last years facilitate in defining the future aims, directing the proexport policy and optimising the number of the Slovak economic diplomats abroad.

3 RESULTS AND DISCUSSION

The Slovak economic diplomacy is an integral part of the state foreign policy and represents a coordination of the state and nonstate entities firstly focused on the support of the proexport policies and tools with the aim of creating the most optimal domestic economic environment and secondly focused on the emphasis of the task and capacity of the economic diplomacy in the transposition of the Slovak interests abroad. These activities should contribute to the growth in the economy as well as the increase in the competition, employment, export performance of the small-sized and middle-sized companies, investment attraction of Slovakia and unified presentation abroad. How the Slovak economic diplomacy thrives on achieving the aims is assessable via its quality and competitiveness and with regard to the strategy, aims, capacity, financial resources, quality of the services linked with the quality of the human resources, adequate territorial location of the embassies abroad etc. A lot of activities need not be measurable, however may contribute to the increase in the country's reputation and its position in the international political-economic environment.

In assessing the influence of the economic diplomacy on achieving the aims of the proexport policy, a few views, levels and econometric models may be considered. Clarification of the relation between the business activity and the presence of the embassies abroad is often achieved by using the gravity model or the so-called gravity equation published by W. Isard in 1954, later altered and in its present-day form first mentioned in the J. Tinbergen's paper. This model enables to clarify bilateral business flows between individual states based on their economic and geographical distance. For the purpose of our research, which is not aimed to assess the influence of the Slovak economic diplomacy at the bilateral level, but is aimed to assess the influence of the economic diplomacy on achieving the aims of the pro-export policy between 2014 and 2020, the research focuses on the aims defined in the pro-export policy and ordered by the general versus specific ones, the innovative diplomacy, territorial focus of the economic diplomacy and the optimisation of the Slovak economic ambassadors' number abroad.

3.1 Assessment of general and specific pro-export policy aims

The fundamental area for the bilateral economic diplomacy is represented by the foreign trade and investments. Slovakia is a state with heavy dependence upon the foreign trade and one of the most open economies. It is therefore obvious it is greatly influenced by major trends forming the world trade such as the technological advance, digitalisation, automation,

sustainable development, climate changes, environment protection as well as demographical trends and economic nationalism.

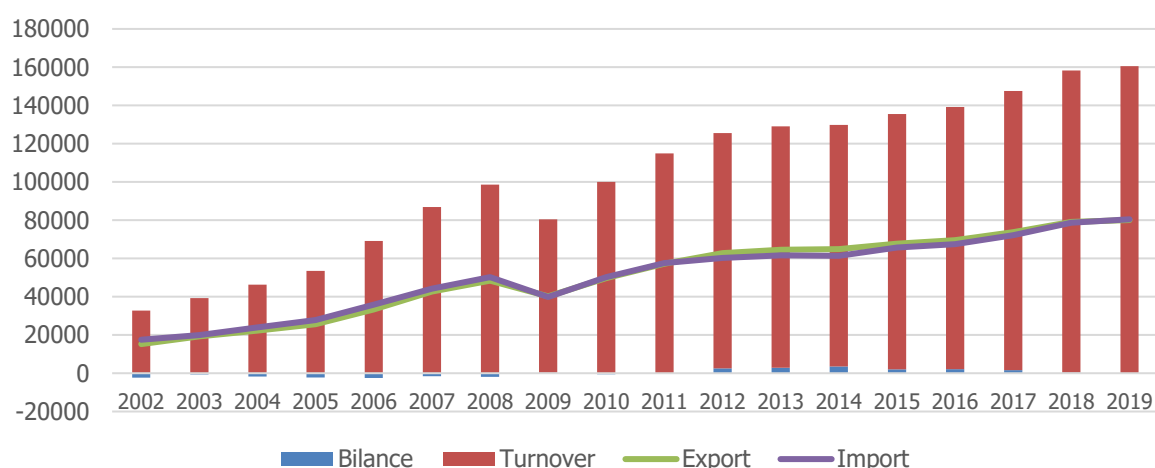
Slovak external economic relations strategy between 2014 and 2020 in the export support area:

- *general* ones such as the growth in export and number of exporters as well as security of stable deliveries and strategic goods,
- *specific* ones such as the diversification of export territorial and commodity structure, increase in MSP export share and growth in export of services.

General aim – Growth in export

Slovakia is characterised by a high production ability and one of the most open economies (185,3 % in 2019) considering the foreign trade and mainly the export an economic growth stimulus, an important factor in payment ability, international credibility, overall rating of the state. In the pro-export policy called the Strategy for the external economic relations between 2014 and 2020, the export aim was to secure the export growth, which may be viewed as very general, without quantification and thorough check or relevant and effective regulation measures.

Fig. 2 Slovak foreign trade development between 2002 and 2019 (in millions EUR)



Source: processed by the author based on the data taken from WTO Merchandise imports by product group – annual, 2020.

As it is evident in the graph above, the export saw certain stagnation starting in 2012 and presumably lasting until today. It may be caused by unsuitable territorial and commodity structure of the Slovak foreign trade. At the beginning of the EU economic recession and at the time of the Slovak low-quality export, our significant orientation towards the EU markets resulted in the export performance increase.

Tab. 1 Export share in Slovakia and Czechia between 2012 and 2019 per capita (in EUR)

	2012	2013	2014	2015	2016	2017	2018	2019
SR	12 378,35	12 864,48	12 885,66	13 538,29	13 997,71	14 799,32	15 821,75	15 919,14
ČR	11 707,38	11 533,14	12 303,67	12 961,70	13 300,03	14 502,35	15 299,48	15 643,45

Source: processed from data EUROSTAT, 2020

To assess whether the export increased sufficiently is thus rather disputable. The Slovak export position may also be viewed in comparison with Czechia or with the average of the EU countries per capita as shown in Table 1.

The average export in the EU-28 in 2018 per capita was at the level of 12 746 EUR. It is significantly lower than that in Slovakia, Czechia or other small economies regarding the number of their inhabitants. It is due to the fact that the EU comprises countries with significantly larger internal market, greater domestic consumption demand and unnecessarily orientation towards the export only.

The countries are aware of the export importance in the national economy and therefore endeavour to increase their export performance in the growing global competitiveness. It is noticeable at the level of their overall export as well as in the quality export area represented by the export of the sophisticated production, top technologies, increasing services share in the export and the pillar factors in the international competitiveness as described in details in the innovation diplomacy part.

General objectives - Increase in the number of exporters / Increase in the share of SMEs in export of the Slovak Republic

The evaluation of the indicator of growth in the number of exporters is possible in this section, as well as within the specific objectives, in the section *Increase in the share of SMEs in total exports*. In our research, we will make an evaluation in this section.

Small and medium-sized enterprises (SMEs) represent a key prerequisite for economic growth and development. In 2019, SMEs in the Slovak Republic accounted for 99.9% of the total number of business entities, employed more than 2/3 of the active labour force and contributed more than half to the creation of added value. In the realm of export support for SME entities, the Slovak Republic has long been trying to increase not only their number, but also the value of their exports. Given that the Ministry of Economy of the Slovak Republic did not quantify this goal in the Strategy of External Economic Relations for 2014 - 2020 (i. e. it was not defined what the desired percentage of increase is), the evaluation of the achieved results is disputable. For example, the Czech Republic quantifies precisely that from 2016 to 2020 it is desirable to increase the number of exporting companies by 15%.

According to the data of the Statistical Office of the Slovak Republic, the number of exporting SMEs reached 31,299 in 2019, while in 2014 it was only 26,000, i. e. the number of exporting SMEs increased by 6.4%. In absolute terms, the number of exporting SMEs increased by almost 2,000 compared to 2014. However, if we compare the share of SMEs in the total exports of the Slovak Republic, then it was at the level of 28% in 2019 and 26.7% in 2014, which cannot be considered as meeting the goal. Therefore, the lack of competitiveness of SMEs persists at the international level. The result is a long-term dominance of large companies in foreign trade in goods, with a predominance of the automotive sector and SMEs focusing more on the domestic market. Due to the anti-epidemic measures taken that adversely affect the performance of SMEs, it is not possible to expect an increase in the share of SME exports in total Slovak exports in the near future.

In terms of territorial structure of exports of SMEs in Slovakia it has long reflected the dominance of the EU market, where up to 90.7% of SME exports went in 2019. Within the commodity structure of SME exports dominated the export of machinery, apparatus, electronic equipment (32.4%), metals and their products (16.0%), vehicles, aircraft, transport equipment (10.4%) in 2018. Regarding the export of high-tech production, the participation of SMEs in the export of this category of products reached a share of 27.5% in 2019. The workforce flexibility and the high motivation and orientation towards performance on the owners' side are considered to be decisive strengths. The general advantages of SMEs are also their knowledge of the local market, as well as their ability to respond flexibly to developments in

the local environment. Among the main weaknesses of Slovak SMEs are the production of products with high energy intensity, lack of state orientation to support SMEs, backwardness in new technologies, lack of knowledge and experience in management and marketing, predominance of low value-added production, as well as insufficient investment corporate finance in the field of intellectual property.

General objectives - Securing stable supply of strategic goods

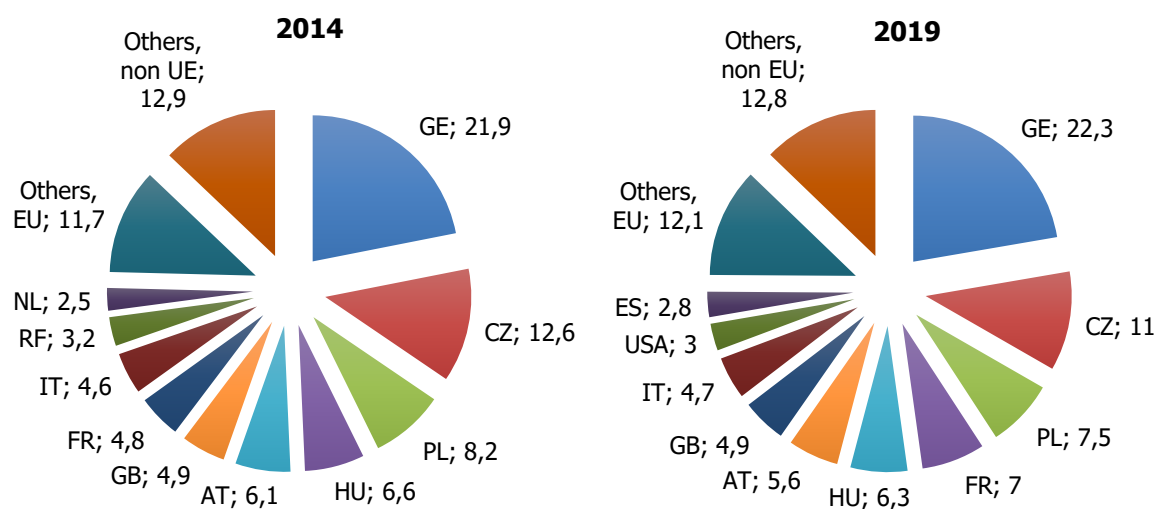
Securing a stable supply of strategic goods is linked to securing supplies within the food and energy security of the state. From 2014 to 2020, in a field of energy security was special attention paid to the development of interconnection of gas and oil pipelines between EU countries in order to increase the security and stability throughout the EU economy. The Slovak Republic participates in the fulfilment of this goal within the framework of the EU's Common Commercial Policy and multilateral diplomacy. Due to more than 90% dependence on the supply of energy carriers, the Slovak Republic is very active and is working on the implementation of the so-called projects of common EU interest (PCI) in the gas, electricity and oil industries. Great attention is paid to the diversification of sources, transport routes and minimization of risks in the event of a supply failure of particular raw materials or goods. Economic diplomacy is helpful in this regard in the structures of the European Commission, the Ministry of Economy of the Slovak Republic and the Ministry of Foreign and European Affairs of the Slovak Republic. Due to existential necessity, this goal is long-term and is also a part of the Concept of External Economic Relations and Economic Diplomacy of the Slovak Republic for 2021 - 2030.

In the realm of food security, despite the problem of food self-sufficiency, Slovakia is among the above-average qualitatively in the global comparison. The problem is the low share of Slovak food products in stores, which stagnates in the monitored period and reaches less than 40%. In comparison, the level of food security from own production in Switzerland, for example, has long been in the range of 59 to 64%, in Germany it has not dropped below 94% for a long time. On the other hand, Slovak foreign trade in agri-food products is declining. Exports are falling, imports are rising. The Slovak Republic achieve the largest trade deficit in agro-commodities in food, beverages and tobacco, where imports increased by EUR 145.5 million between 2018 and 2019. For example, imports of animal products also increased by almost EUR 54 million. This trend is unsustainable, but it is not primarily associated with the fulfilment of the goals of economic diplomacy, but of the Ministry of Agriculture and Rural Development of the Slovak Republic.

Specific objectives - Diversification of the territorial and commodity structure of exports

The objectives of the Strategy in the realm of diversification of the territorial and commodity structure of Slovak exports were not fulfilled, even though they were among the strategic objectives. In assessing diversification, we compared the territorial structure of Slovak exports in 2014, as the base year and 2019. It emerges from them that the share of exports from the Slovak Republic to the EU markets reached 83.9% in 2014 and in 2019 it reached an even higher level of 84.2%. This fact poses a great risk to our economy. At a time of economic recession in the EU, Slovak producers do not have established sales markets outside the EU, which would pull our economy in times of crisis and mitigate the negative impact of the recession of EU economies. Economic diplomacy has relatively large reserves in this area. This should be the content of the agenda of cooperation between economic diplomacy, the business sphere and the territory of operation within B2B - Business to Business activities, as well as G2G - Government to Government. A more detailed overview of the territorial structure of Slovak exports in 2014 and 2019 is given in Chart 2.

Fig. 3 Territorial structure of Slovak exports in 2014 and 2019 (in %)

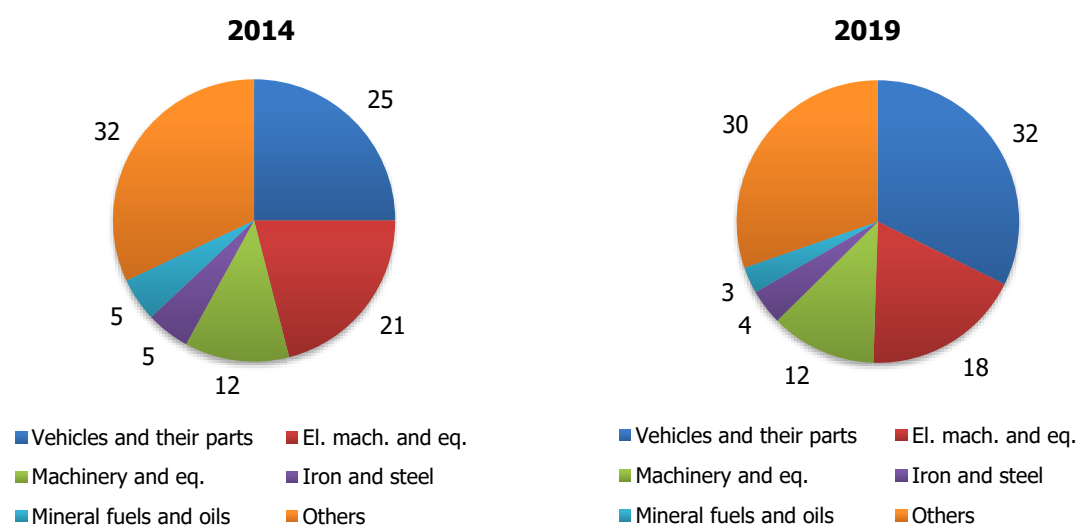


Source: processed from data of the Statistical Office of the Slovak Republic Data Cube - Statistics ZO – H0S4, 2020

The diversification of the commodity structure of Slovak exports, as well as the territorial structure, is unsatisfactory. The inflow of foreign investment in the automotive and electrical engineering industries was a major boost after 1993. However, what was an advantage in the early 1990s, in the form of reduced unemployment, growth in exports and state budget revenues, became a problem in the second decade of the new millennium. The long-term dominant position of the automotive industry, which is the backbone of our national economy with a 50% share of industrial production and a 13% share of the country's GDP, appears to be a threat to our economic development and international competitiveness. Today, the automotive industry directly employs 135,000, secondary up to 250,000 workers, with an annual output of more than 1.1 million automobiles. The mistake was and still is that the automotive industry was not complemented by the development of science and research, the creation of new sophisticated industries with high added value, which would speed up the production and subsequent export of high technologies. A comparison of the commodity structure of Slovak exports in 2019 to the base year 2014 is shown in Chart 3

While in 2014 only three product groups accounted for up to 58% of our exports, in 2019 their share increased even more and reached 63%. The achieved state does not correspond to the goals of pro-export policy and the tasks of economic diplomacy as well as directly threatens the economic security of our economy. This situation in times of recession in target market economies can lead to a significant cooling or even collapse of our economy. We had the opportunity to experience the veracity of this statement during the global financial crisis in 2008-2009, when the annual decline in our exports reached almost 20% and has been proving problematic in recent years. The production and export of these goods is carried out by a small group of several large multinational corporations, without the participation of economic diplomacy. Here as well, and in the case of territorial diversification, the B2B and G2G agenda is needed in economic diplomacy.

Fig. 4 Comparison of the commodity structure of Slovak exports in 2014 and 2019 (in %)



Source: processed from data of the Statistical Office of the Slovak Republic Data Cube - Statistics ZO - HS4, 2020

Specific objectives - Growth in services export

The country's success in international markets is not only due to the growth and support of exports of goods, but also to increasing the share of services in the country's total exports. This is also confirmed by the long-term efforts of individual economies to increase the share of services in total exports, through their pro-export policies. Export of services from the Slovak Republic has an increasing tendency. While in 2014, the export of services was worth EUR 9,062 million, in 2019 it was EUR 12,010 million. The largest share in the total export of services was carried out in the category of transport services and tourism with a share of less than 60%. Services of a commercial nature have a decisive share, accounting for 99.6% of exports of services in 2019. The remaining percentages are for non-commercial services. The share of exports of services needs to be significantly increased in the coming years.

3.2 Innovation diplomacy

The Slovak Republic has long declared an effort to increase the quality of exports. This can be achieved by increasing human capital and creating an innovative environment that will strengthen the competitiveness of production and contribute to a qualitative shift in the value chain of Slovak exports. Despite our efforts, however, we have long been among countries with a weak innovation environment and low support for science and research. Within the EIS (European Innovation Scoreboard), the Slovak Republic belongs to the category of "moderate innovators" and in the Global Innovation Index, the Slovak Republic ranked 39th (the lowest of the V4 countries).

The improvement of the situation is conditioned by significant investments in the areas of innovation, science and research, to building a competitive knowledge-based economy. In the External Economic Relations Strategy for 2014 - 2020, the Slovak Republic has defined in this area the goal of "significantly increasing the share of high-tech production in total exports" with the significant participation of economic diplomacy as well. Realistic view on the development of exports high-tech products and their share in overall exports is given in Table 2, which is complemented by the data for the EU (for better orientation).

Tab. 2 Share of high-tech exports in total exports in the EU and the Slovak Republic in 2011 - 2019 (in %)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
EU-28	15.4	15.7	15.3	15.6	17.0	17.9	17.8	17.9	16,1
SK	6.6	8.2	9.6	9.9	10.0	9.7	10.6	9.6	10.0

Source: Processed from data EUROSTAT, 2020 and from data WORLDBANK. 2021. High-technology exports (% of manufactured exports).

It is evident that the Slovak Republic is well below the EU average. In the monitored period 2014 - 2019, the share of sophisticated production did not increase, on the contrary, it decreased! This indicator goes hand in hand with the intensity of spending and state support for science and research, education, involvement in international science and innovation projects. In the absence of not most positive information about the innovation performance of the Slovak Republic, we decided to analyse these shortcomings deeper. For this purpose, we used an indicator of *the intensity of expenditure on science and research* and their share in total GDP. The export of cutting-edge technologies is significantly influenced by the quality of scientific research activities in the country, associated with the support of science, research and innovation through private as well as government spending. Table 3 shows data processed in the EU-28 and separately for the Slovak Republic from 2010 to 2019.

Tab. 3 Intensity of expenditures on science and research in the EU and the Slovak Republic in 2011 - 2019 (% / GDP)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
EU-28	1.96	2	2.01	2.02	2.03	2.04	2.08	2.12	2,14
SK	0.66	0.8	0.82	0.88	1.16	0.79	0.89	0.84	0.82

Source: processed from data EUROSTAT, 2020

The common goal within the EU was for investment in science and research in the EU to be at least 3% of GDP by 2020. Only Sweden (3.31%), Austria (3.17%), Germany (3.13%) and Denmark (3.03%) managed to meet this target. Expenditures on science and research in the Slovak Republic represented only 0.82% of the total level of GDP in 2019, while the government's goal was for the intensity of expenditure on science and research to reach 1.2% of GDP by 2020. We can state that the support of science and research in the Slovak Republic is weak and falling behind, not only within the EU but also within the V4 countries. Insufficient state support in this area is already reflected in the reduction of the export performance of the Slovak Republic, the stagnation of the economy and the reduction of revenues to the Slovak Republic. The concept of smart industry (Industry 4.0) until 2030 must therefore be considered a priority, and good-quality economic diplomacy can be very helpful in this regard.

3.3 Scope of economic diplomacy in the Slovak Republic

The Ministry of Foreign and European Affairs of the Slovak Republic (MZVaEZ SR) is responsible for Slovakia's relations with foreign countries, whose task is to monitor global economic trends and challenges that may have a major impact on the economic development of our country. MZVaEZ SR is an important communication channel for the transmission of information on innovative approaches and proposals for solving urgent global economic challenges, whether at the multilateral level (within the UN, EU, OECD, etc.), the national level or the level of non-

governmental organizations. It strives to act in such a way that the interests of the Slovak Republic are promoted uniformly, comprehensively and effectively.

The institutional framework of Slovak economic diplomacy was represented by a network of 89 embassies in 2020, whose task was to implement the Strategy of External Economic Relations of the Slovak Republic for 2014 - 2020 abroad. The number of economic diplomats has been steadily declining since 2011. While in 2011 there were 59 economic diplomats abroad, in 2020 it was only 36 and a further reduction is expected in 2021, only 31 independent economic diplomats will work abroad, who should fully perform tasks in promoting the economic interests of the Slovak Republic in abroad and provide services to Slovak business entities. For comparison, the Czech Republic has up to 124 economic diplomats abroad, Hungary about 140, Denmark 105! As foreign trade is crucial for the Slovak Republic and its economy, this situation is even more alarming if the activities of economic diplomacy can bring real results and support to domestic companies and the economy, which is subsequently reflected in the revenue component of the state.

Territorial focus of economic diplomacy

Based on the findings so far, in the next part of the article we will focus on predicting the development of Slovak exports until 2025, for which we used correlation-regression analysis within stochastic modelling, which will allow us to project changes in the future with a certain probability.

Tab. 4 Regional forecast of the increase in Slovak exports until 2025 and the link to the network of economic diplomats

Regional group	Increase 2019 – 2025 (EUR mil.)	% share on increase	Number of independent economic diplomats in 2020	Proposed number of independent economic diplomats by 2025
EU (EU-27)	+11,021	88.24 %	11	15
Europe (excluding EU countries)	+635	5.08 %	5	6
Asia	+420	3.37 %	6	9
CIS	+157	1.26 %	6	7
Africa	+96	0.77 %	2	4
Latin America	+89	0.71 %	3	4
Middle East	+79	0.63 %	1	3
North America	+26	0.21 %	2	4
Australia and Oceania	-35	-0.27 %	0	0
Total	+12,488	100%	36*	52

* Out of the total number of 36, 2 posts (Moscow and Pretoria) have been vacant for a long time and 3 posts (Nairobi, Ljubljana and Stockholm) will be abolished in 2021 due to optimization.

Source: Concept of External Economic Relations and Economic Diplomacy of the Slovak Republic for 2021 - 2030, MZVaEZ 2020, internal material

The model, as we described it in the methodology section, predicts the development of Slovak exports for 2019 - 2025 (Table 4, column 1), which together with the analysis of results achieved in recent years will help us in defining future priorities of pro-export policy, optimizing the number of economic diplomats abroad by 2025, as well as determining the territorial focus of economic diplomacy. The forecasted increase in exports in 2019 - 2025 is at the level of EUR +12,488 million, which corresponds to the proposed minimum number of economic diplomats to 52 in 2025, which in the international comparison of the number of economic diplomats working abroad from other EU countries seems to be insufficient. The territorial focus of economic diplomacy is based on export, investment, scientific research and innovation priorities and goals, and last but not least it must reflect the real possibilities of economic diplomacy to influence the export efforts of Slovak companies. In terms of the territorial focus of economic diplomacy by 2030, the EU-27 markets will continue to be of the utmost importance, with smaller shares accounting for new promising third country markets.

The forecast of export growth by 2025 and the link to the economic diplomacy network is given in Table 4. The export forecast is adjusted for TOP 6 export commodities, as these are carried out not by Slovak companies, but by multinational companies operating in Slovakia and without the participation of Slovak economic diplomacy.

CONCLUSION

For the Slovak, highly open and export-oriented economy, foreign trade is an important factor of economic growth. It has an irreplaceable role in ensuring the optimal balance of internal reproduction processes, adapting economy to the conditions in foreign markets, and at the same time provides space for the application of effective trade policy instruments in order to increase international competitiveness. The Government of the Slovak Republic is aware of this, as it defined in its pro-export policy for 2014-2020 the goals that should have contributed to the growth of our economic competitiveness in the international environment. In this process, the economic diplomacy represents an important "extended hand" of the government, which promotes the interests of the Slovak Republic in a wide range of areas ranging from attracting investments, export support, presentation of research potential, involvement of companies in development cooperation to presentation of the country and its tourist potential. The aim of our research was to use scientific research methods to assess the impact of economic diplomacy on the fulfilment of pro-export policy goals.

In terms of our research, the quality of Slovak foreign trade can be assessed as moderate. Although we manage to maintain an active foreign trade balance, it is evident that the growth rate of exports and export performance is the result of our participation in global and especially regional value chains, rather than our own production. Since 2012, our exports have more or less stagnated, our territorial and commodity diversification is not sufficient, which can cause major problems at some point. As much as 85% of exports head to EU markets, which can decimate our economy in the event of an economic recession in these markets. The commodity structure of Slovak exports is significantly dominated by the output of multinational companies operating in Slovakia with lower domestic value added. The rate of involvement of Slovak SMEs in exports is low, as well as the share of high-tech products in our exports, reaching only about half the EU average. As the intensity of expenditures on science and research in the Slovak Republic is extremely low, at the level of only about 40% of the EU average, no significant progress can be expected in this direction in the near future. The share of the services sector in total exports is also low. Despite these negatives, with the help of scientific forecasts, we expect continuous growth of exports until 2025 with a forecast increase of 12,488 mil. EUR compared to the base year 2019.

In the field of economic diplomacy, there is no single general approach to ensure its performance. However, there are several principles, each of which has its own challenges and should correspond to both international commitments and the needs of economy. The manager of economic diplomacy in the Slovak Republic is the Ministry of Foreign Affairs of the Slovak Republic, which states in the Concept of External Economic Strategy and Economic Diplomacy of the Slovak Republic until 2030 that *"highly competitive environment and current global trends dwell a great emphasis on new innovative tools to support economic diplomacy and especially on new sectors with added value (green technologies, biomedicine, innovation, digitization or robotization). Economic diplomacy needs to present and communicate existing tools in a more targeted way and seek effective coordination with the remaining state and non-state actors in the field of R&D."* However, these intentions are in conflict with reality, namely the gradual reduction of the number of Slovak economic diplomats abroad, from 59 economic diplomats in 2011 to 31 diplomats in 2021, who can hardly participate well in the above-mentioned intentions, including active innovative diplomacy. For example, the Czech Republic has 124 economic diplomats abroad.

The continuity of the reduction is critical and incomprehensible, when the Slovak Republic literally lives on foreign trade, investment and international cooperation. Due to financial under sizing in the field of economic diplomacy, its cumulative performance with another diplomatic agenda is increasingly being enforced, without sufficient knowledge of the economic agenda. Whereas economic diplomacy in the 21st century will face various challenges arising from the changed global economy, the performance of economic diplomacy must adapt to accordingly. In order to increase the quality and competitiveness of economic diplomacy in the Slovak Republic, it will be necessary to ensure its co-financing and increase the number of economic diplomats abroad, strengthen them with a group of sector-oriented diplomats for science, innovation research with adequate education and experience, expand their network in new promising territories. We must not forget to strengthen the so-called the soft power of diplomacy, while difficult to measure, can contribute to a country's attractiveness in an international context - as a good place to do business, as a place where people want to visit, invest, work and travel.

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Cross-border Financial Intermediation in the European Union, Slovakia and Czech Republic

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Abstract: The paper discusses the sectoral regulatory framework for distribution (intermediation) of financial services under the EU framework (most notably IDD and Mortgage Credit Directive) and how it is implemented into Slovak integrated (cross-sectoral) regulatory regime for financial intermediation. The notable feature of Slovak regime is that it regulates financial intermediation in all main financial sectors (deposit taking, lending including mortgage and consumer loans, capital markets, insurance, pensions) under common framework. However, the harmonisation through EU law and consequent benefits of the single passport are limited to the distribution of insurance and mortgage loans. The paper further compares the Slovak regime with Czech approach with the aim to investigate potential benefits or risks of the further harmonisation of the regulation of financial intermediation / distribution and also financial advisory across various sectors of the national and wider EU financial market. On one hand, further integration may help creating more sophisticated and complex distribution platforms across the EU benefiting from the single passport. On the other hand, it is questionable whether the Slovak approach can be successfully replicated at the EU level.

Keywords: financial intermediation, single passport

JEL Classification codes: G2, K22, K23

INTRODUCTION

Since the end of the 20th century, a transformation of the way of selling financial services can be seen. The 1990s are associated with a major change in the focus that has shifted from service to client; these development trends have their roots in globalization and increased competition (Klößner, 2014). When searching for a suitable financial service, the client incurs transaction costs and financial intermediation or financial advisory may be used to reduce them.

Slovak Act No. 186/2009 Coll. On Financial Intermediation and Financial Advisory supplementing and amending other laws as amended (herein after only "Financial Intermediation Act") is reflecting the idea of creating equal conditions for performing distribution of financial services in various sectors of the financial market. The Financial Intermediation Act has unified the conditions for the provision of financial intermediation and financial advisory in the area of financial services in the sectors insurance or reinsurance, capital market, supplementary pension savings, granting loans, housing loans and consumer loans, acceptance of deposits and old-age pension savings. In this context, it must be

emphasized that this is a unique piece of legislation and a way of regulation that we do not find in neighbouring countries.

Integrated regulation of financial intermediation and financial advice in various sectors does not exist in European Union law, which is characterized by a sectoral approach which, moreover, is not fully interconnected and harmonized, even in directly related areas such as the distribution of financial instruments (according to MiFIDII) and insurance-based investment products (according to IDD).

Reflecting on the single passport concept of the EU law, the Financial Intermediation Act enables a financial intermediary from another Member State in the area of housing loans and a financial intermediary from another Member State within the insurance and reinsurance sector to provide financial intermediation or financial advisory in Slovakia. Similarly, Slovak financial intermediaries in these sectors benefit from the same regime when providing the services from Slovakia. This is the outcome of implementing directives, which are reflecting the single-passport principle.

The Financial Intermediation Act also however imposes strict prudential and conduct of business requirements on financial intermediaries in other sectors of the financial market as well (lending, deposit taking and pension funds), however without the potential benefit of the single passport.

1 LITERATURE REVIEW

With regard to key concepts of EU law, relevant theoretical background pertains mainly to the nature of EU legislation instruments and the concept of single passport.

A directive is binding on each member state to which it is addressed as to the result to be achieved, but leaves the choice of form and means to the national authorities (Haratsch et al, 2018, p. 175). This enables the member states to implement the directive taking into account their national characteristics (Fisher et al, 2020, p. 625) The directive is the classic instrument for the harmonization of national legal provisions through the approximation of content, since it leaves the member states a certain degree of leeway in the implementation, the directive presents itself as the gentler measure compared to the regulation (Herdegen, 2018, p. 196).

The discretion of the member states comes into play in particular in cases in which the national legislature exceeds the minimum provisions when implementing the directive (Haratsch et al, 2018, p. 176). However, since directives often contain very detailed regulations, the national legislature is increasingly limited to replicating the European requirements (Hobe, 2014, p. 95). This is even more true where the directive provides for a so called "maximum harmonization" or is supplemented by implementing EU regulations or delegated regulations, which effectively prevents the member states from developing own approach on detailed aspects which are left open under a directive (see for example the complex of EU legislation related to MiFIDII).

With regard to the quality of the act of implementation, the ECJ initially demanded in general that the member states, when choosing the form and means, should take those most suitable for ensuring the practical effectiveness of the directives. Member states must therefore transpose the directive into binding national provisions that meet the requirements of legal certainty and legal clarity (Streinz, 2012, p. 168).

Cross-border activities of financial institutions in the EU are based on two out of the four fundamental freedoms - the free movement of persons and the free provision of services (Pénzeš, 2013).

A large number of activities in the European financial market are subject to licensing requirements. If a license had to be obtained for each member state, this would mean a great deal of effort and correspondingly high costs for the service provider (Imm, 2020, p. 71). For this reason, the EU law provides for the single passport. Once a license has been obtained in the home member state, it is also authorized to sell financial instruments and products throughout the EEA without the need for an individual license in each other country (Imm, 2020, p. 71).

With regard to Slovak law, the main literature used in this paper is the commentary on the Financial Intermediation Act (Slezáková et al, 2020). The commentary discusses inter alia with implementation of Directive (EU) 2016/97 on insurance distribution (recast) (hereinafter "IDD") and Directive 2014/17/EU on credit agreements for consumers relating to residential immovable property (hereinafter the "Mortgage Credit Directive") and how these are reflecting the single-passport principle. The commentary also reflects the impact of Directive 2014/65/EU on markets in financial instruments (hereinafter "MiFIDII").

Finally, with regard to Czech law, the authors have used the commentary on Czech Act on Undertaking in Capital Markets (Husták et al, 2012), articles on the Czech financial intermediation regime in general (Šárek, 2012, Šindelář and Erben, 2017) as well as public information provided by the Czech Ministry of Finance.

2 METHODOLOGY

The method of analysis will be used in order to obtain relevant information. The analysis is based on the assumption that the knowledge of the whole begins with the knowledge of its individual parts. The aim of the analysis as a method is therefore to mediate the knowledge of the whole through the knowledge of its individual parts.

It can be distinguished between factual and legal analysis. In the factual analysis, the important facts (parts) are being isolated from the unimportant ones, thus creating an idea of the factual state (whole). The aim of legal analysis is to obtain a basis for meaningful argumentation that will support the legal conclusion.

Further, the comparative method will be used. The essences of the comparison are thought operations by which the similarity is being examined or difference between the examined elements and we try to reveal the causes of these similarities, resp. differences. In case of this paper, the comparisons will be made between the general EU legal framework, Czech legal framework and Slovak legal framework governing the financial intermediation.

In addition to the comparative method, the paper explores historical context of the legislation at EU and national level in order to identify and justify existing differences in the approach of these legislations.

Finally, in terms of concepts and terminology, we perceive the "financial intermediation" both through general meaning of that term, but also through the legal definition under the Financial Intermediation Act. In general sense, financial intermediation is equivalent of "distribution" of insurance, financial instruments, mortgage credits or other financial services or products. Hence the term "insurance distribution" under the IDD. In narrower sense of legally defined term under the Financial Intermediation Act, the financial intermediation is a regulated activity of a licensed agent on behalf of a financial institution (principal) consisting largely of solicitation and entering into a financial contract between the financial institution and a client. The financial intermediation in this sense includes ancillary activities such as provision of advice to the client and management of client's requests or claims in relation to the financial service (§ 2 of the Financial Intermediation Act, Slezáková et al, 2020, p. 41).

3 RESULTS AND DISCUSSION

This main chapter is divided into three parts discussing the details of EU law position, Slovak law position and Czech law position concerning the financial intermediation.

3.1 European law position

The EU law position on the regulation of the financial intermediation in general sense is fragmented and driven by sectoral developments in various segments of the financial markets. There are various motivations and driving forces behind the development of this EU sectoral legislation, which consists of IDD, Mortgage Credit Directive and MiFIDII.

Insurance sector

In the insurance sector covered by IDD, the EU law is the oldest, dating back over 50 years, with the first directive in this area being Council Directive 64/225/EEC on the abolition of restrictions on freedom of establishment and freedom to provide services in respect of reinsurance and retrocession. A first step to facilitate the exercise of freedom of establishment and freedom to provide services for insurance agents and brokers was made by Council Directive 77/92/EEC on measures to facilitate the effective exercise of freedom of establishment and freedom to provide services in respect of the activities of insurance agents and brokers (Recital 2 of Directive 2002/92/EC).

Traditionally, the insurance sector relied heavily on various intermediaries, agents, brokers or distributors. Given the nature of insurance business, it is relatively easy to distinguish between the insurance itself, which in simple terms represents an assumption of certain risk by an insurance company in exchange for a premium paid by a client, and on the other hand the distribution of insurance, which is relatively simple process of brokerage of an insurance contract. There is rarely a complex layered distribution structure and this simple model largely remains typical in the non-life insurance segment to the present days. In life insurance, the position has become more complex with development of investment based insurance products, which are also the main driver for increasing complexity of the regulation of insurance distribution resulting in enactment of IDD.

From very early times, the EU law supported cross-border insurance distribution and the concept of single passport as the mean of establishment of single EU insurance market and necessary instrument of achieving the freedom of establishment and freedom to provide services in this area.

Mortgage loans sector

In the mortgage loan sector covered by Mortgage Credit Directive and its provisions concerning the credit intermediaries, the historic situation is widely different. The EU law in this area is relatively novel and is reaction to the financial crisis in 2007 – 2009. One of the aims of the Mortgage Credit Directive is to create a single EU market for mortgage loans – the aim, which is largely still far away, given that the mortgage loans markets are still significantly fragmented in the EU, with few lenders acting extensively outside of their home markets and few borrowers seeking credit outside of their country of residence. According to the European Commission, the share of consumers who have already purchased banking products from another Member State was less than 3% for credit cards, current accounts and mortgages and only 5% of consumer loans had been obtained cross-border (European Commission, 2015).

But the Mortgage Credit Directive is not primarily (or only) concerned with facilitation of the single market and the exercise of the freedom of establishment and freedom to provide services. As summarized in the Mortgage Credit Directive itself, a series of problems have been

identified in mortgage markets within the EU relating to irresponsible lending and borrowing and the potential scope for irresponsible behaviour by market participants including credit intermediaries and non-credit institutions. Those problems are driven by market and regulatory failures as well as other factors such as the general economic climate and low levels of financial literacy. Other problems include ineffective, inconsistent, or non-existent regimes for credit intermediaries and non-credit institutions providing credit for residential immovable property. The problems identified have potentially significant macroeconomic spill-over effects, can lead to consumer detriment, act as economic or legal barriers to cross-border activity and create an unlevel playing field between actors (Recital 4 of the Mortgage Credit Directive).

Thus the drivers behind the EU law regulation of the mortgage credit intermediaries is not only to support the single market and to achieve a higher level of consumer protection, but also to address the macroeconomic effects of irresponsible lending in individual member states, as such irresponsible practices in one member state may affect the EU as whole. The concept of single passport for the mortgage credit intermediation has to be considered in this broader context.

Investment services

Finally, the EU regulation of investment services is relatively recent compared to the insurance regulation, although certainly predating the post-crisis generation of the financial regulation. The first EU legislation in this area was Directive 93/22/EEC of 10 May 1993 on investment services in the securities field (hereinafter "ISD"), establishing the concept of "investment firms" and the single passport for such firms. However under the ISD and then under the first MiFID Directive and also under the current MiFIDII, the distinction between the "main service providers" and their "distributors" has been never fully recognised. That is because the investment firms were often and largely intermediaries *per se* and large aspects of the investment services are in fact intermediation by their nature. Hence the historical designation of the investment firms as "brokers". Also, in investment services, there are complex chains of intermediaries such as when a client gives an order to buy securities to its local broker, the local broker transmit the order to a broker on stock-exchange (often through other intermediary brokers), the trade is executed on the exchange and the purchased securities are delivered to the client's account held with local custodian through a chain of other custodians. In this multiple layer structure it is difficult to clearly see classic principal / agent relationships between the different service providers. Rather the whole market acts as a chain or net of intermediaries.

In this context it is not surprising that MiFIDII does not recognise a single passport of "investment services intermediaries" as special subcategory. Rather it grants a single passport only to "investment firms" on the understanding that some of their activities (e.g. execution or transmission of orders) are in fact intermediation by nature.

That being said, MiFIDII does recognise that some member states may have historically established concepts of "limited investment service providers", whose activities are limited to relatively narrow area or reception and transmission of client orders and certain ancillary services. That is why MiFIDII include an exemption that member states may choose not to apply MiFIDII to any persons for which they are the home member state, provided that the activities of those persons are authorised and regulated at national level and those persons: (a) are not allowed to hold client funds or client securities and which for that reason are not allowed at any time to place themselves in debit with their clients; (b) are not allowed to provide any investment service except the reception and transmission of orders in transferable securities and units in collective investment undertakings and/or the provision of investment advice in relation to such financial instruments; and at the same time (c) in the course of providing that service, are allowed to transmit orders only to licensed investment firms, credit

institutions, collective investment undertakings or certain other authorised entities (Article 3(1) of MiFIDII).

However, these exempt firms must be subject to MiFIDII analogous authorisation and on-going supervision, conduct of business obligations and organisational requirements and must be covered by an investor-compensation scheme or professional indemnity insurance (Article 3(2) of MiFIDII). At the same time, these exempt firms shall not benefit from single passport regime (Article 3(3) of MiFIDII).

It follows that such exempt intermediation firms are in fact subject to “at least analogous” burden of compliance with the bulk of MiFIDII requirements as regards the authorisation, ongoing supervision, conduct of business and governance. However, such stringent regulation and supervision does not bring them the benefit of the single passport.

For completeness, MiFIDII also recognises the concept of a “tied agent”. However, a tied agent can only transmit orders to single investment firm (hence it is “tied”). We do not consider this concept to be a functional equivalent of financial intermediation in the investment services sector.

Other sectors of financial intermediation

There is no comprehensive EU regulation of financial intermediation of other segments of the financial market. That means there is no harmonisation of the distribution or intermediation with regard to deposit taking, lending (other than mortgage credits), pension funds, payment services or other financial services.

Financial advisory on an independent basis

By “financial advisory on an independent basis” we understand advice provided for consideration payable solely by the client and not in the context of distribution of a financial or investment product where the commission to the agent is paid by the financial institution (hence such advice is provided on a “non-independent basis”). There is no comprehensive EU regulation of financial advisory on an independent basis, except for investment advice regulation under MiFIDII. However, under MiFIDII, the investment advice is one of the main investment services requiring a full MiFIDII authorisation. For completeness, the insurance distribution under IDD includes “activities of advising on” contracts of insurance (Article 2(1) of IDD). This however implies that the advice is an element of insurance distribution and not an independent service.

3.2 Slovak law position

In connection with the entry the European Union in 2004, Slovakia had to quickly implement a number of existing EU directives in the financial sector, including MiFIDI (later recasted as MiFIDII) and Directive 2002/92/EC (later recasted as IDD). These transpositions followed the sectoral fragmentation of the EU law as described above, i.e. they were included in separate statutes.

Integrated approach

However, Slovakia has adopted the Financial Intermediation Act relatively early thereafter in 2009. The aim of this legislation was to modernize previous legislation for financial intermediation providers as well as the entry of new entities into the financial market in defined sectors (insurance or reinsurance, capital markets, lending, deposit taking and pension funds) and to contribute to the creation of a healthy competitive environment as well as to ensure better protection of the clients in all major sectors of the financial market. Such integrated

approach is unique in that it brings the financial intermediation in various sectors under the common prudential and conduct of business framework (Slezáková et al, 2020, p. 29).

The Financial Intermediation Act distinguishes the following categories of financial agents: an independent financial agent, a bound financial agent, a subordinate financial agent, a tied agent and a supplementary insurance intermediary.

The Financial Intermediation Act also regulates independent financial advice, in particular the requirement that a financial advisor can accept remuneration solely from its clients, recipients of the advice.

Single passport in action

Despite the broader scope of the Slovak regulation, the benefit of single passport is inevitably limited to the sectors, in which such a concept is recognised under the EU law. As discussed above, these sectors are limited to insurance distribution and mortgage loans.

As to the operation of the single passport regime, this is implemented in accordance with the rules set out in Articles 4 and 6 of the IDD and equivalent provisions of the Mortgage Credit Directive. In general, in case of outbound services (i.e. intermediation provided from Slovakia as the home member state) the financial intermediary in Slovakia shall provide certain information to the National Bank of Slovakia, including information whether it intends to provide cross-border intermediation via branch (freedom of establishment) or on a pure cross-border basis (freedom to provide services) and information on the scope of the services and products and related organisational requirements. If the National Bank of Slovakia is satisfied with the information provided and relevant requirements, it notifies the competent authority of the host member state within 30 days. The National Bank of Slovakia will also inform the financial intermediary about the notification and the financial intermediary is entitled to commence the activities in the host member state from the date of such notification. These procedures are regulated in Articles 20, 20a and 20b of the Financial Intermediation Act. The process works *vice versa* in case of inbound services (i.e. intermediation provided into Slovakia as the host member state) as set out in Articles 11, 11a, 11b, 11c and 11d of the Financial Intermediation Act (also Slezáková et al, 2020, p. 90 – 148 with respect to inbound intermediation and p. 217 to 252 with respect to outbound intermediation).

The rules are in fact more complex and include certain intervention rights of the competent authorities of the host member states, but these details are not considered for the purposes of our discussion.

Benefits of and concerns with Slovak regulation

Slovak integrated approach provides the benefit of comprehensive regulatory framework thus ensuring the level-playing field between different kinds of intermediaries and effectively not allowing for a regulatory arbitrage between various segments. It also imposes single standard of qualification requirements, basic common level of the conduct of business requirements and common supervisory framework. All this should arguably result in improved market integrity and stronger protection of the clients. The benefits of the integrated approach are also noted in Czech literature (Šindelář and Erben, 2017, p. 14).

On the other hand, the Slovak regime is causing some potential concerns, mainly:

- Despite the purported comprehensive single statute approach, the Financial Intermediation Act in fact does refer extensively to sectoral legislation concerning the investment services (Slovak Act 566/2001 Coll. on securities and investment services, as amended), mortgage loans (Slovak Act 90/2016 Coll. on residential loans, as amended) and also insurance regulation (Slovak Act 39/2015 Coll. on insurance activity, as amended). This creates a layered legislative structure, which can be

ultimately less robust than a set of sectoral legislation because of inherent clarity issues, increased complexity and potential lack of internal coherence.

- In the capital markets (investment services) segment, the Slovak regime relies on exemption under Article 3(1) of MiFIDII. Without full MiFIDII licence, the intermediaries in this regime will be necessarily limited in terms of the scope of their services and will not have any benefit of the single passport. At the same time, they are subject to essentially the same conduct of business and some prudential requirements as investment firms under MiFIDII (Section 37 of the Financial Intermediation Act).
- Despite the benefit of single passport is granted to insurance distributors from another member states, these entities (even if they are established in Slovakia via a branch) cannot use Slovak tied agents, which results in disadvantage of the cross-border insurance distributors in terms of their capacity to build distribution network compared with Slovak domiciled insurance distributors. This is not necessarily a consequence of the integrated approach, but maybe rather a result of an imperfect IDD implementation.
- There is a question of over-regulation. Higher level of regulation and supervision is usually associated with the benefit of single passport. However, Slovak financial intermediaries in the segments of lending (other than mortgage credits), deposit taking and pension savings are subject to more stringent regulation than their counterparts in other member states. At the same time, such incremental regulatory burden is not compensated by the benefit of the single passport, i.e. the ability to provide services on a cross-border basis. Admittedly, the level of regulation is always a matter of particular considerations in the local market and there is no real competitive disadvantage, because Slovak financial intermediaries in non-harmonised sectors are not facing competition of foreign intermediaries in Slovak market. However, it is legitimate to question why some (if not most) member states including the Czech Republic impose less stringent regulatory requirements compared to those applied in Slovakia.
- Finally, the financial advisory under the Financial Intermediation Act is defined solely on an independent basis (i.e. being remunerated exclusively by the client, recipient of the advice). When coupled with strict regulatory and supervisory regime, prohibited combination of provision of the independent advice with distribution and non-independent advice within single entity (Section 10(1) of the Financial Intermediation Act) and no benefit of single passport, the regulation makes such financial advice prohibitively expensive for the clients and non-attractive for the market participants.

For these reasons,(except for the reason in the second paragraph), it is questionable whether the Slovak approach can be successfully replicated at the EU level or even at the level of national laws of other member states.

3.3 Czech law position

The authors are not being qualified in Czech law. It is understood however that the Czech approach to regulation of the financial intermediation is sectoral, i.e. generally following the EU approach of regulation of financial intermediation by specific legislative instruments (laws) in individual segments the financial markets and not under a single framework.

Insurance sector

IDD was implemented into Czech law through Act No. 170/2018 Coll. on distribution of insurance and reinsurance. The single passport provisions are largely in line with Articles 4 and 6 of the IDD.

Mortgage loans sector

Mortgage Credit Directive was implemented into Czech law through Act No. 257/2016 Coll. on consumer loans. This act regulates both standard "consumer loans" and also "residential loans". This is different from Slovak approach, which regulates "consumer loans" and "residential loans" in two separate statutes. Single passport provisions concerning the intermediation of mortgage loans are set out in Sections 46 to 52.

Investment services

Investment intermediation is regulated in Section 29 of the Act on Undertaking in Capital Market. This reflects the exemption under Article 3(1) of MiFIDII (Husták et al, 2012, p. 303). The approach is similar to regulation of Slovak financial intermediaries in the capital markets segments and largely follows the requirements of MiFIDII. Czech investment intermediaries have no benefit of single passports.

Other sectors

Other sectors (general lending and deposit taking) are not regulated under Czech law, except for pension savings. As the pension savings and pension funds are largely not harmonised under EU law, there is no benefit of single passport.

Integrated approach in the Czech Republic?

There was a proposal of new integrated Czech legislation on distribution of financial services in 2012 (Ministry of Finance, 2012), which to large extent resembled the Slovak approach (Šárek, 2012). The current sectoral fragmentation of Czech regulation is also cited as the potential source of regulatory disparities and market stability issues (Šindelář and Erben, 2017, p. 14). However, the proposal of the integrated legislation was abandoned and apparently was not revisited at the government level since 2012.

CONCLUSION

The summary of our findings in terms of the level of regulation and availability of single passport in relevant segments of financial intermediation is set out in the table below:

Tab. 1 Single passport in relevant segments of financial intermediation

	EU law	Czech law	Slovak law
Insurance sector – regulated / single passport available?	YES / YES	YES / YES	YES / YES
Mortgage loans sector – regulated / single passport available?	YES / YES	YES / YES	YES / YES
Other loans – regulated / single passport available?	NO / NO	NO / NO	YES / NO
Investment services –	YES / NO	YES / NO	YES / NO

	EU law	Czech law	Slovak law
regulated / single passport available?			
Pension funds distribution – regulated / single passport available?	NO / NO	YES / NO	YES / NO
Deposit taking – regulated / single passport available?	NO / NO	NO / NO	YES / NO

Source: relevant EU and national legislation discussed above

It follows from the above that the benefit of single passport for the financial intermediation in the European Union is limited to the segments of insurance and reinsurance and mortgage loans. At the same time, it is clear that the Slovak integrated approach results in the most stringent regime.

Such more stringent regulation can be (and typically is) outweighed by the benefit of single passport – i.e. the firms accept the higher regulatory burden in exchange for the potential to provide their services on a cross-border basis in more than one member state. However, as discussed in relation to Slovak framework in part 3.1.2 above and also taking into account the different history, methodology and aims of relevant EU directives discussed in part 3.1.1 above, there are significant questions as to whether the Slovak integrated approach could be followed at the EU level.

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Influence of COVID 19 on Transfer of Organizational Culture between Headquarters and Subsidiary and Role of Communication on the Process

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Abstract: Many studies consider organizational culture one of the main factors responsible for company success. The aim of this article is to explore how the current pandemic of COVID 19 influences the transfer process of organizational culture between HQ and the subsidiaries and what is the role of communication in the whole process. Facing the pandemic, change in working conditions, relaying on on-line communication and shifts in global economy present a challenge not only for transfer of the organizational culture within a company but can also pose a risk to the building blocks of the organizational culture itself. To explore this topic further, relevant literature was reviewed with focus on the most recent COVID 19 related research, survey developed and distributed to selected high level managers responsible for multi-country clusters and main findings further refined by interviews. The paper identifies key area of focus for companies whose global set up relies on doing business via global presence in markets through national subsidiaries, validates its findings and proposes additional research steps.

Keywords: organizational culture, subsidiary & headquarters, COVID 19 pandemic, communication, transfer

JEL Classification codes: M14

INTRODUCTION

Organizational culture and its effects on effectivity and success of a company has been in the center of research for many decades and has been linked to firm's sustainable competitive advantage (Easterby-Smith et al., 2008). Organizational culture can therefore be seen as a certain synergy of resources and its coordination throughout the company leading to a desired outcome, and also as an endless quest for the right formula which will keep the members of the organization motivated and will be a source of personal satisfaction to employees (Selznick, 1957). It is also true that the environment in which companies do business is constantly changing and presenting them with new elements- both internal and external- such as employees, processes, technology, etc., which can therefore also act as a potential source of change. Considering this, current Covid19 pandemic represents large social as well as economic shock and change to the whole society and can have significant effects on changing the organizational culture. While academic research on the number and scale of effects is only starting, research already suggests that the pandemic presents major challenge for managers (Kniffin et al., 2020). One of the key questions they have to deal with is how they can build (or maintain) an organizational culture when everyone is working at home (Howard-Greenwille,

2020) as the way we interact, do business and most of all communicate has changed overnight. Communication is essential in emergencies such as this and as a result of the new situation connected to spread of COVID 19 the communication immediately changed to virtual form (Sulkowski, 2020) which presents one of the major factors influencing change of the culture in organization. The world has changed for many people working in the corporate offices, and for many of them their home became their permanent office for many months to come.

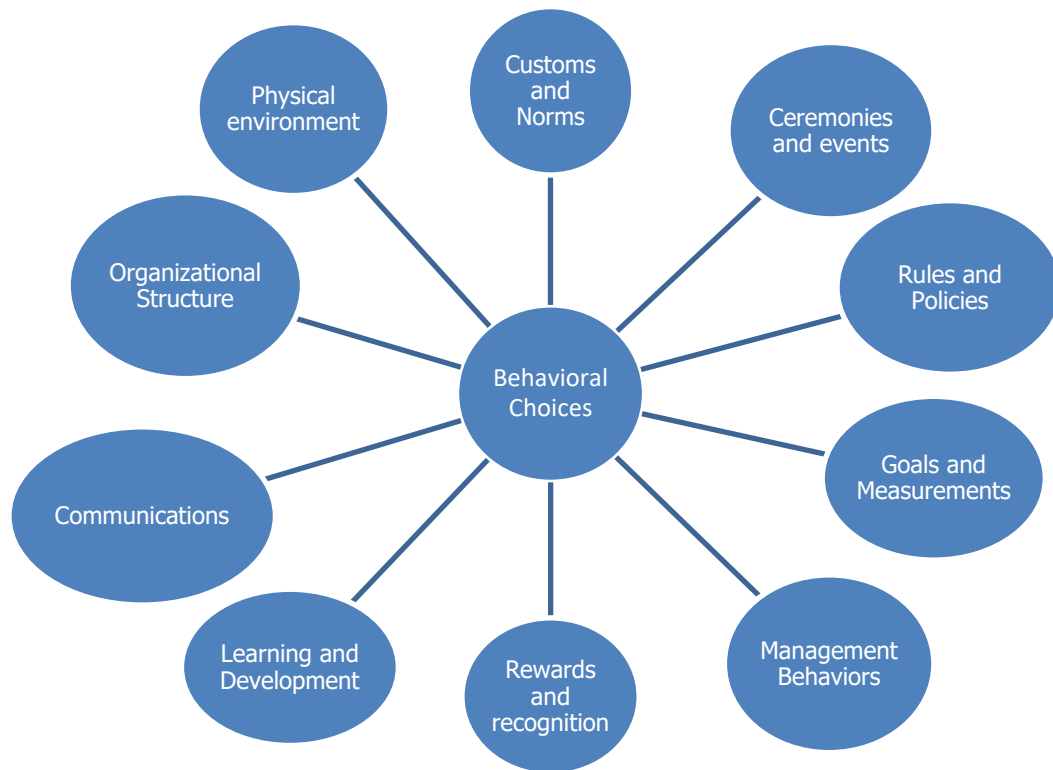
While prior to pandemic, video conferences were one of the parts of communication, effective to communicate with business partners over continents and time zones and in some cases substituting the business travel, they now became the daily bread and only possible way of communication with your office peers that you had lunch with just a week ago. The expectation of the managers were that business should go as much as possible as usual and that they should adopt a new mindset that would allow them to achieve the same results in an environment where they usually rest (Mustajab et. al, 2020). Some topics such as cybersecurity became even bigger focus (Ahmad, 2020) and questions about working from home and the correlation with productivity were also raised (Himawan et al., 2020) as the working from home was viewed as potential threat to productivity. When looking at overall picture, this pandemic is challenging the current status quo of many companies on different levels and the ability of the companies to adapt is a crucial factor in their sustainable success.

The aim of this article is to briefly define organizational culture and establish the importance of the recent pandemic as the dominating factor which can potentially change the organizational culture due to new working normal for many international companies while considering the most recently published research and findings and further to continue in this exploratory research via questionnaires and follow up interviews with selected high level managers responsible for multi-country clusters. The paper then identifies the key area of focus for companies whose global set up relies on doing business via global presence in key markets through national subsidiaries, validates the research findings on ongoing process of transfer of organizational culture and proposes additional research steps.

1 LITERATURE REVIEW

When looking at a most basic definition of organizational culture we can say that it is “the way things are done around here” (Deal & Kennedy, 2000). According to Schein, there are three crucial dynamics regarding the culture: creation, evolution and managed change (Schein, 1985). All these three phases are very essential and understanding the processes behind them helps us to understand the overall organizational culture. To further support the point of organizational culture being fluid and ever changing, research has shown that the organizational culture is always evolving and that organizations should assess their culture regularly (Warrik, 2017) as its transformation is endless. While even during normal times, there is number of external and internal factors influencing and potentially changing the culture of the company, the recent pandemic has taken over the corporate world by storm and poses serious challenge to existing framework of each individual corporation and its culture. As argued by McGowan, the fundamental values have gained more attention during the recent pandemic, truly showing the strength of the culture of each company (McGowan, 2020). This new and unprecedented situation puts the world and global economy into unknown territory and has influenced people in all aspect of their work as well as social and family life and in return can have significant impact on organizational structure and its components. Using the model from Serrat, we can see the 10 components that he considers to be parts that shape organization culture (Serrat, 2017). And while none of them can shape the organizational structure, all of them are influencing it.

Fig. 1 Components of organizational culture



Source: Serrat, 2017

When looking at the figure above, we see that due to recent COVID19 situation, all of the above categories have the potential to be influenced by the pandemic. While some of the categories, compared to others, may go through less dramatic immediate change (Goals and Measurements, formal Organizational Structure, Learning and Development, Rules and Policies, Customs and Norms), they are still influenced in some ways as new rules have to be made for work from home and all learning has to take form via e-learning. Formal organizational structure can also, albeit later, be adjusted to better fit the challenges of the dynamically changing environment. New customs and norms may be formed as those which were tied to workplace can no longer be observed. Other categories from Figure 1 are heavily influenced by this and with immediate effect. Physical environment has changed immediately as new norm for majority of white-collar workers became working from home. This is true also for all of the related activities in which the employee is very much engaged with the company- such as Ceremonies and Events, Management Behaviors and Communication- and these will be discussed in more detail in one of the following sections. which would have to change due to lack of physical contact with coworkers. Economic situation of each company as well as government ordered restrictions and lockdowns could also have immediate impact on Rewards and recognition. Taken all of this above, organizational culture is facing significantly changing environment from many angles resulting from a dramatic change due to pandemic.

Significant research exists on how such dramatic change in the environment can affect the organization and its actions. The range of actions can be very wide. It can lead to overreacting as confirmed by Hallett who witnessed that when a school principal was faced with budgetary cuts, his rigid push for new rules of accountability finally led to alienating the teachers which in turn undermined their performance(Hallett, 2010). In other case, these changes can even radicalize the culture as it happens when the norms, common practices and assumptions are discarded and people give to experiment with more radical alternatives as could be seen during Occupy Wall Street protests during which people arose against established corporate

cultures and started to experiment with other alternatives very often more radical (Reinecke, 2018). One of the examples which combines both over-reaction on a company part and radicalization on the employee part can be a reaction to salary pay cuts or non-payment of bonuses which some of the companies introduced shortly after the pandemic started.

As already established above, one of the important aspects of conducting business is communication. Proper communication is not only of the most importance during emergencies, but it may also change its form given the current conditions. This aspect has changed due to pandemic almost overnight leading to massive virtualization of communication (Sulkowski, 2020) which in itself is one of the factors that can have significant impact on culture. Many studies have linked what a pivotal role communication plays in the business world. For example, Morley et. Al. (2002) presented how, "Organizations that develop effective communication processes are more likely to both have positive work environments and be more effective in achieving their objectives." Following this example, we can derive that effective communication may contribute to better job satisfaction for employees and in turn allow the corporation to achieve better economical KPIs. Further, in their research, Zwijze-Konning and de Jong concluded in their research that, "The importance of communication for the effectiveness of organizations and the well being and motivation of employees is undisputed" (Zwijze-Konning & de Jong, 2005).

Based on the above, we have established that while communication is an integral role of organizational structure and plays important role in building it, it also represents potential threat to transfer of organizational culture as it became virtual overnight. In times when companies face significant changes to the environment, they undertake different actions to keep their employees engaged in order to overcome certain issues, for example virtualization of communication. Based on the available research (Jena et. al, 2018) engaged personnel is always optimistic and shows high level of performance in the organization. Results from other research (Tiwari and Lenka, 2019) also shows among others, internal corporate communication as well as knowledge sharing were positively associated with employee engagement. From the above, we can see that how company communicates during dramatic environmental changes can have significant effect on most of the components of organizational culture as seen in Figure 1 and also on engagement of the employees which is critical especial during this time. This identified topic was subject to further study via the survey as well as follow up interviews.

2 METHODOLOGY

In order to get more insight on this topic, two-step methodology methods of investigation were developed for the aim of the work. In a first step, seven-question survey was developed to identify how the selected companies dealt with communication towards subsidiaries during the pandemic and how (and if) they approached the subsidiaries regarding the development of organizational culture. The selected group of respondents was also asked to identify what tools and drivers they consider to be most effective for proper transfer of organizational culture.

We shared the survey with selected group of 10 international managers who are either responsible for regions or manage multi-country clusters. Due to time limitations, 6 of the 10 were then selected and 20 minute follow up call was conducted to explore the topics further. While follow up interview can have somewhat limited research significance, it was established that it can provide additional added value to investigations as it offers broad overviews of title and its impact (Sukamolson, 2007). We believe that the follow up interview had additional value as it was an extension and elaboration from already evaluated survey and thus allowed to probe and gain insight on specific questions and topics raised in the questionnaires and

further explore topics where the responses were very similar. Due to the limitations of time allotted for the conversation, we have decided for semi-structured interview, which can be referred to as "discovery interview" and which allows a "guided conversation" as it is more flexible when compared with structured interviews which are more similar to formal or job interviews (Saul, 2014).

The group of selected managers represented five corporations from consumer goods industry, two from retail sector and one each from software company, international law firm and CEE marketing agency.

3 RESULTS AND DISCUSSION

3.1 Research finding from the survey

The results obtained from the literature review showed that engagement and communication during dramatic change in environment are key components of keeping the organizational culture strong and potentially changing it if the need arises.

The results from the survey pointed to several common denominators which included the following observations:

- 8 out of 10 managers strongly believed that the virtualization of communication led to meetings being conducted in more formal matter and adhering to stricter rules. 3 of the managers specifically mentioned that the meetings were more rigid and less innovative. 6 of the managers stated that they the quality and level of communication among their staff has deteriorated
- Only 2 out of 10 managers stated that they knowingly engaged in building the organizational structure during the pandemic.
- 9 out of 10 managers felt that overall employee engagement is lower when working from home

Tab. 1 Key drivers for proper transfer of organizational culture to subsidiaries

CEO	8
Subsidiary's GM and HR Department	7
International Meetings and Events	6
Company Global Trainings and Developments	3
HR Onboarding Materials/Videos	2
Local Team Buildings	2
PR Releases and HR Info Sent Regularly To Employees	1
Others	1

Source: author

Managers were also asked to pick their top three choices regarding the key drivers for proper transfer of organizational culture to subsidiaries. From the below table a clear picture of the preferences can be derived. While 8 out of 10 chose CEO as one of the key drivers, 7 of them opted for the GM and HR department of the subsidiary and 6 of them chose international meetings and events as vehicles for transfer.

In general, the results from the managerial survey were consistent in two major areas. First, communication became more formal and more effort was needed by the managers (but also their staff) to keep up previous level of communication. Secondly, employee engagement was much lower when the pandemic started. Strong employee engagement and its positive effect on organizational structure has been already established by many researchers who showed strong correlation between these two variables (Kalianan, Adjovu, 2015). As employee engagement, part of which is communication throughout the company, is one of the major prerequisites for building an organizational culture, the follow up interviews focused on exploring further the views of the managers about the way how the organizational transfer process changed in their opinion, referencing the key drivers from Table 1 and can continue given the current limitations during pandemic times.

3.2 Research findings from the follow up interviews

Most of the managers (60%) chose the combination of CEO role, GM and HR department of the subsidiary and International meeting and events as key drivers for transfer of organizational culture to subsidiaries. While some of them also considered other drivers to play a role in this process, they felt these remaining drivers from Table 1 were more of a regular part of the process (Trainings and Developments, Onboarding materials), were not particularly related to global organizational culture (Local team buildings) or simply were not as related to organizational culture overall (PR releases and HR info). Therefore, part of the interview was dedicated to the top three categories from Table 1.

CEO- vast majority of managers (80%) agreed that the role of CEO is pivotal as he/she has to act as a leader and is the main "vessel" according to one of the managers, of how to change or keep organizational culture within the company. Several managers stated that the CEO's value and importance rise in times of crises such as this pandemic. They also described that the actions of their CEO have partially changed during the pandemic as many of them started to communicate via video calls in regular timeline (weekly or bi-weekly) to update the employees of the company on the overall picture and to boost their spirits. They also ensured their increased engagement by this action.

Subsidiary's GM and HR Management- majority of managers (70%) also considered the local leadership to be extremely important during pandemic. One of the regional managers from consumer industry corporation stated: "We have invested a lot into our country and cluster management and always focused on having a strong leaders in a GM positions. When else but now during pandemic, we should let them fully manage the market which they know the best". This was also a view of most of the other managers that came up during the interviews. As the situation varied country by country, regional managers were often in position of not knowing the exact situation in each country and had to depend and trust the local management to get through the pandemic. Few of them also mentioned that they shared with the local management a flexible game plan which highlighted major DO's and DON'T's and let the locals adjust it to the specific country conditions. Thus they ensured their engagement and let them apply it to the country teams further, albeit unknowingly, making sure that the process of transfer of organizational culture does not stop.

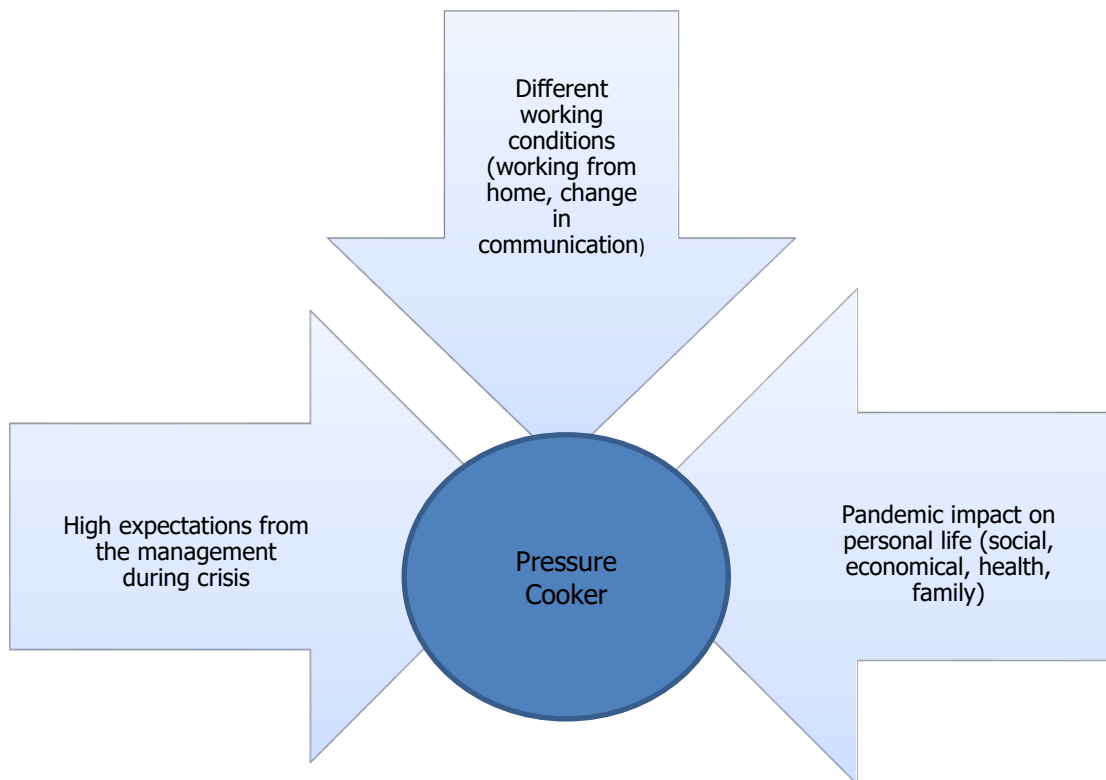
International meeting and Events- 60% of managers described this as a key driver as they believe that the setting of the meetings and events and the overall atmosphere can enhance the transfer of organizational culture and allow the participants to "soak it in". All of them also agreed that their companies are not planning any global or regional in person meetings in foreseeable future and that this has influenced their work as well. Four of the managers stated that their companies started to do global meetings online and also tried to introduce a fan factor as a part of it- for example live online appearance of brand ambassadors, artists or other

well know people. During interviews, majority of them also agreed that currently, they do not feel that lack of the meetings is representing any major risk for their organizational culture, however, that their companies started to look at ways how to conduct these meetings in the future.

3.3 Pressure Cooker

From our discussion with the managers, it became also clear that they felt extreme pressure both on themselves but also on their staff to get through this period successfully. 60% of the managers also admitted that they had higher than usual expectations of the staff during this period and all of them admitted to higher pressure from CEOs and management board. When we take a step back and look at the overall environment conditions and take into consideration significant changes in the working environment (working from home), additional pressure from the organizations to keep the productivity and significant impact from the pandemic on personal life of the employees (social and economical changes, home schooling of kids, health topics, etc.), we clearly see that many of the employees were subject to extreme pressure in their daily live. The word "pressure" resonated throughout the interviews and could be visually summed up as below.

Fig. 2 Pressure Cooker



Source: author

When taken into consideration the great amount of pressure that resulted from the pandemic, it is clear that this can be a major factor going forward and could potentially have impact not only on organizational culture but overall well-being of the employees and performance of given corporation. While the scope of this paper does not allow for furthermore detailed research, it is certainly worth noting that the managers have identified this phenomenon, which could be a topic for additional research.

3.4 Keeping people engaged and allowing for proper transfer

From our discussion with the managers, there was one clear underlying theme. Although they did not fully realize it, the actions of their CEO as well as theirs towards the country management team ensured that the process that would allow for transfer of organizational culture would continue. When discussing their specific actions during the interviews and comparing them with facts from already existing studies and the key drivers identified in Table 1, clear actions related to engagement of the employees and transfer of organizational culture can be seen. Below are some of the findings resulting from the interviews.

Several studies exist on the topic of how to manage during turbulent times while keeping employees focused and engaged. Robinson, for example, suggests making sure that employees have proper tools to do their job (Robinson, 2009). This was also discussed with the managers and 50% of them mentioned that the company bought additional equipment for the people who were working from home. 40% of the managers stated that the company allowed the people to take certain equipment (monitors, keyboards, computers) home for the duration of their work there. In another studies, Robertson summarizes that in order to enhance employee engagement in difficult times, organizations need to make the employees feel that they are truly interested in them (Robertson, 2012) and Groove Management Blog states (Formato, 2014) that leaderships needs to be more visible in tough time than at any other time. These observations correlate strongly also with findings from our research as the managers mentioned that for example their CEOs started to do regular weekly videos where they informed the employees of the current situation and thus increased their engagement. Four of the managers also mentioned that their companies did not cut any benefits during the pandemic and actually tried to find different ways how to offer benefits which would be available during the pandemic. One of the examples was that the company decided to give their employees lunches and deliver them to their doorsteps for one day per week and have lunch together via video conference. This finding is supported by another research (Deal, Stawiski, and Gentry, 2010) which shows that during turbulent times, additionally received benefit packages keep the employees engaged and motivated. That much more as some of the benefits (gym membership, company car, tickets for cultural events) were not applicable due to pandemic. From the above findings, we conclude that the findings from our research are confirmed and validated by previous research focused on actions during dramatic environmental change.

CONCLUSION

While there are certain limitations to this study, especially the limited scope of the research as well as the use of short survey and interview method, we argue that COVID 19 pandemic did not stop the transfer of organizational culture although in many cases this process continued mainly unknowingly while driven by CEOs as well as regional and country management who took number of actions during pandemic as described above. It is also important to realize that the workforce was subject to severe changes in their work as well as personal life as shown in the Pressure Cooker model and that managers need to be aware of this before taking appropriate actions to remedy the situation to the fullest. This phenomenon could be also subject of further research as it will impact the future behavior of employees. While the pandemic is not over yet as of February 2021, it is clear that many corporations were able to deal with challenges such as working from home, change in communication and lack of certain interaction events to keep their members engaged and focused even though they were/are going through rapid change in the business environment. The effects of COVID 19 pandemic are getting much attention from the researchers and one area of possible further research is to study how, in the future, corporations will deal on a global scale with international meetings,

conventions, events and personal interactions which was one of the most important areas for transfer of organizational culture identified during our research.

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Sustainable Design in the Furniture Industry

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Abstract: Designers have considerable responsibility for shaping the current state of products and services. To reduce the negative environmental impact of the furniture industry, designers need to change the way they design, while consumers need to change their attitudes towards sustainable furniture. However, companies that offer sustainable furniture face a frustrating paradox. Most consumers report positive attitudes towards environmentally friendly products and services, but this attitude does not seem to be reflected on their shopping behaviour. The aim of the paper is to provide an insight into the possibilities of applying sustainability in the furniture industry and to support discussion about the connection between the concept of sustainable development and consumption in the furniture industry. The methodology of the paper consists of a profound literature review and analysis in the area of sustainable development, sustainable consumption, sustainable design and their application in the furniture industry. Synthesis of literature review resulted in several recommendations how to align consumer shopping behaviour with the concept of sustainable furniture in line with new trends in the furniture industry.

Keywords: sustainability, furniture design, circular design

JEL Classification codes: M31, Q56

INTRODUCTION

The sustainable design, as a part of comprehensive sustainable development, has received considerable attention in recent years due to several global crises, such as climate change, famine, disease and poverty. In the last decade, there have been many academic and non-academic discussions about introducing a different design task. Concepts such as "eco-design", "green design", "environmental design" and "sustainable design" have emerged, looking for alternative ways to cause less damage to the environment.

Designers, whose work forms the interface between humans and science, technology, and business, have the obligation and opportunity to shape the drivers of the new "green" economy, and to be on the front lines of that effort. Nowadays design is faced with the challenge to contribute to the transition towards a sustainable society (Spangenberg et al, 2010).

1 LITERATURE REVIEW

For a better understanding of the concepts, some contextual and background information is presented below.

1.1 Evolution of environmental design philosophies

Designers have an excellent opportunity to influence what impact products will have on the environment and society throughout their life cycle. It is in the product design phase that decisions are made about costs, appearance, choice of materials, performance and quality features such as repairability, ease of maintenance and durability.

Today, greening is a "trend" and an opportunity for companies for many reasons, such as achieving competitiveness, legal regulations or corporate social and environmental responsibility. Many companies are thus trying to include environmental sustainability factors in their product concept (Ko, 2020).

Papanek's book *Design for the Real World: Human Ecology and Social Change*, which appeared for the first time in 1971 is considered a key work that brings an environmental perspective to the world of designers. Papanek provided a thorough critique of the design profession, a sophisticated response aimed not only at improving the outputs of design activities, but also at supporting the transformation of the design profession.

Subsequently, the first approach to the integration of environmental aspects into design emerges - green design, which, however, focuses only on individual problems such as reducing the amount of material used, replacing original materials with recycled materials or reducing energy consumption.

Ecodesign adds another dimension to traditional design - design is assessed in terms of the product's impact on the environment throughout its life cycle (Dostatni, 2015). It focuses on improving the environmental performance of a product during its life cycle, without prejudice to other basic criteria such as performance, functionality, aesthetics and quality. The main environmental impacts that are taken into account in ecodesign, include the minimization of material and energy consumption, the selection of less unfavorable materials and the promotion of long-life products (Albæk et al, 2020). Ecodesign focuses exclusively on environmental characteristics and does not consider the social dimensions of sustainability, which cover issues related to the distribution of resources and the related social impacts of a product (Ceschin and Gaziulusoy, 2016).

Sustainable design then took a step forward by considering social issues, including usability, socially responsible use and sourcing (Moreno et al., 2016). However, this approach still follows a linear model of the economy.

Circular design aims to reduce the loss of value contained in products and materials by keeping them circulating in closed loops. These cycles, such as reuse, repair, refurbishment or recycling, extend the product life cycle and increase resource productivity. Both circular design and sustainable design focus on environmental, economic and social aspects. However, they differ considerably in how they achieve their goals. Sustainable design gives the product a central role in protecting the value of the product and its environmental impact. On the other hand, circular design begins by optimizing the economic potential of resources through new business models. At the same time, emphasis is placed on resource renewal and quality of life (Medkova and Fifield, 2016). Bakker notes that the circular approach contrasts with the traditional linear business model of production of take-make-use-dispose and an industrial system largely reliant on fossil fuels, because the aim of the business shifts from generating profits from selling artifacts, to generating profits from the flow of materials and products over time (Bakker et al., 2014).

1.2 Sustainable Consumption

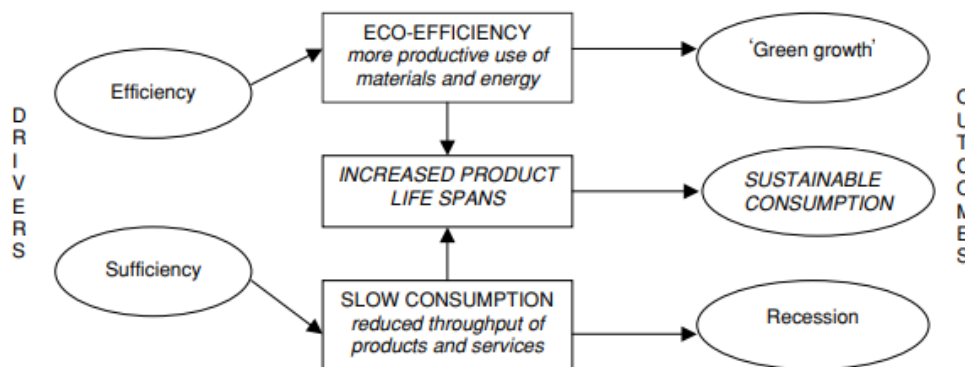
The consumption in the recent decades has significantly increased, today's consumers tend to over-consume and buy new products, although this does not need to be necessarily. This may be due to the new trends, the fact that repair costs are too expensive, or that people want to own new products and features.

Mont and Plepys (2008) describe that there is a lack of knowledge on how to move from materialistic thinking to the more non-materialistic to reduce consumption. Increasing consumption of consumers in industrialized countries makes it difficult to work towards a more sustainable future.

Cooper (2005) explains that consumers play a key role in sustainable development. Sustainable consumption has been defined as "patterns of consumption through which the purchase and use of goods and services meet people's needs while minimising any environmental degradation" (Cooper, 2000). For a change in consumption, consumers' behaviour towards their products needs to change. Reducing our throwaway culture will assist in the progression towards an environmentally friendly attitude to consumption and will help in the overall drive to sustainable development (McCollough et al, 2018).

Cooper's (2005) model of sustainable consumption (Figure 1) indicates the potential product longevity has on slowing consumption rates. He suggests that the rate of consumption is reduced when products are easy to maintain.

Fig. 1 – Model of sustainable consumption



Source: Cooper, 2005, p. 55

Around 80% of a product's environmental impact can be eliminated through better design. Designers are under increased pressure to produce products with a sustainable outcome. They need to respond to current consumption rates, designing products that last longer and satisfy the needs of the user (Cooper, 2000).

2 METHODOLOGY

The methodology of the paper consists of a profound literature review and analysis in the area of sustainable development, sustainable consumption, sustainable design and their application in the furniture industry. We studied and analyzed a number of sources from Web of knowledge, Web of science and Scopus and from case studies that research the implementation of sustainable design in the furniture industry and evaluate the results. We identified sustainability, design and furniture as the three main subjects to be addressed and

their interconnections should be studied. We focused on the development of sustainable design, especially its tools and strategies, to understand how and where improvements can be made in the design process that combine the criteria of sustainability with the needs of the furniture sector.

The aim of the paper is to provide an insight into the possibilities of applying sustainability in the furniture industry and to support discussion about the connection between the concept of sustainable development and consumption in the furniture industry. Deeper knowledge of the environmental impacts of materials and processes used in the furniture industry, as well as awareness of customer criteria for sustainable furniture, allow companies to accept the concept of sustainability. By reviewing of current trends in the furniture industry and consumer expectations, we provide the suggest and the opportunity to increase the competitiveness of products furniture industry by applying the principles of sustainable design.

We asked following research questions:

1. Is sustainable design an opportunity for the development of the furniture industry and the reduction of environmental impact?
2. Is sustainable design in the furniture industry in line with current trends and consumer expectations?

3 RESULTS AND DISCUSSION

In this part of the paper, we synthesize, analyse and compare the case studies, best practices of furniture companies that have introduced elements of sustainable design. We also analyse current trends and shopping behaviour and consumer expectations.

3.1 Sustainable design - an opportunity for the company

The wood and especially the furniture industry is known for being among the biggest resource consumers and is a big generator of residues. The analysis of the key environmental issues in the furniture sector reveals that the most important environmental impacts of the furniture sector relate to the consumption of raw materials such as wood and energy, the use of chemical substances containing volatile organic compounds and/or formaldehyde, and waste production (Olkowicz and Grzegorzewska, 2014).

Designers have great opportunity to influence the impact that products have on the environmental and society. The relevance of the early stages of product development is supported by the European Commission (2018), which stated that more than 80% of the environmental impact of a product is determined at the design stage.

The results of a qualitative study on furniture design teams in Malaysia led to the conclusion that the main challenges for sustainable design in furniture industry contain: (1) limited knowledge of sustainable design principles among design teams, (2) lack of awareness about sustainability among furniture buyers, (3) lack of a clear vision for future progress of furniture industry in sustainability, (4) lack of strategic thinking, (5) and weakness in copyright law (Valipoor & Ujang 2011).

Within the Nordic countries of Europe, the furniture market is known for high quality and design furniture. A study on sustainability and the main factors impacting greenhouse gas (GHG) emissions from wood-based furniture based in Finland was carried out. The study showed that the GHG emissions mainly came from four different factors: materials, packaging, logistics and the process of manufacturing. Materials and production stood for the main part of the GHG emissions, while transportation and packaging resulted in less impact than the

others. One suggestion was that industries could implement a lifecycle thinking; a systematic framework where the environmental thinking is covered of a product's entire lifecycle (Linkosalmi et al., 2016)

A case study made in Brazil investigated wood-based furniture using the Life Cycle Assessment model to analyse sustainable strategies and estimate the environmental performance. The result showed that the product distribution and supply of raw material phase had the most significant environmental impact with 68 percent, and the manufacturing process was only responsible for 7 percent of the overall wardrobe life cycle (Iritani et al., 2015).

Lewandowska et al (2017) concluded that the analysis of the design solutions from the point of view of several criteria (costs, environmental impact, social aspects) and several life cycle stages shows the complexity of the decision-making process and difficulties in selecting a clearly favourable solution. Environmentally preferred materials may be difficult for users to accept due to their costs. On the other hand, materials that have a high environmental impact on the production stage may show a great potential for final disposal (reuse, recycling), which affects their final assessment in the context of the whole life cycle.

The environmental design parameters, which were developed specifically for the furniture industry are presented in Table 1. These environmental parameters are divided into 5 categories, each category refers to a more detailed explanation.

Tab. 1 Environmental design parameters

Category	Refers to:
Reduce	The reduction of raw materials, simplification of the furniture structure, rethinking of cutting processes, and reuse and recycling of residues among others.
Facilitate	Design of new systems to facilitate the assembly of the furniture with fewer pieces and fewer tools.
Extend lifespan	Offers maintenance packages for the furniture to expand the lifespan.
Select	Use of alternative wood types (including composed) and the use of certified wood sources.
Valorize the difference	Let the customers know the new aspect of the furniture to highlight the efforts to turn "green".

Source: Gutiérrez Aguilar et al., 2017, p. 3

The application of the ecodesign parameters resulting in reduction of the use of raw material by 30%, in a reduction in waste by 49% and in allowing a reduction in energy by 36% due to simplification of the productive process. Among the strategies applied were reshaping pieces, redesigning, and the substitution of materials (Gutiérrez Aguilar et al. 2017).

Cordero et al. (2010) claim that the benefits of eco-design include reducing environmental impacts, reducing company costs, developing innovative products, potential marketplace advantages, and enhancing a company's societal image.

According to Lofthouse and Bhamra (2007) sustainable design can offer organizations the opportunity to increase sustainability performance while increasing their profitability. By applying the concept of sustainable design, companies can: (1) reduce the environmental impact of their products / processes, (2) optimize the consumption of raw materials and energy use, (3) improve waste management / pollution prevention systems and (4) support the innovation process.

According to some studies (Govindan et al., 2015; Klinpikul & Srichandr, 2010; Ratnasingam & Wagner, 2009), compliance with regulations has been the most important driver of sustainable design implementation in furniture. However, other factors also play an important role in driving sustainable design - potential financial benefits, cost reduction, the perceptions of stakeholders and customers, product positioning relative to competitors and differentiation in the market. Overall, the implementation of sustainable design seems to have a competitive aspect.

Table 2 shows summarizing list of mentioned surveys.

Tab. 2 A review of the authors who researched the implementation of sustainable design or eco-design in the furniture industry.

Year	Author	Researched
2007	Lofthouse, Bhamra	The benefits of sustainable design for the organization.
2009	Ratnasingam, Wagner	The contributing factors for the adoption of green manufacturing practices among wooden furniture manufacturers in Malaysia.
2010	Cordero	The benefits of eco-design for the environment and the company.
2010	Klinpikul & Srichandr	The driving forces that drive or hinder eco-design activities.
2011	Valipoor, Ujang	The main challenges for sustainable design in furniture industry in Malaysia.
2014	Olkowicz, Grzegorzewska,	The analysis of the key environmental issues in the furniture sector.
2015	Iritani et al.	The using the Life Cycle Assessment model to analyse sustainable strategies and estimate the environmental performance in wood-based furniture.
2015	Govindan et al.	The drivers of green manufacturing.
2016	Linkosalmi et al.	The main factors impacting greenhouse gas emissions from wood-based furniture based in Finland.
2017	Lewandowska et al.	The analysis of the design solutions from the point of view of several criteria (costs, environmental impact, social aspects) and several life cycle stages.
2017	Gutiérrez Aguilar et al.	The results and impacts of the application of eco-design parameters.

Source: own processing

3.2 Sustainable design – a connection with the consumer

The Green Home Furnishings Consumer study (Sustainable Furnishings Council, 2017) was conducted to assess consumer awareness, interest and behaviour in relation to sustainable furniture. The three most important attributes that respondents look for when buying furniture are quality (99%), style (99%) and fair price (98%). On average, respondents expect the

durability of the furniture will be at least eight years. 57% of respondents are willing to pay up to 5-10% more for equipment they consider environmentally friendly, including wooden furniture that is certified of legal and responsibly harvested wood, and for household equipment that is certified as environmentally safe.

According to Nicholls and Stiefel (2007), socio-demographic factors, including age, gender and income, are related to the preferences of different furniture products. This is in line with some findings by Nicholls and Bumgardner (2007), who noted some socio-demographic statistical differences in preferences among furniture consumers. Age and income were both found to be statistically significant, with age having a stronger effect. In contrast, gender was not found to be statistically significant (Kaputa et al. 2018).

In terms of ecological furniture, the socio-demographic elements of consumers (age, residence, income and education) and family size have a significant impact on their willingness to buy this type of furniture (Chitra 2007).

In the U.S., there is a large gap between generations when it comes to sustainable purchase intent. When surveyed, Millennials are twice as likely (75% vs. 34%) than Baby Boomers to say they are definitely or probably changing their habits to reduce their impact on the environment. They are also more willing to pay more for products that contain environmentally friendly or sustainable ingredients (90% vs. 61%), organic / natural ingredients (86% vs. 59%), or products that have social responsibility claims (Nielsen, 2017).

Shrum et.al (1995) have created a psychographic profile of the green consumers. The findings show that the green consumers are cautious shoppers looking for product information, including information on advertising, but also suggest that green consumers are quite sceptical about advertising. As a result, green consumers may be sensitive to green marketing and advertising, but marketers should take care not to discourage them by the use of ambiguous or misleading messages.

Olšiaková et al. (2016) monitored the changes in consumer requirements for wood products in terms of the consumer behaviour in 2004 and 2014. They found that price was no longer the most important factor for Slovak consumers in 2014 because the rate of dissatisfaction of consumers with the price of wood products remarkably decreased by 35%, while the satisfaction with wood products quality increased by 80%. The same findings were presented in the study by Parobek et al. (2015), where Slovak consumers placed a lower importance on price as a criterion in their buying decision.

Kaputa et al. (2018) analysed consumer preferences for wooden furniture in Croatia and Slovakia. Over 78% of the Croatian respondents considered manufacturing quality and price to be the most important attributes. In Slovakia, the manufacturing quality had the highest percentage of importance (85%). Strong preferences for the design of the furniture (approximately 74% of positive answers) were also expressed by the respondents of both countries.

IKEA, in cooperation with the research agency KANTAR HOFFMAN, published a survey on sustainability in Slovakia in 2020. The survey showed that we most often get rid of home furniture only when it is old, destroyed and shabby (63%), when we need another size (19%) or when it goes out of fashion (18%). Half of Slovaks have never bought any used furniture. Almost 1/3 of this group of consumers have never even considered it, others are not worth buying used furniture at the offered price (23%), buying seems risky (21%) or unhygienic (18%). It is to change this approach that we should continue to work to minimize waste and move more towards households with sustainable furniture.

According to White et al (2019) most consumers report positive attitudes toward eco-friendly products and services, but they often seem unwilling to pay for them. In one recent survey 65% said they want to buy purpose-driven brands that advocate sustainability, yet only about

26% actually do so. It is essential to encourage consumers toward sustainable purchasing and behaviour. Authors have identified five actions for companies to consider: use social influence, shape good habits, leverage the domino effect, decide whether to talk to the heart or the brain, and favour experiences over ownership.

The global trend in furniture and housing (according to Interzum-the world's leading trade fair for furniture production and interior design, 2019) focuses on three main topics that will be the focus of attention in the future. The first area aims for conscious, sustainable housing (solutions for smaller living spaces, furniture and model sharing, as well as sustainable production, use and recycling). Another trend is the individualization of living spaces and personalization of furniture (modular furniture concepts, individualized products). The third trend deals with digitization in the context of furniture and accessories (robots, sensors and smart home technologies).

CONCLUSION

The results presented, regardless of the country of origin, show that there is a positive tendency to adopt sustainable furniture and an increased awareness of the availability of sustainable products. The aim of the paper was to provide an insight into the possibilities of applying sustainability in the furniture industry and to support discussion about the connection between the concept of sustainable development and consumption in the furniture industry. From the case studies that we reviewed, some tools and principles of sustainable design can be highlighted that could support the development of the furniture industry and reduce the impact on the environment.

It is important to involve designers at the beginning of product creation in decisions about appearance, choice of materials, properties and quality features such as repairability, ease of maintenance and durability. The application of environmental design parameters could result in reduction of the use of raw material and energy, in a reduction in waste and in a simplification of the production process. Sustainable design offers furniture companies the opportunity not only to increase their sustainability performance, but also to increase their profitability and improve their brand reputation and value.

Demand for sustainable products is growing - especially among younger consumers. According to surveys, most consumers are willing to pay more for furniture that is certified as environmentally safe. Furniture manufacturers need to be able to respond to customer needs and wishes while also considering environmental and social impacts. A synthesis of the product design literature shows several drivers of sustainable design. Although regulations are the driving force in many cases, the full creative potential of design is linked to market demand. Designers should communicate and collaborate directly with end users. A business model focused on well-designed and attractive products contributes to the overall lifespan of the furniture products with a higher value.

We have identified the area of conscious and sustainable housing as a significant trend in the furniture industry. When looking for a better lifestyle, consumers are looking for options that are healthier for them and their homes. Proven sustainability, flexibility and various types of improvements will become crucial elements for furniture companies that want to achieve long-term success and competitive advantage.

ACKNOWLEDGEMENT

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Impact of The Pandemic COVID-19 on Consumer Shopping Behaviour in Slovakia

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Abstract: At a time of turbulent economic change, e-commerce gives consumers the opportunity to shop without endangering the health of themselves and their relatives, and gives businesses the opportunity to save at least some of their sales and thus protect themselves from a complete drop in sales. The main goal of the paper was to identify the impact of the COVID-19 pandemic on the purchasing decisions of a selected consumer segment and to analyze the factors that most influence them when buying food and emergency goods. By processing the primary data using a chi-square test and histograms, we have come to the conclusion, that the factors that influence consumers when buying vary depending on the range purchased. It can be expected that certain changes in consumer behavior and increased demand for online purchase of certain assortments will persist even after the end of the pandemic.

Keywords: consumer behaviour, COVID-19, e-commerce

JEL Classification codes: D10, M10

INTRODUCTION

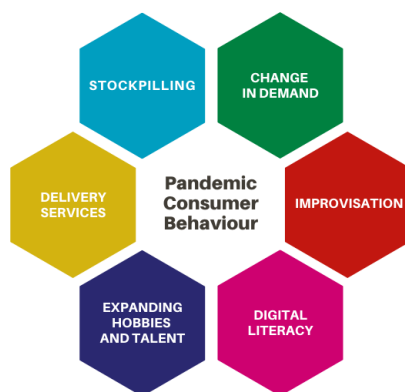
Every successful company should carry out thorough analysis of its environment, characterize the key factors that affect the strategic position of the company, and be able to determine what opportunities market development can help them or, conversely, what threats must be prepared in advance (Lesáková, 2014). However, the market economy of each country is currently facing strong downturns, the prediction of which was almost impossible. The onset of the COVID-19 pandemic has often been rapid and influenced by the shopping behavior of consumers who are forced to spend more time at home, making them even more active users in the digital world than before. Changes can be observed not only in the time spent on the Internet, but also in the factors that influenced their purchasing decisions, or in the assortment they bought. Therefore, we consider it important to approach the theoretical basis of the researched issue, which focuses on a new model of consumer behavior - pandemic consumer behavior. Following the theoretical knowledge, a primary survey was conducted, in which we focused mainly on digital consumer activity and its transformation into online shopping. We have also identified differences in factors that affect consumers when buying selected assortment categories.

1 LITERATURE REVIEW

The global pandemic brings enormous economic uncertainty, which on the one hand affects consumers' shopping behavior, but on the other hand also affects the choice of communication by companies. Consumers are postponing their decisions indefinitely, and companies are trying to draw on experience from similar situations in the past, which suggests that their marketing costs will fall sharply. Media consumption is increasing at a tremendous rate, with online media consumption increasing by up to 30% since the first case of infection in the Slovak Republic (Salner, 2020). People are online more than ever before, which is why social media marketing is gaining prominence, enabling companies to gain huge organic impacts in such a critical period. Businesses have the space to optimize their content, launch Google advertising campaigns, or thoroughly analyze traffic to their website. Changes can also be observed in customer expectations and needs (Shipley, 2020). While a few months ago they considered the price of products and services a priority, they decided according to which company is more environmentally friendly, which store they have near their home, or which product they had the opportunity to try in retail premises, today everything is different. Today, they need to be first and foremost informed that the company has secured hygiene, that it takes care of the health of its employees, that it has control over the distribution of its products, and therefore that they can always turn to the company. The delivery time of the product also plays an important role today, about which customers must be informed in advance. Every marketing activity in these turbulent times should also include the sincerity with which the company will ensure the long-term loyalty of its customers. If companies want to respond promptly to customer needs, they must have a strong customer service team that regularly provides them with information on current market developments, which is conditioned by turbulent fluctuations in each area of business.

Consumer behavior can be characterized as a process of deciding on the use of available resources, under which we include the energy, time and money needed for consumption itself (Solomon, 2013). It is a process in which subjects purchase and consume products or services through which they satisfy their needs (East, 2017). Factors that influence consumer behavior can include culture, social status, family, friends, consumer interests, motivation, perception and many others (Richterová, 2015). As early as 1990, consumer behavior was defined by the American Marketing Association (AMA) as a dynamic combination of consumer interaction, knowledge, behavior, and life events. The corona crisis has affected all people, regardless of their age, gender or the country in which they are located, which also has a significant impact on the products and services they buy. Characteristic features of consumer behavior during the pandemic are shown in fig. 1.

Fig. 1 Pandemic Consumer Behavior



Source: own processing according to Sheth, 2020

1. **Stockpiling** – according to Wang (2020), household food storage created a demand shock, especially in the food market. There is an increase in the volume of purchases of daily consumer goods, which increases stocks in households and causes temporary shortages in retail store. This fact could be observed especially in the beginning of the pandemic, which surprised manufacturers, suppliers, traders and final consumers, and partially disrupted the entire supply chain. Among the scarce goods we could include, for example, toilet paper, bread and durable food. However, the excessive accumulation of food stocks can also have negative aspects in the form of increased food waste (Long, 2020).
2. **Change in demand** – the impact of a pandemic can also be observed in reduced demand for consumer durables, social events, or demand for services, which is largely influenced by the state of emergency persisting in countries around the world. On the contrary, there is a growing demand for digital products such as online courses, education or membership on digital platforms, on which consumers are more active than ever before. Demand has also increased in the category of alcoholic beverages, pharmaceuticals and household products (McKinsey, 2020). It is also worth mentioning the enormous increase in demand for the so-called emergency goods, which include drapes, gloves, wet wipes, or disinfectant gels (Nielsen, 2020).
3. **Improvisation** – as a result of government regulations that seek to prevent the spread of a pandemic, consumers are forced to spend more time at home, which affects their daily activities as well as specific life events. Improvisation and the transition to the digital sphere could also be observed in traditions, for example through online services for Easter, Christmas, or online weddings through various digital platforms. It is also necessary to mention that companies must also improvise, as they are forced to look for online solutions even for off-line problems that come from customers every day. If companies manage to provide their customers with alternative solutions to their problems (ideally without physical or personal contact), whether in the form of applications, home production instructions, or in the form of home delivery services, consumers will feel support and affection for brand's products and services, which can have a positive effect on their current as well as future purchasing decisions (Ho, 2020).
4. **Digital Literacy** – in times of a pandemic, the internet is an integral part of every household. Thanks to the Internet, it is possible to communicate with the outside world, do your work from home or fill your free time, which also has an impact on increasing the digital literacy of Slovak consumers. The impact of social networks on consumer behavior is huge, which is why companies try to use them mainly for modern forms of marketing. An effective tool can be a properly set up influencer marketing, which in the current situation is used by brands up to 33% more often than it was before the outbreak of the pandemic. Even though the consumer does not have the space to test his product directly in the store, the promotion of a famous person through various social media can encourage him to buy. The most effective platforms for Influencer Marketing are the social networks Instagram and TikTok, where there has been a recent 76 percent increase in impressions (Perelli, 2020).
5. **Expanding hobbies and talent** – the pandemic boosted consumer creativity and also changed the way they spend their free time. Everyday hectic life has slowed down a bit, so consumers have room to experiment with cooking, expand their talent, renovate homes, or shop online, which is driven by increased demand in certain categories, which we mentioned in the previous part of the article.
6. **Delivery services** – last but not least, the pandemic also affected the logistics of the last mile, in which we include the services of courier and forwarding companies.

Consumers are gradually getting used to delivering products directly to their doors, which will save them time and also protect their health in a pandemic situation (Sheth, 2020). The use of delivery services has increased, as restaurant and café services have also operated in a restricted mode, and the home food service, which many consumers have tried for the first time during a pandemic, has also become popular.

2 METHODOLOGY

The main goal of the paper was to identify the impact of the COVID-19 pandemic on the purchasing decisions of a selected consumer segment and to analyze the factors that most influence them when buying food and emergency goods. The starting point was the collection of secondary data from domestic and foreign professional sources, from which we created a theoretical basis for the researched issues based on the scientific method of synthesis, deduction and comparison. The next step was the implementation of the primary survey through an anonymous questionnaire in electronic form. We chose Slovak consumers in the age range from 16 to 32 as the target group of the questionnaire, as we consider them to be the segment with the largest consumption of digital media, which is the basis of our assumption that they have experience with online shopping, so they can be considered as a relevant sample. Despite the fact that twelve respondents in the lowest age category (16-18 years) could only have been 15 years old before the pandemic, after a detailed analysis of their answers, they can be classified as active internet users who occasionally shop online. Therefore, we decided to include this consumer segment among the examined sample. The questionnaire contained 28 questions, which were divided into three sections. Two sections contained identical questions, the difference was in before and after the pandemic. Based on these questions, it was possible to compare consumer behavior over two periods and identify the main changes that took place during the pandemic. The questionnaire was filled by 587 respondents from all over Slovakia, but most respondents were from Bratislava Region (17.4%), Žilina Region (16.5%) and Prešov Region (13.6%).

Based on the application part of the paper, we will try to answer the following research questions:

- *Research question 1: Which attribute do consumers consider most important when buying food?*
- *Research question 2: Which attribute do consumers consider most important when buying emergency goods?*

The research questions are complemented by the formulation of the following hypothesis:

- *H1: There is a dependence between the time spent on the Internet and the rate of online shopping.*

We analyzed the collected data in the IBM SPSS statistical program, and also used histograms, contingency tables, and a chi-square test. For a contingency table with frequencies n_{ij} and expected frequencies e_{ij} , we define the quantity chi-square by the relation:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(n_{ij} - e_{ij})^2}{e_{ij}} \quad (1)$$

Where:

n_{ij} – actual number

e_{ij} – expected number

The quantity χ^2 is the basis for the hypothesis test on the independence of factors A and B. Its small values speak in favor of the hypothesis, large values not in favor of the hypothesis.

If the $\chi^2 > \chi^2_{(r-1)(c-1)}(\alpha)$ hypothesis about the independence of factors A, B is rejected on the level α .

3 RESULTS AND DISCUSSION

The structure of the questionnaire survey was compiled in such a way that it was possible to compare the behavior of consumers on individual issues in two periods:

1. before the pandemic - the period before March 2020,
2. after the outbreak of the COVID-19 pandemic - the period from March 2020 to the present.

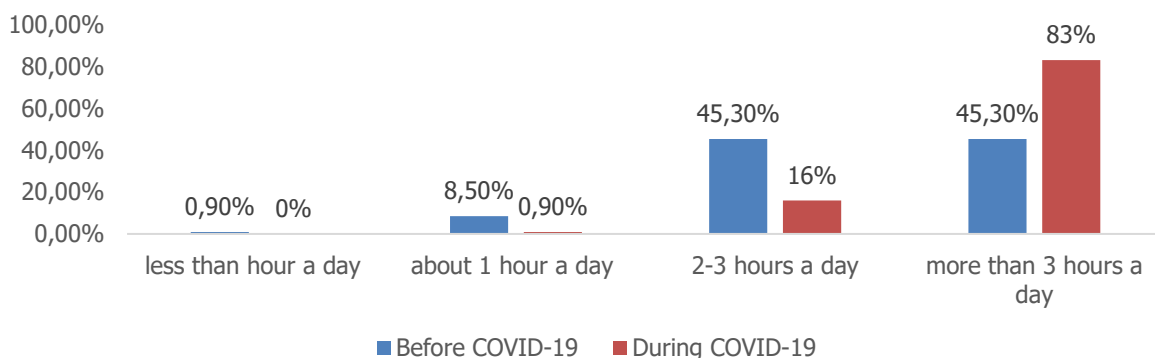
Calculation of the sample size:

$$n = \frac{z^2 * p * (1-p)}{c^2} = \frac{1,96^2 * 0,5 * (1-0,5)}{0,05^2} = 384,16 \quad (2)$$

For the 95% confidence level, the allowable error margin of 5% and the character ratio of 0.5 is the minimum sample size of 384 respondents. The structured questionnaire was filled by 587 respondents aged between 16 and 32 years. The survey was carried out through an anonymous questionnaire, which was shared on social networks in the period from 7 January 2021 to 21 January 2021. As the sample consisted mainly of young people, 83.5% were students, 10.2% were employed, 1.9% respondents were unemployed, 1.9% of respondents stated that they were on maternity leave and 0.9% indicated that they were self-employed. 56% of respondents come from the city and 44% of respondents live in the village.

3.1 Internet shopping via e-shops

Fig. 1 Comparison of digital media consumption in Slovakia

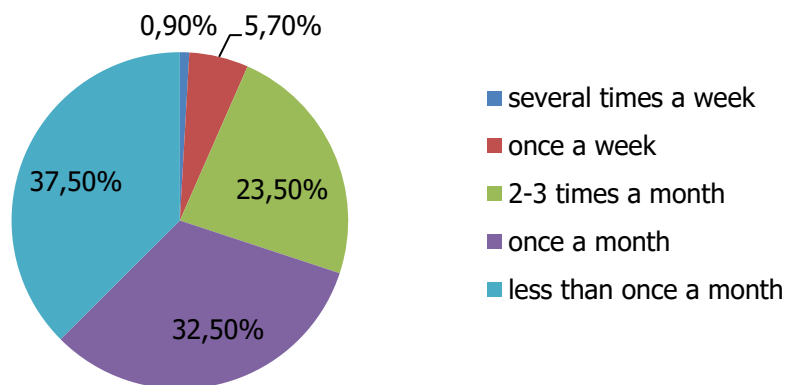


Source: survey results

According to the answers of the respondents, it can be stated that the activity of Slovak consumers in the digital space was already at a very high level before the outbreak of the pandemic. Less than 1% of respondents said they spent an average of *less than 1 hour a day*

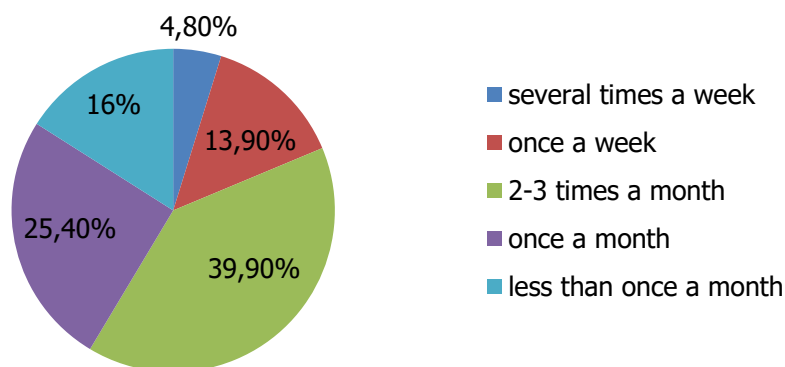
on the Internet before a pandemic. 45% of respondents stated that they spent *about 2 to 3 hours a day* on the Internet, and the same proportion of responses could be observed for *more than 3 hours a day*. With an identical question concerning the digital activity of Slovaks during the pandemic, it was possible to observe a significant increase in media consumption, as the option of *more than 3 hours a day* was chosen by up to 83% of respondents. We also used questions in the survey to find out the preferences of Slovaks when shopping online. 25.2% of respondents *shopped online* often before a pandemic, 71.2% *used e-shops rarely*, and 3.6% said they *never bought online*. These percentages changed significantly with the same question during the corona crisis, as as many as 47.2% of respondents said *they shop online often* during a pandemic, and only 0.9% said they *did not shop online* during a pandemic.

Fig 2 Frequency of online shopping before the COVID-19



Source: survey results

Fig. 3 Frequency of online shopping during the COVID-19



Source: survey results

In the period before the pandemic, 37.5% shopped online less than once a month, from which we judge that these are respondents who preferred to buy in brick-and-mortar stores or did not shop at all. On average, 32.5% of respondents used e-shop shopping once a month, and only 0.9% of respondents shopped on the Internet regularly. During the pandemic, these conditions changed. The number of regular online purchases increased (4.8%), 13.9% of respondents shopped *once a week*, and a significant proportion of respondents used online shopping *2 to 3 times a month*. Only 16% of respondents bought *less than once a month*, which represents a 56% decrease compared to the period before the pandemic. 58.6% of respondents during the pandemic preferred online shopping from *domestic e-shops*, while the main categories of assortment, according to the survey, can be considered *clothing and*

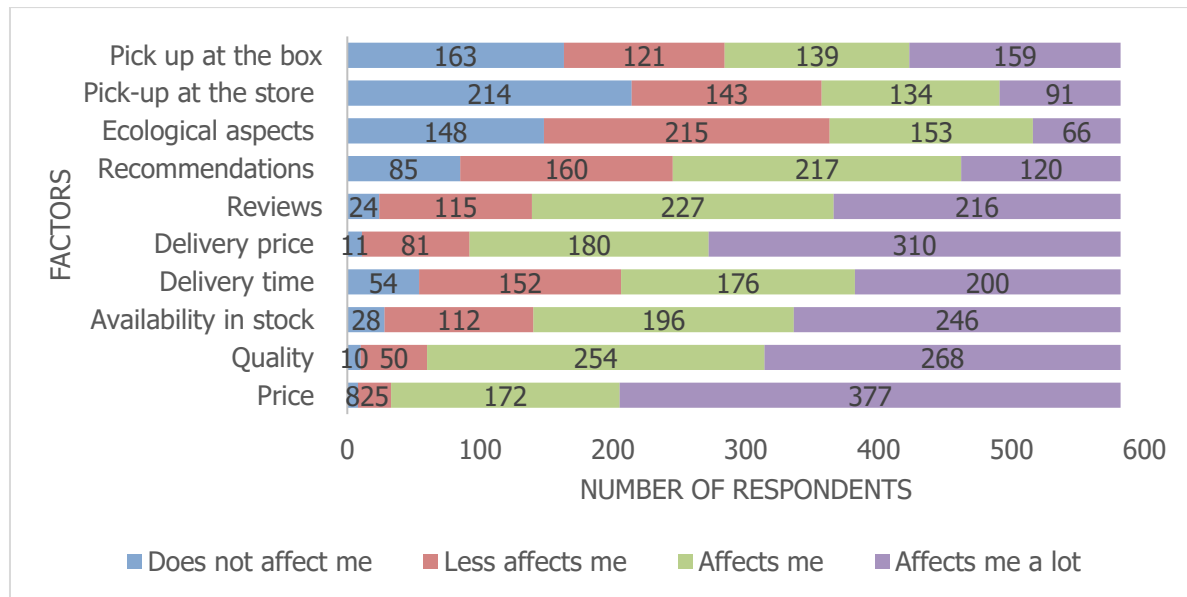
footwear, electronics, drugstore goods and books. An increase was also observed in the range of *pharmaceutical products*, where before the pandemic only 6.7% of respondents bought these products over the Internet, while during the pandemic the rate of online purchase of this range increased to 14.6%. Before the pandemic period only 2.8% of respondents bought food online, during the pandemic this percentage increased to 13.1%. When asked if they used the "Food Home" service before the pandemic, 94.5% of respondents answered *no*, 1.9% said that they tried this service *once*, and only 3.5% of respondents used this service *regularly*. 86.1% answered *no* to an identical period-oriented question during a pandemic, 5.5% used it *once* and 8.4% used it *regularly*. According to a PwC survey, there was an increase in online shopping during the pandemic, especially in the categories of frozen foods (27%), fast food spoilage (26%) and household cleaning supplies (21%) (PwC, 2021). Kohli et. al. (2020) in their study point out that the pandemic also significantly affected the size of shopping baskets, reduced the frequency of purchases in stores and increased the demand for electronic purchasing of food and pharmaceutical products. Puttaiah (2020) points out that changes such as digital adoption or health awareness will persist in society even after the pandemic has been over, and that it is therefore important to adapt business activities accordingly. Zwanka and Buff (2020) confirm this fact and point to the trend of increasing the frequency of food purchases through online stores, which is likely to last longer than the fight against the COVID-19 pandemic itself. According to KMPG's online surveys (2020), it was possible to observe an increase in e-shopping in 2020 in all segments, while sales volumes in stores decreased. (39% decrease in the food segment). This is also confirmed by the results of our survey, in which it was possible to observe a 22% increase in the frequency of online purchases compared to the period before the pandemic. Troy (2020) states that in the category of online shopping it was possible to observe an increase of up to 33% compared to 2019, specifically in the pre-Christmas period. As our primary data collection was carried out at the beginning of 2021, we also dealt marginally with the issue of pre-Christmas shopping behavior. For example, we were interested in the extent to which the pandemic affected the proportion of Christmas gifts purchased in stores and e-shops. In previous years, up to 43% of respondents shopped more in malls, and only 1,5% said they preferred buying Christmas presents through e-shops. There were significant changes in the purchase of Christmas gifts in 2020, as up to 31% of respondents shopped only through the e-shop, and only 4.6% of respondents shopped exclusively in shopping malls (a decrease of 12%).

An important part of the survey was also the analysis of factors that affect consumers when shopping. Using a scale question, we found out to what extent the following factors influence the respondents: 1. *the price of the product / service*, 2. *quality*, 3. *availability in stock*, 4. *delivery time*, 5. *delivery price*, 6. *reviews on the Internet*, 7. *recommendations*, 8. *ecological aspects*, 9. *possibility to pick up the goods in person at the store*, 10. *possibility to pick up the goods at the box/mailroom*. Respondents rated individual factors on a scale from 1 to 4, where 1-does not affect me at all, 2-less affects me, 3-affects me, 4-affect me a lot. An overview of the results is shown in the figure 4.

According to the survey, we can state that the most important factors in purchasing decisions during a pandemic considered by Slovak consumers are: *price of the product, the quality of the product and the price of delivery of goods*. Significant influence can also be observed in factors related to the distribution of goods. *The availability of goods in stock* during a pandemic is important for 72% of respondents, *the price for delivery* is greatly affected or influenced by 83% of respondents, and 64% of respondents also decide according to *the delivery time*. There was also a decrease in the "*recommendations*" factor, where before the pandemic, up to 56% of respondents considered this factor important, during the pandemic only 23% of respondents stated this. In both monitored periods, a low involvement of Slovak consumers in improving the quality of the environment can also be observed. *Environmental aspects* such as the delivery of a product by electric car or eco-packaging affect consumers to a very low

extent compared to other factors, as up to 61% of respondents stated that this factor *affects them less or not at all*.

Fig. 4 Influence of factors on online shopping during the COVID-19



Source: survey results

As we focused on the digital activity of Slovak consumers focused on shopping through e-shops, our first test assumption is that there is a direct relationship between time spent on the Internet and the rate of online shopping.

H0: There is no dependence between the variables time spent online and the rate of online shopping.

H1: There is a dependence between the time spent on the Internet and the rate of online shopping.

Tab.1 Interdependence verification

How much time do you spend online during a pandemic?* Do you shop online during a pandemic?Crosstabulation

			Do you shop online during a pandemic?			Total
			Yes, but only occasionally	Yes, often	No	
How much time do you spend online during a pandemic?	2-3 hours a day	Count	53	39	2	94
		Expected Count	48,8	44,4	,8	94,0
	Less than an hour a day	Count	0	1	0	1
		Expected Count	,5	,5	,0	1,0
	About 1 hour a day	Count	4	1	0	5
		Expected Count	2,6	2,4	,0	5,0
	More than 3 hours a day	Count	248	236	3	487
		Expected Count	253,0	229,8	4,1	487,0
	Total	Count	305	277	5	587
		Expected Count	305,0	277,0	5,0	587,0

Source: author's own processing

Tab. 2 Independence tests

Chi-Square Tests			
	Value	df	Exact Sig. (2-sided)
Pearson Chi-Square	6,084a	6	,204
Likelihood Ratio	6,138	6	,252
Fisher's Exact Test	10,357		,192
N of Valid Cases	587		
a. 8 cells (66,7%) have expected count less than 5. The minimum expected count is ,01.			

Source: author's own processing

The dependence between *time spent online* and *online shopping rates* has not been confirmed. Because 8 cells have a lower expected value than 5, we cannot use the classical Pearson Chi square test, so we use Fisher's exact test. At the level = 0.05, we accept the null hypothesis of independence between variables. This was also confirmed in another question of the survey, in which we asked respondents how they spend time on the Internet. As many as 96% of respondents spend their free time during a pandemic *very often* or *often* on *social networks*. 79% of respondents stated that they spend their time online *watching series*, and only 55% of respondents indicated the possibility of *shopping online*. There is no direct dependence between the selected variables and therefore it cannot be assumed that with the increased online activity of Slovaks, the volume of purchases via the Internet will also increase.

3.2 Shopping behavior of food and emergency goods

Another part of the survey was to examine the differences in the purchase of food and emergency goods. We assumed the difference in the importance of individual factors in the purchase of everyday consumer goods (mostly food) and in the purchase of emergency goods, which we can consider during the pandemic drapes, gloves, disinfectant gels. The emergency goods category uses an intensive distribution strategy that ensures a prompt response to the daily demand for the goods and ensures its availability in retail units where it is available to final consumers. Shortcomings in the supply of emergency goods arose, especially in the first months of the pandemic, which also had an impact on the significant increase in the price level of individual products, as market demand sharply exceeded supply.

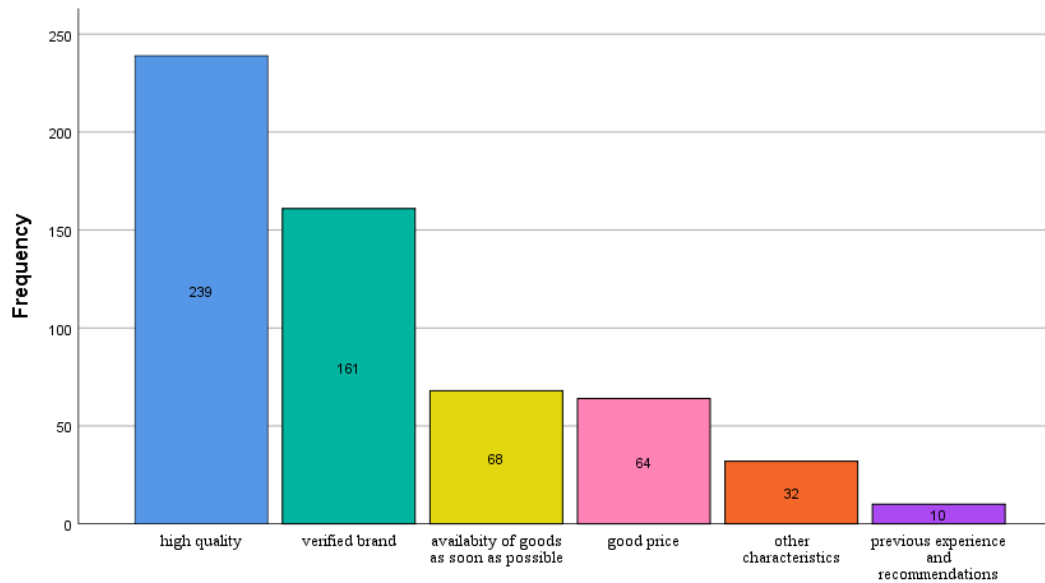
The aim of the analysis of the survey results was to answer the following research questions:

Research question 1: Which attribute do consumers consider most important when buying food?

Research question 2: Which attribute do consumers consider most important when buying emergency goods?

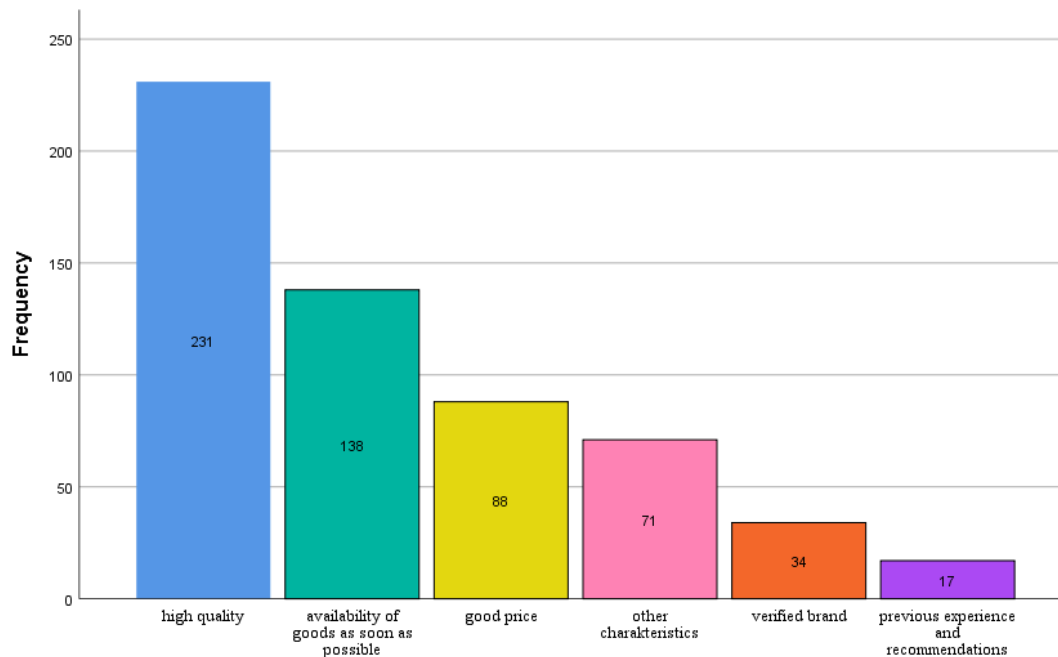
Comparisons of consumer preferences in selected two categories are shown in the form of histograms in the following figures.

Fig. 5 Food purchase priorities



Source: author's own processing

Fig. 6 Emergency goods purchase priorities



Source: author's own processing

Based on the results of the numbers from the implemented survey, which we present in the form of a histogram, it can be stated that the most important factor considered by Slovak consumers is the *high quality* of the product, regardless of whether it is buying food or emergency goods. Specifically, 41.6% (239) of respondents chose quality as a priority factor when buying food, 39.9% (231) of respondents chose this option in a question focused on the purchase of emergency goods such as drapes, gloves, disinfectant gels. The differences can be seen in the second most numerous answer. In the food segment, 28% (161) of respondents say that the *verified brand* is important for them. When buying emergency goods, it is

important for 39.9% (138) of consumers to have the goods *available as soon as possible*. Here we can observe a significant difference, which results mainly from the fact that the availability of emergency goods in retail operations was very low, especially in the early months of the pandemic. Operations were not prepared for an enormous increase in demand for this segment, which was also reflected in the increase in the price level, when the consumer paid three times the standard price for selected goods such as disinfectant gel. This is the basis for the third most numerous answer, in which 15.2% (88) of respondents state that it is important for them that emergency goods have a *favorable / good price*. *The quality, availability and price of emergency goods* can therefore be considered the most important factors that affect the shopping behavior of Slovak consumers during the COVID-19 pandemic, and *the brand* (5.9%), *previous experience and recommendations* (2.9%) affect shopping decision making at least. 12.3% of respondents also state that the highest priority for them when buying emergency goods is *other characteristics*, such as the unique appearance of the drape or the skin-friendly disinfectant gel. When buying food, we consider the *quality, brand and availability of the product* to be the most important decision factors. Only 11.1% of respondents chose the *price of the product*, from which we conclude that Slovak consumers prefer quality food and mostly brands that they know well and that they buy at regular intervals.

CONCLUSION

The main goal of the paper was to identify the impact of the COVID-19 pandemic on the purchasing decisions of a selected consumer segment and to analyze the factors that most influence them when buying food and emergency goods. The pandemic consumer behavior speaks of the major changes taking place in 2020. It is mainly an increase in the volume of stocks in households in which the demand for durable foodstuffs, alcoholic beverages, pharmaceutical products or assortment intended for domestic work has increased. The decline was recorded in the demand for social events, services or durable goods. Another characteristic of pandemic consumer behavior is the increased consumption of online media, the use of courier and forwarding companies, or differences in leisure time. The results of the survey confirm the increase in digital activity of Slovaks, as well as their rates of online shopping. During a pandemic, consumers buy more from domestic than foreign e-shops and most often buy clothes, shoes, electronics and books online. Before the pandemic, consumers shopped through e-shops on average once a month, during the pandemic this frequency increased to 2-3 times a month. Changes could also be observed in the purchase of Christmas gifts, where there was a 29% increase in preference for online shopping. The most important factors that influence consumers when shopping online during a pandemic can be considered the price of the product, the quality of the product and the price of delivery of the product. Factors related to the distribution of goods, such as the time of delivery and the availability of goods in stock, also appear to be important. The increase in importance could also be observed during the pandemic with the factor of the possibility to pick up the goods in the shop, which is derived mainly from the government's ongoing measures, based on which shopping in stone shops is limited. There is no direct relationship between time spent on the Internet and the rate of shopping through e-shops, and therefore it cannot be assumed that increased digital activity of Slovaks will have a positive effect on online shopping through e-shops. Respondents most often spend their time on the Internet on social networks, watching serials, and only then is online shopping mentioned. When verifying the most important attributes of decision-making when purchasing food and emergency goods, the answers were consistent, as the largest number in both categories represented the quality of the product. In the case of food, consumers also consider the product brand and the availability of goods to be important but on the other hand, recommendations and the price of the product are not a priority for them. For emergency goods such as drapes, gloves, disinfectant gels, it is important for consumers to have the goods available as soon as possible and to prioritize a reasonable price. All this

can be deduced from the insufficient supply of this range, especially in the early days of the pandemic, which caused a rapid increase in the price level.

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Creativity and 21st Century Soft Skills Development Opportunities in Education of Top Management in International Environment

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Abstract: Ongoing political, economic, social and technological changes all over the world require higher demands on skills of top managers, they must be more flexible and more adaptable than ever before. Can Design Thinking lead to better solutions to such problems, especially from a managerial perspective? This article presents results from an exploratory case study, where the managers from 7 universities participated in soft skills training using the design thinking methods. The study proved that managers who used a design thinking approach seemed to be more competent to understand creativity, teamwork and interdisciplinarity at finding new solutions. The aim of our contribution is to introduce our knowledge and experience with creativity and other soft skills development opportunities in education of top management in the international environment. The present study is part of a larger research project on the application of design thinking as an approach to finding creative solutions to problems.

Keywords: design thinking, creativity, team work, case study, management

JEL Classification codes: A20, I23, J24, O30

INTRODUCTION

World Economic Forum (2019) defined 10 top demanded soft skills for our recent and future workforce: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and decision-making, service orientation, negotiation and cognitive flexibility. The importance of this challenge is the fact, that this topic is discussed at several other international institutions, such as European Commission and OECD.

The OECD co-operates with member countries to develop policy responses that are tailored to each country's specific skills needs. The outcome of this approach is the OECD Skills Strategy Framework, which points to what countries can do better to develop relevant skills over the life course; to use skills effectively in work and in society; and to strengthen the governance of the skills system (OECD, 2020).

The process of modernization of education systems is based on quality of university management and staff – top managers, that create policy, corporate culture and working

conditions for all others, curriculums and study programs, administration staff, which is responsible for smooth realization of all processes, and teachers, responsible for teaching process. They face a lot of challenges, such as international competition, lack of sources, uncertain environment, etc. Development of their soft skills will lead to their more effective work, to higher level of corporate culture, better working atmosphere, more satisfied employees and to better results.

Many business and innovation managers and academics have been calling attention to the need for changes in business school curricula and learning methods, prompted by the continual social and economic transformation (Martin, 2009; Dunne, 2009; Glen et al., 2014).

1 LITERATURE REVIEW

The European Commission support the development of higher education policies in EU countries in line with the Education and Training 2020 strategy (ET2020) and works closely with policy makers. The renewed EU agenda for higher education, adopted by the Commission in May 2017, identifies four key goals for European cooperation in higher education:

- tackling future skills mismatches and promoting excellence in skills development;
- building inclusive and connected higher education systems;
- ensuring higher education institutions contribute to innovation;
- supporting effective and efficient higher education systems. (European Commission, 2020)

With the aim to help achieve these goals, the Commission proposed specific actions at EU-level, primarily supported by different strands of the Erasmus+ and Horizon 2020 programs. In particular, the European Commission supports:

- **the exchange of good policy practices** between different countries through the ET2020 higher education working group;
- **the Bologna Process** - designed to promote the internationalization of higher education in Europe. Through more mobility, easier recognition of qualifications and streamlined quality assurance mechanisms;
- **the development and use of mobility and recognition tools**, such as the ECTS system and the Diploma Supplement, to increase transparency and facility exchanges in Europe (European Commission, 2020).

The European Commission in the area of education has taken a number of further initiatives, e.g. the concept of Networks of European Universities, that brings a significant change to higher education practices through integrated curricula and mobility, Council recommendation on automatic mutual recognition of higher education and school leaving diplomas, that helps to support students mobility and the future European Student Card, that will facilitate the secure exchange of student information and reduce administrative burden for higher education institutions. These initiatives will help to foster quality, excellence, and innovation in educational systems, that will prepare new generation of young people better prepared for the needs of new challenges, that will occur. Excellent and innovative educational systems consist of institutions, educational facilities, and networks, where all of them need excellent and innovative management staff, that also need to have necessary hard and soft skills, that can be further developed.

There are a number of tools and methods that support creative thinking and soft skills for example "*problem-based learning, design thinking, project based learning*". Design thinking is defined as "a creative problem-solving process that focuses on understanding the needs of others, rapid testing and iterating, and bringing out your inner creative genius". (Tran, 2019) In this process is crucial to support users in their development of creativity, that is "the ability

to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form". (Kerr, 2019). Design thinking has emerged as a powerful new problem-solving approach and it's used in public and private sectors for solving tomorrow's problems.

Creativity is an essential skill based on expected engineering competency, as well as on the impact of engineering on society and on the environment (Paul, R., Hugo, R.J. and Falls, L.C., 2016). A creative person is able to produce a wide range of ideas, processes or products that are novel, original, unexpected, imaginative or useful, as well as recognizing limitations and constraints. (Pusca and Northwood, 2018) Creativity plays a significant role in problem-solving, where students can muster their experiences in the context of social cognitive theory, and therefore create a strong sense of efficacy (Dinther, Dochy, Segers, 2011).

Creativity is related to imagination or original ideas to create something through various thinking techniques. The reason why people are motivated to be creative is there is a need for novel, varied and complex stimulation. The second reason is there is a need to communicate ideas and values and the third reason is there is a need to solve the problem. (Khairul, 2020)

More specifically, creativity was flagged as a competency in students who demonstrated indicators like originality, open-mindedness, flexibility and divergent thinking. That design thinking students came up with more creative solutions echoes findings from numerous studies, which have highlighted the positive effects of design thinking on creativity (Cassim, 2013; Renard, 2014).

Design is a course of action for the development of an artifact or a system of artifacts. It is a process of realization of the idea to form or product that have artistic added value, strength, function, solving user problems and applying technology for the products or the production process (Khairul, 2020).

Design Thinking

The combination of the terms "thinking" and "design", offers fields such as Innovation Management the opportunity to apply design tools to other problem-solving-contexts like for example to businesses, services, and processes. Today, Design Thinking is understood as a way of thinking which leads to transformation, evolution, and innovation, to new forms of living and to new ways of managing business (Tschimmel, 2012).

Design Thinking relies on the designer's capacity to consider at the same time 1. human needs and new visions of living well, 2. available material and technical resources, and 3. the constraints and opportunities of a project or business. The integration of these three factors demands from the designer, the ability to be at the same time analytical and emphatic, rational and emotional, methodical and intuitive, oriented by plans and constraints, but spontaneous (Pombo, Tschimmel, 2005). Some design researchers call this kind of dualistic reasoning designers' use 'abductive thinking' to differentiate it from the rational deductive and inductive reasoning (Martin, 2009; Cross, 2011) Design Thinking can also be considered as a manifestation of *collective intelligence*, whereby important consideration is given to the human being, to his or her behaviour and needs, and wherein creativity among participating problem solvers frequently challenges previously suggested solutions (Pruneau, El Jai, Dionne, Louis, Potvin, 2019).

According to Brown and Sheer (2009, 2013) **Design Thinking process** has the six steps:

1. Observation-inspiration: an ethnographic survey is conducted, while demonstrating empathy for the people affected by the issue (the users), as well as for the problem they are experiencing.

2. Definition-synthesis: the problem is defined and redefined through an iterative process. The goal is to learn information and gain insight into various perspectives surrounding the issue. The information is briefly summarized.
3. Ideation: many ideas are proposed and some of them are retained, while others are discarded.
4. Prototyping: prototypes are very quickly built to emphasize the different ideas that have been generated.
5. Tests and communication: prototypes are evaluated by collecting opinions from users as well as experts on the problem at hand.

Design Thinking Tools

Design, as a multidisciplinary field, took its methods and tools from several knowledge fields, such as from the engineering, arts, economy, etc. But most of the visually related tools, such as sketching, mapping, prototyping, etc., stretch right back to the beginning of design education. These tools are enabling the designer to inquire about a future situation or solution to a problem and also serve to transform abstract immature and unrealized ideas into something to build on and to discuss with colleagues and other stakeholders (Tschimmel, 2012).

Design Thinking researchers agreed that certain assumptions define the Design Thinking approach such as iteration, ambiguity, visualization, collaboration, empathy, and satisficing—the abductive, non-linear nature of the process does not suggest a simple process model (Cross, 2006, Buchanan, 1992). Research demonstrated that Design Thinking involves creativity of thought and a willingness to accept uncertainty, Design Thinking is most often conducted in an extremely systematic way (Cross, 2001, 2006; Lawson, 2006).

Design thinking relies on the human ability to be intuitive, to recognize patterns, and to construct ideas that are emotionally meaningful as well as functional. The elements of design thinking combine to form an iterative approach — one you can try out and adapt to suit your needs. The design-thinking process brings team members together, focuses them on a shared and ambiguous goal.

Tab. 1 How could Managers think like Designers?

Characteristics of Design Thinking Manager	Characteristics of the traditional thinking manager
Mainly visual, use of sketching and prototyping tools	Mainly verbal, use of diagrams and tables
Intensive observation and wondering, challenging stereotypical	Immediate perception and quick interpretation of a situation
Emotional and rational at the same time, subjective	Mainly rational and objective
Abductive and inventive	Analytical, deductive and inductive
Failure is a part of the process	Looking for 'correct' answers
Comfortable with ambiguity and uncertainty	Lead by organizing and planning
Empathic and human-driven, deep understanding of peoples' needs and dreams	Customer-driven, deep understanding about what clients would like to have for their social status
Principally collaborative	Principally individual

Source: In form Tschimmel, 2012, p. 20

2 METHODOLOGY

Our aim is to introduce our knowledge and experience with soft skills development opportunities in education of top management in international environment, based on our participation in international project DT.UNI.-Design Thinking Approach for an Interdisciplinary University (DT.UNI)., where we participated at several workshops and courses on implementation of Design Thinking tools, and we have organized several of them. The main aim of the project is development of innovation in higher education institutions and is co-financed via Erasmus+ Program.

Management staff is the key element of every university. Thanks to the project they have developed their skills, such as the ability to think in a divergent, creative, innovative, and interdisciplinary way, which is a core point of the project, become more open to changes at university, inter-cultural competences.

They took part in locally organized and international workshops, one of them took place in Birmingham in winter of 2018/2019.

In the next section we will bring you the evaluation of DT Uni Workshop for University Managers which took place in Birmingham in November 2018. For the measuring impact we have used Pre-test and Post-test surveys. There were 24 participants at the workshop, 20 of them fulfilled both Pre-test and Post-test.

Our respondents were between 30 – 62 years old, 60 % of them were women. Our participants were top managers and administrative staff at universities in several European countries – Poland, Germany, Netherland, United Kingdom, Portugal, Iceland, Italy, and Slovakia.

70 % of our respondents were in management positions, 20 % were in administration and 10 % were university teachers, associated professors or assistants of professors. Their former experience with Design Thinking varied from no experience to DT experts, 60% of them had some or no experience. They declared their current challenges that they face at their universities, they were similar – material equipment and working conditions, new challenges and strategies, new work models, they want to attract more students for their study programs, they have to work also with less skilled and unmotivated students, etc.

They expected that participation in the workshop will help them in everyday teamwork with different personalities, in exploiting the full potential of all team members and managing different tasks. They would like to learn useful tools to boost their creativity. They would like to know when and which Design Thinking tool to use and how to implement them in the process of teaching students. They also wanted to know the experiences of other people about implementing Design Thinking in their work.

3 RESULTS AND DISCUSSION

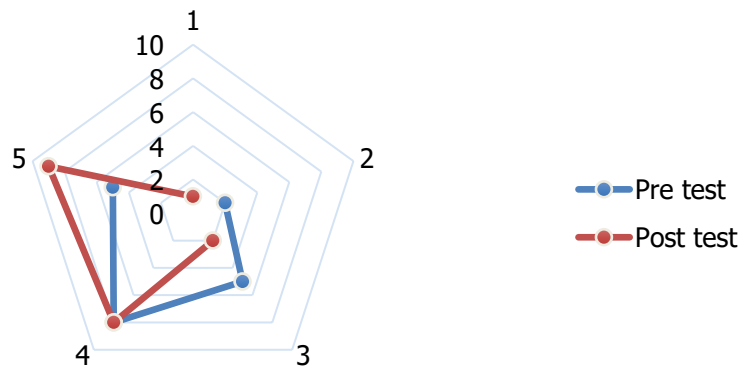
Results from our survey show, that workshops are effective way, how to develop soft skills of managers in international environment. Our survey was oriented to results of Pre-test and Post-test of workshop participants in Birmingham. These tests were in electronical forms, links to them were sent to each participant via e-mail, Pre-test was sent before workshop and link to Post-test was sent to them during last day of workshop. We have got 20 completed Pre-tests and Post-tests from 24 participants of the workshop, i.e. 83,33 %. This result we consider satisfactory.

Figures 1 -3 show respondents' views on selected claims related to their soft skill. We show some of them, that we consider most interesting. They indicated their perceptions on a scale

of 1 to 5, where 1 means that they don't currently do this very much and 5 means that this applies a lot/ always to how they currently work.

The Figure 1 shows, that dealing with complex problems and uncovering their different aspects may be also funny and interesting. We can see the change in the mindset of participants, which have more positive approach after the workshop, where several Design Thinking (DT) practices and tools were used with the aim to solve challenges by teams of participants in a funny and entertaining way. Managers need to deal with several complex problems in their work and creation of positive working atmosphere helps to uncover more ideas and lead to better results, including better working environment and satisfaction of employees.

Fig. 1 Respondents' views on claim "I have fun dealing with complex problems and uncovering their different aspects" (Number of responses)



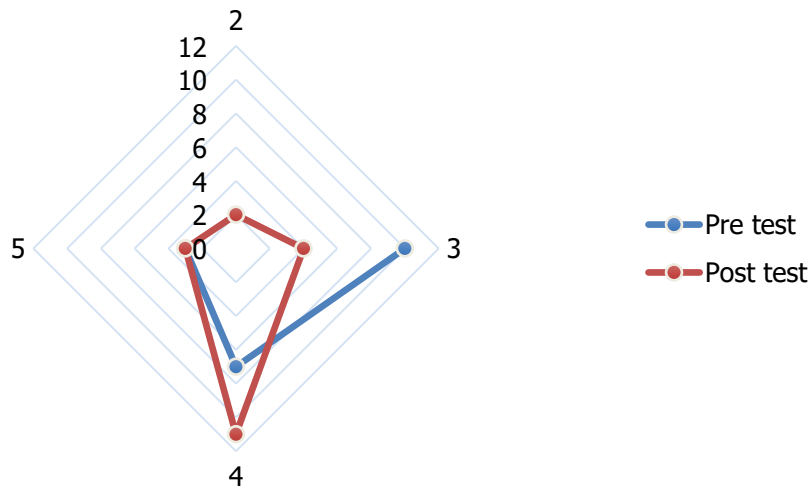
Source: DT Uni Survey in Birmingham, November 2018

We can see from this figure, that while in Pre-test only 1 participant gave 5 points to this statement, in Post-test there were 9, i.e. 45 % of them. No-one neither in Pre-test, nor in Post-test gave only one point to this statement, from which we may conclude, that managers, researchers and teachers, naturally have some fun dealing with complex problems and uncovering their different aspects. All two participants, who gave only 2 points in Pre-test had changed their opinion after workshop, and found it more interesting, so nobody gave less than 3 points in the Post-test. 85 % of participants after workshop gave 4 and 5 points, this result we consider as very positive.

The figure 2 shows the change in empathy of participants. Empathy is important part of communication skills and emotional intelligence.

Results from figure 2 show, that working in teams with people from other institutions and countries was more difficult, than expected. There were language and cultural differences, and it was necessary to find solutions to their given challenges. Only 3 participants perceived him/herself as perfect in this skill, 2 of them (10 %) put their evaluation by one level down in Post-test, from 3 to 2 points, 4 of them (25 %) increased their self-confidence from 3 points to 4.

Fig. 2 Respondents' views on claim "I am very well able to anticipate what other people think and feel (Number of responses)



Source: DT Uni Survey in Birmingham, November 2018

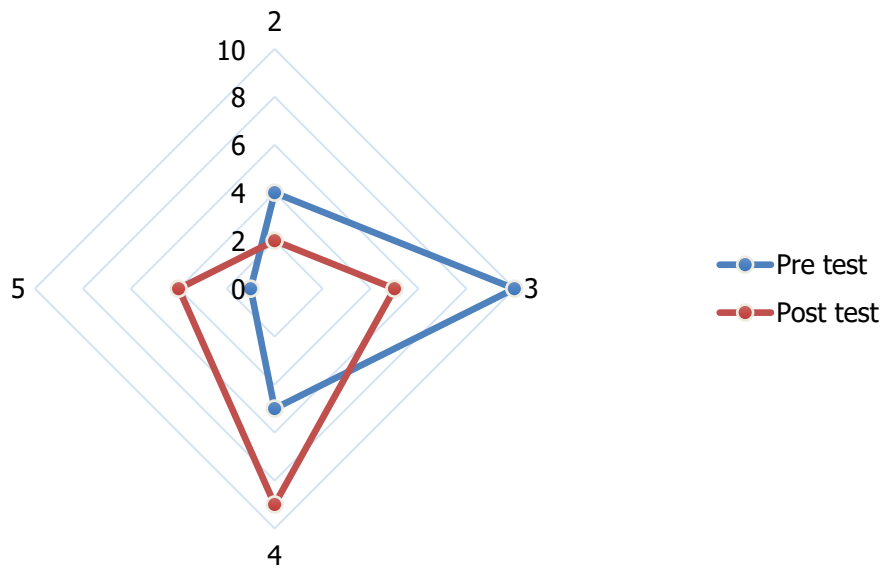
Our experience is that we have not always guessed the right feelings of the other team members, which led to some misunderstandings, and in future we would like to be more careful. Design Thinking tools focused to train empathy helped participants to think more about what other people think and feel. Very interesting was activity "Explain to the Stranger". We were taken to the Museum of Art in Birmingham, as teams we had to choose a picture in the gallery, and we had to explain our solution of our challenge to the person on the picture. We had to brainstorm, what were feelings and fears of that person and we had to explain this person how our challenge may impact this person, and tell our solution in the way, that this person can understand and agree with it, that meant also to use language of the time period on picture.

The figure 3 shows positive changes of mindsets of participants related to enhance creativity soft skills. Creativity is perceived as very important soft skill and it is demanded to support it at workplace. There are several publications (Kerr, 2019, Khan, 2015, Koh et al., 2012, Laurillard, 2015, Filo, 2017, Tran, 2019), how to improve and develop it. During workshop we have used some of Design thinking tools, e.g. Brainstorming, Brainwriting, Persona, Letter to Grandma, etc.

Results in figure 3 show, that no one perceived him/herself as not good at spontaneously channelling their creativity to develop new ideas. The amount of less confident respondents in this area, who gave only 2 points, decreased from 4 (25 %) to 2 (12,5 %). On the other side, number of respondents who perceived themselves as perfect and very good at this skill (they gave 4 and 5 points) increased from 5 (20 %) to 13 (65 %), it more than tripled. We consider this result as perfect.

Our other research results showed, that after workshop participants feel less uncomfortable using concepts where they learn by doing (- 2%) and they have less trouble appreciating other perspectives (- 12 %). They more rely on a certain methodological set of strategies (+31 %), they increased channelling of their creativity to develop new ideas by 19 %. They more enjoy exchanging and incorporating ideas and concepts from other team members (+ 12%).

Fig. 3 Respondents' views on claim "I am very good at spontaneously channeling my creativity to develop new ideas" (Number of responses)



Source: DT Uni Survey in Birmingham, November 2018

The aim of use DT tools is also to improve soft skills of participants, e. g. patience, empathy, self-confidence and adaptability. Top improvement was obtained in use of certain strategies when being confronted with failure (+23 %) and in their enjoying developing a variety of ideas for one problem and having no trouble discarding them (+21 %). Design Thinking is focused to train people to be not afraid of bringing new ideas to the other team members, and to be not afraid to discard those ideas, that fail. People are afraid of failure and it blocks them in creativity. To achieve this, it is very important to create safe and positive atmosphere, where people share their ideas and build new ideas on ideas of the other team members. No idea is bad, criticism is forbidden, ideas are written on sticky notes and later they are selected by given criteria. Focus is on quantity of ideas, in given time limit, because it is known, that brain creates more ideas when it is under some pressure.

After workshop 75 % of participants plan to encourage others to use DT processes in their work and only 5 % declared, that they do not plan it. We have got also feedback, how to organize future workshops better. International environment of the workshop was perceived as very positive. Attendees could share their own experiences and their ideas of solving their challenges at their universities. They also improved their language skills in conversation and in teamwork. They have learned some useful tools to boost their creativity. They experienced several Design Thinking tools, so they can implement them in their managerial work.

Education of managerial skills via workshop we consider as good start for future self-development of managers. Mentoring may become the second step in the process of implementation of DT tools into managerial and teaching process. Some topics may be explained also via webinars and other online tools, that are effective and not complicated for use.

CONCLUSION

Design has always been a catalyst for innovation processes in product and service development. But over the last decade and more, emerged the concept Design Thinking by demonstrating that any kind of organisation can benefit from the designers' way of thinking

and working, including management, business and educational institutions. After a stretching of the Design Thinking concept (Tschimmel, 2012; Johansson-Sköldberg, Woodilla & Çetinkaya, 2013).

We have found that Design Thinking tools are useful also for managers, they enhance creativity, soft skills and they may lead to positive working atmosphere, and to better results. Participants plan to use DT approaches in their teaching process, in strategic processes, in teamwork, in managerial work, in the improvement of internal processes, in the process of seeking solutions to challenges, in designing new projects and in creation of new curricula. 75 % of them confirmed, that their specific lexicon had significantly increased. 95 % of them agreed, that they practiced formulating questions in English. All participants practiced working in interdisciplinary / intercultural contexts.

Thinking like a designer helps managers to become aware of issues in a way that isn't very natural to other disciplines, and this can be especially helpful when users are involved. Design Thinking helps to understand issues and problems in a new context, and figure out how solutions will work in real-time.

The main goal of Design Thinking is to find the solution and promote innovation and creativity, but one of its big benefits is that it can help establish a strong and high-performing team.

Our own experience show, that Design thinking tools are not always applicable, and we carefully choose, when and where we will use them. Short workshops and trainings together with mentoring seem to be effective way, how to teach managers, how to develop their soft skills.

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Wine through the Eyes of Two Generations

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Abstract: Wine is a specific product in which the consumer expects an extended level of satisfaction. This applies to such characteristics as the quality of the wine, the variety, its balance, the enjoyment of its consumption. That is why consumers often pay attention to things such as the brand image, the wine-growing region, the year of production or awards from prestigious exhibitions when choosing this type of product. The aim of this paper is to identify important factors when choosing a wine, and develop recommendations for small winery Alora regarding generational-based segmentation. The study revealed that members of Generation Y drink wine more often, they like modern labels and the label of the Alora winery attracted them more than Generation X. Generation X looks like a suitable target group because it appreciates the domestic origin, wine-growing area, and other factors, which a small winery meets or can adapt to.

Keywords: wine, generation, label, small winery

JEL Classification codes: M11

INTRODUCTION

With the abundance of wine on the global market the wine industry has become strongly competitive. Increasing competition has resulted in shifts in wine consumption patterns (Hussain et al., 2008). There are two important reasons for segmenting wine market. First, segmentation helps in analyzing the needs of a particular customer segment and second, the results will allow marketing to focus on these identified needs (Barber et al., 2008). With this in mind, a research study was designed to identify the differences among Generations X and Y in perceptions, preferences and behaviors towards wine, as well as differences in the evaluation of the bottle label of small Slovak winery Alora. The study's objectives are to identify important factors when choosing a wine, and develop recommendations for small winery regarding generational-based segmentation.

1 LITERATURE REVIEW

Wine is a product with an immediate effect on the consumer and a high level of differentiation, so customer orientation is a fundamental determinant of the competitive advantage of a winery (Muño et al., 2019). However, wine as an alcoholic beverage is subject to various restrictions and regulations, such as marketing communication or the age of the target group. Because of the high level of product differentiation, consumers vary in their preferences regarding wine attributes (Mauracher et al., 2019). A survey carried out by Vitis winery in 2019 showed that taste is the most important factor in choosing a wine, followed by the price, brand, country of

origin, grape variety, wine color, type of bottle closure, label, and type of bottle. Only a very small group of respondents consider Awards as important (Retail magazine.sk). Most Slovaks drink wine at least once a month, especially dry white wine (Vitis). Generation Y, compared to Generation X, does not need special occasions such as celebrations or dinners in restaurants. The generation Y also drinks wine at home while cooking, watching movies or reading a book, because it is more comfortable, cheaper and more personal (Kadlec, 2020). In the USA, one of the most promising new demographic segment is Generation Y (Thach & Olsen, 2006). This group has shown an interest in wine at an early age, and they appreciate most those wines that are fun and approachable (Wagner et al., 2011). But the analysis of data for the years 2017-2019 on wine sales showed that Generation Xers spent more than other generations, so this generation is a key demographic that wine marketers must not overlook (Forbes, 2020). However, ethical consumerism has become a mainstream and younger consumers are increasingly paying attention to the impact of their behavior. Companies must therefore act responsibly and present it on wine labels (Wine intelligence, 2019). The main trends in wine industry include *organic wines* made from grapes grown in accordance with principles of eco farming, *orange wines* made by fermenting grapes with skins and seeds in grape juice, *rosé wines* and *alternative packaging* innovations, e. g. cans (Errand Pro, 2020). A Chilean study showed, that higher levels of consumer trust in a wine brand is related to brand satisfaction, but not necessarily with brand loyalty directly (Bianci, 2015). This is also confirmed by knowledge of the US wine market, for which it is typical that most wine consumers buy an assortment of different wines and brands. Typically, they have one wine considered as their "house wine", However, for other purchases they do not have much brand loyalty (Moulton & Lapsley, 2001). With increasing competition and consumer demands, wine producers have to follow trends in the wine market. Marketing based on positive emotions is becoming more and more popular. Producers can organize visits in vineyards and wineries, wine festivals or wine events (Asero & Patti, 2016). Changing taste and new preferences among consumers, along with increasing demand for new and exotic flavors are expected to fuel the growth of the wine market as well (Mordor Intelligence, 2020).

2 METHODOLOGY

This research uses an on-line survey instrument that was administered through the use of a CAWI. The questionnaire comprised three sections. The first section asked respondents for general wine consumption habits, wine preferences and importance of factors in choosing wine. The second section measured evaluation of the label of small winery Alora. The third section collected general demographic information. The questionnaire was available on the Google website and distributed through social networks in March 2020. The sample was not drawn randomly, so the results cannot be generalize to any specific population. Data were analyzed using descriptive techniques and results were cross-tabulated and χ^2 - test was used to test the independence between Generations X and Y. Generation X was represented by people born between 1961 and 1980 and Generation Y between 1981 and 2000. In total, 221 answers were collected, and 188 of them were from wine consumers. Both generations of wine consumers were equally represented ($n_{XorY}=94$) and 43% of the sample was male (41,5% Gen Xers and 44,3% from Gen Yers).

3 RESULTS AND DISCUSSION

3.1 Wine in general

In this section, we will present the results of the survey that relates to attitudes of both Generations to wine.

Frequency of drinking wine

Generations X and Y differ significantly in the frequency of wine drinking (Tab. 1). We can say that Generation Y drinks wine more often, at least several times a month, and Generation X less often. But on the other hand, those who do not drink wine at all have a larger share of Generation Y (almost a fifth).

Tab. 1 Frequency of drinking wine (%)

	Generation	
	X	Y
several times a week	10,9	18,3
several times a month	20,6	29,6
less often	56,8	33,9
not at all	11,8	18,3
	sig. level = 0,05	

Source: author's survey

Only those respondents who drink wine at least occasionally answered the remaining questions, 94 from both generations ($n_{\text{total}}=188$).

Knowledge of wine

In the next question, we asked the respondents how they would characterize themselves in terms of knowledge of wine. Both generations responded very similarly (Table 2). This confirms cross-cultural study findings about very weak generational effect for wine involvement (Mueller et al., 2011). A quarter of respondents from both generations characterize themselves as wine experts who care about the quality, almost three quarters have only some information about wine and are only interested in the taste of wine, and only a very small portion of respondents said they knew nothing about wine.

Tab. 2 Knowledge of wine (%)

	Generation	
	X	Y
I'm just interested in the taste	71,3	74,5
I care about the quality of the wine	25,5	23,4
I know nothing about wine	3,2	2,1

Source: author's survey

Wine preferences

Although both generations drink white and red wine, Generation X prefers red wine and Generation Y prefers white (approximately 40%) and nearly 15% of them drink rosé (Tab. 3). Both generations clearly prefer Slovak wines, but Generation Y is also more open to foreign ones.

Tab. 3 Wine preferences (%)

	Generation			Generation	
<i>color</i>	X	Y	<i>origin</i>	X	Y
white	30,2	39,6	Slovak	73,6	66,7
red	40,6	26,1	foreign	14,2	27,0
rosé	2,8	14,4	no preferences	12,2	6,3
no preferences	26,4	19,8			
	sig. level = 0,00			sig. level = 0,07	

Source: author's survey

Loyalty

We were also interested in loyalty to the producers, resp. brands, and we found out that the two generations do not differ significantly and more than half of them like to test different producers (Tab. 4). Only a very small number of respondents are loyal to one producer, and more than a third have a few favorite producers. However, most of them like to try wine from different producers.

Tab. 4 Loyalty (%)

	Generation	
	X	Y
one favourite	2,8	8,1
several favourite	35,8	36,0
like to taste different	61,4	55,8

Source: author's survey

Factors in choosing wine

We asked two questions when determining the importance of factors in choosing wine. With the first question, we focused on what they notice first when choosing a wine. They were able to choose only one of the factors. In the second question, respondents answered on a scale of 1 to 5 for each factor (1= very important 5 = not important). To the factors from the first question, we added another, namely the type of closure such as cork or screw caps (Tab. 5).

The survey showed that there are 2 main factors in choosing wine, namely the amount of residual sugar and wine color (both questions confirmed this). Although there are no significant differences between the two generations in what they notice first, Generation X nevertheless pays more attention to wine-growing area and Generation Y to price (Fig. 1). The results correspond to the results of a Boomer Generation Wine Consumers survey which showed that

Generation X cares more about wine producer and quality and will typically spend more money to purchase it (Wolf et al., 2005).

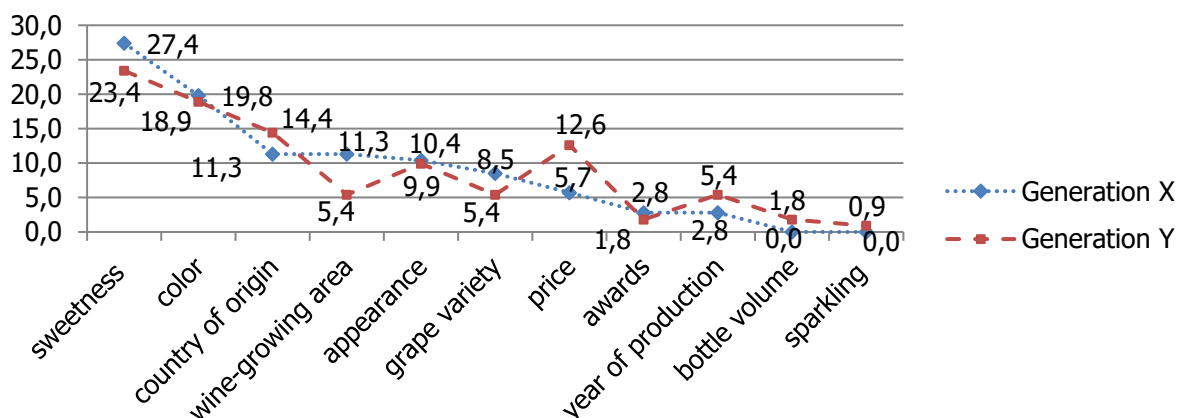
In the second question concerning preferences, we used contingency tables and χ^2 -Goodness of fit test to find out whether there are significant differences between the two generations in the importance they relate to the factors examined when choosing wine. Compared to Generation Y, the more important (but not the most important) factors for Generation X are: sparkling (sig. Level = 0.01), country of origin (sig. Level = 0.05), wine-growing area (sig. Level = 0,00), awards from exhibitions (sig. Level = 0,03) and type of bottle closure (sig. Level = 0,00). These results are similar to the research conducted in Portugal (Tavares & Azevedo, 2011) where factors like country of origin or awards are more important for Generation X.

Tab. 5 Factors in choosing wine

	Noticed as first		Importance	
	%		average	
	Generation X	Generation Y	Generation X	Generation Y
sweetness	27,4	23,4	1,79	2,00
color	19,8	18,9	1,92	1,83
country of origin	11,3	14,4	2,30	2,62
wine-growing area	11,3	5,4	2,43	3,16
appearance of bottle or label	10,4	9,9	2,50	2,63
grape variety	8,5	5,4	2,44	2,60
price	5,7	12,6	2,28	2,24
awards	2,8	1,8	2,54	3,06
year of production	2,8	5,4	2,75	3,03
bottle volume	0	1,8	3,05	2,97
sparkling	0	0,9	2,03	2,59
closure			2,56	2,78

Source: author's survey

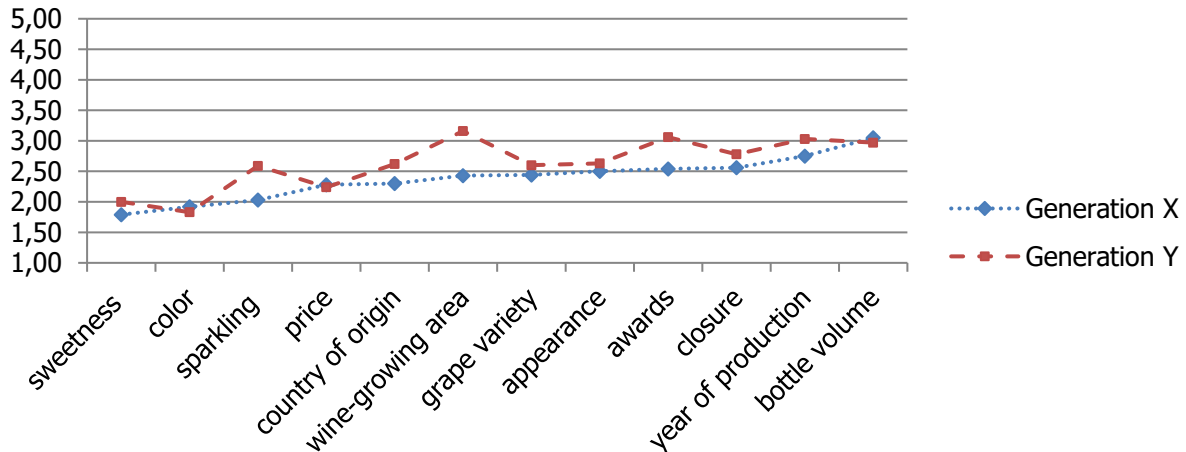
Fig. 1 Noticed as first (%)



Source: author's survey

To make it easier to show the importance of individual factors, we decided to present the average of the scale (1 - 5) for each factor instead of contingency tables (Fig. 2). The 5 most important factors when choosing a wine are for Generation X sweetness and color of wine, sparkling, price and country of origin and for Generation Y color and sweetness of wine, price, sparkling and grape variety.

Fig. 2 Factor importance (1=very, 5=not)



Source: author's survey

Price

We asked the respondents how much they are willing to spend on a bottle of wine when they buy it for their own consumption and how much when they buy it as a gift. When buying wine for own consumption, more than half of Generation X is willing to pay 5 to 10 euros and less than a third 3 to 5 (Tab. 5). Generation Y is more inclined to a lower price, almost half are used to buying wine for 3 to 5 euros, more than a third from 5 to 10 euros.

Tab. 5 Price for bottle of wine (%)

	own consumption		gift	
	Generation X	Generation Y	Generation X	Generation Y
less than 3€	0,0	5,4	0,0	0,0
3,01 - 5€	31,1	45,0	2,8	10,8
5,01 - 10€	55,7	37,8	52,8	55,9
10,01 - 18€	13,2	9,9	37,7	25,2
more than 18€	0,0	1,8	6,6	8,1
	sig. level = 0,00		sig. level = 0,05	

Source: author's survey

In the case of buying wine as a gift, both generations are willing to pay more (Tab. 5). The share of both generations increased significantly at a price of 10 to 18 euros. Generation X does not buy wine cheaper than 5 euros or more expensive than 18. More than half of them buy wine for 5 to 10 euros and more than a third for 10 to 18 euros. In Generation Y, the

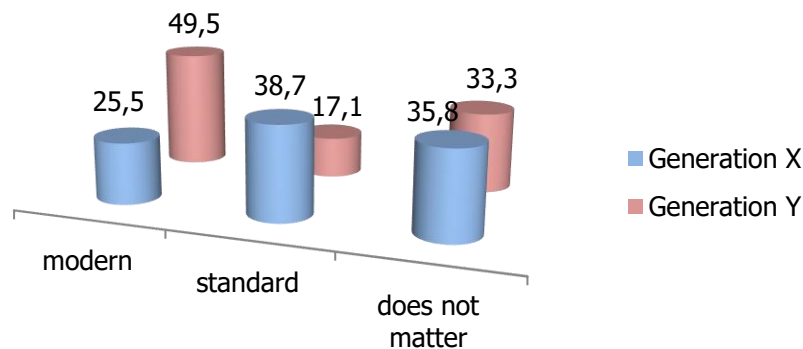
share of those who would buy wine for 3 to 5 euros decreased significantly and the share of those who are willing to pay more than 5, resp. 10 euros.

Both generations are willing to pay more for wine if they buy it as a gift. It can be stated that Generation X buys wine at a higher price than Generation Y. This corresponds to the result of a survey conducted in California: Generation Y consumers want inexpensive wines that they believe represent a good value (Wolf et al., 2005).

Label

We asked respondents which labels they liked more. The differences between the generations are significant (sig. Level = 0.00). The younger Generation Y clearly tends to modern labels or does not care about the appearance of the label. The older Generation X is not entirely distinct, but likes modern labels the least (Fig. 3).

Fig. 3 Label preference



Source: author's survey

Label of small winery Alora

Wine Alora is a product of a small family winery. All Alora wines are unfiltered, processed by hand, without the use of modern technology, without additives and produced in limited quantities. Wine is packed in dark or clear glass bottles and closed with a cork.

Fig. 4 Labels of the wine Alora



Source: Winery Alora

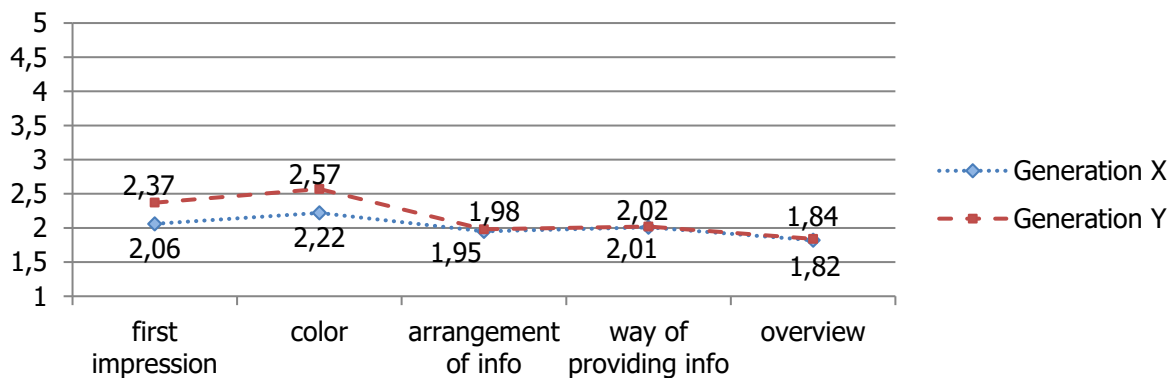
The logo and simplicity of the label were 2 factors which attracted immediate attention of both generations (Tab. 6).

Tab. 6 Attraction (%)

	Generation	
	X	Y
logo	54,7	48,7
simplicity	36,8	36,5
colors	5,7	9,6
nothing	2,8	1,7
other	0,0	3,5

Source: author's survey

Fig. 5 Evaluation of the label (average)



Source: author's survey

Furthermore, the respondents had to evaluate on a scale from 1 to 5 (1 = like a lot, 5 = don't like at all) criteria such as first impression, colors on the label, arrangement and way of providing information and overview of the information. Using contingency tables and χ^2 -Goodness of fit, we found that compared to Generation Y, Generation X evaluates better the first impression and color of the label (sig. Level = 0.05) and the other criteria evaluates the same. To make it easier to display the evaluation of individual criteria, we decided to present the average of the scale (1 - 5) for each criterion instead of contingency tables (Fig. 5).

Most respondents like the label, 72.6% of Generation X and 71.3% of Generation Y. We noticed significant differences (sig. Level = 0.01) in the perception of label color. Two thirds of Generation Y like this label (64.3%) and more than half of Generation X perceive it as indistinct and would use more colors (52.8%).

CONCLUSION

The results of the survey showed that wine is one of the favorite drinks of both generations, while most consumers are not wine experts. Both white and red wines are popular, but Generation X is more inclined to red. Consumers prefer Slovak wines, but Generation Y is also more open to drink foreign wines. Both generations like to alternate wine from different

producers. When choosing wine, 2 factors are important for them, namely the amount of residual sugar and wine color, while Generation X also evaluates sparkling, country of origin, wine-growing area, awards from exhibitions and Generation Y notices the price. The sensitivity to the price of Generation Y has also been shown in the fact that it buys wine at a lower price than Generation X. Both generations are willing to pay more for wine if they buy it as a gift. There are significant differences between the two generations in what labels they like, and logically Generation Y clearly tends to modern labels. The results of the survey indicated that it makes sense to segment and analyze the wine market from the point of view of generations. The differences between the two generations can be used in marketing or communication activities of wine producers.

As far as the Alora brand is concerned, Generation X looks like a suitable target group because it appreciates the domestic origin, wine-growing area, awards from exhibitions and the type of bottle closure, which a small winery meets or can adapt to. This Generation is also willing to accept the higher price that a small producer wine usually has. But on the other hand, Generation Y is looking for experiences, likes to experiment and learn new things. This opens up space for the creativity of wine producer, which can offer non-traditional tastes and experiences. Games and apps are the perfect way to experiment, have fun, and share unusual experiences.

A limitation of this study is that answers have been obtained by non-probability method, namely by convenience sampling. As opposed to a random sample, the results may not be used to make an inference about the whole population of wine consumers in Slovakia. However, thanks to the growth of internet use among Slovak people of different age, we believe that our study may provide insight into attitudes of Generations X and Y. Opportunities for future research would be to consider other factors when choosing wine such as brand image, brand loyalty or promotional offer. This study could be also replicated to compare behavior and preferences of other generations.

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Corporate Social Responsibility Perspectives in European Higher Education

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Abstract: Corporate social responsibility (CSR) takes a significant part of modern-day business organizations' decision making. Not only do companies have their performance assessed by CSR initiatives but also the former strive to strengthen their relationship with society by maintaining a distinctive sustainable corporate culture. Among the most widely adopted approaches for differentiation is the establishment of long-term relationships with customers, partners, employees, shareholders and civil society, among others. Universities are no exception. Modern higher education (HE) institutions place students at the center of the educational process, while maintaining personnel policies to motivate and retain a quality academic and administrative staff (especially given the pressure by the alternative sources of knowledge). In this respect, the aim of this paper is to investigate the opinions of HE representatives on five different dimensions of corporate social responsibility. We base our research on a methodology proposed by European Commission Directorate General for Enterprise.

Keywords: corporate social responsibility, higher education, human-centered management

JEL Classification codes: A22, C83, M14, M31

INTRODUCTION

Undisputedly the existence of every business organizations is determined (to a large extent) by meeting profit targets. However, many companies in 2021 are facing potential risks related to: skepticism towards demand, trade wars, eclipsing expansion plans due to the Corona virus economic crisis, change in tariff procedures, reprisal over imports (in some countries), redesigning supplier networks, internal restructuring just to name but a few. Meanwhile, to capture control over their value chain and maintain positive relationships with their existing customers, companies enact more socially responsible activities. Corporate social responsibility (CSR) aids not only in terms of fighting political unrest, the Covid-19 pandemic, and the aforementioned challenges, but also balances economic, social and ecological interests of communities.

As a matter of choice customers are witnessing a palpable shift towards their criteria for choosing a company to buy products and services from. The emergence of a segment of customers who are seeking sustainable production and delivery urges companies to level up

their CSR policies and implement more viable solutions with greater care towards the environment and the communities.

These dynamics largely determine attraction, retention and sometimes cancellation of relationships between customers and companies. This creates new levels of concern for higher education institutions functioning in this business environment. Their most valuable assets – the knowledge and skills they deliver to students – are accelerating towards a widening set of benefits related to the business environment. Namely, as businesses are seeking out socially responsible measures to attract the attention of publics, universities are imposing escalating focus on CSR in order to meet expectations and demands of the other stakeholders.

Higher education institutions have a profound role in every society. They are active members of a social ecosystem that competes against the modern-day challenges – responding to rapid changes in the economic, technological and political environment while promoting maintenance of long-term relationships with the civil society in every country. Currently HEIs are being placed under the CSR spotlight by ranking systems, accreditation procedures, student demands, local and international authorities' regulations, professional certification bodies and many others.

For all intents and purposes, modern-day universities now place corporate social responsibility at the heart of their activity by observing the interests of their students and disseminating the principles and results of CSR among broad public groups. This undoubtedly requires a change in the internal culture and values of HEIs next to care for the environment and achieving equilibrium of social interests related to building skills and competencies.

The aim of the paper is to propose a research methodology for studying the good practices of corporate social responsibility in higher education. It is based on the opinions of higher education representatives (having teaching and/or senior/executive decision-making roles) on five different dimensions of corporate social responsibility. These dimensions are: (1) workplace conditions; (2) environmental orientation; (3) business partnership engagement; (4) community engagement; (5) corporate values.

The objectives of the paper are:

- (1) Review of literature on CSR perceptions, good practices and implementation in higher education;
- (2) Proposing an research methodology for studying the current state of CSR orientation in different HEIs internationally;
- (3) Summarizing the findings and proposition of further actions to reinforce the performance and reputation of higher education institutions in light of CSR.

The paper has several limitations among which: the study covers the opinions of individuals working in academia regardless of the profile of the higher education institution; probability sampling is used as a sampling method according to the availability of respondents; the research covers only the aforementioned five dimensions of CSR.

The paper analyzes CSR from the perspective of academics and decision-making personnel which gives (despite individual institutional logic) a good socioeconomic overview of the current state of CSR implementation in higher education. Understanding how CSR is seen and practiced can substantiate the benefits of motivating actions to pursue environmental, community-oriented and internal corporate value goals. This can be reflected both in educational curricula and in interactions with different stakeholders.

Higher education institutions may prioritize CSR in all its functions and across all its relationships as it can increase their international competitiveness and navigate the successful adaptation of their graduates with their future employers. Its manifold implementations can

also ensure greater and faster efficiency in HEIs' integration into international economic and social ecosystems.

1 LITERATURE REVIEW

Higher education sees enormous shifts both in terms of modes of delivery and sources of differentiation in an ever-increasing competitive landscape. Universities attempt to enhance the preparation of students by organizing different initiatives with businesses, broadening career horizons, enlarging the integration of various social groups, and demonstration of the social responsibility of the institutions via activities related to: (1) environment protection; (2) maintaining sustainable relationships with business partners; (3) community engagement; (4) workplace conditions and corporate values (among others).

Corporate social responsibility holds the possibility to take higher education to another dimension in view of its competitive positions and in terms of its public image. This is especially valid in the current precarious times characterized by profound transformations related to restructuring of institutions, MOOCs, franchised programs, online modes of delivery and many other factors. Quintessentially, HEIs embrace CSR as part of their social role to increase the intellectual capital of nations by also adding value through creation of conditions for heightening of living quality standards and improvement of the environmental conditions people live and work in. The latter is inextricably linked but not limited to:

- Changing and amending curricula (Fernández Fernández & Sanjuán, 2010);
- Institutional pressures by the public, students, governments (Rahman, Castka, & Love, 2019);
- The perception of students, alumni and employers toward CSR (Sobczak, Debucquet, & Havard, 2006);
- CSR as a predictor of job satisfaction and organizational commitment (Asrar-ul-Haq, Kuchinke, & Iqbal, 2017).

Given the fact that the effectiveness of CSR is not solely dependent upon the efforts committed by higher education institutions, it is essential to review some of the factors, prerequisites and conditions upon which the former can yield positive results for the broader community. In view of this some authors investigate the CSR orientation of students and its predictors to identify stakeholder implications (Galvão, Mendes, Marques, & Mascarenhas, 2019). Namely the authors have determined that religion, gender, program of study, political orientation and volunteerism impact the dimensions of CSR orientation. Other authors research whether social and demographic variables influence CSR perceptions and classify them into: pro CSR; resistant CSR, and secondary CSR (Teixeira, Ferreira, Correia, & Lima, 2018). Alternatively, other source of literature take a differentiated perspective by using accreditation requirements (incorporating CSR) to evaluate quality performance of HEIs (Yeung, 2018).

Apart from being perceived as beneficial for all HEIs, CSR initiative can be pushed forward not only as a result of external requirements such as international ranking systems, accreditation standards, conditions for membership of professional organizations, etc. Academic and administrative staff have a significant role in nurturing and cultivating socially responsible actions of students and colleagues. Some of the preconditions for demonstrating these roles are related to job commitment, work satisfaction and involvement. In particular, staff members' engagement and organizational commitment in HEI have been studied as delivered by perceived CSR (Ahmad, Islam, & Saleem, 2017). The study demonstrates that CSR positively influences both engagement and commitment of employees in higher education institutions. However, in order to achieve better, more structured and supportable results, HEIs must place a bigger emphasis on disseminating the results and other important outcomes of CSR activities in specialized reports (perhaps in a similar manner as the reporting of business

organizations). Some scholars confirm that despite the increasing interest over sustainability, HEIs have been very sluggish in view of incorporating sustainability results in their general reporting systems (Sepasi, Braendle, & Rahdari, 2019). This can hamper both multiplication of results and maintenance of competitive advantage on an international level. Yet students have their one role in mediating the effects of CSR in the home institutions to their future employers. Depending on the programme of study, students may be good ambassadors of CSR practices to their yet to come professional occupations. Studies show that one of the most central dimensions of CSR – environmental – has a very high attached importance by students in the field of business administration (tourism). The authors argue that CSR environmental practices can be significantly reinforced by higher level of education (Gligor-Cimpoieru, Munteanu, Nițu-Antonie, Schneider, & Preda, 2017). On the other hand, choosing a potential company to work for is a choice of increasing complexity for current students. Not only do social benefits exert influence over their decision-making but also possible disproportion between personal and corporate values. In this regard research shows that CSR can be an important employment appeal factor for potential members of staff. One study found that students' assessment of corporate CSR practices and possible correspondence between own and business values can be essential sources of competitive advantage for companies that want to recruit talent.

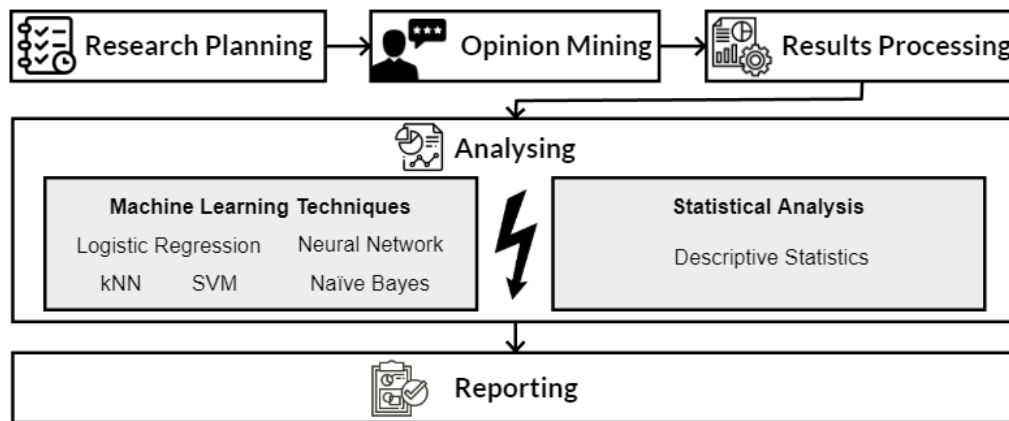
The aforementioned sources of academic studies ascertain the high interest CSR has received as related to educational aims, corporate culture, community and social needs in order to integrate the efforts of different stakeholders towards a better, more sustainable future. This once again underlines that supreme importance that CSR holds on an educational level. More importantly higher education institutions can foster, develop and enrich the perceptions and implementation of CSR practices thus bridging together community, environmental, academic and employer interests (Zhechev & Zhecheva, 2019). Some scholars even make a reference to the university role in CSR (formally called – University Social Responsibility – USR) from the point of view of teaching, learning and research output (Gómez, Pujols, Alvarado, & Vargas, 2018).

Based on the studies reviewed and the most widely adopted principles of integration of CSR in higher education institutions we propose a methodology that builds upon the "Corporate Social Responsibility initiative of the European Commission Directorate-General for Enterprise" and adapt to serve the aim of our research.

2 METHODOLOGY

The purpose of this study is to outline a research methodology for investigating the opinion of academic staff representatives about corporate social responsibility policies that are applied to higher education institutions (Fig. 1). We suggest it is conducted in 5 stages, integrating of sociological, statical and machine learning methods and techniques.

Fig. 1 Proposed Research Methodology



Source: own elaboration

The first phase of the methodology “**Research Planning**” is related to defining the goals and objectives of the research. It is necessary to define the dimensions of the study, which should cover good practices in corporate social responsibility in higher education. We integrated the framework of European Commission Directorate – General for Enterprise about Corporate Social Responsibility presented through awareness-raising questionnaire. It consists of five dimensions: Workplace Policies; Environmental Policies; Marketplace Policies; Community Policies and Institution Values. The European Commission's research framework is of general purpose. Some of the questions are not relevant for the purposes of our study and should therefore be adapted or eliminated altogether, mainly those related to Environmental Policies and Marketplace Policies. That is why we re-organized the survey by integrating a research finding of Freidenfelds, Kalnins and Gusca (2018) about the long-term environmental sustainability of HEIs. In addition, we proposed some new context-related questions.

We based the second “**Opinion mining**” stage on the methods of sociology for surveying the opinion of stakeholders. Specifically, we used our final suggested questionnaire (see Annex 1). Question codes are included that are used for the purposes of the analysis. They correspond to the main CSR dimensions.

The study used within-subject design, with the two main factors being the participants’ academic position (Professor, Associate Professor, Chief Assistant Professor, Assistant Professor, Student) and hierarchical level in the institution (Employee, Executive, Middle Manager, Senior Manager, Student). The dependent variables were the ratings provided by the survey participants for each CSR policy in higher education context, as detailed Annex 1.

The “Opinion mining” stage went through the following workflow:

Firstly, developing an English questionnaire consisting of 3 main parts:

- General Information – it contained information about participants such as academic position, hierarchical level in the institution (if applicable), country of residence;
- Assessment of CSR HEIs policies – it was divided into 5 subgroups containing the CSR dimensions and related questions (see Annex1). A 5-level Likert scale were used: 1 - Completely disagree, 5 - Completely agree, 0 - Not Applicable / Cannot answer;
- Closing remarks – participants share their recommendations on the successful implementation of corporate social responsibility at the higher education institutions.

Secondly, forwarding the questionnaire through variety of channels such as university internal communication environment, email and social networks (e.g., Facebook, ResearchGate and LinkedIn).

The next phase “**Results Processing**” requires pre-processing of the results. It is mainly related to checking the free answer fields for texts entered in a language other than English.

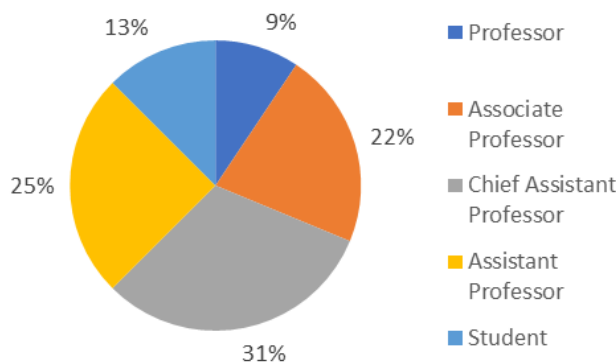
The stage of “**Analysing**” is divided into two sub stages: analysis based on machine learning techniques and statistical analysis. It is related to the assessment of the results. The toolkit depends on the structure of the data extracted from the questionnaire – structured or not. We suggest the following machine learning techniques for the processing of the structured data from the questionnaire: Naïve Bayes, Support-vector machines (SVM), k-nearest neighbours (kNN), Logistic Regression and Neural Network. They are classification algorithms that are also used to predict research results.

The last phase of “**Reporting**” pays attention to the conclusions that can be drawn about the applied good practices for corporate social responsibility in higher education. They are summarized on the basis of the opinions expressed by the representatives of the academic community.

3 RESULTS AND DISCUSSION

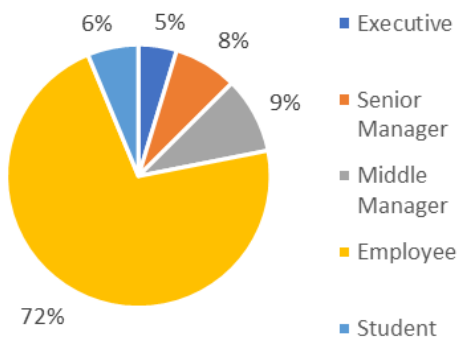
The study involved 64 participants from the following countries: Czech Republic, Bulgaria, Russia, Germany, Poland, India, Egypt, Italy, United Kingdom. There were no invalid answers. One participant replied that she / he did not want her / his answers to be used for the purposes of the study. The percentage distribution of the respondents by academic positions and hierarchical level in the institution are shown on Fig. 2 and 3.

Fig. 2 Academic staff percentage



Source: own elaboration

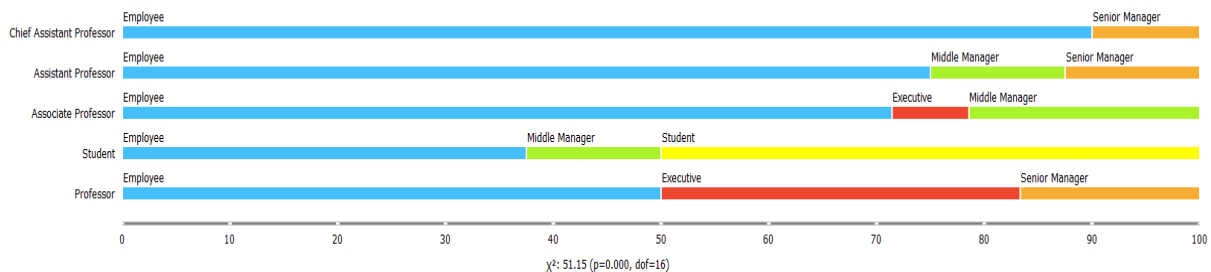
Fig. 3 Hierarchical level percentage



Source: own elaboration

The alignment of the hierarchical levels in the institution by academic positions could be observed on Fig. 4.

Fig. 4 Dependence between hierarchical levels and academic positions



Source: own elaboration

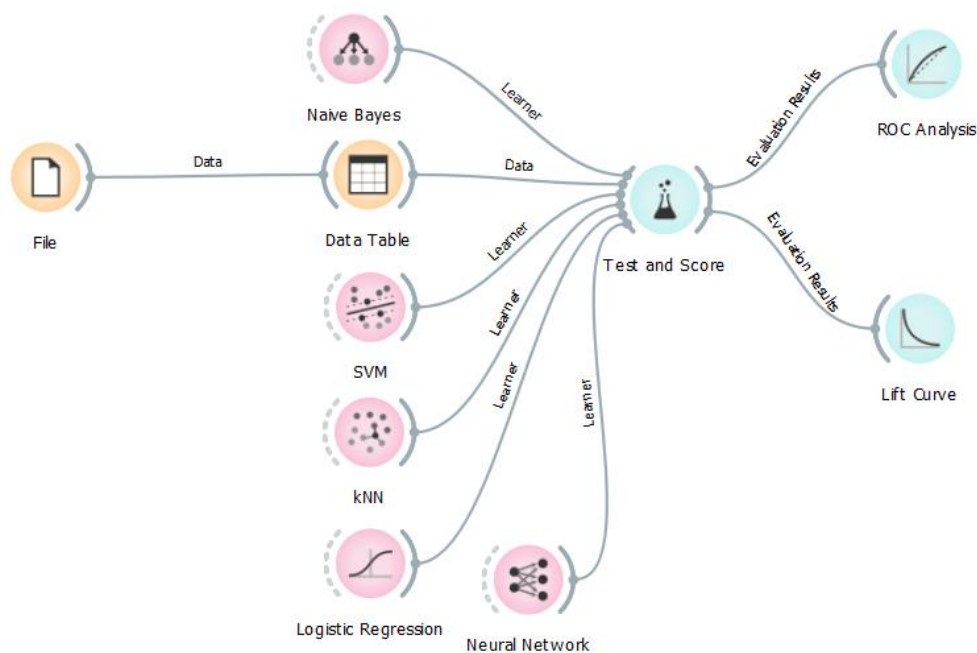
It is noticeable that the percentage of employees who hold the positions of Associate Professor, Chief Assistant Professor and Assistant Professor, is the highest. The positions of Senior Manager and Middle Manager are held mainly by the aforementioned positions. Students are also engaged in administration. The share of participating professors is the smallest - only 9%, of which one third are Executives.

In order to keep the analysis of data as simple as possible due to the large number of dependent variables, we present the results of the survey in summary form. Two main types of analysis were performed: statistical and based on machine learning techniques.

Machine learning techniques

It was used Orange Data Mining Tool for performing the machine learning techniques. The configuration of the Orange modules is shown on Fig. 5.

Fig. 5 Machine learning Orange modules



We applied: Naïve Bayes; SVM (settings: Polynomial kernel with numerical tolerance 0,001 were used); kNN (Euclidean metric was used); Logistic Regression and Neural Network (100 neurons in hidden layers and solver Adam were used). Testing and scoring were performed using Stratified 10-fold cross validation on average over the target class which is the hierarchical institutional level of the participants. Table 1 summarizes the evaluation results. The following comparison criteria were used: Area under ROC (AUC); Classification accuracy (CA); F1; Precision and Recall.

Tab. 1 Machine learning algorithms results

Model	AUC	CA	F1	Precision	Recall
kNN	0,655	0,672	0,578	0,507	0,672
SVM	0,393	0,703	0,593	0,513	0,703
Neural Network	0,775	0,672	0,622	0,588	0,672
Naïve Bayes	0,645	0,141	0,065	0,052	0,141
Logistic Regression	0,615	0,688	0,643	0,659	0,688

Source: own elaboration

The AUC values resulting from kNN, Naïve Bayes and Logistic Regression are close. They disclose low levels of implementation of social corporate responsibility policies in the educational institutions where participants work. According to the evaluation of the Neural Network the level of implementation of policies is satisfactory. SVM shows a low AUC value, which indicates that the algorithm generates negative research results. The numbers in the table cannot be considered unilaterally - only by AUC indicator. The values of the classification algorithms indicate that the most accurate are the results of SVM and Logistic Regression, followed by kNN and Neural Network. Unfortunately, the Naïve Bayes results cannot be taken into account due to the low values of CA, F1, Precision, Recall.

For this reason, we only consider the results of the Logistic Regression. A closer look at the analyses by hierarchical levels reveals that the executives gave the highest assessments of the CSR policies' implementation in the institutions managed by them. In second place are the grades of students, followed by employees, middle managers and senior managers. These are average estimates obtained on the basis of the answers of the representatives of different countries. Not all CSR policies are applicable to every institution, which implies a lack of feedback on some questions from the survey.

On the other hand, in order to be more precise in the analysis of the obtained data, we must also make a statistical analysis through which to broaden the scope of the research.

Statistical analysis

The descriptive statistics summarized by the five CSR dimensions in Table 2 are comparable to the conclusions we reached in the analysis of the data after applying the machine learning techniques. For all five dimensions, the executives gave the highest marks. However, the point of view of the lower hierarchical levels is interesting.

In contrast to the machine learning techniques we applied, in descriptive statistics, middle managers gave higher marks to the implementation of CSR policies than other levels. For example, the most common score for Workplace Policies and Marketplace Policies is 4, and for Institution Values it is the highest possible - 5. The other hierarchical levels have assigned

lower grades. The most common assessment by senior managers is 3 for the implementation of policies in all five dimensions. Employees most often have given a rating of 2 for Community Policies and 4 for Institution Values. According to the students, Environmental Policies are not well represented in the universities where they study, judging by the low grades they have given for this dimension.

Tab. 2 Descriptive statistics

Hierarchical level	Indicator	Dimension					Academic position	Dimension				
		D1	D2	D3	D4	D5		D1	D2	D3	D4	D5
Employee	Mean	3,170	2,393	3,358	2,379	3,454	Assistant Professor	3,200	2,695	3,399	2,798	3,641
	SD	1,452	1,713	1,653	1,656	1,601		1,510	1,536	1,481	1,734	1,420
	Median	3	3	4	2	4		3	3	4	3	4
Executive	Mean	4,700	3,826	3,427	4,318	4,741	Associate Professor	3,526	2,474	3,771	2,581	3,976
	SD	0,433	1,443	1,430	0,697	0,404		1,507	1,958	1,448	1,730	1,311
	Median	5	5	5	5	5		4	3	4	2	5
Middle Manager	Mean	3,402	2,711	3,917	3,247	4,507	Chief Assistant Professor	3,088	2,552	3,402	2,566	3,474
	SD	1,149	1,203	1,007	1,452	0,592		1,287	1,596	1,641	1,578	1,639
	Median	4	3	4	3	5		3	3	4	3	4
Senior Manager	Mean	3,210	2,687	2,669	2,479	3,147	Professor	3,682	2,427	2,589	2,247	3,533
	SD	1,415	1,354	1,349	1,442	1,177		1,278	1,959	2,003	1,836	1,612
	Median	3	3	3	3	3		4	3	4	3	4
Student	Mean	2,850	1,934	2,731	2,922	2,667	Student	2,896	1,957	2,683	2,576	2,690
	SD	1,390	1,386	1,346	1,471	1,293		1,335	1,333	1,349	1,396	1,388
	Median	3	2	3	3	3		3	2	3	3	3
Total	Mean	3,256	2,522	3,358	2,628	3,557	Total	3,256	2,522	3,358	2,628	3,557
	SD	1,413	1,666	1,605	1,638	1,522		1,413	1,666	1,605	1,638	1,522
	Median	3	3	4	3	4		3	3	4	3	4

Source: own elaboration

It is noteworthy that the representatives of the highest hierarchical level give the highest marks, while the representatives of the lower levels also express negative opinions through the low marks.

If we make an intersection of the results by academic positions (Table 2), we will notice differences in them obtained by division at hierarchical levels. The grades in general for all dimensions are 3 and 4 for the different positions. It is noted that the grades of assistant and chief assistant professors are identical for the five dimensions. Higher grades were given for Marketplace Policies and Institution Values. The lowest score was obtained by associate professors for Community Policies - 2. Once again, there is a tendency for higher positions to give higher ratings to CSR policies.

In a detailed review of descriptive statistics, we noticed that assistant and chief assistant professors have given low marks to the implementation of some individual policies. For example, policies D2-1e, D2-2b, D2-3b, D2-5d, D4-2a, D4-2b (see Annex 1) were mostly rated

2. Policies D2-3e, D2-3h, D2-5c, D4-5a and D4-5b received mainly a score of 1 from the participants holding these two positions.

CONCLUSION

Based on the results obtained, we can conclude that the implementation of CSR policies in higher education is at an average level. The scores for some policies are 1 or 2, which is indicative that institutions need to make more efforts to increase the satisfaction of their employees by providing them with a competitive development environment.

In the survey field for open answers, the participants, who hold the academic positions of assistant and chief assistant professor and are at the hierarchical level of an employee, have expressed some opinions on the implementation of CSR in higher education. For example, some of them are:

- "more green projects should be implemented involving students, in order to raise their awareness;
- use of own renewable energy sources, according to modern scientific technologies;
- since we deal each year with the new student group, clear green strategy communication is then a must;
- it would be better if my institution makes more for the nature and fights the pollution".

It is no coincidence that questions from dimensions D2 and D4 have received low marks.

Three participants have expressed the view that CSR policies were not adequately implemented in recruiting new employees, including concerns about discriminatory practices.

Opinions are not only negative - 26.56% of respondents expressed positive feedback on the organization of work in the institutions in which they work. They appreciate the results achieved during a pandemic in terms of the remote learning process; flexible working hours in academia; work safety; health insurance and medical care in the workplace.

Corporate social responsibility policies in higher education must be designed to be understood by all stakeholders - employees, students, partners, local community, suppliers, state administration. Employees and students must be trained on the importance of institutions' values and rules of conduct, but at the same time they must be provided with equal and fair opportunities for development.

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ANNEX 1. CORPORATE SOCIAL RESPONSIBILITY QUESTIONNAIRE

Question	Code
Dimension1: Workplace Policies	D1
The institution implement policies to encourage real skills development of employees via supporting:	D1-1
a. [Performance appraisal process]	D1-1a
b. [Training plan]	D1-1b
The institution implement policies to encourage long-term career development of employees via supporting:	D1-2
a. [Performance appraisal process]	D1-2a
b. [Training plan]	D1-2b
There is a process to ensure adequate steps are taken against all forms of discrimination, both in the workplace and at the time of recruitment (e.g. against women, ethnic groups, disabled people, etc.).	D1-3
There are consultations of the employees on issues important for them (for example, holding an academic position, raising the qualification, professional development, etc.).	D1-4
Your institution have suitable arrangements for health, safety and welfare that provide sufficient protection for the employees.	D1-5

Question	Code
Your institution actively offer a good work-life balance for its employees, for example, by considering flexible working hours or allowing employees to work from home.	D1-6
Dimension2: Environmental Policies	D2
Please indicate which of the following environmental policies is applicable to the institution you represent.	D2-1
a. [Energy conservation]	D2-1a
b. [Waste minimisation and recycling]	D2-1b
c. [Pollution prevention]	D2-1c
d. [Protection of the natural environment]	D2-1d
e. [Sustainable transport options]	D2-1e
Your institution save money by reducing its environmental impact.	D2-2
a. [Reducing energy consumption]	D2-2a
b. [Preventing pollution]	D2-2b
Your institution considers the potential environmental impacts of organizing its activities.	D2-3
a. [Heat energy produced/consumed per person]	D2-3a
b. [Heat energy produced/consumed per square meter]	D2-3b
c. [Amount of electricity generated/consumed per person]	D2-3c
d. [Amount of electricity generated/consumed per square meter]	D2-3d
e. [CO2 emissions per person (e.g. student, administrative and scientific personnel)]	D2-3e
f. [Cold/hot water consumption per person]	D2-3f
g. [Cold/hot water consumption per square meter]	D2-3g
h. [Environmentally friendly vehicles usage]	D2-3h
Your institution supply clear and accurate environmental information on its activities to:	D2-4
a. [Students]	D2-4a
b. [Employees]	D2-4b
c. [Local community]	D2-4c
There are environmental policies undertaken by the management of your institution.	D2-5
a. [Initiatives in the field of resource consumption reduction (e.g. thermal energy, electricity, transport, water consumption and waste management)]	D2-5a
b. [Investment volume for improvement of energy efficiency of buildings, to reduce water consumption, heat loss prevention]	D2-5b
c. [Initiatives for the use of more environmentally friendly transport]	D2-5c
d. [Green procurement procedures]	D2-5d
Dimension3: Marketplace Policies	D3
Your institution have a policy to ensure honesty and quality in all its contracts, dealings and advertising (e.g. provisions for consumer protection, etc).	D3-1
Your institution provide clear and accurate information about its services.	D3-2
Your institution ensure equality in sustaining relationships with stakeholders.	D3-3
a. [Students]	D3-3a
b. [Employees]	D3-3b
c. [Suppliers]	D3-3c
d. [Partners]	D3-3d
e. [State administration]	D3-3e
f. [Local community]	D3-3f
Your institution support a process to ensure effective feedback, consultation and/or dialogue with:	D3-4
a. [Students]	D3-4a
b. [Employees]	D3-4b
c. [Suppliers]	D3-4c
d. [Partners]	D3-4d

Question	Code
e. [State administration]	D3-4e
f. [Local community]	D3-4f
Your institution register and resolve complaints from:	D3-5
a. [Students]	D3-5a
b. [Employees]	D3-5b
c. [Suppliers]	D3-5c
d. [Partners]	D3-5d
e. [State administration]	D3-5e
f. [Local community]	D3-5f
Your institution work together with business or other organisations to address issues raised by responsible entrepreneurship.	D3-6
Dimension4: Community Policies	D4
Your institution offer training opportunities to people from the local community:	D4-1
a. [Internships for scholars]	D4-1a
b. [Internships for students]	D4-1b
c. [Work experience for students]	D4-1c
d. [Internships for disadvantaged groups]	D4-1d
e. [Work experience for disadvantaged groups]	D4-1e
Your institution have an open dialogue with the local community on adverse, controversial or sensitive issues that involve it related to:	D4-2
a. [Accumulation of waste outside its premises]	D4-2a
b. [Vehicles obstructing roads]	D4-2b
c. [Footpaths]	D4-2c
Your institution is trying to support business activities locally?	D4-3
The employees are encouraged to participate in local community activities (e.g. providing employee time and expertise, or other practical help)?	D4-4
Your institution give regular (financial) support to local community activities and projects which are expressed in:	D4-5
a. [Charitable donations]	D4-5a
b. [Sponsorship]	D4-5b
c. [Providing facilities for holding events]	D4-5c
Dimension5: Institution Values	D5
Your institution's values and rules of conduct are clearly defined.	D5-1
The institution's values communicate correctly to:	D5-2
a. [Students]	D5-2a
b. [Employees]	D5-2b
c. [Suppliers]	D5-2c
d. [Partners]	D5-2d
e. [State administration]	D5-2e
f. [Local community]	D5-2f
The students are aware of your institution's values and rules of conduct.	D5-3
The employees are aware of your institution's values and rules of conduct.	D5-4
The employees are trained on the importance of your institution's values and rules of conduct.	D5-5

Current Challenges of the Circular Economy in the Czech Republic and Slovak Republic

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Abstract: The resources that humanity has been consuming to satisfy its needs have manifested in concerning negative impacts on environment in recent decades. Therefore, sustainable development should be a priority for all market players at the international and national level to mitigate existing negative trends. One of the economic solutions is considered to be a transition to a circular economy model based on saving primary raw materials, efficient use of secondary raw materials, minimizing the generation of waste, and recycling. According to selected indicators, the Czech and Slovak Republics lag behind the European average in the application of the principles of the circular economy. This paper aims to evaluate the position of the circular economy in the Czech and Slovak Republics. It also diagnoses the challenges both countries face in this area regarding the analysis of selected indicators of the circular economy based on principles of sustainable growth.

Keywords: sustainability, circular economy, Slovak Republic, Czech Republic

JEL Classification codes: F62, F64, Q01

INTRODUCTION

Since the Industrial Revolution, global society has been advancing at an ever-faster pace, contributing to a huge economic boom which caused a change in 75 % of the earth's surface. Most oceans are polluted and overfished, more than 85 % of wetlands have disappeared and many forested areas have already been converted into agricultural land, causing the destruction of important natural habitats and ecosystems. This damage to the ecosystem has put into danger approximately 1 million endangered plant and animal species. At the same time, this threat to the complex environmental system is causing chain changes in nature and the climate, which will ultimately affect the society as a whole. Although the Paris Climate Agreement is an important milestone in the fight against climate change, the targets of the signatory countries are inadequate. Global temperatures could reach 1.5 °C increase in 30 years and 2 °C between 2050-2070. This means that without more ambitious targets, the temperature will rise by about 3-4 °C by the end of the century, which will have a devastating impact on the human society (WWF, 2020).

Since industrialization, humanity has drained valuable natural resources without further consideration of their limited availability and consequences (Chen & Chang, 2016). Today, as in many other decades, these human activities will be reflected in significant changes in the natural processes, have already started affecting the humanity.

Mikkelsen (2019) concluded through panel research that growth depletes natural resources and pollutes the environment more than it contributes to the society. This means that rapid economic growth increases the ecological footprint regardless of the country's economic level. The author emphasizes that the current, visible ecological crisis should direct individual economies so that they do not only get fixated upon measuring growth through the gross domestic product (GDP).

Another study confirms that sustainable growth cannot be achieved if the Earth's limits have already been crossed (Cibulka & Giljum, 2020). An analysis by Holm and Englund (2009) also concluded that the transition to a highly efficient information society does not lead to a reduction in the use of natural resources; as experts have predicted in the past. According to Chen and Chang (2016), economic development increases the ecological footprint, which means that the higher the economic level of individual regions, the higher the burden on the environment.

Although we can say that thanks to technological progress, science, and research, environmental issues are becoming increasingly important. It is also true that particularly rich and developed countries address environmental issues and set themselves goals to mitigate their environmental impact. Progress in this area cannot be overlooked with successes, such as the growth of specific habitats, a ban on the testing of nuclear weapons in the atmosphere, dematerialization, agreements to reduce sulfur emissions, or a ban on chlorofluorocarbons, which could lead to the reparation of the ozone hole by the end of the century. However, the world is currently facing another challenge, mitigating global warming so that it is no more than 2 °C by the end of the century (Pinker, 2019).

Taking into account trends and the forecast of future developments, the pursuit of sustainable growth is all the more important. According to an analysis by PwC (2015), we can assume that the global economy will double by 2037 and triple by 2050. At the same time, fast-growing developing countries (such as Indonesia and Mexico) can be expected to overtake some developed market economies while other developing countries will also grow at a fast pace. If the global economy continues doing business as usual (as it has so far), we will need the equivalent of two planets by 2050 to meet our needs for natural resources (European Commission, 2011).

The demand of the growing middle class for everyday consumer products, growth in the consumption of animal products and energy, and the increase the extraction of primary raw materials are a burden on the environment. According to UNEP estimates (2017), annual global primary resource extraction may double by 2050 compared to 2015. The sectors that contribute most to emissions include energy, domestic transport, and agriculture (EEA, 2019). It is also estimated that the demand on food will increase by 35 % and water by up to 40 % by 2030, with the most vulnerable regions being Africa, the Middle East, China and India (NIC, 2012).

The population growth will require greater consumption of natural resources and waste generation, which will further burden the environment. Almost 2 billion tons of municipal solid waste are already produced annually in the world. Waste generation per capita is on average 0.74 kg per day, ranging from 0.11 to 4.54 kg/day. At least 33 % of them are not evaluated in an environmentally sound manner. By 2050, there is an estimated increase to 3.4 billion tons of waste, with daily per capita waste generation increasing by around 19 % in high-income countries and 40 % in low- to middle-income countries. East Asia and the Pacific currently generate the most waste in the world (23 %). The Middle East and North Africa regions produce the least (6 %). Nevertheless, the fastest growth in waste generation can be expected in Sub-Saharan Africa, South Asia, and in East Asia and the Pacific, where more than half of the waste is landfilled. The paradox is that green and food waste (44 %) (WB, 2020) is the largest share of waste despite the threat of a food crisis in the future.

In the context of the COVID-19 pandemic, as could be observed that up to 60 % of infectious diseases originate in animals and approximately $\frac{3}{4}$ of them originate in wild animals. The emergence of these diseases correlates with the number and density of people, but mainly with anthropogenic changes such as deforestation, expansion of agricultural land, or more intensive animal production. To alleviate not only these but many other global challenges facing the world, a change in the global direction of society is needed that takes into account both economic and social, and environmental factors of development to the same extent (WWF, 2020).

However, such a change is difficult. It needs to be made step by step, but fast enough to mitigate the worst future scenarios. The first step of creating a more sustainable economy is the first step is the transformation from a linear model to a circular economy model. Circular economy (CE) is a more sustainable economic model which takes into account the consequences of economic activities on both the society and the environment. This paper is not about whether CE is a good solution, but rather what is its state in the two countries selected.

1 LITERATURE REVIEW

The CE is an economic model that is based on redefining the current economic growth by focusing on not only economic goals but also social benefits in a broad framework. It represents a significant shift from the current linear model, based on the system of "take-use-dispose" towards the model, which aims to minimize waste generation and pollution, use resources more efficiently and minimize depletion of natural resources, by closing a loop. CE is based on the renewal of capital, whether financial, industrial, human, social, or natural, which ensures more efficient flows of goods and services throughout the value chain (Ellen MacArthur Foundation, 2020).

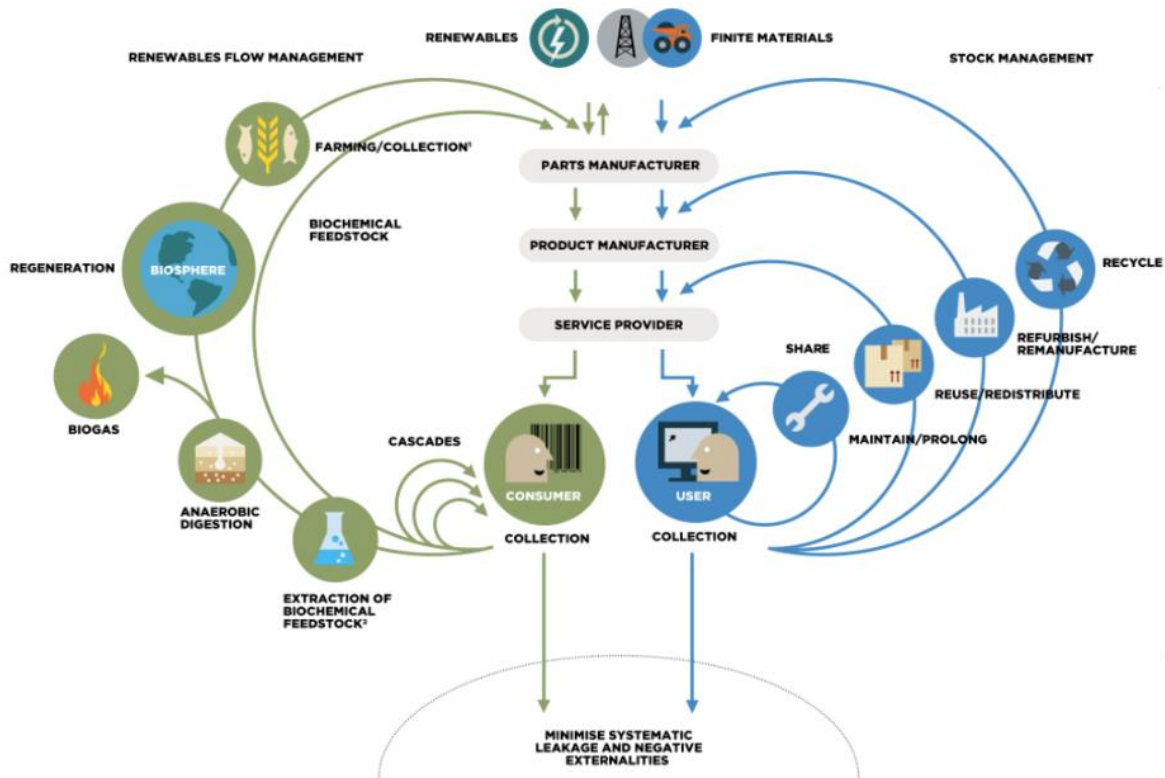
CE operates on three levels with the aim to achieve sustainable development while enhancing the quality of the environment, economic prosperity, and social equality for the benefit of present and future generations. These levels are (Kirchherr et al., 2017):

- micro level - products, companies, consumers
- meso level - eco-industrial parks
- macro level - city, region, nation and beyond

The interest in implementing CE into practice has been increasing. However, there is still space for further research, as the area finds itself only in its exploratory phase (Homrich et al., 2017). According to Korhonen et al. (2018) the concept of CE seems to be favourable, because it can attract a business environment to work in accordance with sustainable development. Furthermore, according to the study by Michelini et al. (2017), the CE is a trend in response to inefficient resource management in the traditional linear model.

The CE is a model of production and consumption, which consists of several principles, such as repair, recycling, shared and leasing services, reuse of products, which extend and extend the life cycle of products (European Parliament, 2020). Figure 1 shows a continuous system flow of technical and biological materials in the value circle, which represents the closing of economic cycles.

Fig. 1 Circular economy model



Source: Ellen MacArthur Foundation, 2020a

Eco-innovation, the use of renewable energy sources, sharing or local support, help to minimize waste generation and to reduce costs for the necessary material inputs into production processes (Incien, 2017). These flows of goods and services are in CE based on three main principles (Ellen MacArthur Foundation, 2020 a.):

Principle 1 - Protect and promote natural capital through efficient storage and management of renewable energy sources.

Principle 2 - Optimize production through the circulation of products, materials, and other components to the highest possible extent of their use in the biological and technological cycles.

Principle 3 - To support the efficiency of the economic system in creating the negative externalities.

The current production of materials that we use every day represents 45 % of CO₂ emissions. According to a study by the European Parliament, measures such as waste prevention, eco-design, and reuse can reduce emissions while reducing the cost of business. The transition to CE is expected to create around 700,000 new jobs and increase GDP by around 0.5 % by 2030 (European Parliament, 2020).

The New Circular Economy Action Plan is also part of the new European Green Deal, which was introduced in March 2020. Its main task is to reduce waste generation and use more sustainable production methods, so that the European Union is fully circular by 2050. (European Parliament, 2021).

Another aim of CE is to separate the economic growth of countries from the use of natural resources, which burden the environment. This means transforming the entire product cycle to eliminate the extraction of primary raw materials, while supporting new innovative forms of

production and sales, especially though (Brears, R.C., 2018): *Powerful design; Extraction and processing of raw materials; Production of goods; Packaging and distribution to the customer; Use and maintenance of the product and End-of-life management of the product (reuse, recycling, and disposal).*

In this context, it is also important to note that waste management plays a key role in the transformation of the linear economy into a CE. The way waste is collected, further processed and recovered determines: the level of recycling in the country, whether valuable materials are returned to circulation and the efficiency of the system. Inefficient system can create significant environmental costs and consequent economic losses due to the fact that most waste is landfilled or incinerated. (Brears, R.C., 2018).

According to UNEP (2015) to achieve effective waste management while minimizing future costs, a strategic transition to efficient resource management in the CE model is necessary. The recovery of resources and their return to the value chain in the field of waste management focuses on the final stages of product life cycle (PLC) and materials and is at the same time the most widespread business model in the field of the CE. Consequently, it is necessary that all market actors pay attention to the so-called "Waste hierarchy" (Fig. 2) in search of the most effective ways to create value from waste. Solutions that reduce the quality of materials/wastes should be considered as a last option (Lacy et al., 2020).

Fig. 2 Waste hierarchy



Source: Lacy et al., 2020

An important prerequisite for the implementation of the principles of CE is the emphasis on closing the loop. This means that when looking for optimal solutions, it is necessary to put the *prevention of waste generation* as a priority. For example, efficient design can extend the life of products but also make them easier to repair. In the final phase of PLC, the second possibility is to *return waste to the production cycle*. The *upcycling* refers to producing goods of a higher value than the original product, resp. quality. The opposite is *downcycling* which refers to producing a lower quality product than the original one. The penultimate possibility is the *generation of energy* from waste, while the aim is to look for such a technological solution that will be able to capture carbon so that it is not released into the air. The last option is to *dump waste* that should only be chosen if none of the previous solutions is possible. In

this respect, there is ample scope for market players to find effective, creative, technological, and innovative solutions that will help reduce environmental pollution, while reducing the negative future impacts of human activity on the global ecosystem.

CE can provide a great opportunity to maintain stable economic growth by creating new business opportunities. According to Hoben (2021) CE can be considered a discourse that is likely to be a key point in the intervention of national governments for many years to come.

2 METHODOLOGY

This paper aims to evaluate the position of the CE in the Czech and Slovak Republics. We used the following scientific methods when processing the present scientific paper. Through literature research, we collected relevant information regarding current global trends and the importance of CE and by applying abstraction, we selected the most relevant ones for our research using sources from the professional and scientific public, such as Lacy, Kirchherr, Hobson, Brears, Holm, Hormich etc. as well as from the international and Slovak institutions such as the Eurostat, European Parliament, EEA, UNEP, WWF, INCIEN etc. The method of analysis, induction, and deduction developed parts of the paper in which we compiled an overview of 7 selected indicators (using the Eurostat database) of CE:

1. *circular material use in %*
2. *municipal waste generation in kg per capita*
3. *recycling rate of the municipal waste in %*
4. *recycling rate of the packaging waste in %*
5. *recycling rate of the biowaste in kg per capita*
6. *energy recovery in kg per capita*
7. *landfill in kg per capita*

Using the graphical method, we analysed the basic context and development trends of selected indicators in the Czech and Slovak Republics in comparison to the EU average. Subsequently, we used synthesis to evaluate the current situation in selected countries which we finally illustrated based on a theoretical mapping of the waste management hierarchy.

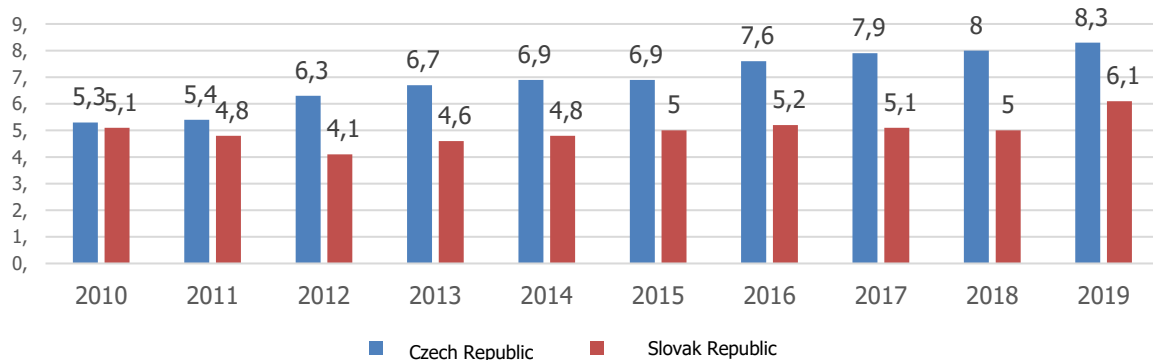
3 RESULTS AND DISCUSSION

CE represents a complex economic model, the implementation of which will require the transformation of the currently valid rules of production and consumption. Therefore, an effective transition of the traditional economy to a low-carbon economy will not be possible without the correct application of the principles of CE to the whole value chain. However, this is preceded by continuous monitoring and evaluation of CE indicators, not only for the improvement of waste management in the country, but especially for the timely adaptation of business entities to changing conditions and analysis of business opportunities in accordance with the principles of sustainable development.

Therefore, we focus on the analysis of selected indicators of CE, the implementation of which is a basic prerequisite for a successful transition of economies to CE model. We analyse the development of selected indicators for Slovakia and the Czech Republic, which we compare with the average of EU.

The first selected indicator by which we compare the level of CE in Slovakia and the Czech Republic is the degree of circulation. It is an indicator that measures circular material use (CMU), that is the share of recovered material that returns to the economy over a period of time. It is calculated from aggregated domestic consumption and material reuse, which represents the approximate amount of recycled waste on the domestic market minus imported waste destined for recovery and plus exported waste destined for recovery abroad. Increasing the CMU rate means that secondary materials replace primary raw materials and thus reduce the environmental burden on the environment (Eurostat, 2021 a.). Figure 3 shows the evolution of the CMU indicator in the Slovak Republic and the Czech Republic in the years 2010 to 2019 (in %).

Fig. 3 Development of the CMU rate in the Slovak Republic and the Czech Republic in the years 2010 to 2019 (in %)

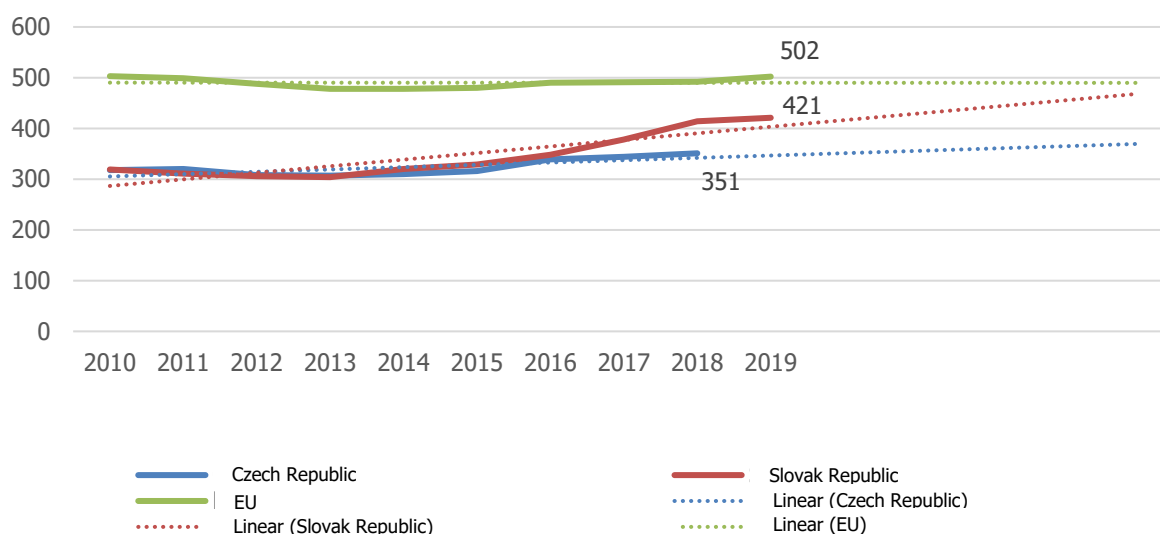


Source Eurostat, 2021a

The CMU rate in Slovakia grew at a very moderate pace between 2010 and 2018, when the share of recovered material from the total volume of material used was 5.1 %. A more significant increase was recorded in 2019, when the CMU reached 6.1 %, which is the highest achieved value in the monitored period. However, compared to the EU average (11.9 %), this is an almost twofold gap in the value of the given indicator in 2019 and also the worst result among the V4 countries. In the monitored period, the Czech Republic achieved a much higher rate of recovered material from the total material used compared to the Slovak Republic. Although it is also below the EU average, the positive fact is that since 2010 this indicator has been gradually growing in the Czech Republic and in 2019 it represented 8.3 %. The highest value of CMU among EU countries was achieved by the Netherlands, which can be considered a leader in the application of the principles of CE in Europe.

The second selected indicator of CE is the generation of municipal waste per capita. Municipal waste can be characterized as a type of waste that is collected by municipal units and disposed of through the legislation of the state. A large part of the waste is made up of household waste, but we also include waste from public institutions and offices. Figure 4 shows the development of municipal waste generation in the Slovak Republic, the Czech Republic, and the EU in kilograms per capita (in the years 2010 to 2018) along with a 5-year forecast of development.

Fig. 4 Development of municipal waste generation in the Slovak Republic, the Czech Republic, and the EU in the years 2010 to 2018 with a 5-year forecast (in kilograms per capita)



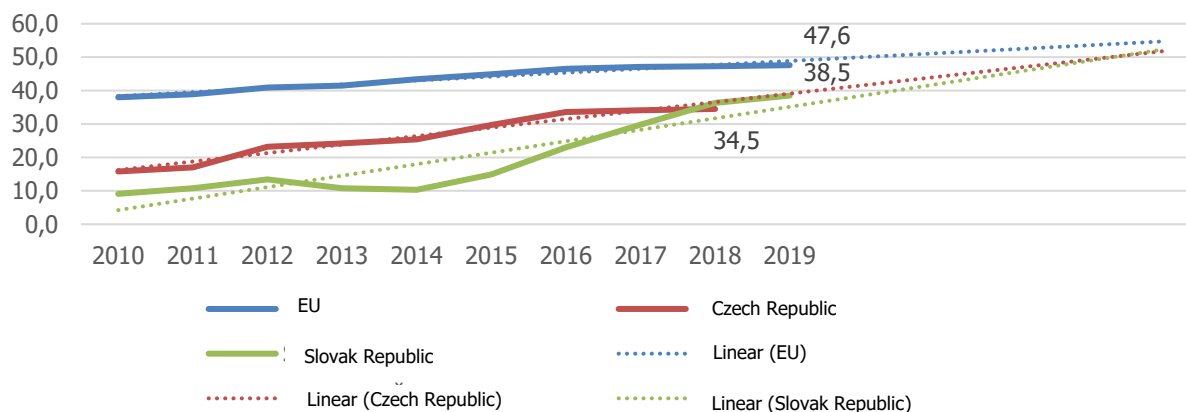
Source: Eurostat, 2021b

The average generation of municipal waste per capita in the EU has increased since 2014. In 2019, the total generation of municipal waste per capita was 502 kg, which is 8 kg more than in the previous year. Nevertheless, the highest recorded value was in 2000, when the average generation of municipal waste per capita was 513 kg. According to data from Eurostat (2020), the Slovak Republic produced the most municipal waste per capita in 2019 (421 kg/capita) among the V4 countries. No data were obtained for the Czech Republic in 2019, but in 2018 it produced 351 kg/capita. Even though both countries are currently below the EU average, we expect an increase in value of the indicator in the coming years as seen in the 5-year forecast, while the EU average is likely to decline gradually. Among the EU countries, Romania (280 kg) reached the lowest value in the generation of municipal waste per capita in 2019. In contrast, the country that produced the most municipal waste per capita in 2019 is Denmark (844 kg).

According to the waste hierarchy (Fig.2), we can recycle, downcycle, upcycle, use energy recovery, incineration or landfill to manage waste generation. Due to the wide range of waste recovery, we further focus on the analysis of selected indicators in the field of recycling, energy recovery, and landfilling.

Therefore, another selected indicator is the rate of waste recycling in the Slovak Republic, the Czech Republic, and the EU in the years 2010 - 2019 (in %) together with a 5-year development forecast (Fig. 5).

Fig. 5 Development of the municipal waste recycling rate in the Slovak Republic, V4 countries, and the EU in the years 2010 - 2019 with a 5-year forecast (in %)



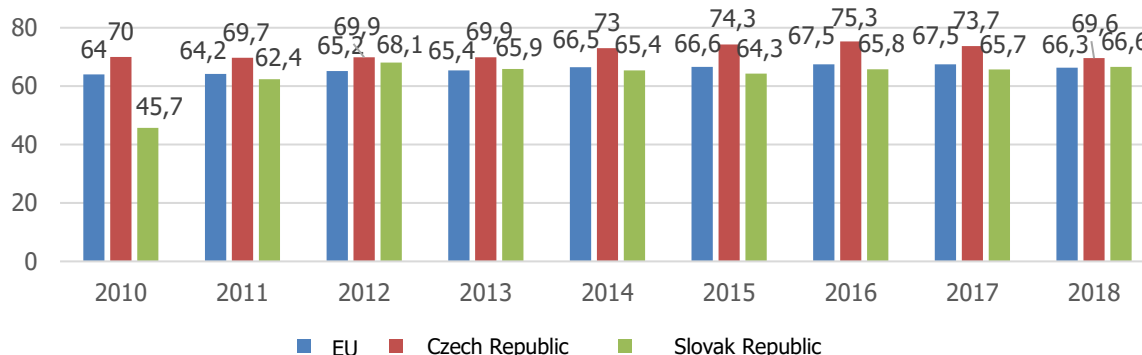
Source: Eurostat, 2021c

The results displayed in Figure 5 confirm that the average recycling rate of municipal waste in the observed period in the EU countries slightly increased. In 2000, its value was 27.3 % compared to 2019, when it reached 47.6 %. The recycling rate of municipal waste was the highest in Germany (66.7 % in 2019) and the lowest in Malta (8.9 % in 2019). Of the V4 countries, the Slovak Republic achieved the highest rate of municipal waste recycling in 2019. For the Czech Republic in 2019, the data was not recorded again, but in 2018 the level of the rate of recurrence of municipal waste reached 34.5 %, which is 1.5 % less than in the Slovak Republic in the same year. We can positively evaluate the overall growth of the given indicator in the observed period, but also the prediction of further development. Nevertheless, both countries are well below the EU average. According to the source, both countries can be expected to reach the EU target of recycling 60 % of municipal waste by 2030 within 7-8 years.

Recycling is a fundamental principle of efficient waste management and it is therefore important that the recycling rate of all types of waste constantly increases. A successful example is Slovenia, which is currently one of the leaders in separate waste collection. The goal of the country is to become "zero-waste", which helps to build an economy based on circular models of the economy (Detersová, 2019).

The third selected indicator is the recycling rate of packaging waste material. In 2018, the average generation of packaging waste in EU countries was 174 kg per capita (Eurostat, 2020). Packaging material plays an important role in the protection and transport of products and its growth has been increasing since 2012. That is why it is all the more important to invest in effective management and technological capacities. The EU aims to recycle 70 % of packaging waste by 2030 (EEA, 2020). Figure 6 shows the evolution of the recycling rate of packaging waste in the Slovak Republic, the Czech Republic, and the EU in the years 2010 to 2018 in %.

Fig. 6 Development of the packaging waste recycling rate in the Slovak Republic, the Czech Republic, and the EU in the years 2010 to 2018 (in %)

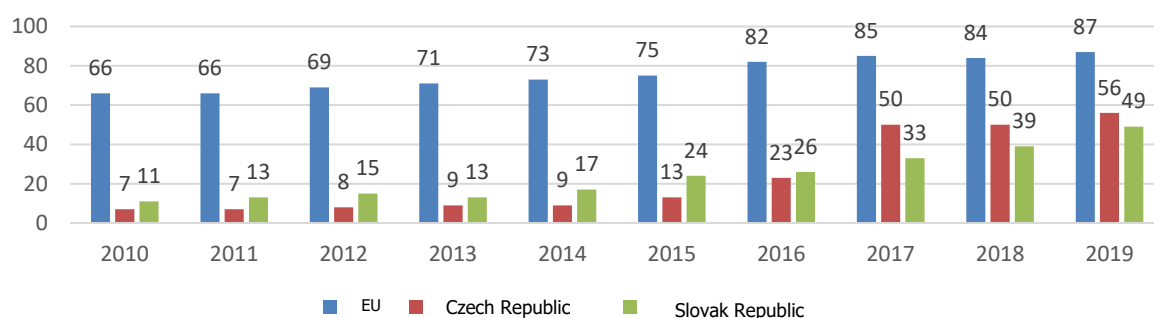


Source: Eurostat, 2021d

Figure 6 shows a positive development in the monitored indicator, when the rate of packaging waste recycling in all monitored countries increased from 2005 to 2018. The recycling rate of packaging waste in the EU increased by 11.6 % between 2005 and 2018. Of the V4 countries, the Czech Republic achieved the highest rate of packaging waste recycling (69.6 % in 2018), followed immediately by the Slovak Republic (66.6 % in 2018). Both countries are above the European average, and the fact that they are very close to the EU target of recycling 70 % of packaging waste by 2030 is also positive.

The last monitored indicator in the field of recycling is the rate of bio-waste reclamation. It is expressed as the share of compostable municipal waste in the total amount in kilograms per capita, while it can be emphasized that the basic way of treating bio-waste is composting or anaerobic digestion. Figure 7 shows the recycling rate of bio-waste in the Slovak Republic, the Czech Republic, and the EU in the years 2010 to 2019 in kg/capita.

Fig. 7 Development of the rate of biowaste recycling in the Slovak Republic, the Czech Republic, and the EU in the years 2010-2019 (in kilograms per capita)



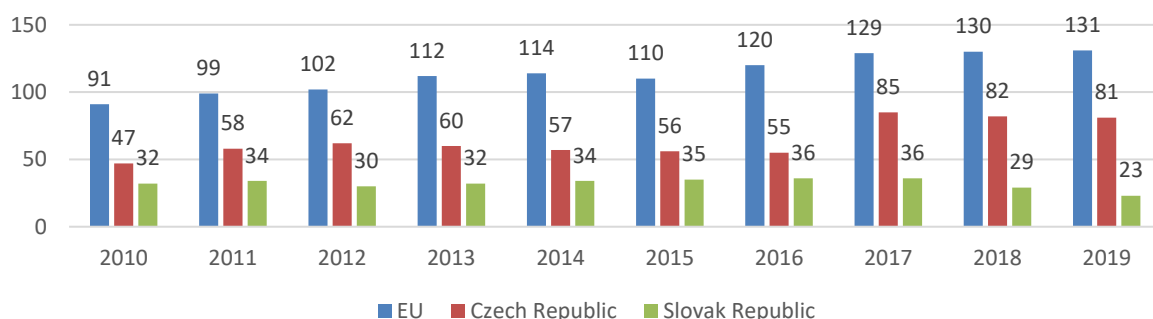
Source: Eurostat, 2021e

There has been a growing tendency in bio-waste recycling rates in the EU since 2010. The EU average in 2019 was 87 kg/capita. The country that is the leader in biowaste recycling in the EU is Austria, which recycled 189 kg/capita in 2019. Among the EU countries, Malta was the worst, recycling no bio-waste. The Slovak Republic recycled 49 kg of biowaste/capita in 2019, just behind the Czech Republic among the V4 countries. Data for 2019 was not obtained for the Czech Republic, but in 2018 it recycled 26 kg/capita. However, both countries are well below the European average. The EU's goal is for biodegradable waste to be properly separated and recycled by the end of 2023 and not to be part of mixed municipal waste (EEA,

2020 p.). Separate collection of biodegradable waste is already established in the Czech Republic, but in Slovakia this obligation for local governments (except for Bratislava and Košice) only came into force on January 1, 2021. However, Slovakia's problem is still the lack of technical equipment and uneven distribution of biowaste treatment facilities. The Ministry of the Environment of the Slovak Republic also promised assistance from the European Union Renewal Fund (odpady-portal.sk, 2020).

In the next part of the paper, we focus on the last stages of municipal waste management operations. We analyse two selected indicators, such as energy recovery and landfill. In the Figure 8, we express the development of energy recovery of waste in the Czech and Slovak Republics in the years 2010 to 2019 expressed in kilograms per capita. The energy recovery of waste is defined as the incineration that fulfils the energy efficiency criteria laid down in the Waste Framework Directive (2008/98/EC) Annex II (Eurostat, 2021 h.).

Fig. 8 Development of the energy recovery in the Slovak Republic and the Czech Republic in the years 2010 to 2019 (in kilograms per capita)

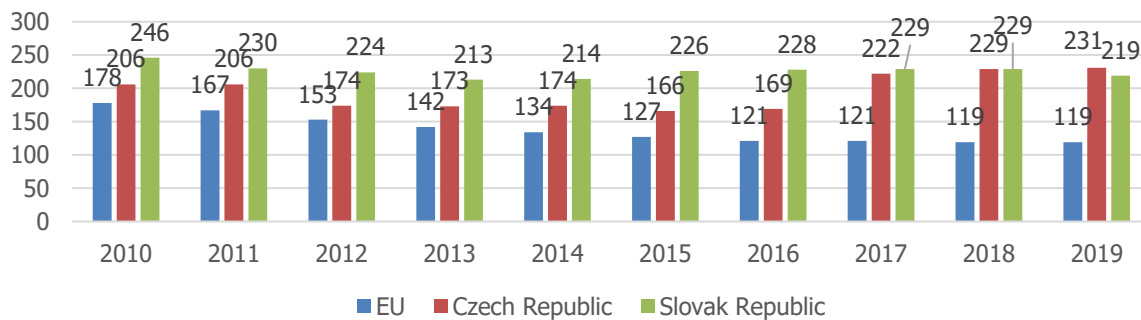


Source: Eurostat, 2021f

Based on the Figure 8 we see that the Czech Republic uses waste energy recovery to a much greater extent than the Slovak Republic. In 2019, the Czech Republic recovered 81 kilograms of waste per capita for energy, while in the same year the Slovak Republic recovered 23 kilograms per capita. The European average for 2019 was 131 kilograms per capita, with Denmark (401 kg/capita in 2019), Norway, and Luxembourg among the countries that made the most energy recovery. In contrast, countries that do not recover energy from waste include Croatia and Malta. According to the Waste-to-energy study 2050 (Eswet, 2021), European waste policy is based on two main pillars, which are the prevention of waste and the prevention of landfill by the recovery of resources and energy. Energy recovery from biomass can be an important tool for member countries to use renewable resources and reduce landfilling. Therefore, an increase in waste energy recovery can be expected in countries that focus on reduction of landfilling. However, this is preceded by the efficient collection and sorting of all types of waste, including biodegradable waste.

The last selected indicator is the landfill and other waste disposal according to the Waste Framework Directive (2008/98/EC) Annex I. (2008). Landfilling is considered, according to the waste hierarchy, to be the last method of waste management and should therefore represent the smallest possible share of recovery compared to other waste management options. The Figure 9 shows the development of the landfill (and other) waste disposal in the Czech and Slovak Republics in the years 2010 to 2019 in kilograms per capita.

Fig. 9 Development of the landfill (and other) waste disposal in the Slovak Republic and the Czech Republic in the years 2010 to 2019 (in kilograms per capita)



Source: Eurostat, 2021f

As Figure 9 shows, both countries achieved approximately the same development in the monitored indicator. In the period from 2010 to 2016, the Slovak Republic landed approximately one-fifth more than the Czech Republic. However, since 2017 the level of landfilling has been balanced, and even in 2019, the Czech Republic landed a bit more. The negative result is that both countries lag behind the European average, which was 119 kg/capita in 2019. The country that landfilled the most amount of waste per capita was Malta (636 kg/capita in 2019). By contrast, Sweden, Belgium, Finland, Germany, and the Netherlands are among the countries that landfilled the least amount of waste in the EU.

In order to meet the global goals of mitigating climate change, the transition of national economies into CE model is a logical and inevitable solution. As Korhonen et al. (2018) said, the advantage is also that the transition of economies to CE can represent significant business opportunities in line with sustainable development. Although CE is a complex issue, in the analyzed paper we focus on indicators representing waste management, which can be considered the first and necessary step in this direction. We can assume that the orientation of national economies towards greener solutions in the form of public procurement and other support for entrepreneurs will increase in the near future. This is also stated by Hoben (2021), who says that CE will be a key interaction of national governments in the next years.

The current pandemic situation has highlighted the fragility and dependence of global economic ties. On the other hand, it has shown that global cooperation can bring countless benefits to the process of addressing societal challenges which may be the transition to CE and the mitigation of climate threats.

CONCLUSION

The excessive superiority of man over the much more complex system of nature can still be mitigated. Although development cannot be reversed, it is important to set it up in a way where nature and its systems are preserved. Minimizing the depletion of natural resources, the efficient use of secondary ones, and investment in green technologies whose economic objectives are in line with environmental protection are the most acute challenges the world faces right now.

CE represents a complex economic model, the implementation of which will require the transformation of the currently valid rules of production and consumption. Therefore, an effective transition of economy to a low-carbon economy will not be possible without the correct application of the principles of CE to the whole value chain. This should be done by continuous monitoring and evaluation of CE indicators, not only for the improvement of waste

management in the country but especially for the timely adaptation of business entities to changing conditions and analysis of business opportunities in accordance with principles of sustainable development.

Both Czech and Slovak Republics lag behind the European average in the CMU rate, which represents the extent to which a country replaces primary resources with secondary ones. It should be noted that the extraction of natural resources currently exceeds the annual biocapacity of the planet, and therefore the orientation towards the use of secondary resources over primary ones can bring significant benefits in the long run. On the positive side, both the Czech Republic and the Slovak Republic produce less municipal waste per capita than the EU average. Nevertheless, this trend is growing (especially for Slovakia) and can reach the EU average in 5-7 years. The growing waste generation will require not only more effective waste management, but also educating the population and building more responsible behaviours.

In terms of waste operations according to the waste hierarchy, we examined 5 selected indicators (Tab.1). The recycling rate of the chosen waste groups is approximately at the same level in the Czech and Slovak Republics. However, they significantly lag behind the EU average in the recycling rate of municipal waste and bio-waste.

One of the EU's goals is to properly separate biowaste and exclude it from mixed municipal waste (by 2023), which ends up in landfills. However, both countries landfill significantly more waste per capita than the EU average. Energy generation is a more acceptable way in terms of waste hierarchy. However, according to the data in Table 1, both countries lag behind the European average in this indicator too. There is a more concerning result in the Slovak Republic, which lags almost 4 times behind the Czech Republic and almost 6 times behind the EU. It stays true that both countries (compared to the EU average) have significant shortcomings in waste management operations in the final stages of the waste hierarchy. However, shortcomings are also significant in some indicators in the recycling phase.

Tab. 1 Evaluation of the analysis of the selected CE indicators in Czech and Slovak Republics based on Waste hierarchy

	Waste hierarchy		Czech Republic	Slovak Republic	EU
<i>The most favoured option</i>	1.Waste prevention	–	–	–	–
	2.Recycling	Recycling of the municipal waste (2018)	34,5 %	36,3 %	47,3 %
Recycling of the packaging waste (2018)		69,6 %	66,6 %	66,3 %	
Recycling of the biowaste (2019)		56 kg/p.c.	49 kg/p.c.	87 kg/p.c.	
<i>The least favoured option</i>	3.Upcycling	–	–	–	–
	4.Downcycling	–	–	–	–
	5.Energy generation (2019)	–	81 kg/p.c.	23 kg/p.c.	131 kg/p.c.
	6.Landfilling (2019)	–	231 kg/p.c.	219 kg/p.c.	119 kg/p.c.

Source: own processing based on analysed data

In conclusion, it can be argued that overall population growth and the associated urbanization will require the consumption of much more resources than at present, which may be reflected in the generation of an enormous amount of waste. Therefore, it is necessary to realize that biodiversity and its quality ultimately affect global economic security. It is clear, the pursuit of important global goals, such as climate change mitigation is in line with the transition to CE. However, the fulfillment of this goal will require sub-goals depending on the state of individual economies. In this respect, we think that efficient waste management is an important milestone for both countries to meet other important goals in the area of CE and climate neutrality.

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What Makes the Rural Area Resilient?

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Abstract: The aim of the article is to present rural resilience as a concept. Firstly, we deal with the concept itself, and then turn to the specifics, such as the relationship between ecological, economic and cultural resilience, and sections of economic, social and environmental capital. We also discuss what distinguishes the resilient region from the non-resilient. At the end of our article, we also deal with the changes during the „coronavirus epidemic,” in which we briefly describe a specific project that is currently underway.

Keywords: resilient, rural resilience, ecological resilience, economic resilience, cultural resilience

JEL Classification codes: O18, P25, R10

INTRODUCTION

The term „resilience” has a Latin origin from „salire” which means „jump”. The prefix „re” corresponds to the term „backward”. In summary, „re-salire” → „re-silire” means „jumping back”, but it can also be interpreted as „stretch, dissolve but not break”. The term was first used in physics, in connection with the resilience of the metal to the shock. Later, the terminology was also used in psychology. It was observed that children have an ability that allowed them to regain their original physical and mental condition and balance in a short period of time after experiencing a difficult situation. Today, the term is used in association both with children and adults. Psychological resilience is the ability to mentally or emotionally cope with a crisis or return to a precrisis status quickly. Psychological resilience can be developed. The individuals will find it easier to cope with traumas (loss of family member, health problems, loss of job, etc.). Garmezy (1973) is one of the pioneers in the field of resilience research. According to him, resilience is an ability that enables and maintains adaptive behavior after experiencing trauma, tragedy or abuse (Masten, Powell, 2003; Windle, 2011).

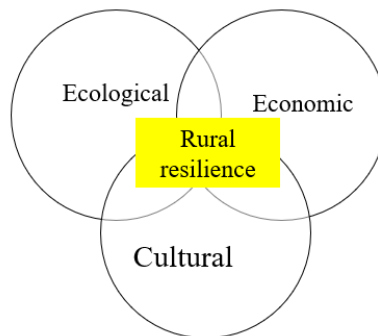
Since its introduction, the concept „resilience” has appeared and has been used as a scientific term in ecology, food aid, famine, resource management and health. The term „resilience” is used not only referring to individuals. Resilience in general is a flexible resistance, a reactive ability of an individual, organization, ecosystem or a kind of material to adapt successfully to adverse, shock-like external influences. In other words, resilience is the ability of an area to retain its basic functions and adapt to a new situation with single, repetitive, or continuous influences. (Wilson, 2010; McManus et al., 2012; Robinson, Carson, 2016; Resilience, online).

1 LITERATURE REVIEW

In modern ecology, the concept of ecological resilience plays an important role. It can be defined as a system capable of absorbing various shocks, so that the previously existing functions, the existing structure and the feedback remain viable. The term „resilience” first appeared in an ecological context in the work of Holling (1973). Despite the fact that the rural areas are facing rapid changes and uncertainties (agriculture, forestry, and landscape) that have significant future impact, the concept of „resilience” is still rarely used in connection with rural development. It can therefore be stated that little attention was addressed to the resilience of these areas (Heijman, Hagelaar, van der Heide, 2007; Schouten, van der Heide, Heijman, 2009; Robinson, Carson, 2016, Jašková, 2019).

The rural area can be considered as a complex socio-ecological system. A sufficient quantity and quality scientific literature on the resilience of these systems has been published. It is important to emphasize that within socio-ecological systems, the principles of resilience have rarely been analyzed from the perspective of specific rural aspects. Rural resilience can be best defined as the ability of a rural region to adapt to changing external conditions. It has to be achieved to maintain a satisfactory standard of living – prosperity. This also includes the ability to „recover” from management problems. The resilience of the rural area determines the extent to which a given area has the ability to adapt to changes before organizing around new structures and processes. It also expresses how the rural area is able to simultaneously balance ecosystem, economic and cultural functions, thus being able to cope with the impact of these factors. The ecological, economic and cultural systems are increasingly interconnected, the intensity and extent of interactions between these systems are increasing. These three forms of resilience are thus interconnected. The rural resilience is based on ecological, economic and cultural resilience. These three forms of resilience are thus interconnected. This can be easily illustrated by the following figure.

Fig. 1 Rural resilience – relationship between the ecological, economic and cultural resilience



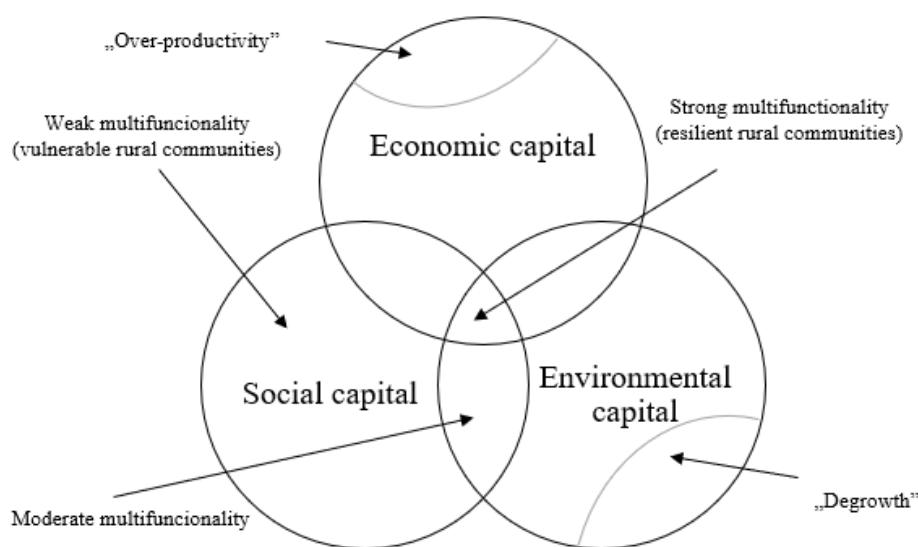
Source: own processing according to Heijman, Hagelaar, van der Heide, 2007

Based on the figure, it can be assumed that a change in one of the areas of resilience can affect the resilience of other areas. If a region is economically not resilient (sensitive to economic shocks, decrease of prosperity, a sudden significant rise of interest rates, increasing job insecurity), the population is gradually moving away and the region becomes vulnerable. Due to the increased vulnerability, even smaller problems can result in chaos and crisis in the rural system. If the region is ecologically not resilient, conditions for agriculture and green services can deteriorate. This can increase the vulnerability of the region as well. Cultural resilience is also a necessary condition for rural resilience, as it ensures that an adequate level of human capital is retained in the region. This can also contribute to vulnerability of the rural system. Building resilience should be an integral part of rural planning (Heijman, Hagelaar,

van der Heide, 2007; Schouten, van der Heide, Heijman, 2009; Šimo, Mura, Žufan, 2012; Robinson, Carson, 2016, Mura, Kljucnikov, 2018).

Huylenbroek et al. (2007) and Chaskin (2008) also outlined a similar approach in their work. They emphasized the importance of the interaction of social, economic and environmental processes. According to them, community resilience should be seen as a positive and adaptive response to disadvantages, if resilient actors (individuals, systems) can utilize economic, social and environmental capital to successfully adapt and thus avoid or mitigate the negative consequences of similar threats. In this term, resilience can have a preventive character (e.g., can prevent negative outcomes by developing coping strategies) or it can facilitate recovery after a traumatic event or disaster. Resilience means whether a system is able to absorb shocks, respectively, it will be able to recover into a functioning system again. Vulnerability can be assessed in terms of the exposure and sensitivity of the system that is generally unable to cope with the risks and threats or the slow or catastrophic changes that ultimately lead to disappearance of the system or certain parts of it. The following figure illustrates that the interlacing of economic, social and environmental capital creates various multifunctional „parts”. The rural systems, where only two areas (capital) are developed can only be characterized as „moderately” multifunctional, while those rural communities that have only one (or have no) well-developed capital are „weakly” multifunctional (in extreme cases monofunctional). (Bobenič Hintošová, Bruothová, Vasková, 2020; Happ, Ivancsóné Horváth, Kupi, 2020)

Fig. 2 Multifunctional quality – intersection of economic, social and environmental capital



Source: own processing according to Heijman, Hagelaar, van der Heide, 2007 and Van Huylenbroek et al. (2007)

The figure also highlights that the conceptual fields of both over-productivity and degrowth can be placed at the „extreme end” of the economic and environmental capital. Over-productivity was addressed by several authors, Halfacree (2007) is one of the most known addressing the issue. According to him, productivity is the primary aspect, but less importance is gained by the moral dimension. Latouche (2006) is one of the leading theorists of the degrowth movement. According to Mészáros (2019, p. 259), degrowth is a new economic paradigm recommended for developed countries that can result in long-term ecological sustainability of our planet and establishment of fair societies. The first international „degrowth conference” was held in 2008 in Paris. The methodological appeal of this framework is that it

can be applied to any rural area as well as it is highly independent (Huylenbroek et al., 2007; Chaskin, 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013; Simionescu et al., 2021).

Based on this, the resilience of the rural community can be considered as a balance between the economic, social and environmental needs of the community. This kind of resilience means that communities are able to successfully cope with endogenous and exogenous changes. Such resilience can be expressed through the speed, robustness and ingenuity of a particular community that helps to find the ways to address internal and external challenges to multifunctional quality at the intersection of economic, social and environmental capital. Resilience can be detected on the level of households and individuals. General resilience of the rural community is shaped by economic, social and environmental activities, and formed by the responses of individuals and households. One of the main aspirations of policy makers should be to maximize the resilience to help local communities in their fight for survival. In order for rural communities to be economically, socially and environmentally sustainable and resilient, it is necessary to develop multifunctional characteristics (Huylenbroek et al., 2007; Chaskin, 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013).

2 METHODOLOGY

Our research results are based on examining secondary data. The article is addressing the concept of rural resilience in details. The content of this chapter is based on the findings of experts. The further parts of the article process secondary data to differentiate the resilient region from the less resilient. We would like to introduce a model that incorporates the findings of published research. Following this, we would like to present the impact of COVID-19 pandemic on the resilience of the countryside and introduce the project „RURITAGE” funded by the EU. The primary project objective is the sustainable development of local heritage to contribute to regional and community development.

3 RESULTS AND DISCUSSION

Based on the reviewed scientific literature, the rural resilience is influenced by 3 main „areas” – economic, social and environmental. These „areas” possess a certain amount of capital. There are developed and less developed factors and components within the capital (Pretty, 1995; 2002; Parnwell, 2007; Van Huylenbroek et al., 2007; Noe, Fjelsted, Langvad, 2008; Chaskin, 2008); Cutter et al., 2008; Rigg et al., 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013)

In the case of economic capital, the economic prosperity in rural areas is the most important factor. It is also important to have a diverse source of income and low dependence on external sources. The more diverse sectors businesses in the region come from, the more competitive the region is. It is also important to consider the level of integration into the capitalist system as well as happiness as a positive factor. Economically less resilient areas are indebted, heavily dependent on agricultural activity or other external resources, have poor infrastructure and developed dependence on import of food produce (Pretty, 1995; 2002; Parnwell, 2007; Van Huylenbroek et al., 2007; Noe, Fjelsted, Langvad, 2008; Chaskin, 2008); Cutter et al., 2008; Rigg et al., 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013).

A rural community will be socially resilient if there is strong social interaction between the individuals of the community. Such regions have an adequate number of educational facilities, good hygienic conditions and offer a wide range of services. There is efficient communication between the interest groups. Socially resilient communities are open-minded, providing equal opportunities for women and members of ethnic minority groups. Land ownership regulations

are transparent and government structures are strong. The goals and direction of development are clearly set. Less resilient regions are characterized by low life expectancy, high levels of mortality and the young are leaving the region. The area is characterized by a limited variety of services. The leadership and control in the region are weak. Communication between the interest groups is weak, inequalities can be detected. The region is characterized by less transparency in land ownership, the government structures are weak. The goals and development direction are unclear (Pretty, 1995; 2002; Parnwell, 2007; Van Huylenbroek et al., 2007; Noe, Fjelsted, Langvad, 2008; Chaskin, 2008); Cutter et al., 2008; Rigg et al., 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013).

If environmental capital is taken into account, the regions with high level of biodiversity, adequate quality and quantity of water will count resilient. The management of natural resources and soil management is sustainable – mainly multifunctional – the agricultural yield can be predicted. The regions with poor soil quality, desertification and salinization are less resilient. The region is characterized by poor water quality and inadequate resources of water. The agricultural yield in these regions is uncertain and unpredictable (Pretty, 1995; 2002; Parnwell, 2007; Van Huylenbroek et al., 2007; Noe, Fjelsted, Langvad, 2008; Chaskin, 2008); Cutter et al., 2008; Rigg et al., 2008; Wilson, 2010; Kovách, 2012; Alabán, 2013).

Tab. 1 Characteristics of resilient and less resilient regions

		Development level of factor (capital)	
		Resilient	Non-resilient
Rural resilience	Economic capital	Economic prosperity	Poverty / debt
		Diverse (multiple) sources of income	High dependence on agricultural production
		Low dependence on external resources	High dependence on external resources
		Multifunctional businesses	Food import
		Integration into the global capitalist system	Poor infrastructure
		Happiness	
	Social capital	Strong connections, interactions between the actors	Young leaving the country
		Training and education opportunities	Poor range of services
		Good health and hygiene	Lack of leadership
		Wide range of services	Lack of control over the life of community
		Good communication between the interest groups	Low life expectancy and high mortality ratio
		Involvement of women and ethnic minorities	Poor communication between the interest groups
		Open-minded communities	Inadequate female involvement, lack of involvement of minorities
		Transparent land ownership regulation	Less transparent land ownership regulation
		Rural stakeholders to determine development directions	General dissatisfaction with the goals of the rural community
		Strong governance structures	Weak governance structures

	Environmental capital	High level of biodiversity	Poor quality soil
		Good quality and adequate quantity of water	Desertification
		Sustainable land management	Salinization
		Predictable agricultural yield	Poor water quality and inadequate amount of water source
		Sustainable management of environmental resources	Unpredictable agricultural yield
		Multifunctional environmental resources	

Source: own processing according to Pretty (1995; 2002); Parnwell (2007); Van Huylenbroek et al. (2007); Noe, Fjelsted, Langvad (2008); Chaskin (2008); Cutter et al. (2008); Rigg et al. (2008); Wilson (2010)

There are several factors that can affect the resilience of an area, the most important are presented in the table above. There is no rural region that can be characterized only by positive factors, there are also some negative, unavoidable factors that need to be offset by positive ones. The more positive factors the certain region is characterized by, the more adaptable the region will be.

RURITAGE is a four-year-long EU funded research project, launched in June 2018, which strives to enable rural regeneration through utilizing the heritage of the area. The main goal is to sustainably enhance local heritage to develop regional communities. Further objective is the regeneration of the rural areas through the „Systemic Innovation Areas”– SIA framework, which identifies the unique heritage potential of the rural communities. The approved SIAs are the pilgrimage, resilience, sustainable local food production, integrated landscape management, migration, art and festivals (RURITAGE project, online).

The rural areas tell us the story of thousands years of cooperation between nature and society. These places embody the unique example of cultural and natural heritage that have to be preserved but also recognized as communities of sustainable development. RURITAGE establishes a rural regeneration paradigm able to transform rural areas into sustainable development demonstration „laboratories” to introduce the natural and cultural heritage as an engine for regeneration (RURITAGE project, online).

Fig. 3 Systematic Innovation Areas – SIA



Source: Ruritage Project (online)

Rural areas face chronic economic, social and environmental problems around the world. This can result in unemployment, migration, depopulation, marginalization or the loss of cultural,

biological and landscape diversity. The project points out that the challenges of rural areas can be reversed by exploiting the potential of natural and cultural heritage (RURITAGE project, online).

The website of the project warns the attention of the visitor to find solutions and provide ideas to combat the consequences of the coronavirus pandemic. Such an unexpected situation is a challenge not only for societies and the economy as a whole, but also for individuals and communities. COVID-19 not only halted the critical development phase of rural communities „Replicators and Role Models“, but also generated a real test for the resilience of individuals and the community. The „Role Models“ have regenerated by utilizing the natural and cultural heritage of the area. The good practices of these role model areas are analyzed and joined to the chosen rural territories, the so-called Replicators. Each Replicator works predominantly in one of the identified Systemic Innovation Areas but will be influenced also by some other SIAs. These replicators represent the local communities in rural areas, where heritage-driven reconstruction strategies are already being developed, although they need support to develop their skills, knowledge or capacity. The knowledge and skills gained from the experience of Role Models are transferred to Replicators through a participatory planning process. This allows the strategies of the „Role Models“ to be customized and adapted to the specific needs and challenges of „Replicators“ (RURITAGE project, online; Rural Resilience Actions, 2020, online).

The crisis is attacking the rural areas as well, as these areas are faced by challenges influenced by the problem of less available resources and deepening isolation. The rural communities are struggling to find customized solutions to their already fragile and vulnerable environment. At the same time, the value of local resources, cultural and natural heritage, the value of human capital, mutual support and networks, better cooperation and solidarity have strengthened. The main objective is to achieve a strengthened resilience (Rural Resilience Actions, 2020, online).

As a part of the project communication activity, a project website was created that allowed the visitors to submit their solution proposals supporting the success of the project. The initiative started within the project is „Rural Resilience in times of COVID-19“. Initiatives and measures to be taken are expected to be proposed connected to sustainability, cultural and natural heritage, the most important innovation areas – pilgrimage, resilience, sustainable local food production, integrated landscape management, migration, arts and festivals. A questionnaire format, containing 11 questions was created to submit the proposals for improvement. The questionnaire contained open-ended questions to motivate the respondents to formulate opinions, ideas or propose solutions. The questionnaire contains only 2 closed questions. In the first, that area should be indicated by the respondents – pilgrimage, resilience, sustainable local food production, integrated landscape management, migration, art and festivals – which is closely related to the proposal for improvement. A closed question also appears at the end of the questionnaire, where the respondents agree their data provided to be processed. The questionnaire is anonymous (Rural Resilience Actions, 2020, online).

CONCLUSION

The main goal of this article is to introduce the concept of „rural resilience“, which is relatively less addressed by the domestic and Central-European scientific literature. The concept covers the resilience of rural areas, an enormously important issue in the current rapidly changing and developing environment. A developed rural area has a capacity to cope also with the biggest changes even during the period of pandemics. However, COVID-19 brought difficult challenges to face in the society. It has already made the society flexible and prepared in certain ways. If we would like to examine the resilience of a rural area, it is necessary to examine the ecological, economic and cultural aspects of the area. These 3 areas are closely

related. If the rural area is not economically resilient, the population will leave the area, and the region will become vulnerable. If the region is not resilient ecologically, the conditions of agricultural and green services can deteriorate. Building resilience should be an integral part of rural planning.

Following another approach, community resilience should be seen as a positive, adaptive response to disadvantages. If resilient actors (individuals, systems) can utilize economic, social and environmental capital to adapt successfully, will succeed to avoid the negative consequences of potential threats. Rural resilience is a balance of economic, social and environmental needs of the community. Economic well-being is the most important economic capital, which is associated with a diverse source of income and low dependence on external sources. The more diverse the companies in the region are, the more competitive the region is. Socially resilient regions have adequate access to training and education opportunities, adequate hygienic conditions, good communication and wide range of services. Environmentally resilient regions are characterized by high biodiversity, adequate and good quality water as well as sustainable soil management.

RURITAGE project is benefiting the rural areas, although launched before COVID-19, the project has successfully adapted to the current situation. Implementation of similar projects is needed, so that rural areas do not lag behind in the development of urban areas. These areas possess many potentials that can be utilized to strengthen their position in the society.

The areas of development receive an unequal, different emphasis in each region. In each case, the location plays a big role. The opportunities offered by each natural endowment are important, but at the same time, for example, the role of transport hubs (motorways, railway junctions, airports, etc.) that determine the opportunities of the area. In addition to these, there are factors such as history and the neighboring area. These factors are (mostly) hardly affected by the area itself. One can only adapt to the natural conditions by noticing and taking advantage of the opportunities offered. Some disadvantages should be tried to be reduced or made insignificant - for example, by focusing on other areas. It is necessary to analyze the situation and identify the obstacles that have prevented the development. Once these have been identified, they need to be removed. It is unfortunately that sometimes the representatives of an area are replaced after the elections and the new board sets completely opposite goals in their new program, ignoring the successful plans and insights of previous years.

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