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AN ANALYSIS OF CRITICAL THINKING SKILLS AMONGST BUSINESS STUDENTS IN KUWAIT

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Abstract

Research Purpose. This article examined critical thinking skills amongst senior-level undergraduate students in a Middle East setting, Kuwait. In addition, the study investigated the gender differences.

Methodology. The subjects involved in this study comprised a convenience sample of 90 graduating seniors. The purpose of this study was to assess the impact of two motivational factors on the development of critical thinking skills. The analysis used the specific subsection about critical thinking skills, which is part of the Motivated Strategies for Learning Questionnaire (MSLQ). One factor relates the sense of entitlement that can arise in a welfare state, which heavily subsidises a wide range of things for citizens, including education. We examined differences between citizens and non-citizens, who do not have access to welfare benefits.

Findings. The results supported the hypotheses that student groups have different levels of critical thinking skills. We found that expatriate students had more highly developed critical thinking skills than students who were Kuwaiti citizens. We also found that women had more highly developed critical thinking skills than men had.

Practical Implications. The welfare state measures undertaken by the government of Kuwait may be counter-productive. The guaranteed employment of its citizens and generous monetary support whilst in school may discourage the development of critical thinking skills. Future research could focus on ways to motivate particular groups (e.g. Kuwaiti men) to enhance their critical thinking skills.

Keywords: Critical Thinking; MSLQ; Kuwait; Gender; Welfare State; Cultural Economics.

JEL codes: I28

Introduction

Critical thinking is the ability to apply previous knowledge in order to solve problem or reach decisions in a new setting. Developing critical thinking ability has long been considered a key goal of higher education (King et al. 1990; Tsui 2002; van Gelder 2005; Davies & Barnett 2015). Critical thinking is important for a country to have a properly skilled workforce (Andriusanitiene 2018; Howard et al, 2015; Igaune et al 2016). There is considerable research on the teaching methodologies for achieving this, as a very recent meta-analysis demonstrates (Abrami et al. 2015). However, there is less work on differential characteristics impacting critical thinking skills.

King et al. (1990) proposed that gender should be examined to determine if student characteristics have any impact on critical thinking skills. In their study, men scored somewhat better on critical thinking. Howard et al. (2015) were only able to cite a few prior studies, and the results were mixed. In their study, women improved on critical thinking measures from pre- to post-use of case-based modules, whilst men did not. 'Females and older students may take their academic work more seriously than their counterparts' (Howard et al., 2015, p. 142-143).

Various motivation aspects have received more attention in critical thinking studies (Howard et al., 2015); Bieliune (2018) focused on school culture as an effect on students' development. The effect of global culture in the development of critical thinking has been discussed (Normal et al., 2017). Al-Hunaiyyan et al. (2018) discussed how culture may hinder certain education methods. In this study, the authors took an approach that the overall society influences students.

Kuwait is a welfare state and heavily subsidises many segments of society. In particular, the government uses a large amount of resources on education. All Kuwait citizens (Kuwaitis) are eligible to receive monetary support whilst earning their first university degree. Kuwaitis earning an undergraduate degree will receive an increased monthly allowance from the government. Although the Kuwait government has policies in which citizens receive generous welfare benefits, these generous welfare benefits may reduce their motivation to achieve. As government spending on education increases, the future achievement of students may decrease (Falch & Fischer, 2011).

Expatriates are people living in Kuwait who do not have Kuwait citizenship. Expatriate students do not receive government support in obtaining an undergraduate degree. In addition, Kuwait has various labour nationalisation policies that give employers incentives to have preferential hiring practices towards Kuwaitis over expatriates. Expatriate students may believe that they need to develop a higher level of business skills that will allow them to successfully compete for employment.

Student achievement has been identified as important to economic growth. In Kuwait, motivation to diversify the economy is important. One method of strengthening the economy has been through dedicating resources, so Kuwaiti citizens will progress in school.

Throughout the Arab World, high-level business executives tend to be somewhat dissatisfied with the ability of their educational systems to turn out graduates with the skills that Arab businesses need. In a recent survey sent to Chief Executive Officers (CEOs) in the region, just 32% of the CEOs felt that the educational system provided graduates with adequate skills (Lootah & Simon, 2009, p. 23). Amongst key skills, these CEOs look for 'analytical/critical skills' (91%) and 'creative/innovative thinking' (90%) whilst recruiting graduates, which are frequently cited (Lootah & Simon, 2009, p. 27). One key recommendation for schools and curricula is to 'shift from memorization methods of appraisal to one that focuses on developing critical and analytical thinking skills' (Lootah & Simon, 2009, p. 45). In the Gulf, business leaders are even less happy about the state of education than in other parts of the Arab World.

The Arab World CEOs in the Lootah and Simon (2009) survey think that private universities do a somewhat better job than State universities. Nevertheless, how to foster critical thinking is a key challenge in any classroom, private or state. Even when teaching methods are reformed, students must still be motivated to learn; obtaining student buy-in for developing critical thinking can be a difficult task in the rich Gulf States.

Kuwait is seeking to decrease its reliance on the production and sale of oil products. It is reported that 80% of the country's gross domestic product (GDP) is from oil. The workforce must have the skills to learn to adapt to these changes.

As Kuwait is a Muslim country, the laws and social customs promote a patriarchal family unit. Women are expected to devote their energies to the family over a job outside the home. Women are faced with social norms and policies that present more obstacles for their employment. Women may seek to develop stronger critical thinking skills in order to be competitive in obtaining a job.

The authors used a specific subsection about critical thinking skills, which is part of the Motivated Strategies for Learning Questionnaire (MSLQ). The subjects involved in this study comprised a convenience sample of 90 graduating seniors. The results showed that both characteristics, expatriate and female, are positively related to critical thinking skills.

Literature Review

Kuwait is considered a welfare state in that the government is actively involved in the promotion of certain social programmes. In particular, the government is actively involved and spends large amounts of resources in the education sector. For children in kindergarten through high school, Kuwaiti children have access to free public education. The government has built schools and trained teachers. Every child has the opportunity for a free education through government support of free books, transportation and meals. The result is that Kuwait has one of the highest literacy rates in the Middle Eastern and North Africa (MENA) region: 94.4% for men and 91.0% for women (Kuwait Defense & Security Report Q4, 2010).

At the university level, Kuwait University (KU) was created to provide quality post-secondary education at low cost. The government provides funds for buildings and for teacher salaries and training. The government also heavily subsidises student tuition and books and provides a monthly living allowance. However, KU does not have the capacity to provide schooling for all Kuwaiti high-school graduates. To supplement demand for post-secondary education, several private universities have been formed within Kuwait. These universities are privately owned and profit oriented. Kuwaiti students who attend these private universities receive government assistance in the form of scholarships and a monthly living allowance. Thus, education for Kuwait citizens is heavily subsidised.

Falch and Fischer (2011) investigated the relationship between the welfare state and student performance. They developed several models that indicated that increased government intervention leads to reduced student achievement in future periods. In Kuwait, this issue would mainly affect students who are citizens.

Expatriate students do not receive support to attend school. Whilst a few scholarships exist for these students, tuition and books are primarily purchased using private funds. The performance of expatriate students may not be affected by the welfare rents of the Kuwait government. Expatriates were used as a comparison group because they would be less influenced by government subsidies.

Expatriate students were also considered to be a good comparison group because they may have a higher focus on acquiring skills that lead to higher probability of obtaining employment. The Kuwait government guarantees employment of its citizens. If a Kuwaiti cannot find employment in the private sector, a position in the government sector is provided. The Kuwait government encourages 'nationalisation' of the private sector by requiring businesses to have a minimum percentage of Kuwait citizens on the payroll. In addition, businesses receive government payments for each Kuwaiti who is employed. Expatriates do not have the advantage of employment in the government sector, and although a percentage of government employees are expatriates, the government's current goal is to reduce the number of expatriates working in the government sector. In the private sector, the government does not motivate employers to hire expatriates through the use of subsidies or hiring quotas. Expatriates may need better business skills in order to obtain employment.

Women are another group who may believe that they need higher credentials in order to obtain employment. An informal societal system may exist, which acts as a deterrent for the employment of women (Amaney, 2005). Kuwait is a Muslim country whose laws and social customs are based on local interpretations of the Quran and on associated religious beliefs. 'Family is the foundation of social life' in Arab society (Farsoun, 2004). Women maintain the family structure subordinate to male authority. According to custom, a woman's primary attention should be to the family unit and not to outside achievements, such as employment. Employers may have an informal policy to hire men instead of women. Thus, men have a competitive edge for jobs, and women may seek stronger job skills to overcome societal obstacles.

Workers in the business environment must have the ability to use knowledge in creative and innovative ways in order to adapt to changes. As critical thinking is such a highly desired business skill, potential employees may cultivate critical thinking strategies whilst in the university setting. In particular, those students who perceive that they are at an otherwise disadvantage (e.g. expatriates and women) may try to develop stronger critical thinking skills.

Therefore, the first hypothesis is a comparison of students who are citizens of Kuwait to expatriate students.

H_1: Critical thinking skills will be more highly developed for expatriates than for students who are Kuwait citizens.

Next hypothesis assumes that women are developing better critical thinking skills than men in order to be more competitive in the workforce.

H_2: Critical thinking skills will be more highly developed for women than for men.

Methodology

The Questionnaire

The questionnaire in this study used questions from the MSLQ to measure critical thinking. The MSLQ was developed in the United States by Paul Pintrich (Duncan & McKeachie, 2005; Pintrich, Smith, Garcia & McKeachie, 1991) and measures both motivations for learning and strategies used in learning by students. The entire MSLQ was used as part of a larger project than is reported here, but the following discussion focuses only on critical thinking. Critical thinking is considered one of the cognitive learning strategies that students use, and it 'refers to the degree to which student report applying previous knowledge to new situations in order to solve problems, reach decisions, or make critical evaluations' (Pintrich et al., 1991, p. 22).

The scale has been tested extensively and generally performs well. A recent review cited 58 uses of the critical thinking component, with a mean and median reliability of .78 and .80, respectively. There was only one extreme outlier amongst these studies (i.e. a very low reliability for the critical thinking items), and eliminating it from the analysis resulted in a mean reliability of .79 (Taylor, 2012, p. 102-104).

Although developed and mostly tested in the United States, MSLQ has been used to investigate students' motivational orientations and their use of different learning strategies in some studies outside the United States. Taylor (2012) included 14 such studies (without noting specifically what the non-US countries are) in the sample of 56 studies that cover critical thinking. On a few of the MSLQ concepts, mean reliabilities outside the United States are significantly lower. However, most MSLQ concepts, including critical thinking, do have reliabilities on data from outside the United States that are very close to those inside the United States. On critical thinking, the mean reliability outside is .78, compared to .80 for studies in the United States. Although Taylor (2012) did not note where the non-US studies are located, she did note a slight reduction in the reliability for the critical thinking measure when it includes higher percentage of Asian respondents. MSLQ has been used in non-Western cultures occasionally, for example, in China, where a reliability of .76 was reported for critical thinking (Huang, 2008). MSLQ has also been used successfully in Malaysia (Yusri, 2010) and Turkey (Buyukozturk, Akgun, Ozkahveci & Demirel, 2004).

At Kuwait University, the MSLQ was used to investigate the interactive relationship between students' motivation and cognition amongst students in a College of Education (Al-Ansari, 2005). Students who were able to regulate their efforts and attention made better grades. Students who reported a variety of metacognitive strategies did better on all performance measures. Students who stated that they were highly motivated for challenge and mastery performed at a higher level. However, this study did not include a few of the concepts on MSLQ; notably, critical thinking was not investigated. It does seem that measures of concepts in MSLQ generally have quite good reliability, including critical thinking and outside the context of the United States. Thus, we used the five questions presented in Table 1 to assess critical thinking.

Table 1. Critical thinking questionnaire items taken from MSLQ

38.	I often find myself questioning things I hear or read in this course to decide if I find them convincing.
47.	When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.
51.	I treat the course material as a starting point and try to develop my own ideas about it.
66.	I try to play around with ideas of my own related to what I am learning in this course.
71.	Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.

The MSLQ was administered in English, because the curriculum at the university where the sample was taken was taught wholly in English. The students had mostly learned English as a second language with Arabic as their first language. (The majority of expatriates in this study are from other Arab countries, whereas citizens are from Kuwait.) The students had all met the minimum undergraduate entry-level requirement of TOEFL (Test of English as a Foreign Language) 520 or IELTS (International English Language Testing System) 5.5 to be admitted to the university and, at the time of this study, were in their fourth year. Taylor's (2012) review included only eight studies in which MSLQ was administered in languages other than English, but the mean reliability (and standard deviation of the reliabilities) for critical thinking was very close to the mean for English language administration (.77 vs. .80, respectively). A few studies compared both in a single study, showing that MSLQ in the native language gives consistent results compared to giving it in English to respondents who are competent in English as their second language. For example, similar results were obtained between English and Mandarin Chinese versions (Huang, 2008) and between English and Turkish versions (Buyukozturk et al., 2004).

In terms of number of scale points, only a few studies used fewer than the original seven-point scale, but here, the discrepancy was slightly greater for critical thinking, with reliabilities of .73 versus .80 for scales with five or fewer points versus seven points, respectively (Taylor, 2012, p. 113). In addition, most other concepts on MSLQ also gave slightly better reliabilities using a seven-point scale. This study used the original seven-point scale, ranging from 1 = 'not at all true of me' to 7 = 'very true of me', as in the original MSLQ (Pintrich *et. al.*., 1991).

The Sample

The sample for this pilot study comprised a convenience sample of 144 undergraduates. Amongst these, 91 of them were enrolled in the Fall Semester of 2010 in 4 sections of an auditing capstone course at the American University of Kuwait (AUK). The auditing capstone course in which the data were collected is a senior-level course taught in the Division of Business and Economics. The course's primary focus is to provide students with an understanding of the processes necessary to achieve audit objectives. It is a required course for all accounting majors in the division. The other 53 observations were collected in Spring 2014. This replication was performed to assess whether there might be any differences from the earlier semester. None were expected, but AUK is a relatively new school, and there could potentially have been some impact from programme changes. However, no differences were detected, so the data were combined, and the results from these combined data were used here.

Thus, amongst accounting majors, there was essentially no self-selection (because nearly all students answered the questionnaire), although there is no guarantee that students in other majors would have exactly the same pattern of responses.

The MSLQ was administered on the first day of class before any orientation to the course or before any academic expectations for the course were presented. Students in all sections of the course who were present on the day that the data were gathered could participate, and before administering the instrument, they were invited to participate if they wished. They were assured that their responses would be aggregated, thus ensuring their anonymity. Only one student out of the four sections opted not to participate. Students signed the informed consent form and were instructed to answer each of the 81 items on the instrument, as well as several demographic questions at the end.

The sample was nearly equally split between men and women (in both years); three respondents did not report gender, so there were 69 women and 72 men, and the proportions did not differ by year. About 71% of the respondents were Kuwaiti citizens. By year, slightly fewer in 2014 were Kuwaiti, but the difference was not significant. For the most part, the sample consisted of traditional students rather than older learners, with 92% aged 24 years or younger. Few were at the lower age categories of traditional students, as would be expected in an upper division course. The cumulative GPA ranged from 1.93 to 3.94, with a mean of 3.04. Eighty-eight per cent were taking a standard full-time course load of between 12 and 18 credits.

Research Results

Descriptive Statistics

Descriptive statistics showed that the mean scores on the critical thinking items were all significantly above the midpoint at four, ranging between 4.74 and 5.01 (Table 2). This finding indicated mild agreement on all of them that they are 'very true of me'.

Reliability of the concepts on the questionnaire compared favourably with the Cronbach alpha scores summarised in Taylor's (2012) review. Most reliabilities on the 15 concepts represented in MSLQ had values greater than .70 in our data, often considered the cut-off point for acceptable reliability (e.g. Trobia, 2008). The four MSLQ concepts with poor alpha in this sample (alpha < .7) were all amongst the six concepts that had weak reliability (alpha < .7) in the original MSLQ (Pintrich et al., 1991). Taylor's (2012) review showed that they are consistently somewhat weak across studies using MSLQ, with both mean and median alpha < .7. The MSLQ seemed to perform well in this Kuwaiti context.

The critical thinking subdimension in the original MSLQ manual had an alpha = .80 (Pintrich et al., 1991). Taylor's (2012) meta-analysis reported only one extreme outlier in 58 studies using the critical thinking subscale in MSLQ with median alpha = .80 and mean alpha = .78. Our data showed that critical thinking had an alpha = .732. The item-by-item statistics showed that the Cronbach alpha score would not be improved by deleting any individual item (Table 2). This compares well with other studies using this scale.

Table 2. Summary statistics for critical thinking items

Question	Mean	Standard deviation	Corrected item-total correlation	Cronbach's Alpha if item deleted
Q38 question material to see if convincing	4.82	1.452	.426	.710
Q47 decide if there is good supporting evidence	5.01	1.434	.435	.706
Q51 develop my own ideas about material	4.74	1.595	.557	.659
Q66 play around with ideas of my own regarding the material	4.80	1.643	.559	.658
Q71 think about possible alternative explanations	4.97	1.549	.484	.689
Critical thinking (mean across items)	4.865	1.079	Cronbach alpha	.732

Note: see Table 1 for exact question wording; the 'listwise valid n' = 140, because of a few cases of missing data.

Factor Analysis

Factor analysis was performed on the five critical thinking items to confirm that they are internally consistent. Trobia (2008), for example, noted that even a set of measures with high Cronbach alpha may still have subdimensions. In this case, a single eigenvalue was greater than 1.0, suggesting a single factor if this criterion is used alone. All five items load moderately well on the single factor, but the communalities on several of them are low, and the single factor accounts for only about half of variance (Table 3).

Table 3. Factor analysis results for critical thinking, single factor

Question	Factor 1	Communalities
Q38 question material to see if convincing	.625	.391
Q47 decide if there is good supporting evidence	.632	.400
Q51 develop my own ideas about material	.757	.574
Q66 play around with ideas of my own regarding the material	.760	.578
Q71 think about possible alternative explanations	.687	.472
λ (Eigenvalue)	2.414	
Per cent of variance accounted for	48.28	

Note: Extraction method: Principal component analysis. One factor had $\lambda \geq 1$.

We also investigated a two-factor solution, because at .875, the second eigenvalue was somewhat close to 1.0, the scree diagram was still descending sharply at the second factor, several communalities were low in the single factor solution, and the single factor accounted for only 50% of variance. These conditions suggest that the second factor may need to be included (Hair, Black, Babin & Anderson, 2010). In the two-factor solution, the two different factors were easy to interpret, further supporting the use of two factors. This two-factor solution accounted for about two-thirds of variance, a much better result, and in the rotated solution, the two factors had similar weight (30–35% of variance, each). The eigenvalues of four of the items were greatly improved. Factor 2 (Table 4) seems to be about critical appraisal of the material, and Factor 1 seems to be about using the material as a foundation to do one's own thinking about issues. Q71, thinking about possible alternative explanations, loads roughly similarly on both factors, indicating that it associates with both subdimensions. However, its communality is still slightly low.

Table 4. Factor analysis results for critical thinking, two factors

Question	Factor 1	Factor 2	Communalities
Q38 question material to see if convincing		.752	.601
Q47 decide if there is good supporting evidence		.829	.706
Q51 develop my own ideas about material	.854		.753
Q66 play around with ideas of my own regarding the material	.856		.757
Q71 think about possible alternative explanations	.524	.444	.472
λ (Eigenvalue)	2.414	.875	
Per cent of variance accounted for in rotated solution	35.817	29.971	
Cumulative per cent of variance	35.817	65.788	

Notes: Factor loadings < .4 are not shown.

Extraction method: Principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

Given that there is still a substantial amount of variance outside the factors, whether we treat critical thinking as a single variable or as two sub-dimensions, we opted to do further analysis using factor score composite variables rather than a simple mean across the items. The factor scores collect the variance associated with the particular concept, but partition non-associated variance is left out.

ANOVA

Analysis of variance (ANOVA) was used to examine the impact of gender and citizenship on the composite variable represented in the single-factor solution for critical thinking. The key results are summarised in Table 5. The model is significant, and both gender and citizenship show significant impact on critical thinking (at 95% confidence). The interaction between gender and citizenship is not significant. These two simple demographic variables account for nearly 10% of variance (R-squared = .069). Parameter estimates for the impact show that women use critical thinking more (b = .508) than men and expats use critical thinking more (b =.573) than citizens. Figure 1 represents this graphically; note that the interaction is not significant, so the seeming slight difference in slope on the two lines does not convey any meaning.

Table 5. ANOVA of gender and citizenship on critical thinking single factor score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected model	11.955	3	3.985	4.366	.006
Intercept	1.625	1	1.625	1.781	.184
Gender	3.951	1	3.951	4.328	.039
Citizenship	5.401	1	5.401	5.917	.016
Gender * citizenship	.423	1	.423	.464	.497
Error	121.408	133	.913		
Total	133.415	137			
Corrected total	133.363	136			

Note: Dependent variable: critical thinking single factor score.

R-squared = .090 (adjusted R-squared = .069).

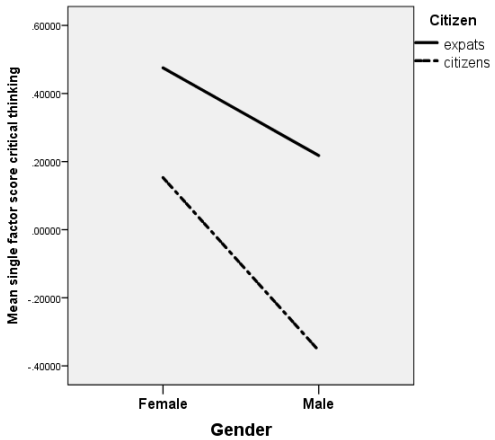

Fig. 1. Critical thinking single factor score, gender and citizenship effects

MANOVA

MANOVA (multivariate analysis of variance) was used to analyse the impact of gender and citizenship on the two subdimensions. The multivariate tests showed that gender was significant (p = .045), citizenship was significant (p = .050) but the interaction was not significant (p = .763). All four of the standard multivariate tests, Pillai's trace, Wilks' lambda, Hotelling's trace and Roy's largest root, showed exactly these same significances on each of these factors. Thus, we examined each subdimension, 'critical appraisal of the material' and 'use material as foundation to do own thinking'. The effects of gender and citizenship on the 'critical appraisal of the material' subdimension were not significant (Table 6a).

Table 6a. MANOVA of gender and citizenship on subdimension 2, 'critical appraisal of the material'

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.437	3	.812	.793	.500
Intercept	.312	1	.312	.305	.582
Gender	.070	1	.070	.069	.794
Citizenship	1.486	1	1.486	1.450	.231
Gender * citizenship	.446	1	.446	.435	.511
Error	136.299	133	1.025		
Total	138.737	137			
Corrected total	138.735	136			

Note: Dependent variable: Subdimension 2 'critical appraisal of the material'; R-squared = .018 (adjusted R-squared = .005).

However, the effects were significant on the subdimension 'use material as foundation to do own thinking'. Both gender and citizenship were significant (with p-values of .014 and .034, respectively), and the R-squared value was .088, about the same as in the single factor case (Table 6b). The interaction between gender and citizenship was not significant. Parameter estimates for the impact were similar in size compared to the single factor case; they showed that women use critical thinking more (b = .510) than men, and expats use critical thinking more (b = .443) than citizens. Figure 2 shows the effects graphically; note that it is much clearer in this graph that there is no interaction effect.

Table 6b. MANOVA of gender and citizenship on subdimension 1, 'use material as foundation to do own thinking'

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected model	11.326	3	3.775	4.257	.007
Intercept	1.421	1	1.421	1.602	.208
Gender	5.559	1	5.559	6.268	.014
Citizenship	4.029	1	4.029	4.542	.035
Gender * citizenship	.086	1	.086	.096	.757
Error	117.963	133	.887		
Total	129.355	137			
Corrected total	129.289	136			

Note: Dependent variable: sub-dimension 1 'use material as foundation to do own thinking'; R-squared = .088 (adjusted R-squared = .067).

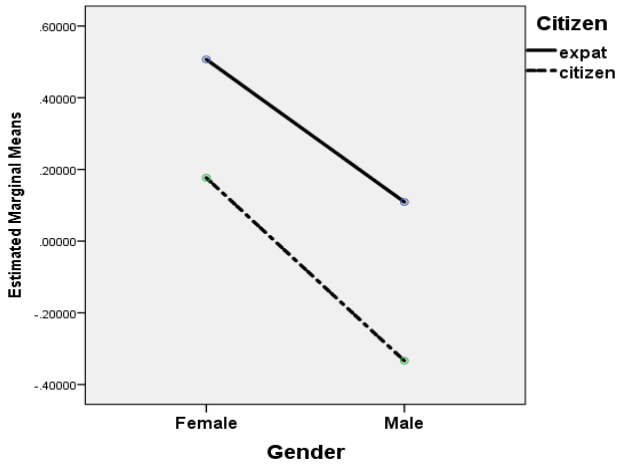

Fig. 2. Critical thinking subdimension 'use for own further thinking', gender and citizenship effects

Conclusions

The results support the hypotheses that student groups have different levels of critical thinking skills. Consistent with our expectations, we found that expatriate students had more highly developed critical thinking skills than students who were Kuwaiti citizens. We also found that women had more highly developed critical thinking skills than men. When comparing students across both citizenship and gender, Kuwaiti men tended to score the lowest in critical thinking skills, whereas expatriate women students tended to score the highest. We did not find any interaction amongst the various descriptors.

Thus, the welfare state measures undertaken by the government of Kuwait may be counter-productive. The guaranteed employment of its citizens and generous monetary support whilst in school may discourage the development of critical thinking skills. As previously mentioned, high-level business executives tend to be somewhat dissatisfied with the ability of the educational system to turn out graduates with the skills that Arab businesses need. To be consistent with governmental goals of improving the entire workforce, government policies and resources should be designed to enhance critical thinking skills in Kuwaitis with particular emphasis given to men.

Future research could focus on methods used to motivate particular groups (e.g. Kuwaiti men) to enhance their critical thinking skills. For example, critical thinking skills have been incorporated in Arabic language classes in public schools (Bahatheg 2019). A study delving into the effects of this approach might be useful. Also, Alhashem and Alkandari (2015) created a list of suggestions; the effect of any implementation of these suggestions would be interesting.

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THE INDIVIDUAL TRANSPORT MOBILITY GAP (ITMG) AS AN OBSTACLE ON THE ROAD TO HIGHER RATES OF PUBLIC TRANSPORT USE

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Abstract

Research purpose. The call for higher rates of public transport usage seems reasonable and understandable, given the growing impact of climate change and the high burden of heavy traffic, especially on urban transport structures. A course of Bachelor's degree students in Logistics explored the issue of satisfaction with individual transport mobility, formulating the hypothesis that there must be a striking difference in the quality behind the use of a private car versus the use of public transport. The hypothesised difference in perceived quality between the two modes of transport was called the individual transport mobility gap (ITMG).

Design/Methodology/Approach. The ITMG was considered from the perspective of people who mainly use a car (car users) and who mainly use public transport (public transport users). Both groups were asked how they rate their preferred means of transport and how they rate the alternative mode of transport using an online questionnaire. The survey can be accessed online at: https://fhludwigshafen.eu.qualtrics.com/jfe/form/SV_6JOoxNvlSVxsdDv.

Findings. The results of the study confirmed the hypothesis that there is a substantial perceived gap with an ITMG value of 4.0 between using a car versus using public transport for people who primarily use a car. In contrast, the ITMG value for public transport users was only 0.8.

Originality/Relevance/Practical Implications. The originality of this approach lies in surveying satisfaction with a mode of transport at a highly aggregated level rather than at the level of individual quality factors, such as punctuality or flexibility. ITMG is defined in this study as a valuable metric that provides a basis for comparison. This quantitative metric can in turn be used to determine the effectiveness of measures to increase usage rates of public transport. The study also provides practical findings by making available its database to other researchers for further evaluation purposes. The study also contributes to scholarly and public discourse on how to effectively reduce the satisfaction gap in the use of private cars versus public transport, thus resulting in improved outcomes for the environment and society.

Keywords: Action-Based Teaching; Empirical Case Study; Mobility Management; Motorised Individual Transport; Public Transport.

JEL codes: A23; R40.

Introduction

Although there are a variety of arguments and motivations for increasing the use of public transport, two examples from early 2020 will help to illustrate how the use of public transport might successfully be encouraged.

First, Luxembourg was the first country in the world to introduce free public transport, which went into effect on 29 February 2020. The stated aim is to encourage people to use public transport instead of using their cars (Frankfurter Allgemeine Zeitung (FAZ), 2020).

Second, the German Bundestag approved two draft laws presented by Federal Minister Andreas Scheuer to improve public transport on 1 January 2020. The laws will massively increase federal funding for public transport in Germany, with the goal of making it easier to switch to public transport services such as bus, tram or train. Funding is allocated for investments in vehicles, subsidies for ticket prices and infrastructure improvements, ranging from new construction to renovation (BMVI, 2020).

On the one hand, this use of public funds to finance public transport appears convincing, because public transport offers clear economic and environmental advantages over private transport by car. The Berliner Verkehrsbetriebe (BVG), for example, found that, in 2017, public transport used an average of 3.3 L of diesel per person per 100 km. All bus lines, days of the week and times of day were taken into account in this calculation (Berliner Morgenpost, 2018). With a diesel price per litre at 1.16 €, this would mean that it costs 3.83 € to transport one person for 100 km. The corresponding CO_2 emissions would have to be indicated as a tank-to-wheel value, with 8.75 kg CO_2/100 km (CO_2 coefficient: 2.650; Schallaböck & Carpantier, 2012).

In contrast, the average fuel consumption in 2017 for cars and station wagons was 7.4 L per 100 km. With reference prices for petrol of 1.36 €/L and diesel of 1.16 €/L, this would mean that private car transport cost 10.06 € per 100 km (for petrol) or 8.58 € (for diesel) per 100 km per person. The corresponding CO_2 emissions (tank-to-wheel) would then be 17.54 kg CO_2 for petrol or 19.61 kg for CO_2.

On the basis of these figures, one could now conclude that the costs and emissions of using a private car are more than double those of using public transport, which would thus justify the allocation of public funds for public transport (a caveat here is that this calculation is based on a private car being used by one person only, not accounting for potentially multiple passengers).

The modal split in passenger transport between public transport and private cars has remained almost unchanged in the recent years. If non-motorised passenger transport (pedestrians and bicycles) is included in the volume of transport, motorised individual transport dominates with a share of about 75% and is thus clearly ahead of more environmentally friendly means of transport (pedestrians, bicycles, rail and public road transport), which together amount to about 20%. These figures have remained roughly stable since 2003 (Umweltbundesamt, 2020).

This leads to two important questions: First, will the additional expenditures of public investment in public transportation in both Luxembourg and Germany ensure that the modal split moves in favour towards public transport? Second, why has the modal split remained so unchanged over the years? Although the first question must remain unanswered (the result lies in the future), the present work is devoted to the second question.

In the Quality Management course, students learn basic definitions, concepts and methods. According to a common definition, quality is the degree of agreement between a quality requirement (from the customer's perspective) and the performance delivered (by the company; Zollondz, 2006; Brüggemann & Bremer, 2015. Typically, the quality requirement consists of a number of individual requirements, and performance is made up of a number of individual results. By evaluating and aggregating the individual factors, the degree of quality can be measured. A number of things can be problematic here, such as the sometimes high number of relevant factors, the aggregation of different scale levels or the weighting of individual factors.

One approach to avoid these problems is by focusing on a single assessment factor. The so-called Net Promoter Score, which was developed by Bain & Company, a Boston-based consulting firm, is relevant in this context (Bain & Company, 2011). The core of this approach is a single question about the probability of recommending a product or service to a friend or colleague, on a scale of 0–10.

To engage students and prevent them from becoming merely passive recipients during the lecture, principles are derived from action-based learning concepts (Naidu & Bedgood, 2012). In the context of the following case study, we refer to a broad definition of the 'action-based learning' pedagogical approach, which includes 'all learning that is orchestrated by some activity on the part of learners' (Naidu & Bedgood, 2012). The activities performed in this case study consisted of group discussion, hands-on activities and data collection.

Literature Review

According to the Research Information System for Mobility and Transport (FIS), which is funded and published by the Federal Ministry of Transport and Digital Infrastructure (BMVI), quality plays a decisive role for road users who travel by car by choice in the competition between different means of

transport (FIS, 2020).

The European standard DIN EN 13816 defines and sets performance targets and measures service quality in public transport (Schellhoß et al., 2002). The standard DIN EN 13816 offers a compilation of quality criteria in public transport and of quality assurance systems. This standard outlines various quality criteria, which are dealt with in accompanying synthesis reports (Klein et al., 2006). Quality is defined by six factors: development, operation, connection, equipment, service and environmental quality.

In a 2017 empirical study by Splendid Research (Hamburg, Germany), 2,069 passengers in the 10 largest German cities were surveyed about their satisfaction with public transport. Passengers rated their overall satisfaction with the service and the range of products and services offered by the local transport companies on a scale of 1–4 (defined as 'very satisfied', 'rather satisfied', 'rather dissatisfied' and 'very dissatisfied'). A total of 71.6% of those surveyed were satisfied (very satisfied and rather satisfied) and 28.5% were dissatisfied (rather dissatisfied and very dissatisfied), with n = 2,028. Other studies dealing with satisfaction with public transport include those by Stradling et al. (2007), Fellesson and Friman (2008), Del Castillo and Benitez (2013), Imam (2014), Thomaz et al. (2016) and the annual study of the Public Transport Council, Singapore, on the public transport customer satisfaction (PTC, 2020).

Mobility in Germany (MiD) is a nationwide survey of daily traffic behaviour commissioned by the BMVI. The latest study was conducted in 2017. The central aim of the study is to obtain representative and reliable information on the sociodemographics of individuals and households and their everyday traffic (e.g. routes travelled for a various purposes and modes of transport) for a whole year. It serves, weighted and extrapolated, as a framework and supplement for other traffic surveys, such as traffic surveys in individual cities. The MiD study also provides the up-to-date information on important factors influencing mobility and forms the basis for traffic models (MiD, 2019). The 2017 MiD opened up a new perspective by including questions that solicited the respondents' subjective assessment of different types of transportation and individuals' personal tendencies. The popularity of the car is clearly indicated in the survey, with an approval rate of 77%, whereas public transport is rated significantly worse at 34% (MiD, 2019). What is interesting here is the approximate agreement with the results of the MiD with the results of this study for the car user group.

The EU-funded project 'Climate-friendly employee mobility' at the Institute for Management and Innovation at the University of Applied Sciences Ludwigshafen is looking into the question of what effective options are available to make climate-friendly mobility options more attractive to habitual car users. This includes not only public transport but also cycling mobility and car-sharing concepts, with the goal of enticing a significant proportion of regular car users will be able to switch over permanently. This study is particularly important because of its broad database of almost 15,000 participants (Tachkov, 2018; Tachkov & Gregor, 2019).

Methodology

The starting point for this research project was a discussion about the new construction of a university building on the campus of the Ludwigshafen University of Applied Sciences. With an estimated cost of 67 million euro, construction on the so-called C-Building began in November 2019 on an area of 14,000 m^2 (HWG LU, 2019). As this area had previously been used as a large parking lot, finding a parking space in the area around the university became a particular challenge for all university members, because there was no adequately large replacement area for parking nearby. Tardiness due to looking for a parking spot had become a frequent phenomenon on campus. This lecturer's suggestion that students use public transport was not successful, either. The reasons given by students were manifold, ranging from complaints about public transport not running on time and offering poor connections to inflexibility and inconvenience. They would essentially rather travel by car, even knowing that they would have to search for a parking space. The consensus amongst the students was that individual transport with a car was still of a significantly higher quality than public transport. This gave rise to the idea of determining this difference in quality in concrete terms.

During the conversation with course participants, it became clear that because of the complexity and multitude of relevant factors, it was preferable to use a simple approach similar to the NPS concept. General satisfaction with the use of a means of transport would be measured on a scale of 10. The two sides of the spectrum were placed at 0 for 'terrible' and 10 for 'very pleasant'. No designations were given for the intermediate levels 1–9.

Two hypotheses were formulated:

1. For people who prefer individual transport by car, the quality level of using a car is significantly higher than that using a public transport.
2. For people who prefer public transport, the quality level of using public transport is roughly equivalent to using a private car.

The gap between both quality levels was called the 'Individual Transport Mobility Gap (ITMG)'. The hypotheses stated above thus correspond to a relatively large ITMG for car users and a low ITMG for public transport users.

To examine these hypotheses, suitable questions were formulated by several discussion groups. In order to gather as many responses as possible and to avoid participant drop-outs during the questionnaire, the survey was limited to six questions (and was thus nicknamed the 'six-pack-survey').

An online survey based on SAP Qualtrics (www.qualtrics.com) was chosen. To guide students to hand-on activities according to the action-based learning concept, one student from the course agreed to do the programming of the questionnaire with Qualtrics. The survey was reviewed and revised with pre-tests in the classroom.

After the final version of the questionnaire was completed (including a translation into English), a link was created to access the survey. The link was sent by email to various mailing lists and was posted on social media outlets. During the period from 29 October 2019 to 26 February 2020, a total of 969 data sets were gathered. In the first survey conducted, n = 519 answers were collected through 23 December 2019. At the same time, the survey was also sent to partner universities to solicit international comparisons. A second round of the survey was conducted through 12 February 2020, yielding an additional 450 responses. Given the means by which data were collected, the survey can be said to have the character of a convenience sample (Maurer & Jandura, 2009). Response rates were not calculated – this would have been impractical because participation was solicited via social media such as Twitter, Facebook or Instagram.

On the basis of the period of data collection, it can be concluded that the data were collected without the influence of the 2020 corona crisis. As of 18 March 2020, Germany has no curfews, unlike countries such as Belgium or Spain. Local public transport is largely maintained (Deutsche Bahn, 2020), but timetables are being restricted in many places because of school and day nurseries closures (RBB24, 2020). As the study focuses on two particular target groups – car users and public transport users – the data set was first adjusted to eliminate responses that did not correspond to the target groups, for example, bicycle users.

After adjusting the raw data set, the remaining data set consisted of 578 car users and 173 public transport users, for a total of 751. In relative terms, 77% of the respondents were car users (578 of 751) and 23% were public transport users (173 of 751). This is an intriguing result, given the fact that the data set corresponds closely to the distribution that has been empirically proven in other studies, with individual transport at 75% and public transport at 20% (Umweltbundesamt, 2020).

Before further evaluation, the data were validated. In this case, 44 data sets were filtered out in which at least the two important questions for assessing the quality level of both transport modes and the question of professional status were not answered. After validation, 707 data sets remained (Table 1) as N_{CPT}, were divided into 537 (76 %) car users (data set N_{Car}) and 170 (24 %) public transport users (data set N_{PT}).

Table 1. Validation of raw data set (Source: author's compilation)

Transport mode		Car user	Public transport User	Other	Undecided	Survey not finished
	Sum:	Private car, car sharing, carpool	Bus, suburban train, train	Bicycle, walk, scooter	Defined as using no one type exclusively or mostly	
Quantity	969	578	173	*84*	*85*	*37*
in %	100%	59.6%	17.9%	*8.7%*	*8.8%*	*3.8%*
Quantity	*751*	*578*	*173*	-	-	-
in %	100 %	*77 %*	*23 %*	-	-	-
Not valid	*./. 44*	*./. 41*	*./. 3*	-	-	-
Quantity	707 (N_{CPT})	537 (N_{Car})	170 (N_{PT})	-	-	-
in %	100%	76%	24%	-	-	-

The questionnaire was as short as possible to attain a high degree of data quality: the longer an online survey is, the higher the risk that the respondent terminates the survey before completion (drop out), which renders the entire data set unusable for analysis. The mean value of the duration for answering the questionnaire was 3.5 min for N_{CPT}, although the questionnaire contained only six relevant and easy answerable questions. The average response time per question would, therefore, be about 35 s. This is a valuable indication for the general design of online questionnaires. Assuming that a participant takes about 5 min to answer the questionnaire, this should limit the number of questions to about nine (300 s/35 s).

It should also be mentioned that the group of public transport users N_{PT} took about 24.4 s per question, meaning that they had a much lower average response time than the group N_{Car}, at about 38.7 s per question.

To keep the questionnaire short, typical demographic details such as gender and age were not collected. However, professional status was surveyed at the beginning of the questionnaire. This question was asked following the assumption that there are differences in the assessment of quality levels between trainees (students, apprentices and pupils) and working employees. Reasons for this could include age (trainees tend to be younger, whereas employees tend to be older), income level (trainees tend to have lower wages, whereas employees tend to have higher incomes) or time available for mobility (trainees tend to have more time available to them compared to working professionals). As expected, the N_{CPT} sample mainly consisted of individuals in training (n = 173; 24%) and employed persons (n = 523, 74%). In the group of car user N_{Car}, there were 101 persons in training (19%) and 427 employed individuals (80%). In the group of public transport users N_{PT}, the distribution was much more balanced, with 72 (42%) still completing their education and 96 persons (56%) employed.

Depending on the main mode of transport used (car or public transport), the survey split into both target groups, establishing two clear categories: N_{Car} (n = 537) and N_{PT} (n = 170). Regardless of the choice of mode of transport, the same four questions were asked for both target groups:

1. How many days per week (Monday to Sunday) do you use the car/public transport?
2. How long is your average travel time per day?
3. How do you rate your car/public transport journeys on average?
4. If you had to cover the distances you normally travel by car/with public transport (bus,

suburban train and train) with car/with public transport (bus, suburban train and train) how would you rate these trips on an average?

The quality rating was given on a scale from 0 for 'terrible' to 10 for 'very pleasant'. The rating for the quality of the preferred means of transport is called Q_P; the value for the alternative means of transport is called Q_A. The ITMG is calculated as the difference between Q_P and Q_A: ITMG = Q_P ./. Q_A. For the group of car users, the equation is thus $ITMG_{Car} = Q_{PCar}$ ./. Q_{APT}, and for the group of public transport users, $ITMG_{PT} = Q_{PPT}$ ./. Q_{ACar}. Mean values are used for the calculation of the ITMG (cf. Figs. 1–4).

In order to make international comparisons, respondents were also asked what country they currently live in. As this is a very simple question, it was not considered to add undue length to the brief survey. A total of 701 individuals responded to this question. As expected, the largest group was from Germany, with 593 respondents; 27 respondents were in the United States, followed by Lithuania, at a considerable distance behind with 18. The remaining 63 respondents were distributed amongst 25 countries, each with fewer than 10 answers. As the international case numbers are very small, comparisons at a country level would not be very meaningful here. For evaluation purposes, all international responses were thus grouped together (n = 108) and compared with the German responses (n = 593).

Results

The results of this 'ex ante corona crisis' study are presented in four sections. In the first section, 'Total sample', the starting point for calculations is the total number of the two main samples N_{Car} (n = 537) and N_{PT} (n = 170). Subsamples based on demographic information such as age, gender or income are generally created to refine the analysis of existing data. In this case, this typical demographic information was not queried in the survey. For this reason, relevant subsamples were created from the information included in the survey in order to check the meaningfulness of the overall sample. The second section, 'Partial sample car user', uses subsets from the database N_{Car} (n = 537). The third section, 'Partial sample public transport user', uses subsets from the database N_{PT} (n = 170). In the fourth and final section, the results from the previous sections are compared.

Total sample

The hypothesis for primary car users predicted that the quality level of using a car would be rated much higher than using public transport as an alternative.

In data set N_{Car} (n = 537), the mean quality level for using a car Q_{PCar} was 7.0, whereas the mean quality level of using public transport as an alternative Q_{APT} was 3.0 (cf. Figs. 1 and 2). This confirms the hypothesis. With these two values, the $ITMG_{Car}$ can be calculated at 4.0 (= 7.0 ./. 3.0). This also confirms the assumption that the ITMG would be relatively large.

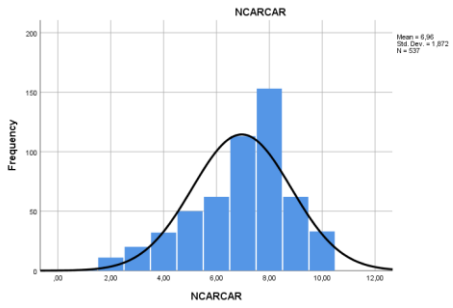

Fig. 1. Data set N_{Car}: Q_{PCar} = 7.0
(Source: author's compilation)

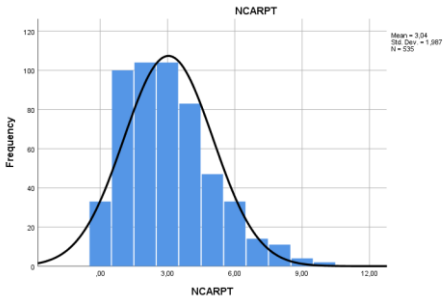

Fig. 2. Data set N_{Car}: Q_{APT} = 3.0
(Source: author's compilation)

The hypothesis for public transport users predicted that the quality level of using a car would be roughly equivalent to using a car.

In data set N_{PT} (n = 170), the mean quality level of using public transport Q_{PPT} was 6.0, whereas that of using a car as an alternative Q_{ACar} was 5.2 (cf. Figs. 3 and 4). This hypothesis could also be regarded as confirmed. With these two values, the $ITMG_{PT}$ can now be calculated at 0.8 (= 6.0 ./. 5.2). This also confirms the assumption that the ITMG in this case is relatively low.

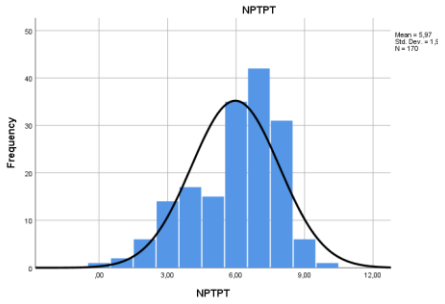

Fig. 3. Data set N_{PT}**:** Q_{PPT} = 6.0
(Source: author's compilation)

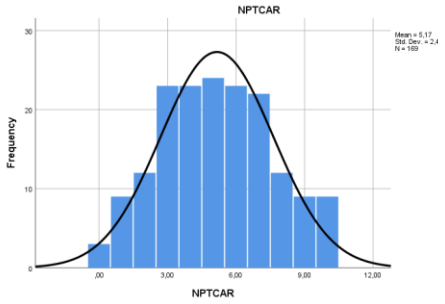

Fig. 4. Data set N_{Car}**:** Q_{ACar} = 5.2
(Source: author's compilation)

Figure 5 shows the key findings from the two main samples N_{Car} and N_{PT}. People who prefer individual transport by car had a quality rating of 7.0 (Q_{PCar}). The rating of the alternative use of public transport was far lower, at only 3.0 (Q_{APT}). Their $ITMG_{Car}$, calculated with Q_{PCar} ./. Q_{APT} was, therefore, 4.0. Compared to people mainly using public transport, public transport users rate the mean quality of their preferred mode of transport slightly lower than car users, at 6.0 (Q_{PPT}). When asked to rate the quality of driving by car as an alternative, primary public transport users gave this option an average of 5.2 (Q_{ACar}), resulting in an $ITMG_{PT}$ of only 0.8; calculated with Q_{PPT}. ./. Q_{ACar}.

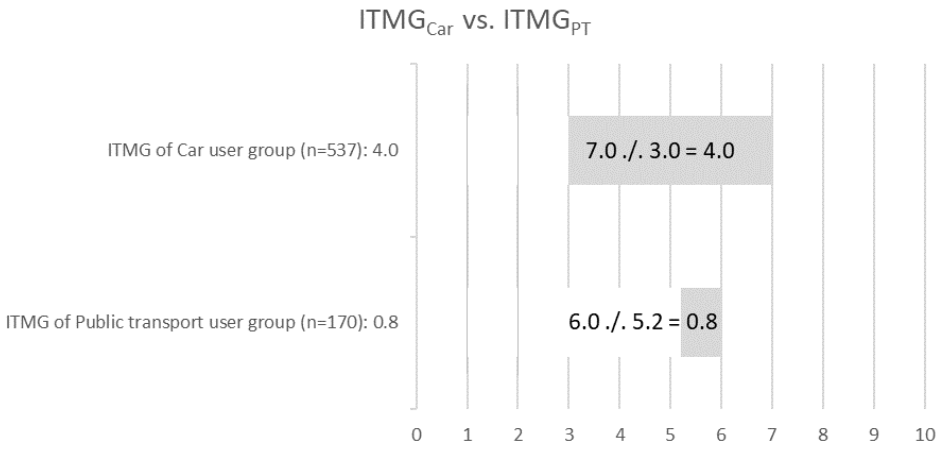

Fig. 5. $ITMG_{Car}$ versus $ITMG_{PT}$ (Source: author's compilation)

Partial sample car user

The starting point for the formation of partial samples in this section was the database N_{Car}, with 537 data sets (Table 2).

Table 2. Definition of Partial Samples for Car Users (Source: author's compilation)

	Variable	Attribute 1	Attribute 2
Partial Sample	Professional Status	Training	Employed
	Quantity	101	427
	ITMG = Q_P ./. Q_A	4.5 = 7.6 ./. 3.1	3.8 = 6.8 ./. 3.0
Partial Sample	Usage	Light user (1–3 days a week)	Heavy user (4–7 days a week)
	Quantity	37	499
	ITMG = Q_P ./. Q_A	3.4 = 6.7 ./. 3.3	4.0 = 7.0 ./. 3.0
Partial Sample	Average daily travel time	Short (up to 60 minutes)	Long (61 to more than 120 minutes
	Quantity	393	144
	ITMG = Q_P ./. Q_A	3.8 = 7.0 ./. 3.2	4.3 = 6.8 ./. 2.5
Partial Sample	Country	Germany	Internationals
	Quantity	455	82
	ITMG = Q_P ./. Q_A	4.0 = 6.9 ./. 2.9	3.2 = 7.2 ./. 4.0

Partial sample public transport user

The starting point for the formation of partial samples in this section was the database N_{PT}, with 170 data sets (Table 3).

Table 3. Definition of Partial Samples for Public Transport Users (Source: author's compilation)

	Variable	Attribute 1	Attribute 2
Partial Sample	Professional Status	Training	Employed
	Quantity	72	96
	ITMG = Q_P ./. Q_A	−0.4 = 5.6 ./. 6.0	1.8 = 6.3 ./. 4.5
Partial Sample	Usage	Light user (1–3 days a week)	Heavy user (4–7 days a week)
	Quantity	20	150
	ITMG = Q_P ./. Q_A	1.9 = 6.6 ./. 4.7	0.7 = 5.9 ./. 5.2
Partial Sample	Average daily travel time	Short (up to 60 min)	Long (61 to >120 min
	Quantity	98	72
	ITMG = Q_P ./. Q_A	0.6 = 6.0 ./. 5.4	1.2 = 6.0 ./. 4.8
Partial Sample	Country	Germany	Internationals
	Quantity	138	32
	ITMG = Q_P ./. Q_A	0.8 = 5.9 ./. 5.1	0.9 = 6.3 ./. 5.4

Results comparison

When comparing the different subsamples with the overall sample N_{Car} (cf. Fig. 6), it is easy to see that deviations from the overall sample are relatively small. The following observations can be drawn:

Individuals completing their education (Professional status: 'Training') rated the quality of their car journeys at 7.6 (Q_{PCar}), which is significantly higher than that of those in employment (Professional status: 'Employed'), 6.8 (Q_{PCar}). As the alternative of public transport was rated relatively equally, with 3.1 and 3.0 (Q_{APT}), the ITMG is significantly higher for those undergoing training (ITMG = 4.5) than for those in employment (ITMG = 3.8).

A comparison between German and international respondents shows that international respondents rate the alternative of public transport with 4.0 (Q_{APT}) more than 1 point higher than the Germans, with 2.9 (Q_{APT}).

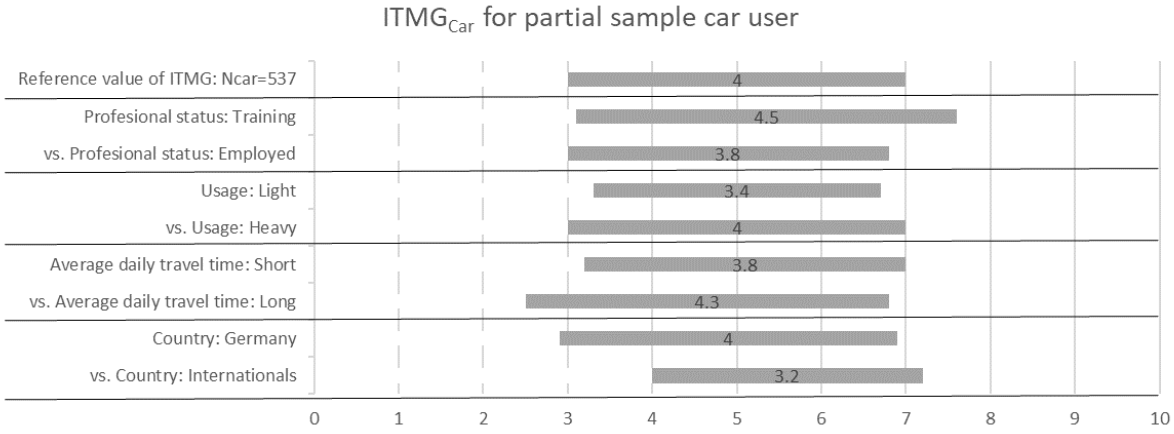

Fig. 6. ITMG$_{Car}$ for Partial Sample Car User (Source: author's compilation)

The image is rather inconsistent in the N_{PT} sample in comparison to the N_{Car} sample. Compared with the overall sample, their ITMGs are sometimes twice as high or even negative. The following observations can be made (Fig. 7):

The ITMG for people in training is negative, −0.4. This means that they rate the quality of the car alternative higher than their use of public transport.

There are conspicuously high ITMGs for the subsamples 'Professional status: Employed' and 'Usage: Light' This results from the fact that both groups rated public transport highest (Q_{PPT}: 6.3 and 6.6) and, at the same time, they rated the car alternative at relatively low quality (Q_{ACar}: 4.5 and 4.7).

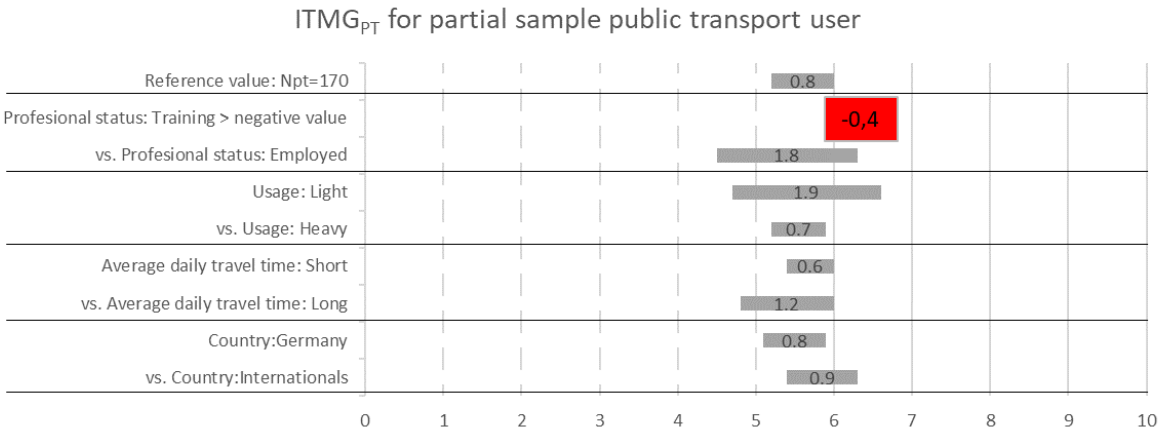

Fig. 7. ITMG$_{PT}$ for Partial Sample Public Transport User (Source: author's compilation)

Conclusions

Owing to the current corona crisis, status 19 March 2020, all conclusions are to be assessed as ‘ex ante corona crisis’ conclusions.

It must be said that this is not a representative study and the limitations of a convenience sample should be considered when evaluating the findings of this research. It is also important to note that the quality of the use of a mode of transport was examined here at a very highly aggregated level, because the survey did not ask when assessing quality what specific means of transport (e.g. specific car, bus, tram or train) the respondent was referring to.

Despite these limitations, the following conclusions can be drawn:

The results for the car users demonstrate that they see a considerable gap (ITMG) between the quality levels of car use and the alternative of public transport. It can, therefore, be concluded that one way to achieve higher rates of public transport use would be to improve the quality of public transport over car use. To do this, it would be necessary to influence the individual factors that contribute to the overall quality of a mode of transport. Important influencing factors for public transport would include, for example, network expansion, cycle times, cleanliness and ticket prices. Even this brief list shows, however, that any improvements (leading to an increase in quality) can only be achieved at great economic cost. If the goal is to improve the cleanliness of trains and buses, they would have to be cleaned more frequently and more thoroughly, and this can only be achieved with more personnel and manpower. In this respect, the allocation of additional funds for public transport could actually be a suitable means for closing the ITMG. Another way to close this gap would again be to make using private cars less attractive, for example, through higher taxes, speed limits, driving restrictions, toll systems, parking space shortages or the rededication of roads to traffic-calmed zones or bicycle lanes.

The results for those who mainly use public transport show that users rate the quality of this means of transport at one point lower ($Q_{PPT} = 6.0$) than the group of car users ($Q_{PCar} = 7.0$). This finding points to the need to increase the quality of public transport use in order to bring it up at least to the same level of private car use.

On the basis of the results obtained, the method for determining the ITMG presented here could be a suitable method for determining the effectiveness of transport policy measures and could, therefore, be used in the implementation of specific transport investments or measures. In practical terms, a before-and-after survey could be used to determine whether the measures taken by a city or region have had a measurable impact on usage quality by transport type, and thus on the utilisation rate of a mode of transport.

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EXPORT COMPETITIVENESS ANALYSIS OF CREATIVE INDUSTRIES IN THE EUROPEAN UNION

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Abstract

Research purpose. The research purpose is to assess and compare the competitiveness of the EU creative industries' export.

Design/Methodology/Approach. The article is organised as follows: Section 1 presents a short theoretical conception of creative industries; Section 2 presents the theoretical background of trade competitiveness indices; Section 3 introduces the research data set, method and variables; Section 4 discusses the results of the revealed comparative advantage index analysis; and the final section presents the conclusions of the research. It should be noted that the research does not cover all possible factors underlying the differences in the external sector performance and thus may need to be complemented with country-specific analysis as warranted. Methods of the research include theoretical review and analysis, evaluation of comparative advantage indices and clustering.

Findings. The analysis revealed that the EU countries may gain competitiveness because of the globalisation effects and the development of creative industries. The increase in the revealed comparative advantage (RCA) index during the period 2004–2017 shows rising EU international trade specialisation in creative industries. According to dynamic RCA index results, France, Poland, Slovakia, Slovenia and Spain has competitive advantage in creative industries sectors and could be specified as 'rising stars' according to dynamic of their export.

Originality/Value/Practical implications. A creative industries analysis is becoming increasingly relevant in scientific research. Fast globalisation growth affects the processes in which closed economies together with their specific sectors are no longer competitive in the market because productivity of countries as well as particular economic sectors depends on international trade liberalisation, technology and innovation. Scientific literature, nevertheless, contains a gap in the area of international trade competitiveness research in creative industries sector.

Keywords: Creative Industries; RCA; EU; Competitiveness; Trade.

JEL codes: F14; L82; F12.

Introduction

In the context of globalisation, creative industries and the creative economy are gaining increasing attention because of their impact on urbanisation, technologies, economies, environmental protection and social environment. Rapidly growing employment, international trade and value added, generated in the sector of creative industries, promote scientific research and correlate with an increase in the number of scientific studies in this area.

The importance of creative industries to economics is emphasised by Potts (2011), Throsby (2009), Getzner (2002) and Canadian Heritage (2013), who analysed the links between the sector of creative industries and GDP (gross domestic product) growth, population income, unemployment rate, interest rates, price index and international trade.

The subject of creative industries and international trade is analysed by Chala (2016), Kontrimienė and Melnikas (2017), Cao and Niu (2017) and Ye and Yin (2007). Chala (2016) who analysed trade specialisation in creative industries sector in CEE (Central and Eastern Europe) countries noticed that

higher trade specialisation is located in large metropolitan areas. The article by Cao and Niu (2017) is focused on trade competitiveness in Beijing, China, Japan, the United States and the United Kingdom in different sectors, which can be attributed to creative industries. Meanwhile, Kontrimienė and Melnikas (2017) paid more attention to theoretical background of creative industries and reviewed international trade tendencies of creative industries in the European Union. Nevertheless, the issue of international trade competitiveness in the sector of creative industries in the European Union shows necessity for a deeper scientific insight.

The main purpose of this article is to assess the export competiveness in the sector of creative industries in the European Union. The analysis of the export competitiveness, accomplished in this study, allowed to cluster the EU member states by the dynamics of their exports and to assess the potential of the creative industries export in a particular state.

The methods used in this study include general scientific methods as comparative and theoretical analysis, graphical analysis and evaluation of comparative advantage indices.

Main concepts of creative industries

The concept of creative industries is inseparable from the concept of creativity, which is becoming increasingly important not only in arts but also in the areas of economics, environmental protection and social environment. United Nations Conference on Trade and Development (UNCTAD) (2010) in its Creative Economy Report indicated that creative industries:

- Cover product and service creation, production and distribution cycles based on corresponding resources as creativity and intellectual capital;
- Include knowledge-based activities that focus on, but are not limited to, arts and generate income from trade and intellectual property rights;
- Comprise tangible products and intangible intellectual or artistic services that possess a creative content, an economic value and particular market objectives;
- Are at the crossroad of the crafts, services and industrial sectors;
- Constitute a new dynamic sector of the global trade.

Bilton and Leary (2002) associated the emergence of the concept of creative industries with the growing production and consumption of symbolic goods. According to the authors, creative industries produce ‘symbolic goods’ (ideas, experiences and images) whose initial value depends on a symbolic meaning. The value of goods or services is determined by the end user (a viewer, an audience, a reader or a consumer) who decrypts and discovers the meaning and the value of particular symbolic goods. Hence, the value of symbolic goods depends on user’s perception as well as the creation of an original content. Owing to this reason, the value may or may not be translated into financial returns. Hartley (2005) noted that such definition of creative industries is beneficial because it justifies the non-pecuniary essence of creative production and the relationship between the meaning of a product and its symbolic image by focusing on the growing importance of symbolic goods in industries such as footwear, automobiles and mobile telephones.

In Creative Economy Report, UNCTAD (2010) proposed that ‘The creative economy’ refers to a developing concept based on the creative assets that can promote economic growth and development:

- It can boost income generation, workplace creation and export earnings by promoting social inclusion, cultural diversity and human development;
- The creative economy covers particular economic, cultural and social aspects interacting with the objectives of technologies, intellectual property and tourism;
- The creative economy is a part of micro and macro determinants in the knowledge-based economy;
- The development of the creative economy calls for the necessary innovative, interdisciplinary, political and inter-institutional actions;

- Creative industries are the essence of the creative economy.

International trade can be considered a key component of the creative economy. With reference to the research of the UNCTAD, the global trade in the products from creative industries has significantly increased over the recent years: for instance, between 2000 and 2005; its average annual growth amounted to 8.7%, whereas the global export of visual arts doubled from 10.3 billion USD in 1996 to 22.1 billion USD in 2005, and the global export of audio-visual art products nearly tripled (Laužikas & Mokšeckienė, 2014).

As it was stated by Pamela Coke-Hamilton, Director of the Division on International Trade and Commodities at the UNCTAD (2019), the creative economy and its industries are strategic sectors that, if nurtured, can boost competitiveness, employment and export opportunities. Therefore, the development of creative industries is not only an engine for promoting the share of developing countries in the global trade but also a direct benefit for developing countries in terms of income generation, workplace creation and building opportunities for artists and creators.

Theoretical background of trade competitiveness indices

Export competitiveness of a country is affected by the ability of this country to effectively exploit international trade specialisation in economics. Comparative advantage is a strategic characteristic in two aspects: first, an economy will be most efficient and prosperity will be highest if the production of goods and services relies on a country's comparative advantage; second, comparative advantage is a relatively dynamic concept. As it was noted by Balassa (1979), the structure of a country's comparative advantage and its exports will change with the accumulation of labour and capital.

In fact, Liesner (1958) was the first who attempted to 'uncover' comparative advantages of different countries. Nevertheless, the general measures of comparative advantage are based on the revealed comparative advantage (RCA) index that was expanded by Bela Balassa (1965) (Ekmen-Özcelik and Erlat, 2013). A substantial share of a growing market can be considered a result of successful competition in terms of that particular share of the market where the RCA, proposed by Balassa (1965), is the greatest (Kathuria, 2013).

Although the literature contains a number of different RCA estimation methodologies, the classical Balassa index still remains most popular and most widely used in scientific research, which is possibly determined by the relatively simple calculation of the index. The RCA index provides a fairly clear picture of trade specialisation. The RCA index, used with a view to assessing international competitiveness, is widely recognised in scientific literature (Kathuria, 2013; Ervani, Widodo & Purnawan, 2019; Hanson, Lind, & Muendler, 2015).

The RCA index allows to assess whether a country focuses on the production, in which it has potential, but it does not reflect which part of the production has been exported competitively. It can also provide some useful information on the prospects of trading with new partners. It is important to note that the countries with similar RCA indices are unlikely to have any intensive bilateral trade unless they are involved in intra-industry trade (Sabonienė, 2009).

Edwards and Schoer (2002) extended the use of the dynamic RCA by developing the assessment of the market positioning dynamics. On the basis of the dynamic RCA index, exports are divided into six following categories: rising stars, falling stars, lagging retreats, leading retreats, lagging opportunities and lost opportunities (see Table 1).

Table 1. Dynamic positioning of the export market by Edwards and Schoer (compiled by the authors with reference to Güneş and Tan, 2017)

	Share of *j* in a country's export		Share of *j* in a market's	Position
Increasing RCA	↑	>	↑	Rising stars
	↑	>	↓	Falling stars
	↓	>	↓	Lagging retreat
Decreasing RCA	↓	<	↑	Lost opportunity
	↓	<	↓	Leading retreat
	↑	<	↑	Lagging opportunity

- A rising star refers to the situation in which the share of a country's export product in the global market is growing faster than the total global export of all products. This is the best position for a country because the growth in the product's market share is inspired by rising global demand.
- A falling star reflects the situation in which the share of a country's export product is growing, whereas the global export of the product is decreasing.
- A lagging retreat refers to the situation in which the share of a country's export product decreases more than the decline in the global market.
- A leading retreat stands for the situation in which the share of a country's export product decreases less than the decline in the global market.
- A lagging opportunity reflects the situation in which the share of a country's export product is growing but less than the share of this product in the global export.
- A lost opportunity refers to the situation in which the share of a country's export product is decreasing, whereas the share of this product in the global export is rising. This is the most unfavourable position for a country (Güneş & Tan, 2017).

Tsikata (1999) also struck to the classification of four dynamic positions that, however, slightly differ from the above-presented Edwards and Schoer's classification: the category of 'falling stars' is replaced by rating an export market as 'competitive, but vulnerable' (Ekmen-Özcelik, Erlat 2013).

Although the competitiveness of international trade can be assessed by analysing a country's exports and imports, the assessment by using the indicators that are related to a country's exports is more common. In any case, the abundance of the models developed for the assessment of the competitiveness of international trade validates the necessity to evaluate the degree of specialisation, competitiveness and efficiency in international trade.

Research methodology

Research sample. This research is focused on the situation in the 28 Europe Union countries – the United Kingdom, Italy, Poland, France, Cyprus, Latvia, the Czech Republic, the Netherlands, Estonia, Germany, Spain, Greece, Denmark, Croatia, Austria, Malta, Sweden, Slovenia, Slovakia, Lithuania, Ireland, Portugal, Belgium, Luxembourg, Finland, Bulgaria, Hungary and Romania. The analysis was conducted leaning on the data for 2004–2017, extracted from the Eurostat database.

The RCA index by Balassa (1965) measures the relative advantage of a country for a particular product based on exports. RCA >1 indicates that a country has an RCA in the product *i* market; the higher the index, the greater is the advantage it represents. If RCA <1, it means that a country does not have any RCA.

$$RCA = ({}^{EXij}/_{EXrj})/({}^{EXis}/_{EXrs}) \quad (1)$$

where:

EX_{ij} is the product *i* export in country *j*;

EX_{rj} is the whole product group export in country *j*;

EX_{is} is the global export of product *i*;

EX_{rs} is the total global export.

The dynamic RCA index by Kreinin and Plummer (1994) proposes that a country is considered to have a comparative advantage for the product *i* if the share of this product in the total export of the country is growing faster than the share of the same product in the total global export for the period under consideration.

When the dynamic RCA >1, it can be stated that a country's export of the product *i* is growing faster than the global export of this product, that is, the country has a comparative advantage. If the dynamic RCA <1, the product *i* has lost its comparative advantage. The dynamic RCA is calculated using the formula below:

$$Dynamic\ RCA = ({}^{\Delta EXij}/_{\Delta EXrj})/({}^{\Delta EXis}/_{\Delta EXrs}) \quad (2)$$

Results

Before the empirical analysis of the revealed comparative advantage indicator for the EU member states between 2004 and 2018, the overall dynamics of the EU creative industries trade, that is, their exports and imports, was considered.

Figure 1 indicates that both export and import tended to grow, although the trade in the products from creative industries slightly declined in 2009 and 2013. Nevertheless, compared to 2004, the export of the products from creative industries in the European Union increased by 54% and import by 51%. In terms of structure, the export of the products from the EU creative industries is dominated by goods such as designer clothing, jewellery, household goods and toys.

Fig. 1. The dynamics of the import and export in the European Union between 2004 and 2018, million euros (Source: Eurostat.eu)

Looking at the EU creative industries export in 2018, the following five major exporters can be identified: the United Kingdom, Germany, France, Italy and the Netherlands (see Fig. 2).

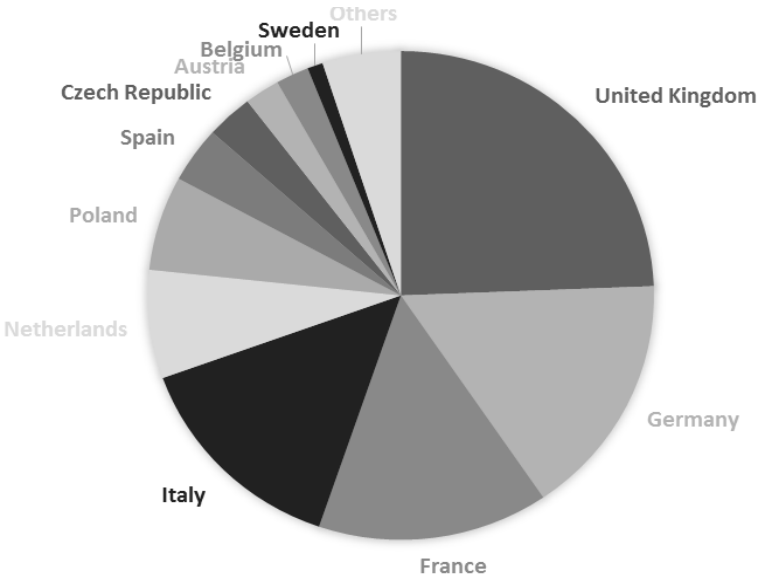

Fig. 2. Distribution of the EU creative industries export by countries in 2018 (Source: Eurostat.eu)

The analysis of the RCA revealed that the United Kingdom is the absolute leader in terms of the specialisation of international trade in the area of creative industries (RCA 3.29 > 1) (see Table 2). Consequently, the United Kingdom could be considered as one of the pioneers that has developed concepts, theories and models for creative industry, with a strong focus on the analysis and expansion of the creative industries sector and the creative economy as a whole. As of 2017, the UK creative industries export amounted to 11.8% of the total service export. Owing to this reason, the UK international trade is significantly more competitive in comparison to the other EU member states. With reference to the strategy developed by the UK Creative Industries Trade and Investment Board (CITIB) for 2023, the United Kingdom is planning to raise its export by another 50% (HM Government, NA).

Most significant growth in the RCA index between 2004 and 2017 was, however, recorded in Poland: in 2004, it amounted to 0.42, whereas it increased to 1.63 in 2017.

Some other countries, such as France, Latvia and the Czech Republic, also demonstrated significant changes in their RCA index, that is, the countries that previously had not possessed any revealed comparative advantage began to implement it; however, Malta, Ireland and Croatia lost their revealed comparative advantage. The general RCA index for the European Union reveals that only five EU member states possess an RCA and specialise in the area of creative industries, whereas, in most other countries, this indicator is below 0.5, which demonstrates a lack of competitive advantage in the creative industries sector.

Table 2. The dynamics of the RCA index for the European Union between 2004 and 2018 (Source: author's compilation)

GEO/TIME	2004	2007	2010	2013	2016	2017	2018	2018-2004
Poland	0.58	0.65	0.64	0.66	1.31	1.62	1.54	0.96
France	0.82	0.95	1.06	1.58	1.65	1.55	1.64	0.83
United Kingdom	2.62	2.74	2.74	2.66	3.41	3.29	3.25	0.63

Latvia	0.49	0.45	0.85	1.12	1.37	1.18	1.02	0.53
Czech Republic	0.52	0.66	0.77	0.6	0.71	1.05	0.96	0.44
Lithuania	0.29	0.4	0.43	0.41	0.39	0.36	0.47	0.17
Estonia	0.48	0.56	0.78	1.06	0.81	0.65	0.56	0.08
Bulgaria	0.22	0.4	0.31	0.21	0.25	0.18	0.29	0.08
Netherlands	0.62	0.86	0.71	0.69	0.77	0.74	0.64	0.02
Hungary	0.17	0.11	0.21	0.23	0.18	0.17	0.17	0.01
Romania	0.2	0.19	0.14	0.15	0.15	0.12	0.18	-0.02
Italy	1.72	1.66	1.74	1.96	1.65	1.68	1.68	-0.03
Sweden	0.48	0.53	0.68	0.45	0.44	0.46	0.39	-0.09
Slovakia	0.55	0.4	0.35	0.3	0.34	0.39	0.45	-0.1
Germany	0.81	0.83	0.87	0.69	0.63	0.65	0.67	-0.14
Slovenia	0.59	0.47	0.43	0.37	0.35	0.39	0.42	-0.17
Belgium	0.47	0.43	0.34	0.29	0.28	0.28	0.29	-0.18
Denmark	0.72	0.86	1.12	0.65	0.6	0.55	0.53	-0.19
Portugal	0.49	0.5	0.42	0.41	0.29	0.31	0.29	-0.2
Spain	0.89	0.73	0.64	0.63	0.55	0.64	0.69	-0.2
Finland	0.43	0.35	0.33	0.22	0.18	0.19	0.16	-0.27
Malta	0.82	0.77	1.59	1.45	0.37	0.48	0.5	-0.32
Austria	1.34	1.25	1.39	1.19	0.74	0.53	0.79	-0.55
Luxembourg	0.84	0.37	0.28	0.34	0.2	0.27	0.27	-0.57
Greece	1.08	0.89	0.78	0.68	0.77	0.6	0.48	-0.6
Ireland	1.22	0.97	0.73	0.91	0.43	0.32	0.31	-0.9
Croatia	1.68	1.42	0.84	0.53	0.65	0.53	0.47	-1.21
Cyprus	1.53	0.96	0.93	1.21	0.54	1.3	0.26	-1.27

An overview above indicates that the share of creative industries export in the total EU export between 2004 and 2018 changed insignificantly and fluctuated around 1%, whereas from 2015 to 2018, it recorded an insignificant increase. On this ground, the share of creative industries export in the total EU export was considered to demonstrate the trends of growth, and the analysis of the dynamic RCA index was based on the rating of the countries by the values reflecting an increase in the share of their creative industries export in the total EU export.

In this approach, France, Poland, Slovakia, Slovenia, Spain and the United Kingdom is attributed to the category of rising stars with growing shares of their creative industries export in the total EU export when the share of creative industries export within the European Union was also rising. Assessing by the RCA, only France, Poland and the United Kingdom possess a competitive advantage.

Austria, Croatia, Denmark, Estonia, Finland, Greece, Latvia, Malta, the Netherlands, Belgium, Bulgaria, Cyprus, the Czech Republic, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Portugal, Romania and Sweden were attributed to the category of lost opportunity economies with declining shares of their creative industries export in the total EU export when the share of creative industries export within the European Union was rising. In this category, only Latvia possesses a comparative advantage (see Fig. 3).

Such distribution of the EU member states indicates that only a part of the EU countries specialise and possess a competitive advantage in the area of creative industries, but international trade in this area is not widespread within the European Union. These findings also propose that the United Kingdom,

France and Poland have a significant impact on the competitiveness of the EU creative industries export.

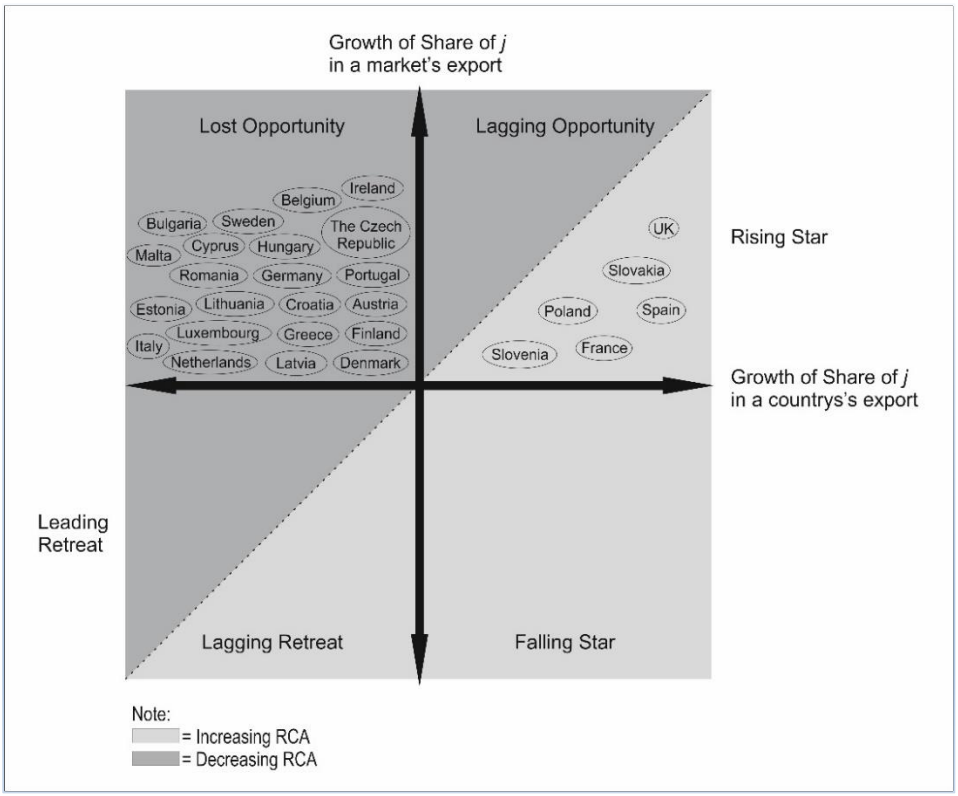

Fig. 3. Grouping of countries according to dynamic RCA (Source: author's compilation)

Conclusions

In the context of modern globalisation, many social and economic changes are taking place. The ongoing changes could be significant for the formation of a new type of economy, where the fusion of culture and economy forms a sector of creative industries that promotes cultural and technological progress. In the recent decades, the term creative industries and the creative economy have received increasing attention because of the significant growth of this sector, knowing that the creative industries have impact on urbanisation, technological development, economic growth and the environment, they contribute to creation of workplaces and the general welfare through personal skills, talents and creativity; they promote exports and generate value added.

In this study, the competitiveness of the EU exports is assessed using the RCA index and its modification – the dynamic RCA – which served as the basis for clustering the EU member states by the potential of their creative industries export, in this case, into two groups – rising stars and lost opportunity.

The research disclosed that the greatest RCA for the period under consideration was recorded in the United Kingdom, whereas the fastest-growing indicator was observed in Poland. Meanwhile, the United Kingdom, Poland, Italy and France are attributable to the category of the countries with the highest RCA indices, which proposes that these countries specialise in the area of creative industries. These results could be related with fact that these countries have large metropolitan areas – London, Warsaw, Milan and Paris – that attracts creative products generation.

When assessing the general dynamics of the EU creative industries export, it was noticed that dynamic RCA indicator had a growing trend. Furthermore, France, Poland, Slovakia, Slovenia, Spain and the United Kingdom recorded the growth in their creative industries export; these countries are attributable to the category of rising stars in consideration of the overall EU creative industries export growing trend.

The majority of the EU member states are attributable to the category of lost opportunity economies because their creative industries exports are decreasing, although the overall export is rising. Such distribution can be associated with the novelty of creative industries minding the fact that a significant share of the EU creative industries export is generated by a few member states – the United Kingdom, Poland and France. It is significant to mention that specialisation in the area of creative industries is inherent to more developed countries, than developing.

For further investigation, it is crucially important to evaluate more advanced specialisation index and estimate specialisation level in all creative industries sectors in the European Union, having in mind that some countries specialises in main cultural industries, others in mass culture or more functional products.

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THE DPOBE MODEL FOR ORGANIZATIONAL SUSTAINABILITY: AN EXPLORATORY STUDY ABOUT ITS STRUCTURE, PILLARS AND COMPONENTS AMONG A GROUP OF MASTER DEGREE STUDENTS

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Abstract

Research purpose. To get a validation of the structure, pillars and components that seem to be central, and under which, business management and managers need to develop abilities and competences to ensure the sustainability of their organizations according to the 'DPOBE Model for Organizational Sustainability' structure.

Design/Methodology/Approach. For the validation of the structure, pillars and components and it's practical application to measure the organization's sustainability level with the referred model, despite the focus group exercise made in an early stage, it's also important to get a solid opinion about it among managers and also in academia, specifically among teachers and investigators on management, business administration and economics as well near master and doctorate students in this field. In this paper, we analyse the results obtained in an exploratory study, based on a survey made among students from four different master's degree in several specific areas of business management from the School of Business Administration from the Polytechnic Institute of Setúbal (Portugal).

Findings. Main results obtained with this exploratory study let the authors be granted with the developments made so far in the model and its structure, pillars and components. However, only with a major collection of opinions (answer to the survey) from the referred groups, it's possible to define and adjust the final structure and components of the DPOBE Model.

Originality/Value/Practical implications. Being an investigation with several years of development, with several articles, chapters of books, master's degree thesis, congress presentations and papers made so far, only with a solid and validated structure, pillars and components of the DPOBE Model for Organizational Sustainability, it's possible to go to its aim, the use of it as a quantitative tool to measure the effective organizations sustainability in a way different from other existing sustainability tools and indexes.

Keywords: Management; Organizational Sustainability; Competences; Sustainability Strength Index.

JEL codes: M19; L25.

Introduction

The importance of the subject 'sustainability' is becoming more and more relevant at the present time, making some justice to Elkington (2001) not only looking to an environmental perspective but also looking together to the social and economic influences on it.

The '*triple bottom line*' approach proposed by Elkington (2001) remains so *up-to-date* that '*The Paris Agreement*' (2019), established under the United Nations efforts, defined seventeen global objectives

for a sustainable development to be achieve in 2030 regarding all this three sustainable dimensions.

The world is suffering from financial, economic and environmental situations and crisis, and recently, from pandemic global diseases, more often than any time before World War II and mainly in the recent past and nowadays.

All around the globe, this directly affected many companies, despite its economic, human and market dimensions, and exposed its incapacity to avoid or deal through this atypical situations.

Together with this insufficiency, sometimes managers take attitudes focused mainly on short-term earnings and profits without taking into account the need of establishing a long-term strategic line, even changing sometimes corporate and financial data only to show to third parties and stakeholders 'good figures'.

The aim of this exploratory study is to get some more information following previous studies (Santos *et al.*, 2013; Santos, 2012; Santos *et al.*, 2012; Gisbert López *et al.*, 2011, 2010) in order to establish a quantitative model to measure, in real time, the effective organizations sustainability in a way different from other existing sustainability tools and indexes, supported in some pillars and components that this and other authors consider to be central and where managers need to develop capacities and abilities, in a demand to get 'good business management' and, consequently, organizational sustainability.

As DPOBE Model for Organizational Sustainability as its structure mainly settle, after several steps of investigation including the use of focus group methodology used in an early stage, seems also important to get an opinion about it among managers and also in academia, specifically among teachers and investigators on management, business administration and economics as well near master and doctorate students in this fields.

For this first exploratory study, a survey has been made among students from different master's degree courses in several specific areas of business management from the School of Business Administration of the Polytechnic Institute of Setúbal (Portugal).

The results obtained with this methodology, despite being a first approach with only almost seventy master's degree respondents, reveal a general approval from them of the structure, pillars and components settled on the DPOBE Model, despite some differences observed on the importance given to the five pillars and also in some groups of competences and dimensions from each pillar.

Literature Review

There are different approaches to the concept of corporate sustainability (Coral, 2002).

Table 1. Different perspectives on the concept of sustainability (Source: The Authors, 2020)

Perspective	Authors
Ecological vision	Epelbaum, 2004; Danich, 2003; Atkinson, 2000
'Eco-efficiency', 'Socio-effectiveness', 'Socio-efficiency', 'Eco-effectiveness', 'Eco-equity'	Dyllick & Hockerts, 2002; Chen, Boudreau & Watson, 2008
Economic, physical and social stages	Anderson, 2006; Ehrenfeld, 2005; Dunphy, 2003
Integration of economic, environmental, and social goals (*Triple bottom line* - TBL)	Huemann & Silvius, 2017
Relational perspective between stakeholders	Moldavanova & Goerdel, 2018; Oliveira, 2007; Almeida, 2007; Donaire, 2006; Santoro, 2003; Elkington, 2001
A mission statement and strategy	Duan, 2019
System of determinants	Horak, Arya & Ismail, 2018
Performance and business value	(Tworek; Walecka-Jankowska, & Zgrzywa-Ziemak, 2019)

Although this approach may differ in the aspects or elements evidenced in each one, they end up complementing each other as shown in the table before, which evidences the richness of the concept and the diversity of the associated factors.

Some authors focus on the nature of the different dimensions of the concept of sustainability, such as an ecological vision (Epelbaum, 2004; Danich, 2003; Atkinson, 2000) or 'eco-efficiency', 'socio-effectiveness', 'socio-efficiency', 'eco-effectiveness' as important principles (Dyllick & Hockerts, 2002).

Other authors reflected the different dimensions that sustainability must contemplate as a subject mainly sustained in economic, physical and social stages, regarding an environment supported in a systemic concept reinforced in ethical principles and social responsibility culture in businesses' development (Anderson, 2006; Ehrenfeld, 2005; Dunphy, 2003), or as an one based with the integration of economic, environmental, and social goals, known as the *triple bottom line* (TBL) (Huemann & Silvius, 2017).

However, other authors consider that the importance of this economic, environmental and social TBL integration should make sense in the area of sustainability, through a new strategic view and an approach that fits a strong collaboration with different stakeholders and their interests, also taking into account the environmental impact of their activities (Oliveira, 2007; Almeida, 2007; Donaire, 2006; Santoro, 2003; Elkington, 2001).

Moldavanova & Goerdel (2018) consider that this relational perspective should be sustained, among others, in internal organizational relationships, audience diversity and institutions established by organizations in order to enhance their social connections, such as public outreach departments.

In this line of thinking, authors such as Duan (2019) consider that sustainability should correspond to a clear mission statement and strategy in organizations. It should also consider several determinants such as Government intervention, regulations imposed by industry and legal stakeholders, societal expectations, relationship-oriented socialization, alliance between partners' culture and power *status*, organizational uncertainty and crisis, commercially based socialization, top management characteristics and exposure and corporate culture orientation (Horak, Arya & Ismail, 2018), which should be evaluated through the analysis of dimensions such as organizational performance, information systems' capabilities, business value and information technologies' value (Tworek, Walecka-Jankowska & Zgrzywa-Ziemak, 2019).

While there are several approaches in an attempt to address the best model or approach to sustainability, Svirina (2009) warns that the efficiency of organizations, many times, is not an outcome of an efficient management, showing 'good numbers' about social, economic and environmental issues in corporate reports is not enough to reveal an organization as really sustainable.

Svirina (2009) also referred that there is no direct relation between profits and a good companies' management and shareholders' value, as well as corporations' efficiency can't be measured by its annual profits.

Following this idea, a 'good' organizations' short-term performance, mainly calculated with annual balance sheet information and accounting figures, may 'cover' difficulties to get a medium and long term sustainability (Baumgartner & Ebner, 2010).

According to this, Santos (2012) referred that the information exposed by several organizations about its environmental, social and financial data are not 'transparent' according to real results, being the same many times manipulated according to the interests of individuals, groups and corporations about the impact of their activities in different contexts.

As Stacey (1993) referred since some time ago, the challenge of sustainability remains in the balance among differentiated and difference maker's abilities of the performance of organizations, conditioning and starting all these on three main axes: 'Discontinuance' *versus* 'Continuance'; 'Integration' *versus* 'Differentiation'; 'Complexity' *versus* 'Instability'.

It's based on these facts that, in recent past, the authors tried to develop, improve and validate a model that provides a holistic and pragmatic approach to organizational sustainability.

Several articles, chapters of books, master's degree thesis, congress presentations and papers have been written by these authors since 2010, regarding applications of the original empirical model and other developments made so far (Santos *et al.*, 2013; Santos, 2012; Santos *et al.*, 2012; Gisbert López, *et al.*, 2011, 2010)

This context of insufficiency and lack of consistent information let some authors (Gisbert López *et al.*, 2011, 2010) to develop a theoretical model aiming to disclose the main features that seem crucial to get organizations' sustainability, the 'DPOBE Model for Organizational Sustainability'.

This model is supported in the five pillars that an organizations' managers should grow their capabilities and skills.

- '**Direction**', related with organizations' economic 'sense', the way they 'view' the future and the development of the best way to achieve it (Santos, 2012; Gisbert López *et al*., 2010);
- '**Posture**', concerning good management and ethical values, organizational credibility, working consistency, 'good attitudes and behaviours', 'confidence and new ideas' (Markides, 2000, 1997);
- '**Organization**', related with management activities' measure, 'multi-dimensional and multi-contextual' organization activities, alignment strategies and organizational dimensions, responsibilities and performances (Kim & Mauborgne, 2003);
- '**Behaviour**', 'forcing' quality organizations, quality measure, quality standards, efficiency and effectiveness (Andrade & Anunciação, 2009, 2008; Anunciação & Zorrinho, 2006; Yang *et al*., 2005; Grupe *et al*., 2002; Zeithaml, 2002, 2001; Yoo & Donthu, 2001);
- '**Evaluation**', related with organizational performance, strategic objectives and options, performance and risk, capacities and resources for critical opportunities and to solve problems (Wolfinbarger & Gilly, 2002; Rajkumar & Mani, 2001; Rodrigues, 2000).

Fig. 1. The DPOBE Model for Organizational Sustainability (Source: G. López *et al*., 2011, 2010)

Some empirical studies were conducted that applied to two big Portuguese companies (Santos, 2012; Gisbert López *et al*., 2010).

Meanwhile, some of the authors proposed an upgrade of the initial model to a quantitative application able to measure the global sustainability robustness of organizations, supported in the sustainability strength in each of the five pillars (Santos *et al.*, 2012).

In order to achieve this aim, a group of competences and dimensions was set in each of the pillars to be analysed according to their objectivity and scope of information in four different levels of organizations.

The authors used 'focus group' technique with a group of academic researchers in the field of management together with management professionals. It is a powerful research tool and methodological approach that provided, in this case, some perceptions and a suitable assortment, mixture and set of points of view, as Boateng (2012) and Bishop (2006) referred when defending this research technique.

Following this line of investigation, some of the authors tried to make an upgrade of the sustainability model, defining previously a set of items and conditions to transform it in a quantitative method to determine the global sustainability robustness of organizations (Santos *et al.*, 2013).

The levels in organizations that were chosen to be analysed are:

- '**Strategic level'**;
- '**Operational level'**, related with organizational and functional planning as well as short and long term planning;
- '**Top management level'**, regarding administration written records and resolutions;
- '**Activity reports'**, regarding official accounting, revision and management reports as well as sustainability reports.

Two dimensions to be evaluated were defined in each previous level:

- '**Objectivity**', regarding the way each parameter and competence is formally declared and defined;
- '**Scope and Knowledge'**, related with the disclosure within organizations of each competence and parameter.

They established, in each one of the five pillars of the organizations (Direction, Posture, Organization, Behaviour and Evaluation), nine (9) parameters and competences to be examined in each one (Santos *et al*., 2013).

They defined a Likert scale with six (6) different values in order to rate each one of the parameters and competences to be examined in each one of the five pillars of the organizations (from 5 – 'Explicitly defined and well exposed and applied' to 0 – 'Don't know/don't answer/not applicable').

The average of the acquired results in each one of the parameters and competences makes possible the definition of the 'sustainability strength of each pillar' (in a scale from 0 to 5).

With the sum/average of all 'sustainability strength of each pillar' we get the 'sustainability robustness of the global organization', in a scale between 'Extremely robust' (equal or more than 5 or 22 points) and 'Without robustness' (less than 1 or 4 points).

According to what was mentioned earlier, is established an 'Organizational Sustainable Robustness Index (R_S)', supported in the sustainable strength indexes of each pillar of the model:

$$R_S = f(Si) \quad (1)$$

where

S_i: Sustainable Strength Index of each pillar of the DPOBE Model

R_S: Organizational Sustainable Robustness Index

	Direction	Posture	Organization	Behavior	Evaluation
Company A	3,5	2,6	4,5	2,8	3,8
Average A	3,44	3,44	3,44	3,44	3,44

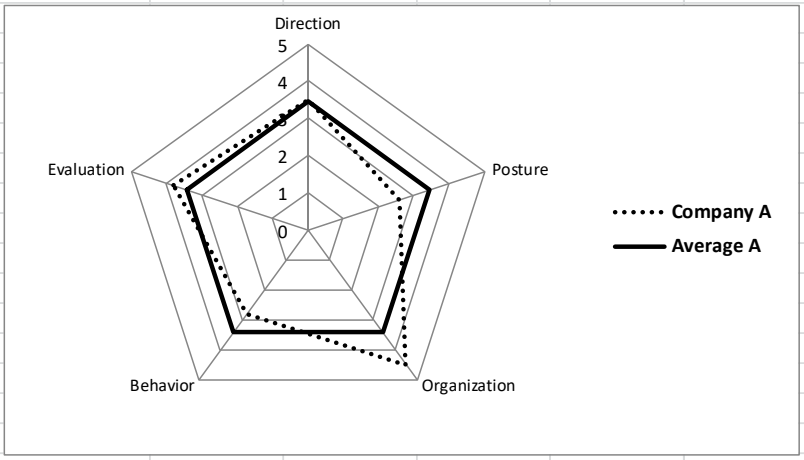

Fig. 2. Example of a Company Sustainable Strength Indexes (Source: Santos *et al*., 2013)

With this type of sustainable index, it is possible to compare, for example, the sustainability strength in each pillar and the global sustainability robustness index of an organization with a set of companies in the same business sector.

	Direction	Posture	Organization	Behavior	Evaluation	Robustness
Company A	3,5	2,6	4,5	2,8	3,8	17,2
Company B	3,5	1,6	2,5	3,8	4,1	15,5
Company C	4,1	0,6	3,5	1,9	4,8	14,9
Company D	2,5	2,6	3,7	2,4	3,2	14,4
Company E	1,8	2,6	2,2	3,1	3,6	13,3

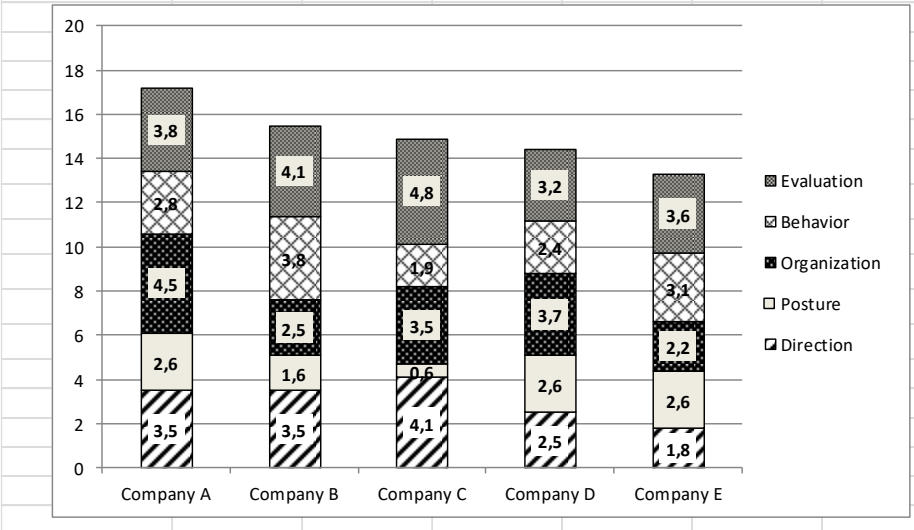

Fig. 3. Example of a Group of Companies Sustainability Strengths/Robustness (Source: Santos *et al*., 2013)

The sustainable robustness index of a set of reference companies from the same business sector can be also formalized as a mathematical function, giving the possibility to reveal, for example, a pattern of sustainability of a business sector and put in evidence a set of factors that can be representative of a similar management behaviour, skills and other key-conditions.

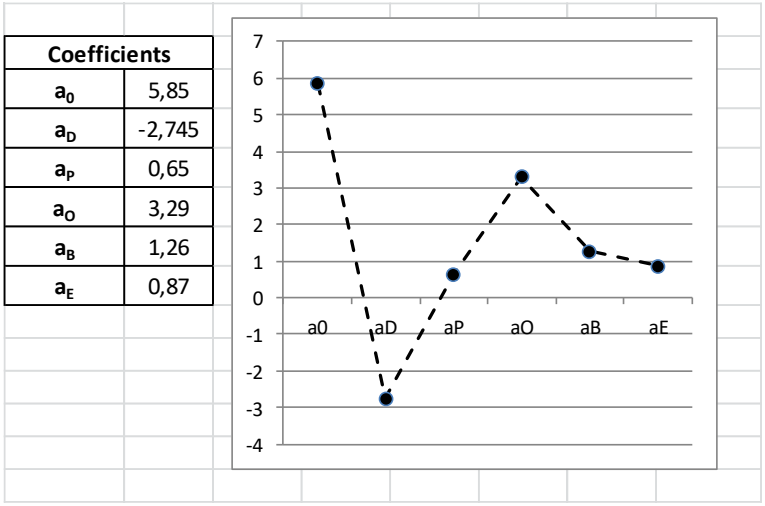

Fig. 4. Example of a Group of Companies Statistical Inference (Source: Santos *et al*., 2013)

$$R_S = R_0 + a_D.S_D + a_P.S_P + a_O.S_O + a_B.S_B + a_E.S_E \quad (2)$$

where

R_0: Independent coefficient;

$S_{D,P,O,B,E}$: Sustainable Strength Indexes of each pillar of the DPOBE Model

$a_{D,P,O,B,E}$: Coefficients of each Sustainable Strength Indexes

Methodology

To the authors and others related with the origin of this sustainability model, it's crucial to conduct the validation of its structure, pillars and components and the practicability of its application in order for it to be a tool to measure the organization's sustainability.

Despite the focus group exercise conducted in an early stage, it's also important to get a solid opinion about it among managers and also in academia, specifically among teachers and investigators in the fields of management, business administration and economics as well near master and doctorate students in this fields.

In this paper, we analysed the results obtained in an exploratory study, based on a survey made among students from several master's degree courses in several specific areas of business management from the School of Business Administration from the Polytechnic Institute of Setúbal (Portugal).

The choice of master's students was due to the fact that they are management staff in its majority, and because they are consolidating knowledge and want to improve their skills in several areas of management.

These characteristics allowed them to be a relevant sample for this exploratory study. Sustainability is a theme of great relevance in the current context of the economy as others before, mainly due to the pandemic Covid 19 that led to the closure of many small and medium businesses and the layout of

others.

The survey mainly asked about the level of importance given by the respondents in each one of the pillars, in the settled parameters and competences of each one and the objectivity, scope and knowledge of each pillar in the chosen four levels in organizations.

The group of master's degree students asked to answer to this exploratory survey was composed of a total of 95 students, distributed in four different master's degree courses in several specific areas of business management (Business Sciences, Accounting and Finance, Information Systems Management and Strategic Human Resources Management).

The level of valid answers to the survey was almost 70% of the inquired group (66 students), making no sense in this exploratory study of the application of any methodologies to validate the sample of valid answers considering the small number of persons in the universe explored.

Valid answers were classified in their main characteristics, as follows.

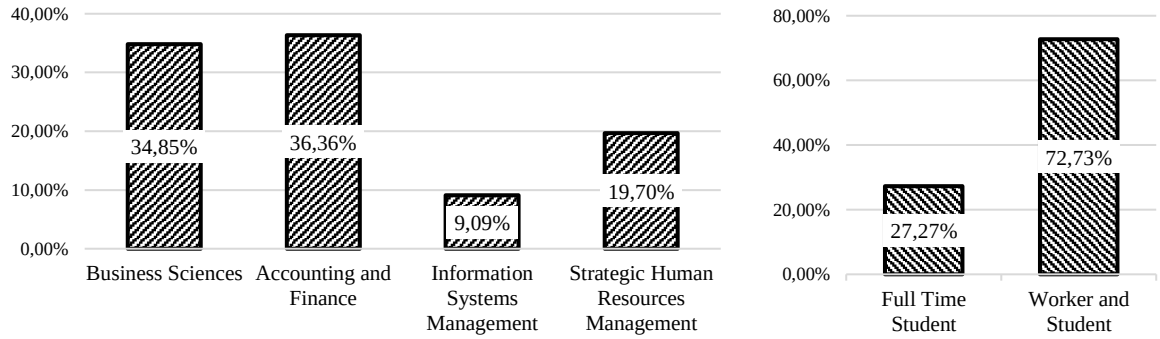

Fig. 5. Distribution by Master Degree Courses and Type of Student (Source: The Authors, 2020)

Almost 90% of the inquired group have working experience outside school, with more than 60% of them with more than 5 years of working experience.

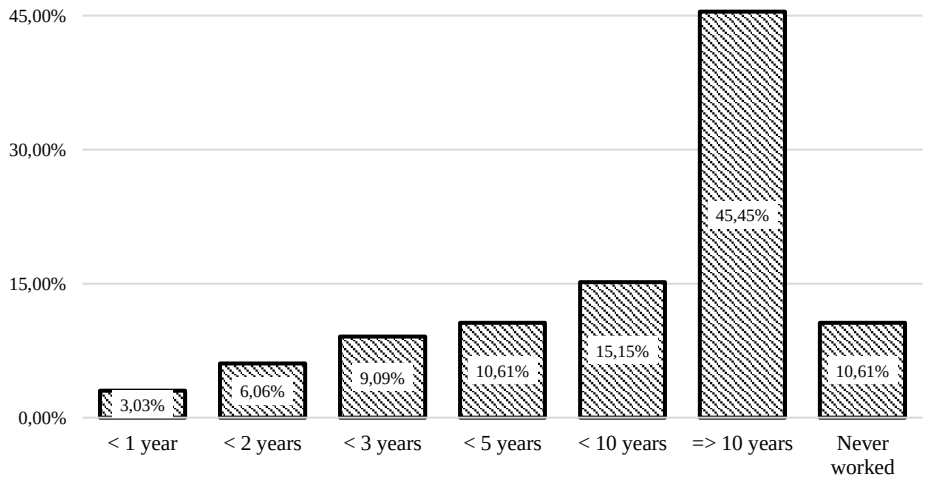

Fig. 6. Distribution by Working Experience (Source: The Authors, 2020)

Also almost 41% of the respondent students have actually top level or first line working positions in the organizations they work, being the 'Administrative Technician' the working position with more frequency, almost 40% of the inquired group.

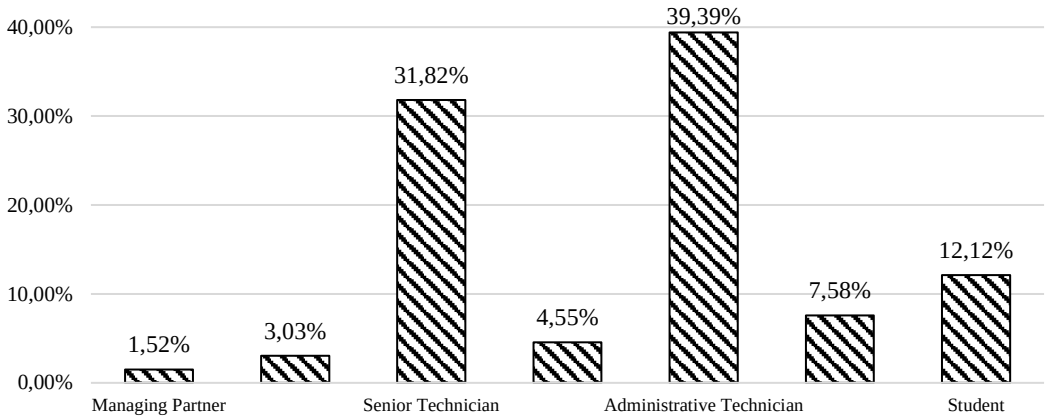

Fig. 7. Distribution by Working Position (Source: The Authors, 2020)

Regarding the perception of the present working respondent students on the organizations they work about its concerns and effective actions about sustainability issues, they are the following, with a special remark in the lack of information of the working respondents on social and economic sustainability issues and the lower level of knowledge about environmental concerns and effective actions.

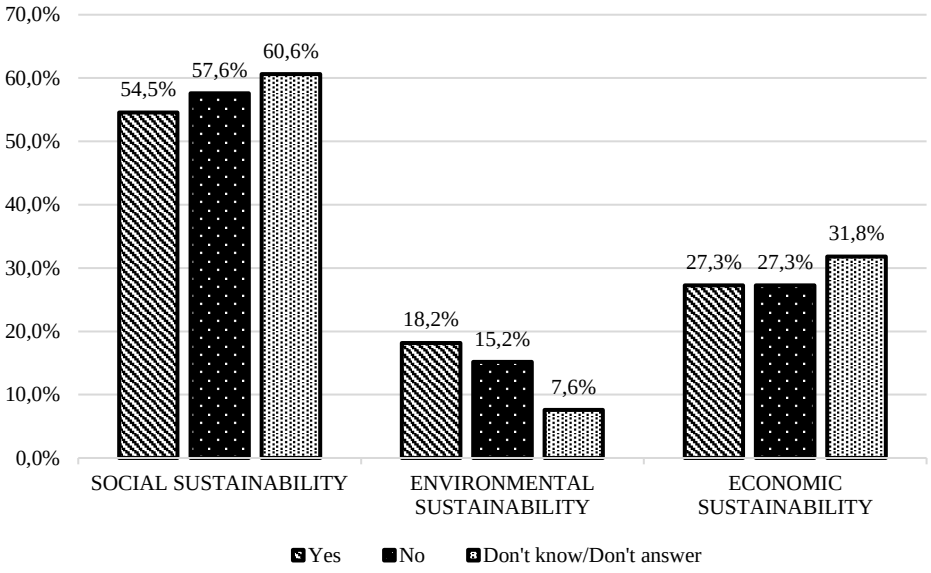

Fig. 8. Perception about Concerns and Actions on Sustainability Issues (Source: The Authors, 2020)

The knowledge of the inquired group about existing certified management systems in their own working companies revealed some lack of knowledge and a possible low information to them in their jobs, putting in question the way their companies work and the required positioning and action of each one in the possible existing certified systems and sub-systems.

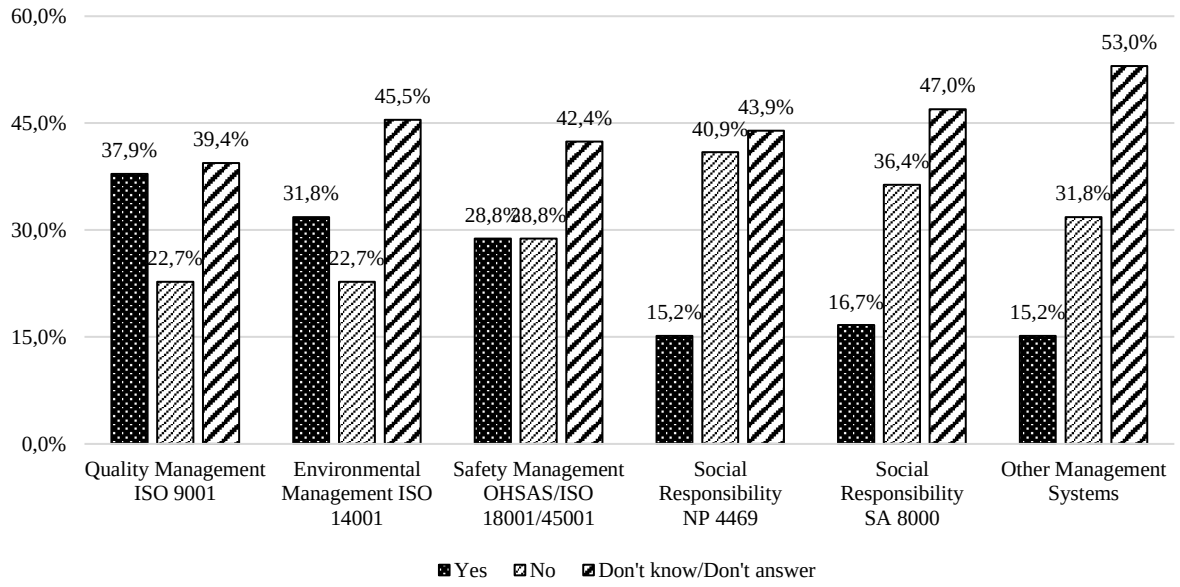

Fig. 9. Knowledge about Existing Certified Management Systems (Source: The Authors, 2020)

Results

Main results obtained in this exploratory study let the authors joyful with the developments made so far in the model and its structure, pillars and components.

The importance given by the respondent students in each one of the pillars as '*Very important*' and '*Fundamental*' reaches together approximately 85% or more of the total answers given, and this figure added with the answers of the respondent students as '*Important*' raise up to approximately 97% of the total answers.

Table 2. Importance Given in Each Area/Pillar by the Respondents (Source: The Authors, 2020)

Area/Pillar	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
DIRECTION	0.00%	0.00%	10.61%	36.36%	50.00%	3.03%
POSTURE	0.00%	1.52%	9.09%	34.85%	54.55%	0.00%
ORGANIZATION	0.00%	0.00%	12.12%	33.33%	54.55%	0.00%
BEHAVIOUR	0.00%	0.00%	9.09%	37.88%	50.00%	3.03%
EVALUATION	0.00%	0.00%	13.64%	37.88%	46.97%	1.52%

On the other hand almost nobody considered '*Insignificant*' or with '*Low importance*' any of the considered pillars, as well as only a few respondents declared '*Don't know/don't answer*' about some of the pillars.

Table 3. Importance of the Parameters/Competences in Each Pillar (Source: The Authors, 2020)

Parameters/Competences Pillar 'DIRECTION'	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
Mission, Values and Organization Policies	0.0%	0.0%	13.6%	31.8%	53.0%	1.5%
Business Strategy and Definition of Strategic Objectives	0.0%	0.0%	6.1%	34.8%	57.6%	1.5%
Time Frame and Quantification of Strategic Objectives	0.0%	0.0%	18.2%	39.4%	39.4%	3.0%
Integration of Business Strategy in the Economic Group Policy and Strategy (if applicable)	0.0%	0.0%	18.2%	42.4%	34.8%	4.5%
Action Markets ('*Where?*')	0.0%	0.0%	22.7%	36.4%	36.4%	4.5%
Target Customers ('*Who?*')	0.0%	1.5%	19.7%	28.8%	47.0%	3.0%
Products and Services ('*What?*')	0.0%	0.0%	22.7%	37.9%	36.4%	3.0%
Time-to-Market ('*When?*')	0.0%	0.0%	22.7%	43.9%	28.8%	4.5%
Product and Services Placement ('*How?*')	0.0%	0.0%	19.7%	39.4%	34.8%	6.1%

Parameters/Competences Pillar 'POSTURE'	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
Corporate Culture and Values	0.0%	0.0%	18.2%	39.4%	42.4%	0.0%
Ethical Principles	0.0%	1.5%	12.1%	27.3%	57.6%	1.5%
Organizational Principles and Code of Conduct	0.0%	0.0%	12.1%	36.4%	50.0%	1.5%
Social Responsibility Principles and Code of Conduct	0.0%	0.0%	15.2%	40.9%	42.4%	1.5%
Environmental Principles and Code of Conduct	0.0%	3.0%	15.2%	37.9%	42.4%	1.5%
Professional Principles and Codes of Conduct	0.0%	0.0%	12.1%	39.4%	47.0%	1.5%
Principles of Relationship with Suppliers	0.0%	3.0%	18.2%	45.5%	30.3%	3.0%
Principles of Action and Participation in the Community	0.0%	0.0%	25.8%	43.9%	28.8%	1.5%
Legal Framework of Organizational Activities	0.0%	0.0%	13.6%	31.8%	53.0%	1.5%

Parameters/Competences Pillar 'ORGANIZATION'	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
Organizational Structure	0.0%	1.5%	13.6%	40.9%	42.4%	1.5%
Compatibility and Integration of the Organizational Structure in the Economic Group (if applicable)	0.0%	0.0%	19.7%	47.0%	31.8%	1.5%
Organization Functional Charts and Operating Standards	0.0%	0.0%	27.3%	34.8%	36.4%	1.5%
Organizational Information and Communication Systems	0.0%	1.5%	13.6%	36.4%	47.0%	1.5%
Training and Information to Employees, Suppliers and Subcontractors	0.0%	0.0%	18.2%	42.4%	37.9%	1.5%
Planning of Activities and Resources Distribution	0.0%	0.0%	27.3%	36.4%	34.8%	1.5%
Strategic Business Partnerships	0.0%	1.5%	24.2%	53.0%	19.7%	1.5%
Business Units, Geographic Business Areas and Branches/Delegations	0.0%	0.0%	30.3%	42.4%	22.7%	4.5%
Organizational Structure	0.0%	1.5%	13.6%	40.9%	42.4%	1.5%

Table 3. (*Continuing*) Importance of the Parameters/Competences in Each Pillar (Source: The Authors, 2020)

Parameters/Competences Pillar 'BEHAVIOUR'	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
Certifications and Management Sub-systems	0.0%	1.5%	28.8%	39.4%	27.3%	3.0%
Effectiveness Level (Achievement of Objectives)	0.0%	0.0%	22.7%	36.4%	37.9%	3.0%
Efficiency Level (Use of Resources)	0.0%	0.0%	15.2%	34.8%	47.0%	3.0%
Productivity Levels	0.0%	0.0%	19.7%	42.4%	34.8%	3.0%
Internal Audits	0.0%	4.5%	22.7%	40.9%	28.8%	3.0%
Customers and Employees Satisfaction Analysis	0.0%	1.5%	13.6%	28.8%	53.0%	3.0%
Actions on Internal Failures and Complaints	0.0%	1.5%	16.7%	37.9%	40.9%	3.0%
Improvement Processes	0.0%	0.0%	10.6%	36.4%	50.0%	3.0%
Compatibility between Strategy and Operational Actions	0.0%	1.5%	21.2%	39.4%	34.8%	3.0%

Parameters/Competences Pillar 'EVALUATION'	Insignificant	Low importance	Important	Very important	Fundamental	Don't know/don't answer
Indicators and Evaluation Metrics	0.0%	0.0%	21.2%	36.4%	39.4%	3.0%
Evaluation of Business Incomes	0.0%	0.0%	12.1%	37.9%	47.0%	3.0%
Comparison between Expected and Obtained Results	0.0%	0.0%	12.1%	37.9%	47.0%	3.0%
Organizational Efficiency Monitoring	0.0%	0.0%	16.7%	39.4%	40.9%	3.0%
Organizational Effectiveness Monitoring	0.0%	0.0%	16.7%	37.9%	42.4%	3.0%
Economic and Market Analysis	0.0%	0.0%	27.3%	43.9%	25.8%	3.0%
Adjustment of Actions in line with Business Results	0.0%	1.5%	22.7%	37.9%	34.8%	3.0%
Forecast and Development of Future Scenarios and Potential Markets	0.0%	1.5%	18.2%	43.9%	33.3%	3.0%
Strategic Realignment Procedures	0.0%	0.0%	22.7%	37.9%	36.4%	3.0%

It's verified that the majority of respondents considered '*Very important*' or '*Fundamental*' as the importance they gave to the majority of parameters and competences of all pillars.

The importance given, in each of the pillars, by the respondent students in the parameters/competences was between 91% and 100%, if adding together the number of classifications '*Important*', '*Very important*' and '*Fundamental*', with the last two achieving combined values between 65.2% and 92.4%.

The only exclusion is in the parameter/competence '*Outsourcing of Activities, Functions and Tasks*' in the pillar 'Organization' with only 48.5% in both classifications '*Very important*' and '*Fundamental*'.

None of the respondents considered '*Insignificant*' in all parameters and only a very few considered '*Low importance*' in some parameters, and some few respondents answered '*Don't know/don't answer*' as well.

Similar results were obtained in this survey about the importance given to the four levels in organizations chosen to be analysed in each one of the five pillars, each one according to the two dimensions defined to be evaluated, the '*Objectivity*' and the '*Scope and Knowledge*'.

The importance given by the majority of questioned students to the four levels in organizations chosen to be analysed in each pillar was between 91% and more than 98%, regarding the combined number of classifications '*Important*', '*Very important*' and '*Fundamental*', with the last two achieving

combined values between 57.6% and 77.3%.

None of the respondents considered '*Insignificant*' in the four levels for each pillar. In the pillar 'Evaluation', it was found that at two levels, some respondents (1.5%) considered it '*Insignificant*'.

At some levels of valuation and in all pillars, very few respondents considered it as '*Low importance*' and only a very few have stated that '*Don't know/don't answer*'.

Conclusions

The results obtained with this small exploratory study somehow revealed the importance of the main subject studied some years ago and the validity and importance of the goals it sought to achieve, that is, an improvement of the original theoretical model in order to develop a quantitative tool to measure the sustainability of organizations.

One practical value achieved with this brief exploratory study was getting a small insight about the perception of second cycle students regarding the sustainability of organizations and businesses, especially from the ones that already have work experience outside school.

This small exploratory survey also drew the authors' attention to some answers regarding the expressed ignorance in some competences/parameters as they considered that '*Don't know/don't answer*', together with the classification given by some of the inquired students in some competences/parameters of the pillar 'Evaluation' as '*Insignificant*'.

However, only with a major collection of opinions (answers to survey) from this specific group (master and doctorate students in the fields of management, business administration and economics, in Portugal and abroad), together with others (businesses and companies' managers and also teachers and investigators in the same fields of knowledge), it was possible to define and adjust the final structure and components of the DPOBE Model for Organizational Sustainability.

Being an investigation with several years of development around an initial theoretical model, only with a solid and validated structure, pillars and components, it was possible to transform it into a quantitative tool to measure the effective organizations sustainability in a way different from other existing sustainability tools and indexes.

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INFLUENCERS' ENGAGEMENT IN A BRAND COMMUNICATION: LATVIA AND CYPRUS CASES

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Abstract

Research purpose. Social networks have become an integral part of life, making social media one of the most significant advertising platforms, which, according to many experts and scientists, is one of the most effective brand communication techniques. According to *Google's* data (Think with Google, 2018), before the purchase, shoppers like to address real people, which they think could be trusted. Branding with influencers is a new way of promoting products and services. It has also recently been a much sought research topic both in terms of studying the brand communication and the influencer phenomenon. This comparative study explores the involvement of influencers in brand communication. The aim of the research is to analyse the involvement of Latvian and Cypriot influencers in brand communication, its features in theoretical and practical aspects.

Design/Methodology/Approach. The research methods used were content analysis of Latvian and Cypriot influencer accounts, comparative analysis, literature analysis and graphical method.

Findings. Within the theoretical framework of the study, a review of literature has been carried out on influencers' involvement in brand communication, with particular focus on research in Cyprus and Latvia, as well as influencer typologies, communication features and current aspects of the research. The practical part of the research explores the demographic portrait of the Cypriot and Latvian influencers, the most important features of brand communication, paying particular attention to the principles of choosing influencers' social networking platforms and brand communication labels in their communication – hashtags *(#Reklāma, #Ad, #Sadarbība, #Paidpartnership, #Apmaksātasadarbība*), as well as tendencies and regularities in their use or non-use.

Originality/Value/Practical implications. The results of the study can be used by brand communication researchers, as well as by marketing and public relations professionals, to identify the key features of communication of influencers, including in comparative terms, and to select optimal tactics for collaboration with influencers.

Keywords: Influencer; Brand Communication; Marketing Communication; Advertising; Social Media.

JEL codes: M3.

Introduction

Social networks have become an integral part of life, making social media one of the most significant advertising platforms, which, according to many experts and scientists, is one of the most effective brand communication techniques. According to *Google's* data (Think with Google, 2018), before the purchase, shoppers like to address real people, which they think could be trusted. Thereby the representation of the brand exceeds much further than just a symbol or logotype and is closely related to clients' emotions that arise in contact with the company (Mediju tilts, 2019). Branding with influencers is a new way of promoting products and services. It has also recently been a much sought research topic both in terms of studying the brand communication and the influencer phenomenon. As

a result, influencer marketing is regarded as digital equivalent to word-of-mouth marketing. It is a type of marketing that focuses on using key leaders to drive a brand's message to the larger market (Byrne, Kearney, MacEvill, 2017).

The aim of the research is to analyse the involvement of Latvian and Cypriot influencers in brand communication, its features in theoretical and practical aspects. In order to achieve the aim of the research, the following tasks were set: (1) to research and compile information about influencers and their involvement in brand communication, paying special attention to researches from Latvia and Cyprus; (2) to analyse 108 Cypriot and 309 Latvian influencer accounts on Instagram during the period from September 2019 to December 2019, 3. To compile information on the activity of influencers' accounts in relation to brand communication in Cyprus and Latvia. The following research methods were used: content analysis of Latvian and Cyprus influencer accounts, comparative analysis, literature analysis and graphical method.

Literature Review

Influencer. According to Watts and Dodds (2007), influencers are those individuals who influence an exceptional number of their peers. Grave (2017) defined social media influencers as opinion leaders in digital social media, and these opinion leaders communicate to a mass audience. Similar definitions of influencers are also stated by other researchers, highlighting some specific characteristics. For example, Jiménez-Castillo and Sánchez-Fernández (2019) in their definition included the reasons of becoming influencer: those are people who have gathered popularity because of their expertise, authority or other reasons. They are often involved in creative work, something that is especially demanded amongst brands. Through their creative work, they can inform their audiences about the products or services of specific brands. According to Lou and Yuan (2018), influencer is someone who has a power to influence other peoples' thoughts on social media sites such as Instagram, Facebook, Twitter, YouTube and Snapchat. They also highlight some industries where the activity of influencer marketing is high – healthy lifestyle, traveling, food, beauty, fashion, etc. (Lou & Yuan, 2018).

According to Influencer Marketing Hub (2019), an influencer has two characteristics. First, the influencer has the power to affect the purchasing decisions of other people because of the authority, knowledge, position or relationship with the audience that follows him/her. Also what describes an influencer according to the same source is that he/she has a following in a particular niche.

The categorisation of influencers can vary. According to Gulberti (2019), influencers can be categorised according to the number of followers they have. When an influencer has between 10,000 and 100,000 followers, they are considered micro-influencers. The same source states that many professionals in the fashion luxury and beauty industry seek this type of influencers because of the belief that they can communicate better with their audience.

Mid-tier influencers come next with a range of 100,000–500,000 followers. The professionals who show preference to this group do so because they have more followers than micro-influencers and the communities targeted are still easy to communicate with.

Next size-related category according to Gulberti's article is mega-influencers with 0.5–2 million followers. They are very well-known personalities and usually collaborate with multiple brands. The benefit in involving a mega-influencer is of course the fact that there is a larger audience and more communities to address to.

According to Gulberti (2019), an all-star influencer is someone with over 2 million followers. The benefit of using an all-star influencer is the fact that the advertisers get immediate impact and high reach.

According to Inflowlabs (2017), a nano-influencer is someone who has between 100 and 1000 followers on their social account; micro-influencers are generally understood to be topic experts or topic fans with follower numbers in the 1,000–10,000 range. Macro-influencers have between 10,000 and 100,000 followers and are perceived as genuine and relatable plus they add more professionalism to their content. Mega-influencers have 100,000 to millions of followers. They win when it comes to

number of likes, comments and reach. However, their engagement rate is around only 2–5% of their total followers (Inflowlabs, 2017).

Categorisation of influencers can then be extended to the occupation, or expertise of the influencer. Some of these categories of influencers can be movie stars, activists, reality TV stars, journalists and so on.

Social influencers and their role in brand communication. Brand communication, being integral part of brand management, informs interested parties about the products, services, values and so on. Interested parties can be employees of the company, investors, sponsors or buyers (Smith, 2018). The popularity of influencer marketing is growing every year. A recent report stated that, in 2018, 39% of marketers had plans to increase their budget for influencer marketing and 19% of marketers intended to spend more than $100,000 per campaign (Bevilacqua and Del Giudice, 2018).

Many of today's companies have turned to social media influencers in order to have a review for their products. They often pay them to review their products in attempt to create awareness (Cramer, 2015).

This is to be expected because studies have shown that people make their purchase decisions on either emotion or rationality (Grundey, 2008). Having this in mind, a good combination of both is a favourite person who would stimulate the emotion part, and the rationality part would be stimulated through the thought that because it is demonstrated by this person I favour, then it must be practical.

Studies have also shown that consumers rely heavily on the information they receive from people in their own network when they want to buy something (Sadovykh, Sundaram & Piramuthu, 2015).

The moment an influencer is attempting to send a message about the brand, he/she is contributing to the understanding of this message to those users who did not directly get it from the brand itself (Araujo et al., 2017). So it is essential for brands to use the influencer as part of their digital marketing communication campaign and, more expediently, in their integrated marketing communication efforts. In other research findings, we see that these days, people do not rely on traditional advertisement to make a purchase decision. People research opinions, and they collect information before purchasing. Consumers have more confidence in the opinion of influencers than traditional advertisers (Roelens, et al., 2016).

Schau and Gilly (2003) mentioned that influencers become more powerful in effecting others and are more accessible than the major known people because they share personal every day scenes of their lives, and they interact with their followers easier.

For companies, the important thing is to find a suitable influencer. One way to 'measure' the suitability is the number of followers the person has (Colliander & Dahlén, 2011). It is a logical measurement because according to the product and budget a brand has can find a suitable influencer. Then a brand must examine the effectiveness of specific influencer. According to Godes and Mayzlin (2004), one point that would determine the effectiveness of an influencer is his/her relationship with the brand itself and the other point is the credibility of the influencer. This seems to make sense as well. It only makes sense if a fashion-related personality will write reviews and commends on fashion-related brands rather than a science-related personality.

The rise of social media has opened up a new channel for brands to connect with consumers more directly and more organically. Social media influencers promote brands through their personal lives, making them relatable to the average consumer. People learn from example, and influencers lead by example for those who 'follow' them (Glucksman, 2017). Influencers truly serve as the ultimate connection between a brand and a consumer. Through their candidness and openness with consumers, influencers have high social clout and credibility (Buyer, 2016). Where traditional marketing targeted mostly mass audiences, influencers have the unique ability to target niche audiences that have until now been unreachable (Ledbetter, 2017). Companies are using their resources via social media influencers in hopes that the experience that a consumer has with an influencer allows the behaviour of the influencer to be adopted, that is, copied by the consumer (Forbes, 2016). Brands want influencers promoting their products who are confident in themselves. When influencers express confidence in themselves, it also promotes confidence in the brand. This brand confidence leaves a lasting impression on followers and causes them to consider becoming a consumer of the product. From the

placement of the product, to the caption, and even to the context of the scene in which the advertisement is taking place, everything is executed in a particular way to maximise brand recognition through individual personalities (Glucksman, 2017).

According to Woods (2016), there is a certain level of risk the advertiser is taking on when partnering with any influencer, which is why the vetting process is a long one. The possibility of an influencer creating controversy before or any time after a campaign launches is a real risk and one that must be considered when working them. Negative attention brought to the influencer can bring negative repercussions to the brand that partners with them. By partnering with an influencer, they become an extension of brand's voice, invoking consequences when something goes wrong. To minimise a portion of this risk, some agencies have set up an approval process. Also advertising agencies often go through influencer agencies who recommend influencer for a brand or campaign (Woods, 2016).

In Cyprus. Even in a small country such as Cyprus with a total population of approximately 875, 000 (Ministry of Finance Republic of Cyprus, 2019), the role of the influencer is appreciated and even honoured. In 2018, the first influencer award ceremony in Cyprus was organised by trends.com.cy in collaboration with Cal Creative Communication. The event was supported by well-known brands such as Johnnie Walker, Shark and Hilton (Trends, 2018). For the specific event, influencers were awarded in various categories, that is, top female influencer, top male influencer, top blogger and top makeup artist. For example, the top female influencer had about 55,000 followers, which is not a very high number compared to other international markets; however in Cyprus, each of her posts reaches 6% of the country's population. Influencers in Cyprus have not united in any legal association or other entity, and rules and regulations about posting correspond with general European and Cypriot laws.

In Latvia and Baltic States. According to the research carried out by advertising agency 'GolinRiga', 38% of Latvian population does not know who influencers are or they do not actively use social media networks. Majority of these respondents represent the 40–65 years age group. From those who know who influencers are and who actively use social media networks such as Instagram, YouTube and blogs, 17% have purchased a product promoted by an influencer and 27% acknowledge that they have had a strong wish to purchase a product. From the products that have been purchased after the recommendation of influencer, the most popular categories are technology devices (29%), beauty products (24%) and events (22%). This survey was carried amongst economically active Latvian population aged 16–65 years (1621 persons, 52% women, 48% men) (GolinRiga, 2018).

According to the analysis performed by Hype Auditor (company for analysis of Instagram and YouTube blogger accounts) and ordered by A. W. Olsen & Partners communication agency, core influencers in the Baltic states are women (62.,01%), of whom majority are aged between 18 and 34 years. The average engagement of the Baltic States influencers is 25% higher than the worldwide average. Users in the Baltic States are more engaged in influencers' content. Nano-influencers have the strongest connections with their audience, thus their engagement rate is higher (7.8% both in Estonia and Latvia; 5.9% in Lithuania). Lifestyle (6.35% ER) and Photography (5.55% ER) are the most engaging topics on Instagram in the Baltic States followed by Travel & Tourism (4.51% ER), Beauty & Fashion (4.28% ER), Fitness & Yoga (3.84% ER) and so on. However, according to the analysis, more than half of Latvian influencers are scammers. The smallest number of scammers (44%) is observed in the category of nano-influencers, that is, those users of the Instagram whose number of followers does not exceed 5,000. The largest number of scammers is amongst those with 5,000–20,000 subscribers, namely 61%. The most popular type of fraud is the purchase of followers – on an average, in the Baltics, amongst all types of influencers, 28% are noticed in this activity. Again, there are more scammers in the category from 5,000 to 20,000 subscribers: in Latvia, 38% of bloggers have some of the followers purchased, 38.5% in Estonia and 33% in Lithuania. Every sixth (17%) is engaged in the purchase of comments, and every sixteenth (6%) participate in mutual commenting groups. The research of 5,000 profiles of Baltic influencers was organised in September 2019 (Olsen A. W. & Partners, 2019).

In 2018, 'Bloggers and Influencers Association of Latvia' was established. Its activities include counting professional influencers of Latvia that work according to professional standards – authentic followers, high-quality content and financial transparency. The association also works on educating

and consulting on topics related to influencer marketing, fostering professional development of influencers and so on. The association has also developed its code of ethics (Latvijas Blogeru un influenceru asociācija, 2018).

Methodology

During the research period from September to December 2019, 309 Latvian and 109 Cypriot influencer accounts on Instagram were analysed to monitor their activity. The accounts were chosen based on various criteria: the number of followers, influencer's activity and inclusion in the influencer's top of respective country. For the data analysis, the following information was gathered about each influencer: name, surname, Instagram username, gender, represented sector(s) and number of followers. A sample table was developed that was used by all parties involved. In addition, Latvian influencers were also analysed separately by gathering data about their post frequency (including paid content) and the usage of hashtags such as #reklāma, #sadarbība, #sponsorēts, #apmaksāts and #ad that are suggested by Latvian authorities as examples of good practice.

Results

The results of the research show that the sectors that are the most represented on Instagram in both countries are entertainment, fashion and other creative industries. However, there are also some significant differences between the countries.

The vast majority of influencers in Cyprus have a great relation with the fashion industry, because69.7% of them have a relationship with the fashion industry as a primary interest or as a combination with something else such as fitness, television and entertainment. Therefore, we see that micro-influencers in Cyprus are combining a number of interests rather than being 'experts' in one specific area. Top sectors of influencers in Cyprus are presented in Figure 1.

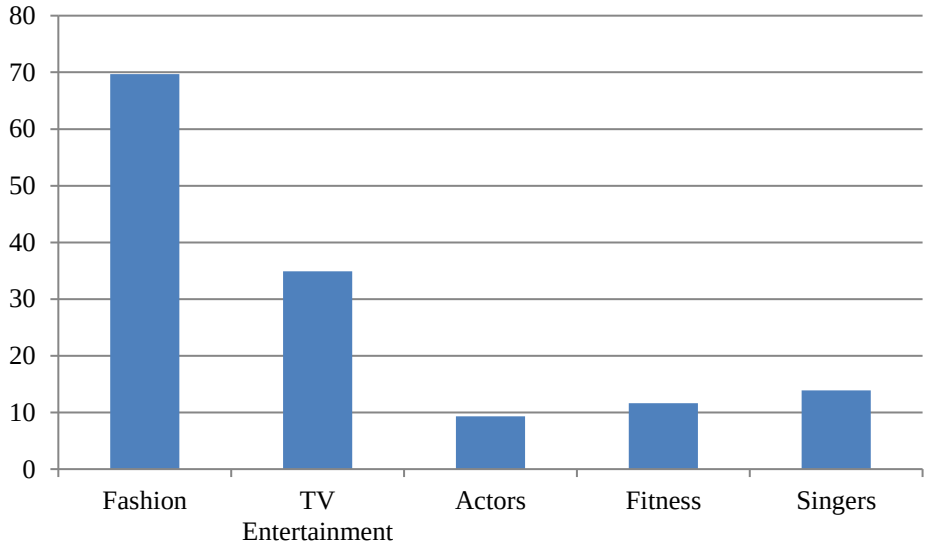

Fig. 1. Analogy of influencers' Sectors in Cyprus (created by authors)

As it can be expected, and according to the above figure, most followers will fall in the sector of Fashion in Cyprus. Even though the number of singer influencers is less than those of TV host and entertainment, they have the second largest number of followers. Singers and actors fall in the last two places when it comes to number of followers. Figure 2 shows the comparison.

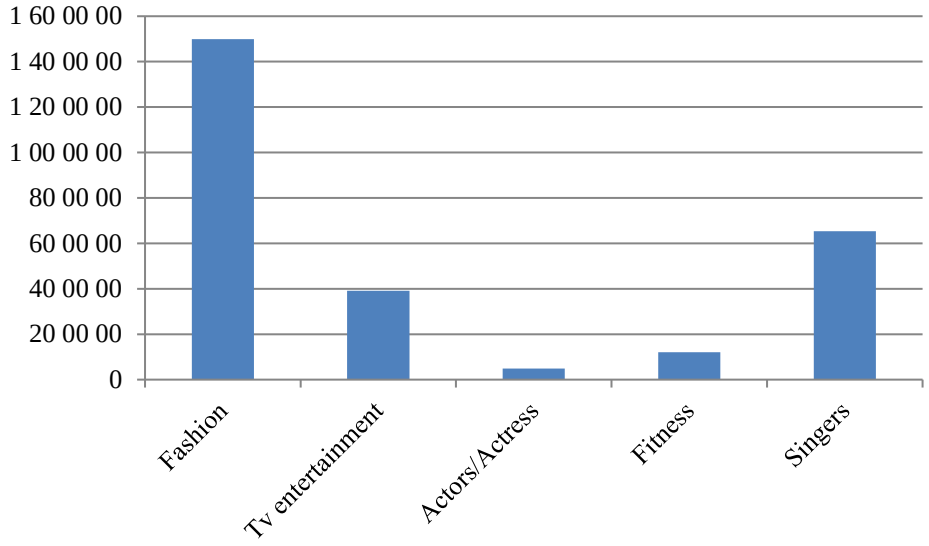

Fig. 2. Top most followed sectors in Cyprus (Source: Authors)

In Latvia, higher diversity of sectors can be observed on Instagram. In addition to creative and entertainment sectors, there are also influencers who represent sport, retail sale of clothing, hairdressing and beauty service providers, banking and others. Top 10 most followed sectors in Latvia are presented in Figure 3.

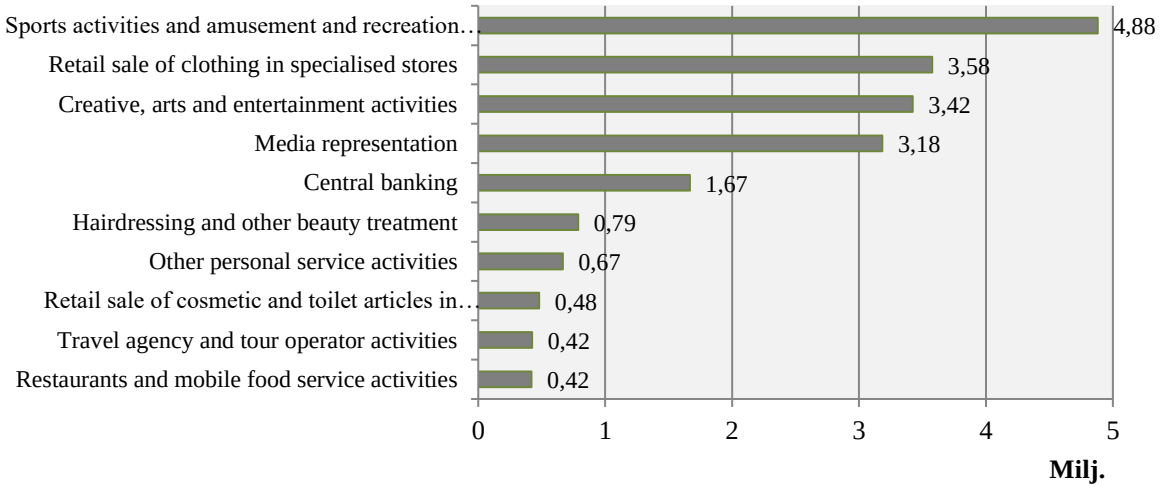

Fig. 3. Top 10 most followed sectors in Latvia (Source: Authors)

The research corresponds with other researches carried out in Latvia and Cyprus. Majority of influencers are women (76 [69.7%] in Cyprus and 186 [60.19%] in Latvia). A noteworthy tendency can be seen in data from Latvia – there are several joint accounts with a high number of followers such as music bands 'Prāta vētra' ('Brainstorm') and 'Singapūras satīns', sisters Karlīna and Elīza or 'Two Candies', rigainmycolours (group of people that post photos of Riga) and seeksimple (a joint lifestyle and zero waste account created by Laura Arnicāne and Andis Arnicāns).

Another significant tendency is that Latvian women influencers often represent various sectors at the same time (Fig. 3). On the other hand, Latvian male influencers have a tendency to represent exclusively one sector. There are also differences amongst the sectors represented by women and men. Top 10 sectors represented by Latvian women are presented in Figure 4. Top 10 sectors represented by

men are presented in Figure 5.

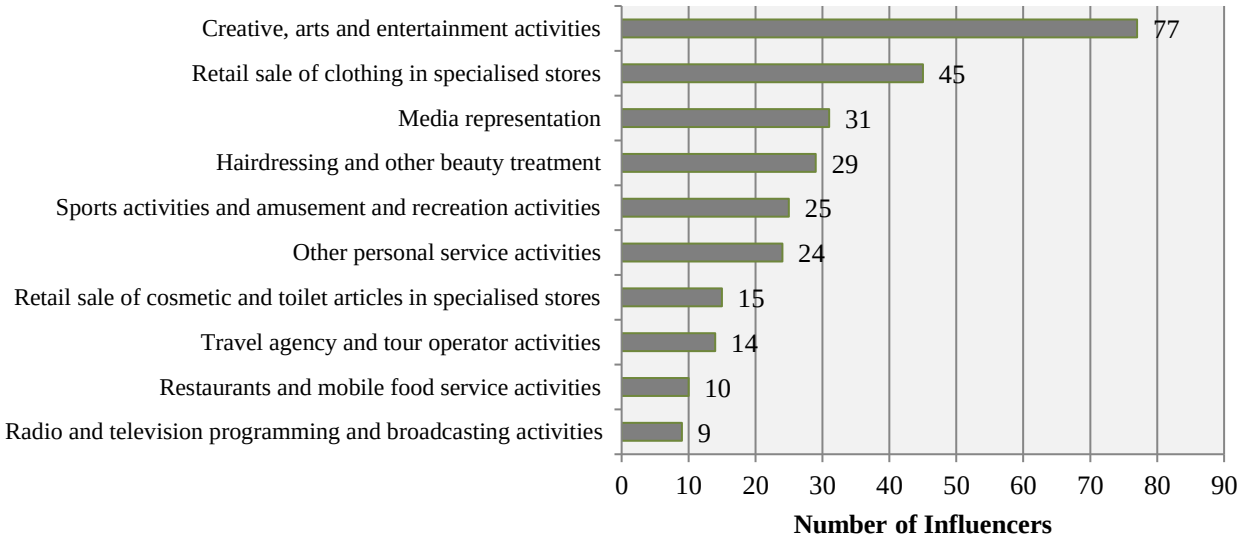

Fig. 4. Top 10 sectors amongst women Instagram influencers in Latvia (Source: Authors)

Fig. 5. Top 10 sectors amongst men Instagram influencers in Latvia (Source: Authors)

Conclusions

At this stage of the research, and according to the results we have, we see that a large number of influencers in both countries combine more than one industries in order to promote and send messages about brands. This phenomenon is more obvious in Cyprus because the market is more compact. As seen from the tables and the results, Cyprus had significantly less sectors, given the fact that influencers in categories Latvia has (e.g. sports and hairdressing etc.), could not have as many followers that would be significant enough to be measured. Hence, the intense multi-sector observation in Cyprus is limited.

Diversity of sectors in Latvia in comparison with the narrow selection of these factors in Cyprus probably has to do with the size of the two countries and may be the difference in cultures, or even

Northern versus Southern European trends. It would be interesting to examine similar cases in future research.

It is observed that, in Latvia, most people show interest in creative arts and entertainment activities, whilst Cypriots are more concerned about fashion. This is something to be considered by marketing departments for both countries.

As seen from the results, a common observation is that both countries have high degree of interest in the clothing industry. Either for the purpose of fashion, such as the case of Cyprus, or retail sale of clothing, in the case of Latvia, which is the sector that comes the second most followed, it seems that clothing industry has some of the most significant market influencers.

This was the first phase of the long-term research that will continue in 2020. In the second phase, more attention will be paid to the content and hashtags used by the influencers. Also, other social networking platforms such as YouTube will be analysed.

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A QUESTION OF VALUE: EXPLORING PERCEPTIONS OF HIGHER EDUCATION VALUE IN ACADEMIC AND POPULAR LITERATURE

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Abstract

Research purpose. The pursuit of higher education has, until recently, been viewed as a worthwhile pursuit. However, factors including rising tuition costs, graduate job-readiness, and the associated debt have diminished the perceived value of college degrees at all levels. This research seeks to explore both academic literature and popular publication sources to gain a deeper understanding of the value proposition of higher education in the dynamic 21st century.

Design/Methodology/Approach. An aggregative qualitative synthesis of the selected academic and popular sources is examined for emergent themes. Drawing on theory from the disciplines of economics, marketing, education and humanities, a meta-matrix is then constructed from the content analysis, with the goal to not only more effectively describe the variant perceptions of value but also to reconcile and synthesizes these views where possible.

Findings. The perceived value of a contemporary higher education has been challenged, requiring post-secondary institutions to find new ways to demonstrate the benefits that accompany an advanced degree. Through a more explicit understanding of the dichotomies that exist between the various perceptions of value, as well as the emergence of thematic agreements, a more holistic depiction of higher education's value proposition may be created.

Originality/Value/Practical implications. The creation of a framework that allows post-secondary institutions to gain a more explicit understanding of the perceptions of value held both within and outside the academy will allow colleges and universities to respond more directly to this critical challenge and more accurately demonstrate both the short-term and life-long value of a college degree.

Keywords: Higher Education; Perceptions of Value; Systems Thinking.

JEL codes: I23.

Introduction

Education has played a critical role in advancing human society across time. Though the epoch-specific goals have changed, an overriding purpose has been the preparation of people as full participants in society (Cubberley, 1920; de Alva, 2002; Spires, 2008). The accomplishment of this goal in the modern 21st century, however, has become more challenging in the face of globalization, technological change, rising costs, and decreases in governmental subsidization. An additional challenge facing colleges and universities is the determination of quality. As a phenomenon, quality has been defined in numerous ways over the last thousand years (Cheng & Tam, 1997; Reeves & Bednar, 1994); however, in higher education, quality is generally conceptualized in two basic forms – viewed either from a process/outcome perspective (Adams, 1993; Dew, 2009; Harvey & Green, 1993) or alternately as a uniquely negotiated transformation for each individual participant (Harvey & Green, 1993).

Across time, the pursuit of advanced education has been viewed as a worthwhile endeavour. Recently however, the value of that quest has been challenged, in both academic literature and the popular press. Both sources, citing declines in the job readiness of college graduates coupled with job uncertainty and continually increasing costs, have resulted in a decline in the perceived value of higher

education (Fishman, Ekowo, & Ezeugo, 2017). While overall Americans continue to believe that a college education does prepare graduates for a better future, they are less certain that the degree earned is truly 'worth the cost' (Fishman, Ekowo, & Ezeugo, 2017). In a study of the exchange relationship, Moguluwa and Ewuzie (2013) found similarities in 'consumer's expectations, desires, needs, and wants' for consumer products and higher education, such that it is possible to 'assess and define quality and value … along the consumers' line' (p. 32). This study seeks to apply insights from education, economic and consumer behaviour theory to the question 'is college worth the cost?'. Drawing on theory from the disciplines of economics, marketing, education, and humanities, a meta-matrix is then constructed from the content analysis, to not only more effectively describe the variant perceptions of value but also to synthesizes these views for greater depth of understanding.

Literature Review

Quality as the Foundation for Measuring Educational Success

Definitions of Quality

In business, quality has been conceptualized using a variety of terms, including; excellence; as value; as fitness for use; as conformance to specifications; as conformance to requirements and freedom from defects; and finally, as meeting or exceeding customer expectations (Cheng & Tam, 1997; Reeves & Bednar, 1994). The wide variety of these definitions is the result of the competing disciplinary perspectives used to study the concept, with the fields of philosophy, marketing, and economics all seeking a definition of the construct (Garvin, 2014).

As an industry, higher education is no different and the competing and often imperfectly aligned perspectives of stakeholders lead to similar variety in conceptualizing quality. Harvey and Newton (2005) note that the word quality, as it relates to higher education, can be used as a noun to denote status, as an adjective to describe value, and as a verb to explain the human transformation process. Dew (2009) identified five different frames to define higher education quality: as endurance, luxury and prestige, conformance to requirements, as continuous improvement, and as value-added. These conceptualizations were expanded by Adams (1993), who stated quality could be identified as reputation, resources and inputs, process, content, and as outputs or outcomes. Noting that quality in higher education possesses 'discrete but interrelated' elements, Harvey and Green (1993) categorized quality as exceptional (or excellence), as perfection (or consistency), as fitness for purpose, as value for money and finally, as transformation (p. 11).

Categorizing Quality in Higher Education

A closer look at these various definitions of quality in higher education reveals two main foci in the categorization process. In higher education, quality is generally conceptualized in two basic forms, as either focused on the process or outcome of the educational process (Adams, 1993; Dew, 2009; Harvey & Green, 1993) or as the unique transformation of each individual student (Harvey & Green, 1993). Through the 20th century, education focused on the transmission of knowledge. This attention increased when the American accrediting bodies began emphasizing the assessment of discipline-specific student learning outcomes, which resulted in a greater prominence of the process-based definitions of quality. In this way, Harvey (2000) notes that higher education may be seen as a form of disciplinary apprenticeship.

The tremendous advancement of educational technology in the 21st century, however, has had a substantial impact on that process-based focus. Where, in the past, students had to physically attend a university to obtain faculty transmitted, discipline-specific knowledge, much of that content today is merely a click away (Brown & Adler, 2008). As such, there is the need for colleges and universities to shift their focus from merely transmitting knowledge to a more holistic approach to higher education. The pursuit of a broader value proposition, one that has been expanded to include the development of critical thinking, communication, and collaboration skills has been called for (Brown, 2006; Spires, 2008; Tapscott, 2009).

As a result, the transformational conceptualizations of quality in higher education have received increased attention (Harvey & Green, 1993). Rather than discrete units of knowledge, or similarly

quantifiable metrics of institutional success such as graduation and employment rates, viewing quality from a transformational perspective focuses on the qualitative change to the student (Harvey & Green, 1993; Harvey & Knight, 1996). As such, rather than academic mastery expanded human capacity, the achievement of individual potential, and the creation of new mental models become the metrics of success (Adams, 1993; Harvey, 2000; Harvey & Green, 1993; Tapscott, 2009). In this way, a student's transformation though education may be seen as value-added a well. Although expanded to include a wider variety of aspects of quality, the transformational definitions are less quantifiable.

Aligning Dew's (2009), Adam's (1993), and Harvey and Green's (1993) categorizations of quality, similarities as well as differences may be seen. For example, the definitions of higher education quality as conformance to requirements may be seen to align with quality as perfection (consistency) as well as with the exceptional (excellence). Where some of these categories clearly stand alone in their definition of quality, resources, and inputs as well as process, content, and outputs; others such as exceptional (excellence) may be interpreted against both the process and transformational classifications. An institution may be deemed exceptional or excellent based on either their reputation or based on their ability to consistently conform to specified requirements. Similarly, the definition of value-added may be seen to apply to the transformation of an individual student as well as value for money. Table 1 presents an alignment of similar categories of quality in Dew's (2009), Adam's (1993), and Harvey and Green's (1993) definitions of quality.

Table 1. Alignment of Quality Definitions (Source: author's compilation)

Dew (2009)	Adams (1993)	Harvey & Green (1993)
Endurance		
Luxury and prestige	Reputation	Exceptional (excellence)
Conformance to requirements		Perfection (consistency)/Exceptional (excellence)
Continuous improvement		
Value-added		Transformation/Value-added
	Resources and inputs	
	Process	
	Content	
	Outcomes or outputs	
		Fitness for purpose
		Value for money

Evaluating the similarities and differences between these categorizations of quality, against the process-based, and transformational conceptualizations, a more detailed description of the criteria that define 'success' or value in each category may be derived.

Table 2 depicts the compilation of those definitions of quality that may be considered process-based and those definitions of quality that are transformation-based.

Table 2. Process-based and Transformation-based Definition Criteria (Source: author's compilation)

Process-Based Definition Criteria	Transformation-Based Definition Criteria
	Transformation
Value-added	Value-added
Exceptional (excellence)	Exceptional (excellence)
Perfection (consistency)/Exceptional (excellence)	Perfection (consistency)/Exceptional (excellence)
Conformance to requirements	
Continuous improvement	
Resources and inputs	
Process	
Content	
Outcomes or outputs	
Fitness for purpose	
Value for money	

This classification is supported in the operationalization of multiple process-based activities that evaluate quality in higher education. Specifically, institutional quality is evaluated based on: the ability to meet accreditation standards, an example of conformance to requirements; an institution's ability to effectively utilize government funds, as an example of resources and inputs; and based on an institution's ability to achieve student learning outcome metrics, exemplifying the outcomes/outputs. Conversely, an institution's inability to exhibit 'closing the loop' activities as part of an accreditation review may be seen as evidence the college or university must pay more attention to the assessment process to further their continuous improvement efforts, thereby exemplifying both process-based definitions. Fewer formal evaluation activities are associated with the transformation-based definition criteria, however, the specific evaluation processes currently in place for the process-based activities serve to delineate each of these categories.

Quality as the Determinant of Value

In recent years, both the popular press and academic journals have posed the question 'Is college worth it?'. Articles with that headline have appeared in *Forbes*, the *New York Times*, the *Washington Post*, and *U.S. News and World Report*, as well as in *The Education Digest*. Where this provocative title hits the mark, clearly foundationally challenges the value of pursing a college education, rarely do these articles specifically define the construct of value in their challenge. Without a clear and specific process by which value is defined and/or categorized, it is exceedingly difficult for individual colleges and universities or the higher education industry as a whole to respond to these challenges.

Much like quality, a wide variety of definitions of the construct of value exists with some of that variety also explained by the fact that the construct exists in multiple disciplines. Steenkamp (1989) states that although quality and value are often used interchangeably, both possess an underlying assumption of utility. The determination of utility for both quality and value are constructed utilizing both objective and subjective criteria, as well as examining the net result of the exchange process through which that utility is derived (Steenkamp, 1989; Zeithaml, 1989). Where the evaluation of objective utility is more straightforward, the influence of the subjective components frequently complicates the overall assessment of both quality and value. As an example, some consumers rely on price as an indicator of quality, however, for many others, additional features may either obscure the direct, objective price-quality relationship, or diminish the direct relationship between price and quality (Zeithaml, 1988). Similarly, perceptions of value may also be based on a more direct price-value relationship or may be highly subjective and even idiosyncratic (Zeithaml, 1988).

Zeithaml (1998) notes that some research disputes the direct equation of quality and value, designating

value as the higher of the two constructs. In this view, quality denotes the usefulness or worth of something and value is the usefulness or worth relative to price. Similarity between the objective and subjective elements of both quality and value appear to allow the existing definitions of quality in higher education appear to allow their application to the determination and evaluation of value. Specifically, when the objective, process-based definitions of quality in higher education are segregated from the subjective, transformation-based definitions, the arguments made for and against the value of the pursuit of a college education can be evaluated.

Methodology

For the past several decades, literature from a wide variety of disciplines has been critical of the value of a college degree. As there is tremendous diversity in how the construct of value is perceived, defined, and measured, this study's qualitative content analysis is designed to examine a variety of literature sources, exploring the phenomena of value as it relates to higher education.

Schreier (2012) defines the qualitative content analysis methodology as the systematic pursuit of meaning derived from textural sources. Execution of this reductive and synthetic process inductively develops a new understanding of the construct under analysis. Examining the literature associated with quality in higher education, the various definitions of quality may be both aggregated and categorized as either process-based or as transformation-based. In addition, an examination of the literature on both quality and value demonstrate similarities in not only the underlying foundational evaluation of utility but also in the evaluation of the exchange process. These broad categories of quality, therefore, may be seen to serve as a measure of the value associated with higher education.

This study employed a convenience, half-split sampling technique in an effort to evaluate a wide variety of literature sources. This sample was purposely neither exhaustive nor fully representative of all existing literature on the subject as generalizability is not an intended outcome. In addition, as this study does not intent to construct a reliable or valid definition of the phenomena of value, but rather to produce a comparative analysis of the construct, this sampling technique effectively allows the inductive inference of the emergent themes associated with value in the higher education context.

The works selected as the study's sample were chosen in an effort to draw both from a wide variety of publication types as well as to achieve a wide variety in publication sources selected. The works were also selected to ensure that the question of higher education's value was specifically addressed. As a result, works containing a variation of the question 'Is College Worth It?' in their title were selected for examination. The sampled works were unitized by designating the core disciplinary focus of the work – economics, marketing/consumer theory, education or the humanities – as the categorical distinction. As a qualitative study, the content of these works was then coded, noting the textural references to either the process or transformational definitions of quality in order to construct a comparative meta-matrix.

Results

A total of six articles, all containing a variation of 'Is College Worth It?' as part of the title, were examined. Three articles were prepared for and published in academic journals and the remaining three were published in the popular press. Table 3 identifies the article titles and their sources.

Designating a categorical distinction of these works, the Kresge Foundation report was unitized as an education publication, as was Oreopoulos & Petronijevic's (2013) contribution, which was published as part of a larger study, while Bolling's (2015) article published in a communication journal was unitized as a humanities publication. The articles from the popular press, Friedman's (2019) article in *Forbes* was indexed on the website under the 'Personal Finance' tab and was unitized as an economics article, and Svrluga's (2019) *Washington Post* article was indexed under the website's 'Nation-World' tab resulting in a humanities unitization, while Kerr's (2019) U.S. News & World Report article was indexed on the website under the 'Education' tab and was unitized appropriately.

Table 3. Academic and Popular Press Sources (Source: author's compilation)

Academic Journal Sources	Popular Press Sources
The Kresge Foundation. (2013). Is College Worth It for Me? How Adults Without Degrees Think About Going (Back) to School: A report by Public Agenda.	Friedman, Z. (2019, June 13). Is College Worth It? *Forbes.*
Bolling, C. (2015). 'Is College Worth It?' Arguing for Composition's Value with the Citizen-Worker. *College Composition and Communication*, 67(2), p. 150–172.	Svrluga, S. (14 November 2019). Is college worth it? A Georgetown study measures return on investment—with some surprising results. *The Washington Post.*
Oreopoulos, P. & Petronijevic, U. (2013). Making College Worth it: A Review of Research on the Returns to Higher Education. Working Paper 19053. *The Future of Children: Postsecondary Education, 23*(1). Eds. Rouse, Barrow, & Brock. National Bureau of Economic Research.	Kerr, E. (17 June 2019). Is College Worth It for Me? For most students, college is worth it. But alternatives to four-year schools are on the rise. *U.S. News & World Report.*

In total, therefore, the six-article sample consisted of: 2 academic journals and 1 popular press article in the education category, 1 academic journal and 1 popular press article in the humanities category, and 1 popular press article in the economics category. Each of the articles were coded for evidence of either process-based definitions of value and/or transformation-based examples of value. Not all examples of either process-based or transformation-based definitions were coded, however, examples of every type that did appear were coded.

Process-Based Definitions of Value

Within the academic studies, evidence of the value for money definition of value were the most prevalent examples. Frequently utilizing the words 'worth' or 'value', a majority of these examples centred on the concepts of the costs and associated debt of higher education; the return on the investment of the college degree, generally in the form of an initial earnings premium for college graduates and/or a lifetime earnings premium; and the resultant affordability of the pursuit of a degree. Interestingly, with the overriding focus on value for money, none of these unitized in the economics category. Table 4 presents examples of the value for money within the academic articles evaluated.

Table 4. Evidence of Value for Money Process-based Definitions in the Academic Articles (Source: author's compilation)

Bolling (2015)	Oreopoulos & Petronijevic (2013)	Kresge Foundation (2013)
'economic uncertainty motivating the question of "worth" also undermines composition's traditional reliance on the redistributive function of higher education, as high debt burden and uncertain employment weaken the narrative of social mobility through education' (p. 152)	'college graduates also realize higher lifetime earnings (p. 2) … the average lifetime earnings of a bachelor's degree holder were 84% higher than the earnings of a high school graduate, by 2009' (p. 3)	'Finding 1. Driving concerns: Can I afford it, and can I make it work in my busy life?'(p. 3)
'the debate often approaches the question of "worth" through a cost-benefit analysis that places economic opportunity in opposition to economic costs of attendance.' (p. 153)	'Utilizing the investment model, … returns consist primarily of the present value of lifetime earnings associated with a college degree, while the costs consist of both direct costs, such as tuition, and the indirect cost of forgone earnings while in college' (p. 5)	'Finding 2. Top priorities: High-quality teachers, applicable skills, affordable tuition.'(p. 3)
'According to "commonsense" advocates of higher education, college is an economically transformative event because the experience produces skills, knowledge, and personal networks that grant college graduates jobs valued at one million dollars more in lifetime earnings' (p. 153)	'Individuals who are constrained will either under-invest in higher education, stopping before it would be optimal to do so, or will not invest at all.' (p. 4)	
'college produces value by yielding good jobs' (p. 152)	'costs are increasing and students are borrowing more than ever before to finance the investment' (p. 2)	

Within the three academic articles, evidence of the other process-based definitions of value appeared. Oreopoulos & Petronijevic's (2013) research contained examples of the process, output, and resources/inputs conceptualizations of value, while the Kresge Foundation's evaluation of the perceptions of non-traditional student on the value of a college education focused on process and output.

In the Kresge Foundation's study, one of the findings evidenced both value for money, a process and an outcomes definition of value and was therefore classified against all three definitions. Table 5 presents examples of these definitions of value in the academic articles evaluated.

Table 5. Evidence of Value for Money Process-based Definitions in the Academic Articles (Source: author's compilation)

Outcomes	'unemployment rates are much lower for those with a college degree' (Oreopoulos & Petronijevic, 2013, p. 3)
Process	'average study times have fallen … completion rates have stagnated, as those who eventually do acquire a degree take longer to do so than in the past' (Oreopoulos & Petronijevic, 2013, p. 2)
	'Graduates with these degrees (computer science, engineering, and math programs) working in their fields are likely applying skills acquired from higher education.' (Oreopoulos & Petronijevic, 2013, p. 19)
	'Finding 2. Top priorities: High-quality teachers, applicable skills, affordable tuition.' (Kresge Foundation, 2013, p. 3)
Output	'relative supply of college educated workers has also been steadily increasing.' (Oreopoulos & Petronijevic, 2013, p. 19)
	'Finding 2. Top priorities: High-quality teachers, applicable skills, affordable tuition.' (Kresge Foundation, 2013, p. 3)
Resources/Inputs	'Because students self-select into college, it may be that those who choose to pursue more schooling are the most likely to benefit from college or earn higher wages at any level of schooling.' (Oreopoulos & Petronijevic, 2013, p. 17)
	'According to the signalling hypothesis, however, students do not actually develop new skills as they move through college, but rather use a college degree to signal their innate ability to the labor market. If there is little or no skill development throughout college … then pushing students into college who do not already possess substantial abstract thinking skills will not necessarily lead to the returns described above.' (Oreopoulos & Petronijevic, 2013, p. 18)

Within the popular press, a dramatically skewed focus on value for money was evidenced. Not only did all of the articles reviewed contain numerous examples of this perception and evaluation of value, but this view almost completely dominated the evaluation of value.

In the unitizing process, however, only one article was indexed in the economics category, with the other two articles categorized as having an education or humanities focus. Table 6 depicts the selected examples of the process-based value for money definition of higher education value.

Table 6. Evidence of Value for Money in the Popular Press (Source: author's compilation)

Forbes	U.S. News & World Report	The Washington Post
'According to the Federal Reserve, college is worth it... [even in the face of rising college tuition and student loan debt] college is still a good investment … [yielding] premium earnings in the labor market compared to those without a college degree.'	'Experts say it remains financially worth it to go to college, despite rising tuition and opportunity costs in relation to increasing wages for workers holding only a high school diploma.'	'Higher education is so expensive now, he said, that few can afford the luxury of meandering through a liberal arts education without making hard calculations about employment prospects.'
'According to the Fed, if you graduate at the bottom 25% of your class, drop out of college or take longer than four years to graduate, the benefits of a college degree may not always outweigh the risks'	'But not all college graduates experience these salary benefits. Annual wages for the bottom 25th percentile of college graduates are less than the median wages earned by a typical worker with a high school diploma.'	'But given [the] surging student-loan debt nationally, ...with many legislators loath to fund universities that aren't preparing young people for the workforce'
'Based on individual unique circumstances, financial and otherwise … the cost-benefit of going to college [may determine] trade school makes most financial sense.'	'Students often underestimate the long-term cost of college ... near-graduates think it will only take six years to pay off their student loan debt, but other data shows it will likely take 20 years.'	'Among the top 10 colleges with the best long-term net economic gain are Harvard University, the Massachusetts Institute of Technology and Stanford University.'
'The latest student loan debt statistics show that more than 44 million borrowers collectively owe $1.5 trillion of student loan debt.'	'Labor market outcomes of college graduates by major range widely … majors like early childhood education and social services receive wages similar to those earned by workers with only a high school diploma.'	'Forty years after enrolment, bachelor's degrees from private colleges have the highest returns on investment.'
'Your intended major and profession are especially important [as they] will have a major impact on your earning power and ability to repay student loans.'		

Where evidence of the value of a higher education gauged as value for money was predominant in the popular press coverage, a secondary focus on the outcomes was also found. Specifically, the ability for a college education to provide a good or better job was evidenced. Table 7 displays textual evidence of the outcomes focused definitions of value in the popular press.

Table 7. Evidence of Outcomes Focused Definitions of Value in the Popular Press (Source: author's compilation)

	U.S. News & World Report
Outcomes	'National surveys college freshmen over the last decade, one reason for attending college dominates all others: to get a better job.'
	'Labor market outcomes of college graduates by major range widely … majors like early childhood education and social services receive wages similar to those earned by workers with only a high school diploma.'
	Forbes
	'Your intended major and profession are especially important [as they] will have a major impact on your earning power and ability to repay student loans.'

Transformation-Based Definitions of Value

The perceived value of a contemporary higher education has been challenged, requiring post-secondary institutions to find new ways to demonstrate the benefits that accompany an advanced degree. Through a more explicit understanding of the dichotomies that exist between the various perceptions of value, as well as the emergence of thematic agreements, a more holistic depiction of

higher education's value proposition may be created.

Within the academic studies, evidence of the value as human transformation and as value-added were most evident. Bolling's (2015) evaluation of the worth of a college degree, published in an academic communication journal, predominantly references the characteristics seen in Harvey & Green' (1993) definition of quality as human transformation, with the benefits of that transformation extending beyond the individual to society, whereas Oreopoulos & Petronijevic's (2013) research, published as part of the book *The Future of Children: Postsecondary Education*, predominantly evidenced the value-added transformational definition of transformation-based quality and value. Table 8 displays textual evidence of the transformation-based definitions of value in the academic journals evaluated.

Table 8. Evidence of Transformation-based Definitions of Value in the Academic Journals (Source: author's compilation)

Transformation	'economic uncertainty motivating the question of "worth" also undermines … the narrative of social mobility through education' (Bolling, 2015, p. 151)
	'economic focus makes appeals to civic literacy appear irrelevant' (Bolling, 2015, p. 151)
	'The effect of [the economic] debate is a kind of containment that limits the cultural and civic value of higher education, naturalizing the view that college is an individual investment.' (Bolling, 2015, p. 151)
	'scholars have traditionally defined the discipline's value and, by extension, implicitly defined the university's social function' (Bolling, 2015, p. 152)
	'arguments for civic training represent two of the most prominent ways that the field has argued for its—and the university's—value to society at large.' (Bolling, 2015, p. 159)
	'the value of a college degree … produces value primarily through the production of social capital rather than skills or knowledge. In other words, to the extent that college degrees produce higher earners, they rely on socialization and social capital to explain college graduates' success' (Bolling, 2015, p. 155)
Value-added	'A market-based logic of education encourages students to focus on its instrumental value—that is, as a credential—and to ignore its academic meaning and moral character' (Bolling, 2015, p. 155)
	'An ongoing debate exists over the extent to which college itself improves skill or simply signals the presence of skill … [such that] some wonder whether college actually develops new skills or produces a signal of skill already acquired before the college experience.' (Oreopoulos & Petronijevic, 2013, p. 17)
	'The assumption has been that students develop new skills throughout the college experience.' (Oreopoulos & Petronijevic, 2013, p. 17)
	'… after controlling for income, the study found that siblings with an average of one more year of education married spouses with more education, were less likely to be divorced or be receiving health disability payments, and were less likely to have a teenage birth.' (Oreopoulos & Petronijevic, 2013, p. 21)

Two additional findings were an interesting outcome of this textual review. First, within the academic by Bolling (2015) and Oreopoulos & Petronijevic (2013), the majority of analysis on the value of a college degree was economic or process-based rather than transformational, regardless of how the journal was unitized by discipline. As a result, the data that supported these process-based perceptions of quality was reanalysed for the emergence of additional themes. These themes were weighted to represent their frequency of occurrence. Figure 1© visually depicts these weighted process-based themes as a Word Cloud.

Fig. 1. Weighted Themes Evident in the Process-base Perspectives of Higher Education (Source: author's compilation)

In addition, within each article, the extensive economic analysis was presented first, with the transformational aspects addressed toward the end of the evaluation. Further, both Bolling (2015) in his academic article and Svrluga (2019) in *The Washington Post* note the difficulty in effectively defining and compartmentalizing both higher education and its value proposition. Bolling states, '… scholarship on cultivating a citizen-worker ethos among students resists the compartmentalization of higher education's cultural, civic, and economic functions,' (p. 155) while Svrluga (2019) notes 'Higher education is a complicated proposition, tricky to measure'. Yet, even with this noted, neither attempt to clarify the components of value in the article's context.

Content-Analytic Summary Table

Qualitative coding of the categorized data enables the creation of a content-analytic summary table. Designed to present in a matrix style, the synthesis of the most important aspects studies, the table additionally allows further refinement of the data by focusing on the content observations without the associated case attribution (Miles, Huberman, & Saldana, 2014). Table 9 depicts the meta-matrix of Content-Analytic Summaries thematic compilation of the dimensions of higher education value.

Synthesizing these various attributes of value reveals the sought similarities and dichotomies. In process-based views of value, the aggregated monetary concerns are evident. The overriding desire for both maximal earnings and skill development, in order to ensure optimal employment with the least amount of debt is clear. Equally clear is the understanding that substantial non-monetary gains are an additional benefit or value of a college education. Curiously, while there is the desire for high quality instructors to provide education with that value, the fact that a degree can signal a level of skill attainment to the marketplace, regardless of a student's actual skill attainment level, may explain this focus on value for money. If from the resource/input perspective, students enrol in higher education with the expectation that the mere attainment of their credential will send the appropriate signal to prospective employers and thereby reducing their effort throughout their educational process, they may themselves be not only diminishing the return on their investment and the associated value for money, but may also be negatively impacting their outcomes' value as well.

Table 9. Meta-Matrix – Process/Transformational Dimensions of Higher Education Value (Source: author's compilation)

Process-Based Definitions of Value			**Transformational Definitions of Value**	
Value for Money	Expense of College vs. Lifetime/Earnings Premium Cost-Benefit Trade-offs ROI - Return on Investment		**Transformational**	Social mobility Cultural/Civic literacy Social capital Skills development Personal Enhancement
Outcomes	Employment/Employability Learn applicable/valuable skills			
Process	Students studying less Desire for high-quality teachers			
Output	Market supply of graduates Gain applicable skills		**Value-Added**	Skills development Personal Enhancement
Resources/Inputs	Credential signalling			

Interestingly, a majority of the meta-categories derived from the data conceptualizing value are aspects not only accrued to an individual but also are predominantly focused on the present. High quality graduates should not only be able to positively impact their local, national, and even the global economy, but by virtue of their transformation should also be able to creatively solve existing problems and generate innovative new solutions for future problems. Future research should therefore not only expand the sampling size but should also seek broader representation from a wider variety of disciplines as the construct of value in higher education is explored further.

Conclusions

The findings of this study advance the understanding of value in higher education. As this value has recently been called into question, institutions and the entire higher education industry must seek new ways to demonstrate the benefits that accompany an advanced degree. Through a more explicit understanding of the dichotomies that exist between the various perceptions of value, as well as the emergence of thematic agreements, a more holistic depiction of the current state of higher education's value proposition may be created.

These results make it clear that currently, the process-based views dominate the conceptualization of higher education's 'value'. Whether inside the academy in academic journals or outside in the popular press, value is primarily equated with value for money, specifically the immediate, individual, economic returns on the investment. The outcome-based view also prevails, as an education is deemed valuable when it provides the skills necessary to secure a good job upon graduation. In this view, the broader, long-term gains associated with higher education's transformational value, to an individual as well as to society, are suppressed in favour of an immediate economic payback.

Finally, results of this study's exploration of perceived value resulted in an extremely recipient-focused view, with individual students as the major benefactor of higher education's value. If, or where, this perception does not align with the academy's perceptions of the value provided, this insight can assist institutions in either reconciling the divergent provider/receiver views, or in

reframing the provision of higher education's additional value elements in more student centric terms. Continued application, adaptation and integration of business theory may assist in furthering this endeavour. Building from Hjorth-Anderson's (1984) claim that, although academic research primarily values unidimensional scales and the need to achieve repeatable conclusions, the creation of a wider and more inclusive framework may be necessary to appropriately evaluate a construct as subjective and diverse as the value of a higher education.

Where the sampling technique employed was adequate for an initial exploration of the question of value perceptions in academic and popular literature, this however limits the generalizability of the conclusions. Future research employing a more rigorous sampling technique, as well as a broader variety of publication types may allow for the triangulation of results and strengthen the generalizability of the results. In addition, studies that specifically explore the definition of the phenomena of value within the higher education context may be extremely valuable to all stakeholders. Finally, broadening the scope of literature surveyed beyond the categorical distinctions of economics, marketing/consumer theory, education or the humanities would also serve to expand this study's initial conclusions.

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DECISION FACTORS BEHIND CHOOSING HIGHER EDUCATION INSTITUTIONS IN EUROPE

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Abstract

Research purpose. This article aims at distinguishing and weighting the educational factors that could have an impact on young people's choice to study in European higher education institutions (HEIs).

Design/Methodology/Approach. To achieve the aim, previous research and scientific literature were studied and experts from student society and the higher education sector, who deal with international students, were interviewed. The developed questionnaire was based on pairwise comparison procedure, and the obtained data were processed using the analytical hierarchy process (AHP) method.

Findings. The findings revealed that the following factors are the most critical for students who want to study at European HEIs: provision of programmes that are taught in English, the existence of scholarship opportunities, provision of different facilities in the campus, and accreditation of the study programme and university.

Originality/Value/Practical implications. The current study focuses on a topic that has been studied fragmentally, that is, on which factors are crucial for an international student to choose HEI in Europe. The current research contributes to the existing scientific literature by identifying and systemising educational factors influencing young people's choice to study in Europe. The obtained results could be useful for professionals who are responsible for strategic partnerships at European universities.

Keywords: Higher Education Institutions (HEI); International Students; Studying Abroad; Analytical Hierarchy Process (AHP).

JEL codes: J62; I23.

Introduction

In the era of globalisation, there are many opportunities for young people's international mobility in order to graduate abroad, especially in European countries. According to the European Commission (2018), the number of tertiary education students in the 28 EU countries in 2017 reached 19.8 million. A large number of students are those who came from abroad; hence, there are many scholars investigating this issue. There are scientists concentrating on the analysis of study programmes that are popular amongst international students (Clarke et al., 2020; Di Pietro, 2020). Other researchers focus on education abroad in terms of migration, that is, they investigate study abroad as an opportunity for students to change their residence (Naito & Zhao, 2020). Moreover, scientists are interested in factors that motivate young people to study in a particular country, for instance, China (Gbollie & Gong, 2020; Lee, 2020), India (Naito et al., 2020) and Taiwan (Lee, 2017). However, there the motivating factors for international students to study in Europe are studied fragmentally. Hence, the idea of the current research emerged because of the lack of studies analysing the factors influencing international students to choose European higher education institutions (HEIs) and the personal engagement of the authors with the study process within management programmes. Being actively involved in teaching and studying, the authors are interested in delivering relevant knowledge for HEIs, education

consultants and governments to increase the number of international students. The current research aims at identifying the factors influencing international students' choice of HEIs in Europe.

Moreover, it is worth mentioning that several factors motivating study abroad are vast. Hence, in the current research, only educational factors are examined. Apart from that, there are several limitations to the study. The current is focused on 'third-country national' internationally mobile students. According to the Council Directive 2004/114/EC, 'third-country national' means any person who is not a citizen of the European Union (European Commission, 2004).

Literature Review

There are many materials on international students' education in European countries. Some countries have introduced research about international students' attraction and retention (Leiškalne et al., 2018) to solve labour market challenges in Europe. They look to the international students from developed countries as a possibility of tackling an ageing population problem, maintain the welfare system and attract a skilled workforce. However, there is not enough research about the factors influencing international students from third countries' choice of HEIs in Europe.

First, the authors reviewed the literature about consumer behaviour in order to identify the main factors of consumer choice and especially about variables affecting customer conduct. The literature review of consumer conduct or behaviour is various and broad as changes in the society, economics or financial matters and innovation in technology influence how consumers to act (Peighambari et al., 2016). There is a wide scope of variables that can influence purchaser conduct in various manners. These components are split by Hoyer et al. (2012) into four general classes:

- Situational
- Individual
- Social
- Cultural components.

Each factor is briefly described below (Hoyer et al., 2012; Patil & Bakkappa, 2012):

- Situational factors affecting purchaser conduct may incorporate area, condition, timing and, considerably, climate conditions
- Personal/individual elements include taste inclinations, own money related conditions and related components or factors
- Social variables affect shopper's behaviour. The opinion pioneers, as a rule, promoting items and services
- Culture and utilisation or consumption have had an extraordinary relationship in the cutting-edge world.

They further contend that given this relationship and the way that the world economy is turning out to be progressively multifaceted, a comprehension of how culture impacts buyer conduct by advertisers will be pivotal, all the more with the goal that culture has extreme power in managing human behaviour. Spiers et al. (2014) noticed that purchaser conduct is affected and inspired by elements, for example, culture, character, way of life, pay, perspectives, helpers, emotions, information, ethnicity, family, values, accessible assets, sentiments, encounters and different gatherings. Culture, subculture and social class are known to have significant effects on individuals' conduct because they are ground-breaking drivers in the development of mentalities, convictions and qualities (Blythe, 2008). Table 1 presents the components that impact human conduct whilst settling on a choice on the selection of items or influencing customer conduct (Table 1).

Table 1. Factors influencing humans' choice (Source: Authors' compilation)

No.	Major factor	Subfactors	Description
1.	Cultural factors	Culture	Variables allude to the arrangement of essential qualities, needs and practices learned by an individual from a general public from the family and other significant organisations.
		Subculture	Each culture contains small subsocieties. Subculture incorporates nationalities, religions, racial groups and geographic locations.
		Social class	Individuals who share comparable qualities, interests and practices. Social class can be dictated by a blend of occupation, salary and instruction.
2.	Social factors	Groups	Group alludes to at least two people who interact to achieve individual or shared objectives. An individual's conduct is affected by numerous little groups. These groups include family, companions and neighbours.
		Family	Individuals can unequivocally impact a purchaser's conduct. Advertisers are keen on the influences of the spouse, partners and kids on the acquisition of various items.
		Roles and status	The individual's situation in each group can be characterised as far as both role and status. Every job conveys a status that is presented by society.
3.	Personal factors	Age and life cycle stage	Individuals change their purchase preferences over their lifetimes. Advertisers characterise their markets as far as family life cycle arrange and create fitting plans and items for each stage.
		Occupation	An individual's occupation influences the purchase of goods and services.
		Economic situation	An individual's monetary circumstances influence their purchasing decision.

Factors affecting consumer behaviour can be a combination of two or more factors. Also, each factors' impact is not the same. This indicates that each individual has his or her own major and minor factors that influence his or her behaviour and is subject to change. There are eight main factors that the authors consider for further analysis.

Second, the authors found factors influencing the choice of higher education institution. Several researchers before have examined the factors. Several case studies in different countries in different regions about factors influencing HE decision, for example, Iraq, United Arab Emirates, Latvia and Poland, have been conducted. The authors examined them and discovered the main factors.

Guibourg (2011) pointed out the financing cost to attend courses at the university as one of the top factors in choosing the location of the institution. The cost of living is also mentioned as one of the significant factors for consideration (María Cubillo et al., 2006) when choosing to study abroad.

International students nowadays use many resources to help them make decisions – the Internet, education consultants, exhibitions and government resources. However, they do not have enough knowledge about the quality of education offered by HEIs abroad. Most HEIs focus on the Internet as a primary source of information to establish a relationship with the potential student and to destroy cultural and geographical barriers between the host and home country of the student (Usunier & Lee, 2009).

The study conducted to understand the selection process by students states a few factors in Table 2.

Table 2. Key factors that influence undergraduate selection practices in favour of higher education institutions (Source: Authors compilation based on the research work by Vevere & Mons, 2020)

No.	Context	Subfactors
1.	Motivation for studying	a) Educational and personal development; b) Employment or career development; c) Pursuance of a selected career path d) Individual's characteristics
2.	Key factors in decision making for choosing a study programme	a) Teaching quality b) Reputation of the study programme c) Ranking of the programme d) Location: safety, recreational possibilities, cost of living and welcoming of international students
3.	Key factors in decision making for choosing a university	a) Qualified teaching staff b) Employability rate c) Updated technology-wise and availability of online class options d) Whether the HEI offers placement options e) High volume of face-to-face teaching hours

A paper written in Iraq with the aim to understand the perception of students whilst selecting a university revealed the main factors influencing the choice of HEIs (Budur et al., 2018):

- Quality of education
- IT services
- Atmosphere comprising of social activities
- Social facilities
- Reputation of the university
- Academic staff
- Scientific activities
- Internationality of the university
- Financial aid and scholarship.

The research to investigate the factors determining student destination choice of HE in the United Arab Emirates was conducted (Ahmad & Hussain, 2017). The authors came up with several factors that are presented in Table 3.

Table 3. Factors determining student's choice of higher education (Source: Ahmad & Hussain, 2017)

No.	Factors	Subfactors
1.	Learning environment	(a) Comfortable climate, (b) environment conducive to learning, (c) safety, (d) multiculturality, (e) English speaking and (f) economic and political stability

2.	Cost	(a) Cost of living, (b) tuition fee, (c) traveling costs, (d) visa approval time, (d) degree duration and (e) part-time work possibilities
3.	Institutional reputation	(a) Quality of education, (b) university reputation, (c) degree recognition, (d) course diversity, (e) simplicity of admission, (f) facilities of institution, (g) ranking of institution, (h) scholarship options and (i) employment prospects
4.	Personal Development	(a) International exposure, (b) migration intention, (c) potential to improve language skills, (d) international contacts and (e) career enhancement
5.	Recommendation	(a) Family, (b) friends, (c) teachers, (d) alumni, (e) agent and (f) media
6.	Socio-cultural proximity	(a) Religious homogeneity, (b) proximity to home country, (c) friends, (d) relatives, (e) cultural homogeneity and (f) halal food
7.	Government initiatives	(a) Scholarship schemes, (b) government relations and (c) institutional collaboration

In turn, Rika et al. (2016) focused on factors affecting the choice of HEIs by prospective students in Latvia (Table 4)

Table 4. Factors affecting choice of HEI (Source: authors' compilation based on the results of the study done by Rika et al. (2016))

No.	**Factors**	**Subfactors**
1.	Culture	(a) Religious affiliation, (b) Nationality, (c) Ethnic origin, (d) Embedded societal norms, (e) Traditions and (f) Family culture
2.	Social	(a) Family members, (b) friends and (c) society at large
3.	Psychological	(a) Attitude and (b) Belief
4.	Organisational factors	(a) Specific characteristics of HEI and (b) actions of educational institutions themselves

A study titled 'Determinants of higher education choices and student satisfaction: the case of Poland' was conducted by Sojkin et al. Table 5 is a compilation of complex factors determining decisions about pursuing a university education.

Table 5. Factors determining decisions about pursuing a university education (Source: Sojkin et al. (2012))

No.	**Items**	**Determinants**
1.	Choice of pursuing higher education	(a) Student – the type of life, (b) professional advancement, (c) family opinion and expectation, (d) family financial support and (e) increased chances at a job

2.	Choice of university	(a) Marketing efforts, (b) professional development, (c) university tradition, (d) courses offered, (d) university reputation, (e) cost of studies and (f) accessibility of financial aid

To understand why students want to study in Europe, the authors look at the HE system in Europe. As per Zahav and Friedman (2019), the Bologna Process and the following foundation of the European Higher Education Area have affected the manners by which advanced education in Europe works and the manners in which it is seen and identified within nations and areas outside Europe. European advanced education used to be known for its exceedingly differing national frameworks. At present, the Bologna Process describes the procedure that built up the European Higher Education Area (EHEA). This has led to an expansion in programmes in English, to universally conspicuous advanced education structures and too straightforward quality confirmation measures (European Commission, 2017). According to Trejos (2019), the EHEA framework guarantees that advanced education frameworks across Europe are right and that students, scientists and academics in Europe can study or work abroad more effectively. Qualifications across Europe are similar through the European Qualifications Framework (EQF).

As a next step, the authors describe EQF. European degrees are connected in a more extensive system of qualification of the EHEA. This is the system settled upon by 46 European nations and depicts what skills and competences you should have to do a graduation in a specific programme. The point of the structure of this system is to advance universal straightforwardness, acknowledgement and portability of European degrees (European Commission, 2017). According to the European Commission (s.a.), as a significant aspect of the EHEA, every nation taking an interest consented to:

- Present a three-cycle advanced education framework comprising of bachelor's, masters and doctoral study programmes
- Guarantee the shared acknowledgement of capabilities and learning periods abroad finished at different educational institutions
- Actualise an arrangement of value confirmation, to reinforce the quality and importance of learning and educating.

EHEA ought to be recognisable by its straightforwardness, by its practically identical degrees sorted out in a three-cycle structure, by its participation in quality affirmation and by its universal acknowledgement of degrees. This permits unlimited versatility to understudies, graduates and advanced education staff (European Commission, 2017).

The all-encompassing framework for qualifications of the EHEA gets its particular purposes from the goals communicated through the Bologna Process: international transparency, acknowledgement and movement. Worldwide acceptance of qualifications expands on openness. The general qualification framework gives a typical comprehension of the results as a contrast to a mere comparison of qualification (recognition). The all-encompassing qualification framework incredibly improves the value of qualification over the EHEA. The stakeholders of higher education in Europe contributed to the development of the overall qualification framework (European Commission, n.d.-b).

The authors emphasise that each nation in Europe has its instruction framework. Framework for qualifications of the EHEA depends on an intergovernmental understanding within the Bologna Process. The framework's point is to sort out national advanced education capabilities into an all-encompassing European-wide qualification structure. Conventional descriptors of the immediate learning results at each level have been characterised by a group of experts within the Bologna Process. These descriptors are applicable in every national setting.

Methodology

The authors selected a questionnaire as a research tool for achieving the research aim. After reviewing the literature and scientific research work performed by various authors, the authors came up with a

compilation of the top 10 educational factors that influence consumer behaviour in general and matching factors that influence consumers in the choice for their HEI. They are listed as follows:

- Ranking of the university
- Reputation of the university
- Accreditation of the programme and university
- Facilities on campus (latest technology used for teaching, library, cafeteria, etc.)
- Educational qualification and work experience of teaching staff
- Accommodation facilities provided
- Scholarship opportunities
- Internship opportunities
- Programmes are taught in English
- Admission process is easy

The questionnaire is based on the pairwise comparison, and the results are obtained using an analytical hierarchy process (AHP) proposed by Wind and Saaty (1980). According to the method, experts compare alternatives $\{\theta_1, \dots, \theta_n\}$ with each other by filling pairwise comparison matrices $A = (a_{ij})_{n \times n}$, where $a_{ij} = \frac{\omega_i}{\omega_j}, \forall\, i,j = 1,2,\dots,n$; $\omega_n\ (n = 1,2,\dots n)$ – priority vector; $a_{ij} = \frac{1}{a_{ji}}, \forall\, i,j = 1,2,\dots,n$.

After experts complete pairwise comparison of the factors, all the matrices are evaluated with regards to consistency. The matrix is consistent if there is such priority vector $\mathbf{w} = (\omega_1, \dots, \omega_n)$ that $a_{ij} = = {\omega_i}/{\omega_j}, \forall\, i,j$. For that issue, the consistency index (CI) is calculated (Saaty, 1993). To compute the CI, an eigenvalue of the pairwise comparison matrix λ_{max} is calculated first: $\lambda_{max} = \sum_{j=1}^{n} \frac{(\mathrm{A} \cdot \nu)_j}{n \cdot \nu_j}$, where A is the comparison matrices, n is the number of rows in a matrix and ν_j is an eigenvalue of a matrix. Consistency requirement is fulfilled if λ_{max} is equal or close to n. After CI is computed, a consistency ratio (CR) should be calculated by dividing CR by random index, that is, fixed values for different n (Thomas L. Saaty, 2012). If $CR \in [0; 0{,}2)$, it means that the matrix is consistent (Аксёнов et al., 2014). In other words, for experts' consistent pairwise comparison matrices, the aggregated experts' assessment is calculated using geometric mean (Kostin, 2014; Wu, Chiang & Lin, 2008). After the aggregated matrix is developed, the weights of factors ω_j are computed using the normalised geometric mean method (Franek & Kresta, 2014).

Empirical Findings

The research on factors of individual clients' confidence in mobile banking took place in Latvia and Lithuania in April 2020. Seven experts from the two countries took part in the survey. Experts with an experience of working with international students were selected for the assessment of the distinguished educational factors. The characteristics of the experts who participated in the study are presented in Table 6.

Table 6. Characteristics of experts (Source: Designed by authors)

Experts	**Characteristics**
E_1	Vice-Rector for Science; Professor; PhD, 10 years
E_2	Professor; PhD; 8 years
E_3	Study Programme Director; PhD; 8 years
E_4	Professor; PhD; 10 years

E_5	Professor, PhD; 15 years
E_6	Study Programme Director; MSc; 4 years
E_7	Associate Professor; PhD; 10 years
E_8	Assistant Professor; PhD Candidate; 5 years

The experts evaluated 10 educational factors by comparing them to each other. The experts' individual comparison matrices and consolidated matrix are presented in Appendix 1. The results of the weighting procedure are presented in Table 7.

Table 7. Weights given by experts to educational factors influencing students' choice to study at European HEI (Source: authors' calculations)

Factor	**Weight (place)**
Ranking of the university	0.042 (10)
Reputation of the university	0.054 (9)
Accreditation of the programme and university	0.102 (4)
Facilities on campus (latest technology used for teaching, library, cafeteria, etc.)	0.112 (3)
Educational qualification and work experience of teaching staff	0.070 (7)
Accommodation facilities provided	0.076 (6)
Scholarship opportunities	0.162 (2)
Internship opportunities	0.069 (8)
Programmes are taught in English	0.238 (1)
Admission process is easy	0.080 (5)

Visualisation of the results is presented in Figure 1. Moreover, absolute errors are depicted in the figure.

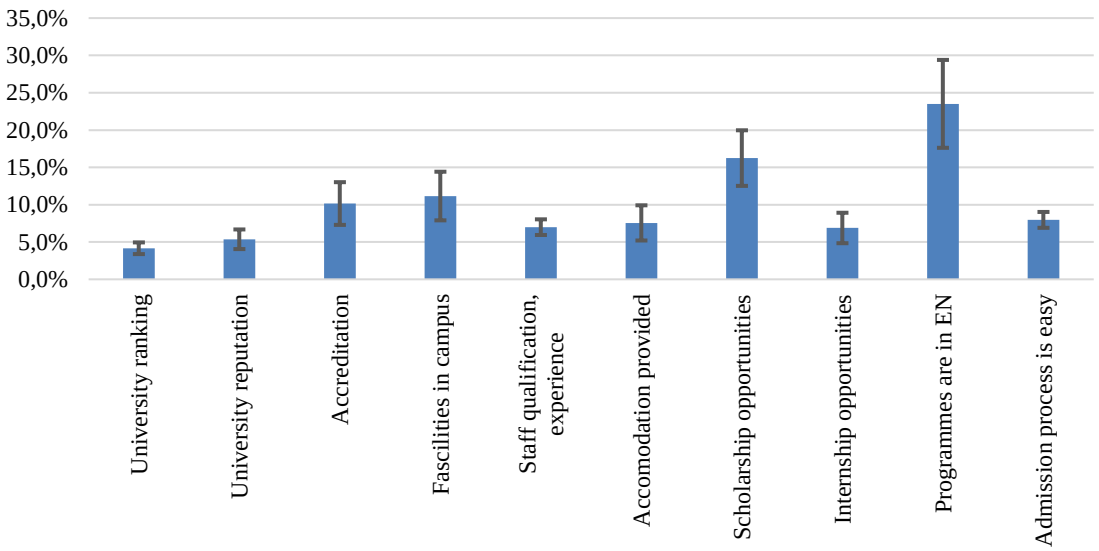

Fig. 1. Factors' weights obtained with AHP method and absolute errors (Source: Authors' calculations)

The results presented in Figure 1 and Table 6 show that the most powerful and influencing educational factor is programmes taught in English. The weight of the factor is reasonably higher than other weights and reaches 23.8% with an absolute error of ±5.9%. In fact, the results are logical because English is considered to be an international language and almost all universities in Europe provide all or a part of their programmes in English. The second factor is scholarship opportunities for incoming students. The weight of the factor is 16.2% with an absolute error of ±3.7%. In fact, the opportunities to receive this kind of funding are one of the essential factors for students because most of the incoming students are from those third countries that considered as developing. This means that very few students can allow coming to Europe to study without any financial support. Facilities of the campus gained a third place in the ranking, and the weight of the factor is 11.2% and the absolute error is ±3.3%. It is quite evident that incoming students are not familiar with the country they are going to. Usually, it is a country with a different religion, mentality and so on. Hence, looking for facilities outside the campus might be difficult, especially at the very beginning of studies.

What is more, this factor is closely related to financial support as well. Usually, the facilities provided on campus are cheaper than those supplied outside the campus; hence, for young people who do not have stable financial inflows, this aspect becomes extremely important. Another vital factor, according to the experts, is the accreditation of the programme and university. It is evident that international student comes to the university in order to receive new knowledge, gain new skills and, at the end, receive their diploma, which becomes impossible without accreditation. The weight of this factor is 10.2%, with an absolute error of ±2.9%. The rest factors were considered as less important, and their weights are below 10%. However, they remain vital as well and do have an influence on students' motivation to choose to study abroad, in our case in Europe.

Conclusions

The article analyses the factors that could have an impact on students from third countries to choose to study at European HEIs. On the basis of the scientific literature analysis, the following 10 factors were distinguished: ranking of the university, the reputation of the university, accreditation of the programme and university, facilities in the campus (latest technology used for teaching, library, cafeteria, etc.), educational qualification and work experience of teaching staff, accommodation facilities provided, scholarship opportunities, internship opportunities, programmes are taught in English and admission process is easy. In order to rank the factors and identify the most important ones, the expert evaluation method was chosen. The expert had to perform a pairwise comparison of the factors, and the results were processed using the AHP method. On the basis of the obtained results, the following factors are the most important for a student who wants to study at European HEI: programmes are taught in English, the existence of scholarship opportunities, provision of different facilities in the campus and accreditation of the study programme and university.

It is worth saying that the current research was aimed at weighting the educational factors only. However, there are more factors that affect young people's choice to study in Europe, such as financial factors, organisational factors and geographical factors. Consequently, in order to get a big picture, these factors have to be analysed in future studies.

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Appendixes

Appendix 1: Consolidated and pairwise comparison matrices of experts

Consolidated

	1	2	3	4	5	6	7	8	9	10
1		0.535	0.525	0.305	0.654	0.542	0.315	0.516	0.204	0.607
2	1.871		0.706	0.281	0.946	0.694	0.282	0.724	0.223	0.626
3	1.905	1.416		1.408	1.488	1.435	0.561	0.917	0.604	1.501
4	3.281	3.562	0.71		1.615	1.391	0.736	1.804	0.344	1.145
5	1.53	1.057	0.672	0.619		1.13	0.569	1.007	0.271	0.985
6	1.846	1.442	0.697	0.719	0.885		0.488	2.044	0.209	0.81
7	3.177	3.551	1.781	1.358	1.758	2.05		3.753	0.719	1.811
8	1.937	1.381	1.091	0.554	0.993	0.489	0.266		0.369	0.923
9	4.892	4.486	1.657	2.907	3.685	4.787	1.391	2.711		2.615
10	1.646	1.598	0.666	0.873	1.015	1.235	0.552	1.084	0.382	

E_1

	1	2	3	4	5	6	7	8	9	10
1	1	1/2	1/5	1/2	1/4	1/3	1/2	1/3	1/2	1
2	2	1	1/3	1/2	3	1/4	1/3	1/2	1	1
3	5	3	1	3	6	4	4	3	3	6
4	2	2	1/3	1	3	1/3	1/3	2	1/4	2
5	4	1/3	1/6	1/3	1	1/3	1/3	1/3	1/4	1/2
6	3	4	1/4	3	3	1	3	2	1/2	3
7	2	3	1/4	3	3	1/3	1	2	1/2	2
8	3	2	1/3	1/2	3	1/2	1/2	1	1/4	3
9	2	1	1/3	4	4	2	2	4	1	4
10	1	1	1/6	1/2	2	1/3	1/2	1/3	1/4	1

E_2

	1	2	3	4	5	6	7	8	9	10
1	1	1/5	1/9	1/8	1	1/9	1/9	1/9	1/5	1/9
2	5	1	1/7	1/9	2	1/3	1/9	1/9	1/5	1/9
3	9	7	1	5	1	5	1	1	5	5
4	8	9	1/5	1	9	1	1/5	1/5	8	1/9
5	1	1/2	1	1/9	1	1/5	1/9	1/9	1/5	1/9
6	9	3	1/5	1	5	1	1/9	1/9	1	1/9
7	9	9	1	5	9	9	1	1	9	3
8	9	9	1	5	9	9	1	1	9	3
9	5	5	1/5	1/8	5	1	1/9	1/9	1	1/8
10	9	9	1/5	9	9	9	1/3	1/3	8	1

E_3

	1	2	3	4	5	6	7	8	9	10

E_4

	1	2	3	4	5	6	7	8	9	10

1	1	1/5	1	1/3	1/5	1/3	1/9	1/9	1/5	1/7
2	5	1	1	1/5	1/3	3	1/9	1/9	1	1/7
3	1	1	1	4	4	1/3	1/9	1/9	1/3	1/9
4	3	5	1/4	1	3	1	1/9	1/9	1/3	1/9
5	5	3	1/4	1/3	1	1/3	1/9	1/9	1/3	1/9
6	3	1/3	3	1	3	1	1/9	1/9	1/3	1/9
7	9	9	9	9	9	9	1	9	9	1
8	9	9	9	9	9	9	1/9	1	9	1
9	5	1	3	3	3	3	1/9	1/9	1	1
10	7	7	9	9	9	9	1	1	1	1

1	1	1	8	1	8	1	1/8	1	1/9	7
2	1	1	7	1/9	8	1/7	1/9	1	1/9	8
3	1/8	1/7	1	1/9	1	1/8	1/9	1/6	1/9	6
4	1	9	9	1	4	2	1/4	8	1/9	9
5	1/8	1/8	1	1/4	1	1/7	1/9	1/7	1/9	2
6	1	7	8	1/2	7	1	1/9	7	1/9	7
7	8	9	9	4	9	9	1	9	1/2	9
8	1	1	6	1/8	7	1/7	1/9	1	1/9	7
9	9	9	9	9	9	9	2	9	1	9
10	1/7	1/8	1/6	1/9	1/2	1/7	1/9	1/7	1/9	1

E_5

	1	2	3	4	5	6	7	8	9	10
1	1	1	1/8	1/5	1/4	1/5	1/8	1/8	1/9	1/6
2	1	1	1/9	1/4	1/5	1/4	1/9	1/4	1/9	1/9
3	8	9	1	9	5	4	1/9	5	1	5
4	5	4	1/9	1	1	1/5	1/6	1	1/2	1
5	4	5	1/5	1	1	5	1/9	5	1	3
6	5	4	1/4	5	1/5	1	1/9	4	1/9	1
7	8	9	9	6	9	9	1	9	2	9
8	8	4	1/5	1	1/5	1/4	1/9	1	1/9	1
9	9	9	1	2	1	9	1/2	9	1	6
10	6	9	1/5	1	1/3	1	1/9	1	1/6	1

E_6

	1	2	3	4	5	6	7	8	9	10
1	1	1/9	1/3	1/7	1/9	1/5	1/5	1/5	1/9	1/5
2	9	1	5	1/3	1/5	1/5	1/3	1	1/9	1/3
3	3	1/5	1	1/7	1/9	1/5	1/5	1/5	1/9	1/5
4	7	3	7	1	1/7	3	7	7	1/9	5
5	9	5	9	7	1	7	9	9	1/3	9
6	5	5	5	1/3	1/7	1	7	7	1/9	5
7	5	3	5	1/7	1/9	1/7	1	1	1/9	1/3
8	5	1	5	1/7	1/9	1/7	1	1	1/9	1/3
9	9	9	9	9	3	9	9	9	1	9
10	5	3	5	1/5	1/9	1/5	3	3	1/9	1

E_7

	1	2	3	4	5	6	7	8	9	10
1	1	3	7	1	3	5	5	7	1	1
2	1/3	1	3	3	1	5	7	7	1/5	1
3	1/7	1/3	1	1/5	1/5	3	1	1	1/7	1/7
4	1	1/3	5	1	1	5	5	5	1/7	1/3
5	1/3	1	5	1	1	3	3	5	1/3	1/3
6	1/5	1/5	1/3	1/5	1/3	1	1	7	1/7	1/7
7	1/5	1/7	1	1/5	1/3	1	1	3	1/7	1/7
8	1/7	1/7	1	1/5	1/5	1/7	1/3	1	1/9	1/5
9	1	5	7	7	3	7	7	9	1	1
10	1	1	7	3	3	7	7	5	1	1

E_8

	1	2	3	4	5	6	7	8	9	10
1	1	1	1/9	1/8	1	3	1	7	1/9	5
2	1	1	1/9	1/8	1	6	1/3	7	1/9	5
3	9	9	1	9	9	9	9	9	2	9
4	8	8	1/9	1	1	7	8	9	1/3	8
5	1	1	1/9	1	1	8	8	8	1/7	8
6	1/3	1/6	1/9	1/7	1/8	1	1	9	1/9	1
7	1	3	1/9	1/8	1/8	1	1	9	1/9	5
8	1/7	1/7	1/9	1/9	1/8	1/9	1/9	1	1/9	1/8
9	9	9	1/2	3	7	9	9	9	1	9
10	1/5	1/5	1/9	1/8	1/8	1	1/5	8	1/9	1

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MOTIVATION TO INNOVATE AS A KEY FACTOR IN INNOVATION DEVELOPMENT PROCESS

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Abstract

Research purpose. The purpose of this study is to analyse the influence of industrial enterprises' employees' motivation to innovate on the results of innovation process and the quality of innovative products market performance. The need for such an assessment was inspired by the lack of understanding the role of motivation to innovate in the quality and success of innovation development process.

Design/Methodology/Approach. To achieve this goal, the authors conducted a survey distributed to the industrial enterprise employees. The study was based on the paper-and-pencil survey that was distributed to 250 people involved in innovation development process at Russian industrial enterprises; 150 questionnaires were received back and considered valid for the study. The results were evaluated by means of statistical analysis performed by means of SPSS Statistics software.

Findings. The results support the intuitive proposition that motivation to innovate influences the quality of new product development process: idea generation, market study, product development, pre-commercial financial analysis and commercialisation quality are influenced by motivation to innovate – which is in line with the literature (Cooper, 2013). At the same time, probability on new product development in the company, the quality of initial screening, preliminary technical analysis, preliminary production analysis and in-house product testing do not correlate with employee motivation to innovate. Same is true for the new product performance: we observed no correlation between the motivation to innovate and the market success, whereas correlation was revealed between the innovative motivation and the level of market competition for the new product; however, the graphical analysis allowed to estimate that in case employees with high motivation to innovate are absent in the company, it is very unlikely that the new product would be successful.

Originality/Value/Practical implications. The study was based on a questionnaire that was used for relevant purposes in different countries in order to make cross-country comparison on the innovation development process and the role of motivation to innovate. It allowed to indicate the specific features of organisational culture that are outlined in the Russian management literature: in majority of cases, bottom-level innovative initiatives were not supported by the management (Prigozhin, 2007), and hence, motivation to innovate cannot be revealed by employees at every stage of the new product development process. Another reason for somewhat controversial findings of this study was the difference between organisational cultures of the analysed manufacturing enterprises, which was not evaluated in this article.

Keywords: workplace innovation; motivation for innovation; innovative products development; innovation process; innovation strategy

JEL codes: L22, O31, O32

Introduction

Existing literature recognises innovation as one of the main drivers of both firm growth and organisational development, which leads to extensive research on key factors affecting efficiency of the process of new product development (see Kahn et al., 2012; Locke & Wellhausen, 2014), which include, amongst others, individual and team innovation (McMurray et al., 2013), organisational culture (Martins & Martins, 2002), leadership (Hughes et al., 2018) and a number of other intangible factors. Although motivation to innovate is recognised by a number of scholars as an important incentive of innovation development process (Samila & Sorensen, 2011) and a key factor of being an industry leader (Moore, 2005), the importance and influence of motivation on innovative process is

underdeveloped from the quantitative point of view. Some studies on innovation incentives with large samples were performed recently, but they mainly focus on IT-oriented and other high-tech innovations (Kallingal, Rajarathinam, 2016: Tang, Yu, 2016), thus leaving manufacturing sector innovation behind.

The situation on studying innovation incentives is even worse in case of Eastern European countries: a little evidence on company innovative performance is available (Skorupinska & Torrent-Sellens, 2014), although the importance of innovation for growth of the firms from this part of the world is clearly recognised (Prats et al., 2015). In case of Russian companies and their innovative activities, a little evidence is revealed so far, which is due to low level of transparency, which is a specific feature of Russian manufacturing sector.

In this study, we aimed to identify the relationship between motivation to innovate and innovation development process based on the data obtained directly from Russian manufacturing companies in order to test the importance of this factor of innovative product performance. A lack of research at the intersect of innovation process, motivation and manufacturing enterprises had defined the research question of this study: does motivation to innovate influence the outcome of innovation development process in the manufacturing sector.

To answer this research question, the authors had implemented a survey on innovation development process, followed by quantitative analysis of the influence of motivation on this process.

Literature overview

An evaluation of existing literature on motivation to innovate and its influence on company performance and market perspectives of new product showed that the majority of studies are concerned with organisational culture and creativity as drivers of motivation to innovate (Martins & Martins, 2002), identification of values and assumptions of innovation development (Filipczak 1997, Judge et al., 1997) and the role of openness in promoting innovative motivation (Senge et al, 1994). The problem was also evaluated from managerial point of view: researches investigated the role of learning orientation in creation of motives to innovate (Dragoni et al., 2009) and multidimensional nature of motivation to innovate (Cano-Kollmann & Hamilton, 2014). Thus the quantitative analysis of the influence of the motivation to innovate on the innovation development process is underdeveloped in existing literature.

An analysis of Russian literature showed lack of quantitative studies on employee motivation, motivation to innovate and innovative products development process and performance. Existing studies paid attention to innovation dynamics (Korzinkov, 2013), implemented theoretical frameworks of innovation process (Gerasimov, 2012), dealt with management of innovation activity (Vasyukhin, Pavlova, 2010) or ranked innovative practices and evaluated relevant methodology (Gokhberg, 2014) – and almost all of these studies avoided the use of quantitative data. The reason for low interest towards studying innovative performance, which is named by the country officials a priority of national economy development, can be explained by the fact that innovative products provide less than 1% of Russian Gross Domestic Product (GDP) (Rosstat, 2014), and the tendency is the same for at least past 10 years (Koshkin, Svirina, 2011). Hence, the problem of innovative product development in Russian context remains underdeveloped in existing literature, which is also due to the lack of interest towards motivation that can be found in Russian management studies.

Methodology

In order to conduct the research, we used the questionnaire developed for search for workplace innovation and technology innovation by the RMIT university (Xuang, McMurray, 2014), which was enriched by the question on employee motivation to innovate at the time of entering workplace and after a year. The questionnaire was translated into Russian, and the accuracy of translation was tested via reverse translation procedure, and the questionnaire was adapted within two rounds of translation. Then, 250 questionnaires were distributed to mid-Russian manufacturing companies coming from different branches of industry, including chemical and oil industry, construction materials production,

equipment and accurate equipment building, food manufacturing and ship and engine production. The distribution process took place in September and October 2014. We received back 163 questionnaires filled by managers of different level (a very high response rate of 65.2% was due to the fact that distribution was made within Russian universities strategic partners' network); 13 appeared to be inappropriate for evaluation, so we got the sample of 150 questionnaires; of these, 128 (85.33% of the original sample) came from firms that developed new product within the period of past 3 years, whereas the rest confirmed that 14.67% of original sample work in the companies that did not provide any technology innovation in the past 3 years.

The majority of the companies (which included both small and medium-sized companies (SMEs) and relatively large companies) had launched their latest new product past year, so innovative process in these companies can be considered an innovative flow rather than discrete innovation (although, in 3.1% of the cases, new product did not get marketed because it was a specific product ordered by a certain client for its purposes). Of those companies, only 1.6% does not have a procedure for new product development, whereas in 32% of the cases, there is an informal one, although the majority – 66.4% of manufacturing firms – have a formal procedure for new product development.

The new product development process was measured in 13 steps developed by Cooper (2013), which evaluated the new product development from idea generation to commercialisation. All response scales for the measures were anchored to a Likert type scale, where 1 = strongly disagree to 5 = strongly agree.

Main findings

To address the main research question of the study, we proposed the following hypothesis:

Hypothesis 1. Motivation to innovate correlates with the elements of new product development process.

Hypothesis 2. Motivation to innovate correlates with the new product performance in the market.

To test hypothesis 1, we conducted analysis to measure the interrelation between motivation to innovate (at the times of hiring and a year after) and the main indicators of the new product development process (i.e. idea generation, market study, product development, pre-commercial financial analysis and marketing testing). To test hypothesis 2, we conducted analysis to measure the interrelation between motivation to innovate and the main indicators of the new product development process (i.e. commercialisation and market size of the product).

These hypotheses were tested with correlation analysis performed using SPSS Statistics (see Table 1). The table presents only statistically significant findings.

As it can be seen from the table, hypothesis 1 was partly supported. It was revealed that motivation for innovation and motivation dynamics (the questionnaire studied motivation at the time of employment and after a year of employment) were strongly related to the quality of (1) new product development, (2) idea generation, (3) preliminary market analysis and (4) the level of competition for the developed innovation product. Employee's innovative motivation is also related to the quality of (1) market study, (2) product development process, (3) market testing and (4) commercialisation. Accordingly, one can state that hypothesis 1 was supported by the results of statistical analysis, although some of the correlations did not achieve high level.

At the same time, no relation was observed between the motivation for innovation and (1) the quality of initial screening and (2) new product performance on the market, although intuition suggested these ties should exist (thus hypothesis 2 was not supported). It was confirmed that the absence of employee's motivation for innovation leads to low success rate of innovative products using both correlation and graphical analyses.

The difference identified between the motivation to innovate at the early and late stages (right after starting the job, and a year later) had provoked the need to identify the importance of motivation at both stages of employee performance.

Table 1. Correlation analysis of new product development process and employee motivation to innovate (Source: author's own findings).

		IG	**MS**	**PD**	**MT**	**PFI**	**C**	**MSP**	**MB)**	**MP**
Idea generation (IG)	Pearson correlation	1	.657**	.797**	.719**	.649**	.625**	−.004	.285**	.237**
Market study (MS)	Pearson correlation	.657**	1	.739**	.706**	.798**	.730**	.078	.209*	.229*
Product development (PD)	Pearson correlation	.797**	.739**	1	.692**	.752**	.808**	.061	.241**	.220*
Marketing testing (MT)	Pearson correlation	.719**	.706**	.692**	1	.835**	.715**	.057	.232*	.236*
Pre-commercial financial analysis (PFI)	Pearson correlation	.649**	.798**	.752**	.835**	1	.800**	.070	.201*	.195*
Commercialisation (C)	Pearson correlation	.625**	.730**	.808**	.715**	.800**	1	.034	.334**	.240*
How would you evaluate the market size for this new product? (MSP)	Pearson correlation	−.004	.078	.061	.057	.070	.034	1	.197*	.182*
Motivation at the time of hiring (MB)	Pearson correlation	.285**	.209*	.241**	.232*	.201*	.334**	.197*	1	.786**
Motivation after a year (MP)	Pearson correlation	.237**	.229*	.220*	.236*	.195*	.240*	.182*	.786**	1

** Correlation significant at .01.

* Correlation significant at .05.

The interrelation between the motivation to innovate and the market success of the product is presented in Figure 1.

The graph shows that in case of unsuccessful products, motivation to innovate level was relatively low (1 in the questionnaire stood for 'It is absolutely unimportant for me to create innovation in the workplace' and 5 for 'It is very important for me to create innovation in the workplace'), whereas, in case of successful products, at least some of employees stated that the innovation in the workplace was important for them. Hence, hypothesis 2 is partly supported, and the market success of the innovative product appears only when some of the employees are strongly motivated to innovate.

This finding was not unique for the industrial enterprises, yet it was previously confirmed in case of North American and Western European enterprises, whereas the conducted research allowed us to identify that in case of Eastern European and post-Soviet companies, market success of the developed innovative product is related to employees' motivation to innovate. This motivation is in turn related to the quality and efficiency of the new product development process – hence, comes the practical implication of this research – the involvement of efficient personnel in more market successful innovative products would increase the efficiency of the overall innovation process in an industrial enterprise.

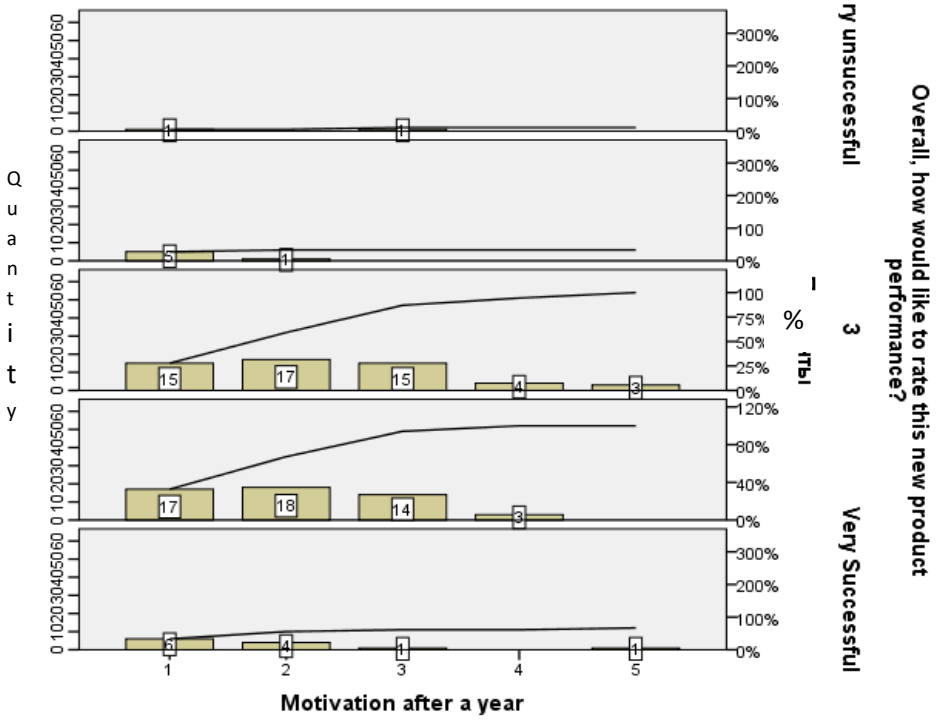

Fig. 1. Graphical analysis of employee motivation to innovate and new product performance (Source: author's own findings)

Conclusions

The purpose of the study was to measure the relationship between motivation to innovate at the time of hiring and after a year of employment and the elements of new product development process and market performance of innovative products in case of Russian industrial enterprises.

The results supported the intuitive proposition that motivation to innovate influences the quality of new product development process: idea generation, market study, product development, pre-commercial financial analysis and commercialisation quality are influenced by the motivation to innovate – which is in line with the literature (Cooper, 2013). At the same time, probability on new product development in the company, the quality of initial screening, preliminary technical analysis, preliminary production analysis and in-house product testing did not correlate with employee motivation to innovate. Same was true for new product performance: we found no correlation between motivation to innovate and market success, whereas correlation was revealed between innovative motivation and level of market competition for the new product; however, the graphical analysis allowed to estimate that in case employees with high motivation to innovate are absent in the company, it is very unlikely that the new product would be successful.

These findings can be explained by the specific features of organisational culture, which are outlined in the Russian management literature: in majority of cases, bottom-level innovative initiatives were not supported by the management (Prigozhin, 2007), and hence, motivation to innovate cannot be revealed by employees at every stage of new product development process. Another reason for somewhat controversial findings of this study was the difference between organisational cultures of the analysed manufacturing enterprises, which was not evaluated in this article.

Besides the absence of organisational culture evaluation, another major limitation of this study was relatively small sample (which did not include enterprises from Moscow and Saint-Petersburg regions, as well as companies from Asian part of Russia) and its focus was on manufacturing enterprises. These disadvantages indicated that future research should include testing the hypotheses of the study on a bigger sample and in case of other industries as well.

As the study was originally conducted in 2014, the authors were planning to enrich it by comparative study of the importance of employees' motivation to innovate to the quality of new product development process; the reason behind this was the similar situation in the industry. In 2014, Russian industrial enterprises witnessed increased pressure because of the increased volume of production (regarding to imposed sanctions), whereas in 2020, IT industry is witnessing similar stress provoked by the increased volume of Internet-based operations (evolved because of to COVID-2019-related curfew).

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PRODUCT BRANDING AND CONSUMER LOYALTY IN TELECOMMUNICATION INDUSTRY

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Abstract

Research Purpose. With fierce competition and saturated marketing in Nigeria, telecom operators must work hard to reduce cost, win new customers, and most importantly, retain the existing ones. The aim of the study was to examine the relationship between product branding and consumer loyalty in the Nigerian telecommunication industry.

Design / Methodology / Approach. This research employed survey research design. Primary data was adopted with the aid of a questionnaire administered to the customers of three major telecommunication companies in Nigeria (MTN, AIRTEL and GLOBACOM) residing in Lagos State. The population of the study was 172, the sample size was 120, which were determined using the simple computation method. The study made use of statistical tools that include: analysis of variance (ANOVA), correlation efficient and Statistical Packages for Social Sciences (SPSS) Version 17.0.

Findings. The results of this study confirm with the existing literature that product branding as a feature has a significant effect on product. The study found out that there exists a significant relationship between product branding and consumer loyalty in the Nigerian telecommunication industry. Consequently, from the practical perspective, telecommunication firms should expand their network coverage, improve the quality of service and provide better access to other networks within and outside Nigeria.

Originality / Value / Practical implications. The study seeks to contribute to existing literature on product branding and customer loyalty. The paper contributes in clarifying that telecom providers in Nigeria must make product branding as a very important aspect of its marketing strategy and it must be given a serious approach, because it goes a long way to determine the success or failure of the product offer to the market, the firm in question and its ability to achieve consumer loyalty

Keywords: Product Branding; Consumer Loyalty; Choice and Patronage; Telecommunication Industry.

JEL codes*:* M31; L96.

Introduction

The Nigerian telecommunication industry is experiencing stiff competition and it is the duty of every player in the industry to develop a good marketing strategic plan that will enable it win a good portion of the market (Okpara, 2002; Anyanwu, 2003). Most potential customers already have a telephone line or two, unlike the initial stage of the deregulation of the industry. It is not enough to get customers in the industry, but also converting them to loyal customers (Adeleke & Suraju, 2012). The real competition here now is not mainly on getting new customers but retaining the existing ones (Olakunori, 1999). If any company must survive in the industry, it must shift its marketing strategy from just winning new customers to retaining the existing ones (Keller, 2003; Choi, 2013). Lee et al. (2012) describe customer loyalty as follows: 'Customer loyalty is a composite of a number of qualities. It is driven by customer satisfaction, yet it also involves a commitment on the part of the

customer to make a sustained investment in an ongoing relationship with a brand or company. Customer loyalty is reflected by a combination of attitudes (intention to buy additional products or services from the same company, willingness to recommend the company to others, commitment to the company demonstrated by a resistance to switching to a competitor) and behaviours (repeat purchasing, purchasing more and different products or services from the same company, recommending the company to others). Nebo (2004) stated that customer loyalty is one major attribute that brands need to thrive in the market place. If customers are loyal to a brand, they become ambassadors by mouthing good stories about the brand (Kumar, 2002). Alireza and Aran (2011) posit that the basic truth is when customers are happy; they go to a large extent to promote a good image for the brand. Customer loyalty is all about relevance and meaning throughout every customer touch point. It is all about making the brand experience a more intimate relationship with the customers (Anjum et al., 2013). To achieve this (brand loyalty), the companies in the industry must pay more attention to its product branding. Many definitions of branding have been offered by different authors and a lot of reasons have also been deduced by different authorities as justifications for the adoption of branding as a marketing strategy. Branding is a fixation of special and unique image or attribute to a particular product, which makes it to be exceptional among other products in the eyes and minds of consumers (AMA, 2011; Gronhold et al., 2000; Ehikwe, 2005). The above definition of branding means that a brand has an added value to the physical product beyond the core product. These may be aesthetic, emotional, psychological and philosophical values that are embedded in the minds and hearts of consumers (Ahmad, Hassan & Rajput, 2015). Based on the definition, a brand is a product and the value-added personify it beyond the core product. This statement infers that branding identifies the product for the consumer and relates it to branding and product design. Phan and Lan (2001) captured the very essence of branding when they described it as an integral and intimate part of a product strategy. Lee (2013) opined that a product is not complete until it is given a name, mark or symbol. Branding has been identified as one of the major tools in the hands of firms to increase consumer loyalty (Kuo et al., 2013). Branding is a fixation of special and unique image or attribute to a particular product, which makes it to be exceptional among other products in the eyes and minds of consumers (Ehikwe, 2005). In view of this context, two research objectives were proposed for the study: (i) To examine whether product branding and features have a significant relationship on customer patronage for telecommunication products; (ii) To determine the relationship between product branding and consumer loyalty in the Nigerian telecommunication industry.

Literature Review

The Concept of Product Branding, Product Level and its Importance

A product is everything that is considered inclusive of satisfaction and utilities that the buyer obtains in the purchase (Malik et al., 2012). According to Ching (2007), a product is the basic ingredient in the exchange process. The expectation that satisfaction will be realized through exchange is what a product represents; it is the focus bringing buyers and sellers together to make exchange. The marketer see it as a good or service that most closely meets the requirements of a particular market or segment and yield enough profit to justify its continued existence, while the economist sees it as goods (physical) and services (intangible), while has the ability to give utility to the consumer or user (Edward, 2010; Evanschitzky & Wunderlich, 2006). According to Kotler and Keller (2009), there are five different levels of product that must be well understood in order to produce a product that will satisfy the needs of the targeted market. Nebo (2004) classified product into four pairs: durable and non-durable categories –this classification reflects the life expectancy of a product; perishable and non-perishable ones – the factor of perishable ability here can be psychological as well as physical; and also as necessity and luxuries ones – necessity are essential, while luxuries are those that match wants more than needs; and finally, those product that are price elastic and those that are price inelastic. Marketers see the variation of products and brands as going through a life cycle that begins with commercialization and ends with removal from the market place. This is defined in terms of two dimension, sales volume and time (Juwan, 2011; Kotler, 2010; Chaudhuri, 2001; Reichheld, 2003). The product life cycle is divided into five stages: introduction or pioneering stage – here, product has not been accepted by the market; rapid growth or market acceptance stage – here, sales rise at an

increasing rate as consumers accept and demand the product; slow growth or turbulence stage – here, sales climb high but at a decreasing rate; saturation or maturity stage – here, sales level off and everyone seems to have the product; decline or obsolescence stage – here, sales turn downward, profit usually decreases and competitors leave the scene (Choi et al., 2006; Keller, 2002; Back & Packs, 2003).

Many definitions of branding have been offered by different authors and a lot of reasons have also been deduced by different authorities as justifications for the adoption of branding as a marketing strategy (Chung et al., 2006). What is more, the popularity of a brand has often been said to be a direct push for sales turnover (Dobers, 2009; Evanschitzky & Wunderlich, 2006). Not minding the vagaries of definitions of branding, the fact still remains that it is an important aspect of every firm's marketing activity that cannot be overlooked. Branding has been said to be as important as a child's naming ceremony and as old as man/creation (Okpara, 2002; Ahmad, Hassan & Rajput, 2015). Branding is a fixation of special and unique image or attribute to a particular product, which makes it to be exceptional among other products in the eyes and minds of consumers (Ehikwe 2005; Chakraborty & Sengupta, 2014). From the above definition of branding, it means that a brand has an added value to the physical product beyond the core product. These may be aesthetic, emotional, psychological and philosophical values that are embedded in the minds and hearts of consumers. Based on the definition, a brand is a product and the value-added, which personifies it beyond the core product. Onah and Thomas (2004) identified the various types of brands as manufacturer's brand and private brands. They posited that branding helps to facilitate the performance of various other Marketing Management functions like New Product Introduction, Advertising and other Promotions, Pricing and so on. It is strongly speculated that most times, what consumers buy is name and not quality or functionality or performance. Djupe (2000) captured the very essence of branding when he described it as an integral and intimate part of a product strategy. This suggests that a product is not complete until it is given a name, mark or symbol. From the foregoing discussions, it is obvious that the essence of branding is to create a distinctive and unique product, whose name rings a bell and commands the influence of consumers positively in terms of one's purchase behaviour (Luo & Bhattachanya, 2006; Fraering & Minor, 2013). This against the backdrop for a bigger and more resonating name, for a better perceived name, certain consumers will be willing to pay a little more. Consequently, it is safe to extrapolate that branding distinguishes the product or service of a manufacturer(s) from that of other manufacturer(s) of the same or similar products. This distinctive element is particularly crucial for the repeat purchasers and first-time buyers or prospects of malt drinks. Van Auken (2007) compiled a list of characteristics of leading brands as follows: has very high awareness, increases customer loyalty, decreases price sensitivity, results in increased market share, especially for the target customers. In this list of characteristics, of great importance is that it reduces price sensitivity, commands customer loyalty and commands positive perception among consumers or customers. This goes to probably suggest why branding may influence consumer purchase behaviour. Levitt (1983) opined that branding is usually a way of distinguishing a company's product from the competing products. It should be an assumption that companies, particularly those starting new and those not sure of what the consumers' reaction to their products would be, would approach the branding exercise with a lot of ambivalence (De Bakker et al., 2005). The resultant name, term, sign, symbol or any combination is what comes out as the brand. This means that a brand can come in the form of a name or mark (Nebo, 2004; Kumar, 2002; Edward et al., 2010). Lee (2013) stated that branding helps to supplement advertising and personal selling. Branding seeks to provide a prospect that has been notified through advertising, the means of identifying the product in the market place. Therefore, brand name is another product attribute that can contribute to consumer acceptance of a product. It can be extended to refer to the visual features such as package, colour, typography design or slogan, which should assist in stimulating and maintaining demand (Kuo et al., 2013; Choi, 2013). A branded product once acceptable to the consumer can lead to brand loyalty, good brand image, and thus, greater market acceptance of such a product. Because branding adds to the value of products, market acceptance and achieve competitive edge over others market, designation of branding include brand name, brand mark, trade mark copyright, family branding, individual branding, manufacturers brand, distributor's brand, primary brand, secondary brands and so on (Reichheld, 2003; Adeleke & Suraju, 2012). There is a need for differentiation that gives rise to the branding of products as mark of identification,

differentiation and recognition in the presence of so many products that have similar outlook (Anyanwu, 2003; Olakunori, 1999).

Role of the Brand

The crucial role of branding according to Okpara (2002) can be captured from three perspectives: Consumers, Manufacturers and Intermediaries.

a. Consumers: For consumers, product branding does the followings:

i. It facilitates the identification and purchase of preferred product choices.

ii. It enthrones some status symbols on users of the product.

iii. Especially for new products, they can help in the first-hand evaluation of the products' likely suitability and quality, judging from who is the owner of the brand.

b. Manufacturers: Product branding to the manufacturers is vital in the following ways;

i. It affords a manufacturer on exclusive legal protection for his unique efforts and product features, from competitive parody.

ii. It is vital in differentiating and serving market segments of various purses, purposes and personalities.

iii. It facilitates the identification of a manufacturers' product on the retail shelves.

iv. It can provide a manufacturer with an avenue to escape the travails of price related competition

c. Intermediaries: These include the wholesalers, retailers, agents, jobbers and so on. A typical store, supermarket or distributor benefits from branding in the following ways:

i. The brands are usually advertised by the manufacturers, thereby making sales easier for intermediaries.

ii. It makes description and location of needed products by shoppers much easier.

iii. Promotional materials based on product brands are usually given as gifts to intermediaries.

Customer Loyalty

Alizera and Aram (2011) stated that customer loyalty is a composite of a number of qualities. It is driven by customer satisfaction, yet it also involves a commitment on the part of the customer to make a sustained investment in an ongoing relationship with a brand or company. Customer loyalty is reflected by a combination of attitudes (intention to buy again and/or buy additional products or services from the same company (Kumar, 2002; Malik et al., 2012; Dobers, 2009). Customer loyalty is one major attribute that brands need to thrive in the market place. When customers are loyal to a brand, they become ambassadors by mouthing good stories about the brand (Lee, 2013; Choi, 2013; AMA, 2011). It is a basic truth that when customers are happy, they go to a large extent to promote the good image for the brand (Gronhold et al., 2000). Customer loyalty is all about relevance and meaning throughout every customer touch point. It is all about making the brand experience a more intimate relationship with the customers (Minarti & Segoro, 2014). Brand loyalty is the situation in which a consumer generally buys the same manufacturer-originated product or service repeatedly over time rather than buying from multiple suppliers within the category (Kuusik, 2007; Phan & Lau, 2001).

Methodology

This research adopted the use of survey research design. The consumers will be purposefully selected, in which 172 consumers will be selected from the three firms. This will give all the consumers to have an equal opportunity of being selected. This is because the actual population of the consumers cannot be determined. Since it is usually not possible to study the entire larger population of telecom firms in Nigeria, the researcher will be choosing consumers of MTN, AIRTEL and GLOBACOM. The sample will be determined from various users of the three telecom firms. To this extent the sample size will be determined by a simple computation method. Therefore, an approximate sample size of 120

respondents will be used to conduct the research. For the purpose of this study, the secondary sources that will be used are journals, textbooks, reports and periodicals. The sample frame that will be used are the consumer of the selected Firms. The researcher employ stratified sampling and purposive sampling to select the respondents of the study. The Cronbach's Alpha will be used to assess the reliability of the data. The sampling validity will be used to access the validity of the data. It is a measure of validity obtained, to ensure that the measure covers the broad range of areas within the concept through a sample size under the study in order to achieve the research objective (Cresswell et al., 2003). The study made use of statistical tools that include: analysis of variance (ANOVA) and correlation efficient in testing hypotheses, wherever applicable. The responses from the questionnaire were sorted, coded and Statistical Packages for Social Sciences (SPSS) Version 17.0 was used for analysis.

Table 1. Distribution of respondents and response rate (Source: Field Survey 2018)

Respondents Occupation	Questionnaire administered (sampled)	Percentage of total response (%)
GLOBACOM Consumer	27	27.0
AIRTEL Consumer	20	30.0
MTN Consumer	53	53.0
Total	100	100.0
Gender/Category	Questionnaire administered (sampled)	Percentage of total response (%)
Male	46	46.0
Female	54	54.0
Number of Returned	100	83.3
Number of Not Returned	20	16.7
Total Number of Questionnaires	120	100

Table 2. The Descriptive statistics of Product Branding and Consumer Loyalty in the Telecommunication Industry (Source: Field Survey 2018)

Product Branding Features and Customer Patronage for Telecommunication Products	**Mean**
Product branding and features determine customers' choice and patronage of telecommunication products	4.86
Product branding may influence consumer purchasing behaviour	3.99
Most telecom firms use product branding as their promotional tool	3.88
Product branding increases the level of productivity	3.65
Product branding is necessary for the survival of any business and its product, especially in the highly competitive Nigerian telecommunication industry	3.96
There is a significant relationship between product branding features and customer patronage for telecommunication products	3.88
Product Branding and Consumer Loyalty in the Nigeria Telecommunication Industry	**Mean**
Customer loyalty helps to relate to the future purchase intention of the customer to repurchase the desired product.	3.89
Product branding determines consumer's loyalty and a better branding leads to increased customers loyalty.	3.98
Product branding helps customer to differentiate the product from other product in the same industry.	3.88
Product branding helps to make awareness of a product in the market	3.76
Products branding are designed to satisfy customers according to their needs.	3.92

Results

Hypothesis One

H_0: There is no significant relationship between product branding features and customer patronage for telecommunication products..

H_1: There is a significant relationship between product branding features and customer patronage for telecommunication products.

Table 3. Correlation matrix (Source: Authors' computation)

		Product Branding	Product choice and customer patronage
PRODUCT BRANDING AND FEATURES	Pearson Correlation	1	0.203*
	Sig. (2-tailed)		0.043
	N	100	100
CUSTOMER PATRONAGE	Pearson Correlation	0.203*	1
	Sig. (2-tailed)	0.043	
	N	100	100
*Correlation is significant at the 0.05 level (2-tailed)			

Result: Pearson Correlation Value of the hypothesis is 0.203 having the r value of 0.001 (in which p-value is lesser than 0.01), it shows that the correlation result is considered to be significant at 0.05 level. This shows a correlation between the dependent and independent variables with the value of 0.203 at a significance level of 0.05. Hence, it is concluded that there is a significant relationship between product branding features and customer patronage for telecommunication products. Therefore, the decision would be to reject the null hypothesis (H_0), and accept the alternative hypothesis (H_1)

Hypothesis Two

H_0: There is no significant relationship between product branding and consumer loyalty in the Nigeria telecommunication industry.

H_1: There is a significant relationship between product branding and consumer loyalty in the Nigeria telecommunication industry.

Table 4. Model summary (Source: Authors' computation)

Table 4 : Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.349[a]	0.122	0.116	1.703	1.997
a. Predictors: (Constant), PRODUCT BRANDING					
b. Dependent Variable: CONSUMER LOYALTY					

Table 5. ANOVA (Source: Authors' computation)

ANOVA[a]						
Model		Sum of Squares	D_f	Mean Square	F	Sig.
1	Regression	63.476	1	63.476	21.897	0.000[b]
	Residual	458.024	158	2.899		
	Total	521.500	159			
a. Dependent Variable: CONSUMER LOYALTY						
b. Predictors: (Constant), PRODUCT BRANDING						

The result from the model summary table revealed that the extent to which the variance in customer loyalty can be explained by product branding is 12.2%, that is, (R square = 0.122). The ANOVA table shows the F_{cal} 21.897 at a significance level. The table shows that both variables are significant at a significance level of 0.01.

Table 6. Regression coefficients (Source: Authors' computation)

Regression Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.617	1.504		7.061	0.000
	Product branding	0.396	0.085	0.349	4.679	0.000
a. Dependent Variable: CUSTOMER LOYALTY						

The coefficient table above shows the simple model that expresses the relationship between customer loyalty and discount. The model is shown mathematically as follows:

$y = a + bx$, where y is customer loyalty and x is discount, a is a constant factor and b is the value of coefficient. From this table, therefore, product branding = 10.617 + 0.396 customer loyalty. It shows that both tested variables are at a significance level of 0.01, which means that there exists a significant relationship between product branding and customer loyalty. Therefore, for every 100% increase in customer loyalty, product branding contributed 39.6%.

The significance level below 0.01 implies that a statistical confidence of above 99%. This implies that there is a positive significant relationship between product branding and customer loyalty. Thus, the decision would be to reject the null hypothesis (H_0), and accept the alternative hypothesis (H_1)

Conclusions

The result of findings has shown that there is no significant relationship between Product choice and customer patronage for telecommunication products. Also, there exists a significant relationship between product branding and customer loyalty in the Nigerian telecommunication industry. The research shows that product branding and features such as coverage, quality of service, tariff, customers service, promotion, value added service and access to other networks determine customers' choice and patronage of these networks. Product diversification and innovation such as prepaid airtime, mobile banking, mobile internet, mobile cable TV, video conferencing, sim backup and improved caller tunes determine customers' choice and patronage of telecommunication products. The correlation coefficient reveals that product branding has a very strong positive relationship with consumer loyalty in the Nigerian telecommunication industry. This implies that product branding

determines consumer's loyalty and a better branding leads to increased customer loyalty. From the research findings, the researcher therefore makes a conclusion that product branding is necessary for the survival of any business and its product, especially in the highly competitive Nigerian telecommunication industry. The focus has shifted from just only to get new customer to keeping the existing ones while looking for new ones, because that is the only way to succeed in the industry now. Therefore, the telecommunication firms in the industry in Nigeria, in order to maintain customer loyalty and increasing its profitability, must engage in quality product branding as this will help re-position its product offering and differentiate it from other competitors in the market place. This research recommends that:

Telecommunication firms should expand their network coverage and improve the quality of service they offer, because these are the major factors that affect customer loyalty.

Telecommunication providers in Nigeria must maintain a low and friendly tariff in order to increase customer loyalty and reduce brand switch.

Also, they must provide better access to other networks within and outside Nigeria, because this is another important factor that affects consumer loyalty.

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VALUATION OF LITHUANIAN CITIES' SMARTNESS

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Abstract

Research purpose. To assess the level of smartness of Lithuanian cities. The article systematizes the theoretical background of a smart city and its criteria, develops the methodology for measuring the level of smart cities and assesses the level of smartness of Lithuanian cities.

Design/Methodology/Approach. Methods used for the study: systematization, comparison, generalization, multi-criteria methods (COPRAS, EDAS and TOPSIS). The criteria for the assessment of smartness of cities were distinguished from the analysed scientific literature. Multi-criteria methods are used to determine the smartest city in Lithuania since they allow you to rank alternatives according to various criteria that are rendered dimensionless.

Findings. A multi-criteria assessment of the level of smartness of Lithuanian cities has shown that the capital city is leading. However, different results were obtained using different multi-criteria assessment methods in ranking the remaining cities.

Originality/Value/Practical implications. Usually, the smartness is analysed for major cities of the world, and Lithuanian cities were not assessed to the knowledge of the authors. The selected criteria for the assessment of the smartness of the cities represent the most often used (foreign direct investment; emission of the pollutant; the number of international immigrants; the ratio of people registered as unemployed to the working-age population; the number of crimes; the number of specialists trained at universities; the number of universities; the number of bus routes; the number of road traffic accidents; the number of IT companies and forest cover). The results could help for policy creators to make decisions on increasing the intelligence of Lithuanian cities, which would help to develop the economy not only in the capital but also in other important cities of the country and raise the quality of life of the inhabitants of those cities.

Keywords: Smart City; Smart City Criteria; Smart City Development; COPRAS, EDAS and TOPSIS.

JEL codes: O18; C38; O31; O32.

Introduction

The concept and phenomenon of a smart city are relatively new but has been spreading rapidly in recent years. Cities are becoming more and more advanced, making it much easier to solve various problems related to traffic, pollution, poverty, and unemployment (Dameri, 2013). Smart cities are a movement that aims to innovate, create a better environment, and improve skills and abilities (Zapolskytė & Palevičius, 2018). Smart cities reflect creativity, technological capacity and the ability to combine diverse, unrelated elements, knowledge, and processes. With the rapid growth of smart technologies, smart cities are also evolving steadily, becoming more and more convenient. This trend encourages the development of various smart technological solutions in cities, which are then used to develop the environment of public service infrastructure. Smart cities provide a higher quality of life, which is why it is essential to develop, adapt and use smart systems in various social and economic activities of cities, and to develop higher-quality infrastructure (Batty, 2017). For a city to become smart, it needs a favourable infrastructure, a focus on integration, innovation, and cooperation. Creating and developing a smart city requires careful, responsible work and planning.

Smart cities offer many benefits to society in terms of life quality and sustainability. Smart cities as a phenomenon represent the transition from an isolated city system to full openness in an intellectual

environment. The main goal of smart cities is to create a better and more comfortable environment for residents and to promote learning and innovation in various social fields. It is important to note that smart cities are associated with an environment that allows the integration of various, not necessarily interconnected, capabilities, information systems, elements, systems, and knowledge. The essence and concept of smart cities is still a new and not fully explored phenomenon. Although the importance and benefits of smart cities for nature and society are widely discussed around the world, the problems of smart city development are not clearly identified. The problem of the research is how to assess the level of smartness of cities. The research object is Lithuanian smart cities. This research aims to investigate the level of smartness of Lithuanian cities and to determine the smartest Lithuanian city based on the smart city criteria that are selected from the analysed scientific literature. To achieve this aim, several objectives are set: to systematize the theoretical concepts of a smart city, to create an appropriate methodology for assessing the level of smart cities, and to assess the level of smartness of Lithuanian cities. The methods used for the research are scientific literature analysis and synthesis: systematization, comparison, generalisation; multi-criteria decision-making methods EDAS (Evaluation Based on Distance from Average Solution), TOPSIS (technique for order of preference by similarity to ideal solution), and COPRAS (complex proportional assessment).

A multi-criteria assessment of the level of smartness of Lithuanian cities has shown that the city of Vilnius is leading in this context. However, different results were obtained using different multi-criteria assessment methods in ranking the remaining cities (Kaunas, Klaipėda, Šiauliai, Panevėžys).

Literature Review

The concept of a smart city is not clearly defined in detail and is not always used consistently. In scientific literature, the concept of a smart city is equated with terms such as a smart, digital or electronic city. A digital city is one in which most functions of services and management are in electronic form. However, the presence of electronic space and automation is not enough to indicate a smart or intelligent city (Komninos, 2006). A smart (intelligent) city is characterised by the active participation of residents in the development, management, and improvement of services. Scientific literature emphasises that a smart city is closely linked to feedback, innovation and the development of social intelligence. The concept of a smart city is not limited to technology. Various definitions and meanings of a smart city are found in the literature (Table 1).

Table 1. Definitions of a smart city (Source: author's compilation)

Author	Definition
Hajduk (2016)	A global trend in city strategies to restore city quality. Innovations and smart technologies are used to address problems related to social and economic problems.
Arasteh et al. (2016)	A city that applies a smart system characterized by the interaction of infrastructure, capital, behaviour, and culture, which is achieved through their synergy.
Caragliu et al. (2011)	When smart solutions are identified that allow modern cities to thrive by improving quantitative and qualitative performance.
Santinha and Anselmo de Castro (2010)	It is the relationship between a city and its environment, which emphasizes the importance of the organizational capacity, creativity and technologies of governing institutions.
Odendaal (2003)	A city that takes advantage of information and communication technologies, the opportunities they offer, their progress and influence.
Hall et al. (2000)	A safe city of the future, which preserves an ecological environment and has an efficient infrastructure. Advanced, integrated materials are used, consisting of databases, monitoring and decision-making algorithms.

All authors unanimously agree that a smart city is associated with innovation and smart technologies. A smart city is also closely related to improving the quality of life, creativity, prospects, solving residents' problems, and environmental friendliness. The creation and development of a smart city are based on artificial intelligence – a key feature of the 21st century society. A smart city is a social and

economic space in which governance and self-regulatory processes take place. The idea of a smart city arises from the application of technology to solve problems in cities (Dameri, 2013). Smart cities emerge when many different specialists, political views, economies, and cultures merge into one. Lakamp (2017) identifies six key aspects of a smart city that characterize a smart city: smart governance, smart economy, smart mobility, smart citizens, smart environment, and smart lifestyle. The author states that the creation and development of a smart city require forecasting and planning, as this helps to define goals and objectives, model possible situations, and anticipate people's reactions and accessibility.

Thus, a smart city is based on transparency, diverse strategies and perspectives, resident participation in decision-making, creativity, flexibility, environmental protection, and conservation of natural resources, accessibility, innovation, security, technological, educational and cultural infrastructure, and productivity. A city like this requires not only smart technologies but also the improvement, maintenance, storage, and replacement of smart technologies (Patašienė & Patašius, 2014). Smart cities also reflect user interfaces, the adaptability of residents, improved design, resilient and advanced energy, security, and privacy. Smart cities not only improve living conditions, conserve resources, provide easier and more convenient access to the needed information, goods, and services, but also contribute to the development of an intelligent, knowledge-based society. Smart cities are characterized by functionality, speed, and convenience (Leonavičius & Žilys, 2009). Resident involvement, innovation, and the use of digital literacy facilitate the development processes of a smart city.

Scientific literature indicates that the creation, development and solutions of smart cities are focused on raising the quality level and transforming the living environment. The creation of a smart city, like all processes, has a certain cycle. First of all, infrastructure is created, data is collected and processed, decisions are made, and then finally, services are provided to residents (Šiupšinskas, 2014). The final products, services, and resident services are referred to in scientific literature as applications or software. The final product in creating a smart city comes when all the necessary steps before this have been completed: the infrastructure has been set up, the data has been collected and processed. The final product provides city residents with access to a variety of electronic spaces where they can obtain and use relevant information about public transport, car flows, health care, education, culture, commerce, and other processes (Ferrara, 2015).

The development of smart cities is a process that was determined by the progress of science, technology, and the economy, as well as the needs of residents (Juškevičius, 2013). Smart cities, their creation and development all around the world are of great importance. With rapid transformation of the world's cities into smart cities, the optimization of city life is increasingly being considered. Smart cities are not a vision of the future but rather a topical reality and one of the most important principles of a modern city. Such cities are created and developed by implementing non-standard ideas, using imagination, science, knowledge and skills, and applying the principles of sustainable development (Calas, 2019). The development of a smart city, as a process, incorporates a variety of technologies, people, goods, businesses, transport, communications, and energy. The development of smart cities is important in that the living environment becomes more innovative, comfortable, and humane (Guo & Qi, 2019). The main elements of the importance of smart city development are indicated in the scientific literature (Table 2).

Table 2. Features of a smart city (Source: author's compilation)

Features / Authors	Building smart community	Conservation of natural resources	Functionality	Improvement of life quality	Availability of information and services	Traffic management
Guo and Qi (2019)	+	+	+	+	+	+
Alsaig et al. (2019)			+		+	+

Basumatary and Anand (2018)		+	+	+	+	
Cerruela García et al. (2016)	+			+	+	
Zapolskytė and Palevičius (2018)		+		+	+	+

In summary, the development of smart cities is essential for the development of a knowledge-based society (an increased number of specialists with higher education, an increased number of educational institutions in cities and improved quality of education and knowledge), conserving natural resources (cities become 'greener', more focus is placed on forest conservation and protection), creating a comfortable, functional city (leading to an increase in the number of immigrants attracting additional cash flow and FDI), creating easier access to information (city streets, residential, and commercial buildings become a network flow, which is controlled by sensors. As a result, crime decreases and people become more responsible), decreasing traffic flows (people choose public transport, which is a more convenient and faster method of travel and results in the decline in road traffic accidents), creating a life that is of much higher quality, more humane, and more convenient. It is also important to mention that the creation and development of smart cities, in turn, encourage the creation of IT companies, as they are one of the main drivers of smart cities. Scientific literature also states that the ratio between the unemployed and the working-age population is declining with the development of smart cities. When creating and developing a smart/intelligent city, its functions must satisfy the needs of all members of society (Tomičić Pupek et al., 2019). Thus, smart cities and their development are extremely important because they represent the transition from isolation to full intellectual openness. Presented are four key aspects that must be considered when creating and developing a smart city (Gascó-Hernandez, 2018):

- adopting multi-level governance models, assigning responsibilities across different levels of institutions and governments,
- promoting an integrated city policy with a holistic and strategic approach,
- focusing on new information and communication technologies to provide citizens with easier access to social and cultural content,
- ensuring sustainable territorial development based on the efficient use of resources.

Although the development of smart cities, as a phenomenon, has positive characteristics, there are often problems with the development of smart cities. In scientific literature, the development of smart cities is identified as a complex process that needs to be managed by creating an effective model and system that overcomes and solves problems arising in the long run (Tiškus, 2007). While the development of smart cities is a social process that ensures and streamlines social, economic, political, technological, and cultural processes, many problems are also encountered that must be continuously anticipated, modelled, analysed, and addressed. In the context of smart city development, multifaceted, complex, and universal problems are encountered.

When developing a smart city, there are many challenges related to educating people and informing them about new platforms. Technical and systemic challenges are also common. The scale of smart city creation and development is infinitely large, but there are constantly more and more various problems, mistakes, and incompleteness of models. With the expansion of smart cities, there are often issues with security and privacy, slow processing of large amounts of data, systemic disruptions, insufficient technological knowledge, and resident resistance. Problems of smart city development fall into three main categories (Figure 1).

Social problems are related to the community and city residents, economic problems – to finances, and technological problems – to information systems. Security and privacy issues are also related to cyber-

attacks, which can occur in the presence of data security vulnerabilities. Technological challenges arising from the development of smart cities are related to information technology. No one can guarantee that systems, models, and automated mechanisms in the face of an unusual and unforeseen situation will make the right decisions and will not make the situation catastrophic. Development problems may also be related to a lack of finances and investments. Creating or developing a smart city requires large investments for training people, purchasing machinery and equipment, and testing.

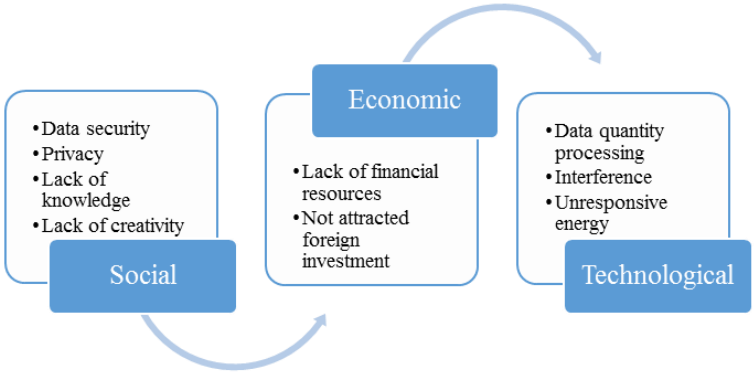

Fig. 1. Problems of smart city development (Source: author's compilation based on Gonzalez (2016))

In summary, the development of smart cities is caused by three groups of problems, which are related to resources, security, privacy, information technology, lack of creativity and knowledge. Thus, the problems of smart city development are multifaceted, often unpredictable, and universal. In order to anticipate such problems, it is necessary to model possible scenarios and analyse the data constantly. The problems of smart city development are complex in that they are new, unexplored, and unique).

Methodology

The current research has several stages. First, the criteria for the assessment of smartness of cities were distinguished from the literature. Second, the statistical data of the criteria were gathered. Third, multicriteria decision-making methods were employed in order to rank the largest Lithuanian cities in terms of cities' smartness. The research scheme is presented in Fig. 2.

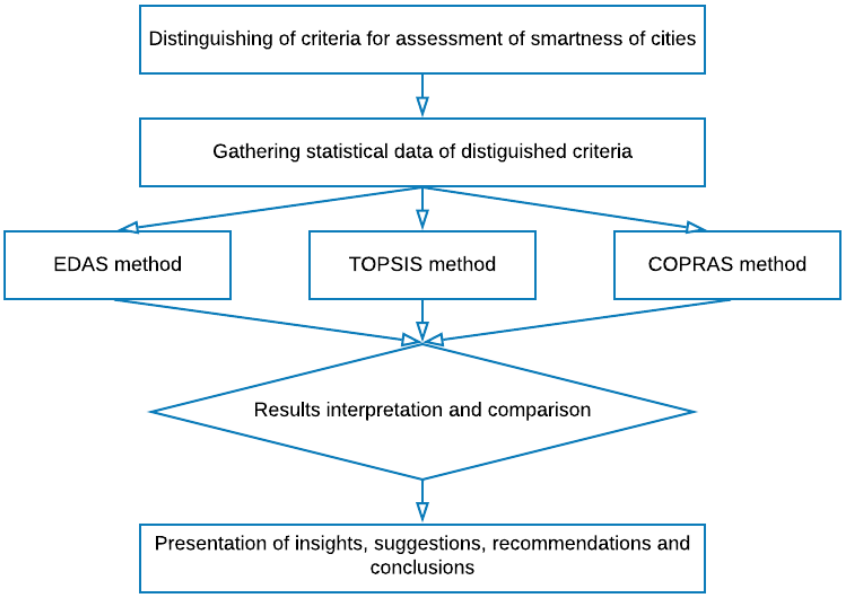

Fig. 2. Sequence of research to determine the level of city smartness (Source: author's compilation)

The criteria are based on scientific literature. According to the criteria of smart cities, five Lithuanian cities with all or some of the characteristics of smart cities are selected. After the multi-criteria assessment, all models are compared with each other in order to obtain the most accurate and reliable results possible, then the results are analysed. By applying multi-criteria assessment, the smartest Lithuanian city is determined using three different methods. Once the factors are identified, conclusions and recommendations are provided on what should be taken into account throughout the development of smart cities, which factors should be prioritized, and what requires the most focus, effort, work, and analysis.

The methods used for the research are EDAS, TOPSIS, and COPRAS. The advantage of multi-criteria methods is that they make values dimensionless. Some techniques are simple and easy to apply, while others are a bit more complex. Before performing the multi-criteria assessments, it is critical to determine whether the criterion is minimizing or maximizing and to determine the weight of each criterion.

The TOPSIS method is applied to both minimizing and maximizing indicators. This is the formula used to normalize the indicators. Positive ideal V^+ and negative ideal V^- solutions are calculated according to these formulas (Ginevičius & Podvezko, 2008):

$$V^+ = (v_1^+, v_2^+, \dots, v_n^+) = \left(\left(v_{ij} \mid j \in I\right), \left(v_{ij} \mid j \in J\right) \right), \quad (2)$$

$$V^- = (v_1^-, v_2^-, \dots, v_n^-) = \left(\left(v_{ij} \mid j \in I\right), \left(v_{ij} \mid j \in J\right) \right), \quad (3)$$

where: *I* is identified as the maximizing criterion and J as the minimizing criterion, i = 1, … , m; j = 1, … , n.

After calculating ideal positive and negative solutions, the distances to them are calculated according to these formulas (Ginevičius and Podvezko, 2008):

$$S_i^+ = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_i^+\right)^2}, \; i = 1, 2, \dots, m. \quad (4)$$

$$S_i^- = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_i^-\right)^2}, \; i = 1, 2, \dots, m. \quad (5)$$

After determining S_i^+ and S_i^-, the relative closeness to the positive ideal solution P_i is calculated according to this formula (Ginevičius and Podvezko, 2008):

$$P_i = \frac{S_i^-}{S_i^- + S_i^+}, \quad (6)$$

All criteria are ranked according to the P_i values obtained. The best variant is the one with the highest P_i value and vice versa.

Another multi-criteria assessment method used in smart city development research is COPRAS. This method is quite commonly used and can be easily applied to a variety of quantitative studies. Normalization using the COPRAS method is performed according to this formula (Malinauskas and Kalibatas, 2005):

$$d_{ij} = \frac{x_{ij} q_i}{\sum_{j=1}^{n} x_{ij}}, i = 1, \dots, m; \; j = 1, \dots, n \quad (7)$$

where: x_{ij} – the value of criterion *i* using variant *j*; *m* – the number of criteria; *n* – the number of compared variants; q_i – the significance of the criterion.

The second step after normalization is calculating the sums of minimizing S_{-j} and maximizing S_{+j} estimated normalized indicators describing a certain variant, according to these formulas (Malinauskas & Kalibatas, 2005):

$$S_{+j} = \sum_{i=1}^{m} d_{+ij}, i = 1, \dots, m; \; j = 1, \dots, n \quad (8)$$

$$S_{-j} = \sum_{i=1}^{m} d_{-ij}, i = 1, \dots, m; \; j = 1, \dots, n \quad (9)$$

Next, the relative significance of the compared variants is determined based on the S_{+j} and S_{-j} values that describe them. Relative significance is denoted by Q_j and calculated according to this formula (Malinauskas and Kalibatas, 2005):

$$Q_j = S_{+j} + \frac{S_{-min}\sum_{j=1}^{n} S_{-j}}{S_{-j}\sum_{j=1}^{n}\frac{S_{-min}}{S_{-j}}}, j = 1, \dots, n \quad (10)$$

Based on the obtained values of relative significance, the ranking of the criteria is performed. The higher the Q_j value, the higher the rank number and vice versa.

The EDAS multi-criteria assessment method consists of six main steps. As with any multi-criteria assessment, the application of the EDAS method starts with the creation of a solution matrix. When the solution matrix is formed, the average of all criteria is calculated according to this formula (Ubartė, 2017):

$$AV_j = \sum_{i=1}^{n}\frac{r_{ij}}{n}, \quad (11)$$

where: r_{ij} – the value of the *i* alternative and the *j* efficiency indicator; *n* – the number of compared variants.

Once the average has been calculated, a calculation is made to determine the positive and negative distances from the average. Positive and negative distances from the average are calculated according to these formulas (Ubartė, 2017):

$$PDA_{ij} = \frac{\left(0,(r_{ij} - AV_j)\right)}{AV_j}, \text{when the criterion is beneficial} \quad (12)$$

$$PDA_{ij}\frac{\left(0,(AV_j - r_{ij})\right)}{AV_j}, \text{when the criterion is non} - \text{beneficial} \quad (13)$$

$$NDA_{ij}\frac{\left(0,(AV_j - r_{ij})\right)}{AV_j}, \text{when the criterion is beneficial} \quad (14)$$

$$NDA_{ij}\frac{\left(0,(r_{ij} - AV_j)\right)}{AV_j}, \text{when the criterion is non} - \text{beneficial} \quad (15)$$

Next, the sums of all alternative PDA_{ij} and NDA_{ij} significances are calculated according to these formulas (Ubartė, 2017

$$SP_i = \sum_{j=1}^{m} w_j\, PDA_{ij}, \quad (16)$$

$$SN_i = \sum_{j=1}^{m} w_j\, NDA_{ij}, \quad (17)$$

where: w_j – the significance of indicator j.

The next step is to normalize the SP_i and SN_i values. This is done according to these formulas (Ubartė, 2017):

$$NSP_i = \frac{SP_i}{max_i SP_i}, \quad (18)$$

$$NSN_i = 1 - \frac{SN_i}{max_i SN_i}, \quad (19)$$

The final step is ranking. The ranking of alternatives is performed by calculating the appraisal score according to this formula (Ubartė, 2017):

$$AS_i = \frac{1}{2}(NSP_i + NSN_i) \quad (20)$$

It is important to apply quantitative research methods to determine the level of smartness of cities. Multi-criteria assessment methods, which can be used to rank alternatives according to certain criteria, are ideal for this. Multi-criteria assessment methods are applied to assess the level of smartness of cities as the criteria are converted into dimensionless values.

Results

In order to assess the smartness and development opportunities of Lithuania's five largest cities, the criteria that describe the characteristics of smart cities and are essential in assessing development were selected as follows:

- foreign direct investment (mill. Eur),
- emission of pollutant (tons),
- number of international immigrants (units),
- ratio of people registered as unemployed to the working-age population (per cent),
- number of crimes (units),
- number of specialists trained at universities (units),
- number of universities (units),
- number of bus routes (units),
- number of road traffic accidents (units),
- number of IT companies and forest cover (per cent).

2018 data is analysed (Table 4).

Table 4. The initial data are intended to assess the level of smartness of Lithuanian cities, 2018 (Source: author's compilation, based on the Department of Statistics (2019))

Feature of a smart city	Functionality		Improving the quality of life/accessibility to information			Building a smart community			Traffic flow management		Conservation of natural resources
Criteria for measuring city smartness	FDI | Mill. Euro	Number of international immigrants | units	Emission of pollutant | tons	Ratio of people registered as unemployed to the working-age population | per cent	Number of crimes | units	Number of specialists trained at universities | units	Number of universities | units	Number of IT companies | units	Number of bus routes | units	Number of road traffic accidents | units	Forest cover | per cent
Vilnius	9958,73	5799	6899,86	6,10	14396	10239	12	3947	317	624	34,60
Kaunas	1214,68	2406	5370,53	7,20	8490	6466	4	1158	317	399	17,60
Klaipėda	911,55	1438	3378,37	6,40	4422	1127	2	321	79	168	19,90
Šiauliai	139,12	1319	988,63	5,30	2160	808	1	224	57	137	6,00
Panevėžys	259,44	510	1696,85	7,00	1910	0	0	149	474	167	1,60

Vilnius, compared to other cities, is in the lead according to nine out of eleven criteria. The lowest indicators prevail in Šiauliai and Panevėžys. After analysing the initial data for determining the level of smartness of Lithuanian cities, the results obtained after the multi-criteria assessment using EDAS, TOPSIS and COPRAS methods are presented (Table 5).

Table 5. The initial data are intended to assess the level of smartness of Lithuanian cities, 2018 (Source: author's compilation, based on the Department of Statistics (2019))

EDAS			TOPSIS			COPRAS		
	AS_i	Rank		P_i	Rank		Q_j	Rank
Vilnius	0.7055	1	Vilnius	0.6395	1	Vilnius	0.3981	1
Kaunas	0.3875	2	Kaunas	0.5551	2	Kaunas	0.2053	3
Klaipėda	0.2194	3	Klaipėda	0.5465	3\4	Klaipėda	0.1747	5
Šiauliai	0.1257	4	Šiauliai	0.5367	5	Šiauliai	0.2161	2
Panevėžys	0.1047	5	Pavevėžys	0.5522	3\4	Pavevėžys	0.1872	4

Table 5 displays the AS_i (appraisal score), P_i (relative closeness to the positive ideal solution), and Q_j (relative significance) values according to which the cities are ranked. After assessing the level of smartness of the five largest cities in Lithuania by applying multi-criteria assessment using three different methods, it was established that Vilnius is the smartest city. By applying the EDAS and TOPSIS methods, Kaunas is in second place in terms of smartness. However, the COPRAS method shows that Šiauliai is in second place. The third place is partly consistent in the EDAS and TOPSIS methods. With the COPRAS method, results are different. When using the COPRAS and TOPSIS methods, the fourth place is partly consistent, and it is established that Panevėžys is fourth in terms of smartness, but the EDAS method reveals that Šiauliai is fourth. With the three different multi-criteria assessment methods, the results of the fifth-place using the EDAS, TOPSIS, and COPRAS methods are radically different. Thus, after completing this study using various methods, it can be stated that the results obtained using different multi-criteria assessment methods are not consistent. This creates the assumption that each method has its advantages and disadvantages, internal logic, and examines and highlights a different aspect of the phenomenon being assessed. In order to see the whole picture more thoroughly, the results are depicted in Figure 3.

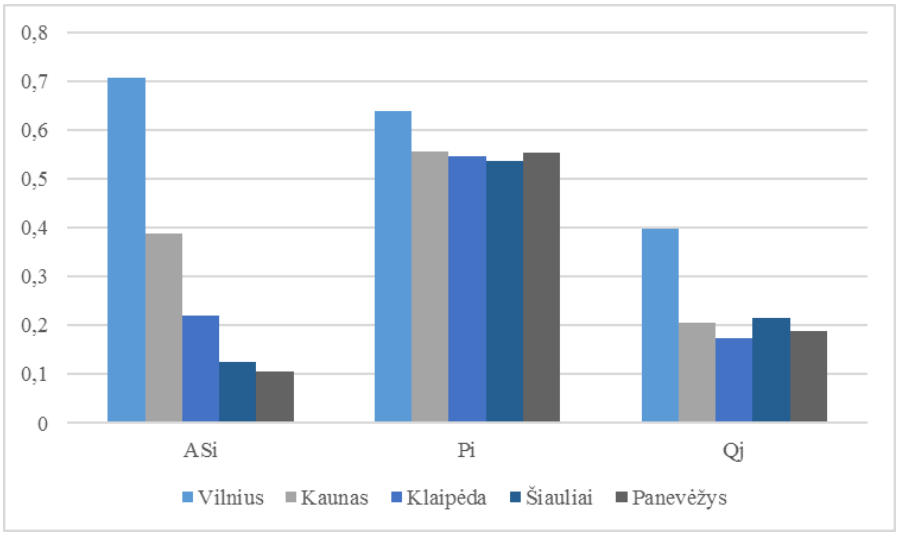

Fig. 3. Results obtained by applying multicriteria decision-making methods EDAS, TOPSIS, and COPRAS (Source: author's calculations)

As it could be seen from Figure 3, Vilnius is ranked as the smartest city in Lithuania. It could be explained by the fact that Vilnius is the capital of the Republic of Lithuania and is a leading city in attracting the most significant part of foreign direct investments. In fact, the ability to attract FDI is one of the drivers of cities' smartness (De Falco, 2019). Moreover, Vilnius significantly stands out with the number of universities, the number of IT companies and forest cover. This means that such different indicators working together could be crucial for cities transforming to the smart ones.

Conclusions

After performing the literature review, it was found that a smart city is described as a social and economic space in which governance and self-regulatory processes take place. This is an all-encompassing concept that fosters the use of innovations, with a focus on a knowledge-based society. A smart city is characterized by smart governance, smart economy, smart mobility, smart citizens, smart environment, and smart lifestyle. Smart cities are developed by implementing non-standard ideas and applying the principles of sustainable development. Smart city development involves people, diverse technologies, goods, businesses, communications, and energy. The development of smart cities is important because it helps build a knowledge-based society, conserves natural resources, creates a comfortable, functional and smart city, which results in easier access to information and services, reduced traffic flows, and higher-quality and more comfortable life.

The literature review shows that the creation and development of smart cities come with certain challenges. The problems of smart city development fall into three main categories. Social problems are related to the community and city residents, economic problems – to finances, and technological problems – to information systems.

The research to identify the smartest city consists of three main stages: determination of the criteria of smart cities, selection of cities, and identification of the smartest city. The study uses multi-criteria assessment methods: EDAS, TOPSIS and COPRAS. Quantitative multi-criteria methods for determining the level of city smartness allow for the ranking of alternatives according to various criteria that are rendered dimensionless.

After performing the multi-criteria assessment using three different methods, it is evident that the smartest city in Lithuania is Vilnius. Different multi-criteria assessment methods yield different results. Based on the EDAS method, Kaunas is in second place, Klaipėda is in third, Šiauliai is in fourth, Panevėžys is in fifth. Based on the TOPSIS method, Kaunas is in second place, Klaipėda and Panevėžys share the third and fourth places, and Šiauliai is in fifth place. The COPRAS method revealed that Šiauliai is in second place in terms of smartness, Kaunas, is in third place, Panevėžys is in fourth place, and Klaipėda is in fifth place.

The selected criteria for the assessment of smartness of a city could help assess other cities in other countries. However, to get more reliable results, the proposed criteria could be judged by experts – this would help to deal with one limitation of the current research and serve as an extension of it in the future. The article is based only on one-year data (the second limitation), so probably, the results could differ using more extended time series, and could help to have a more realistic view. In general, smart cities are associated with significant social, economic and environmental advantages to keep or develop the quality of life of citizens. Therefore there is an increasing interest of scientists and practitioners to find ways how not only to assess the status quo of cities but also to find prospects for their development.

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ASSESSMENT OF THE SUSTAINABLE ECONOMIC DEVELOPMENT GOAL 8: DECENT WORK AND ECONOMIC GROWTH IN G20 COUNTRIES

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Abstract

Research purpose. The importance of sustainable development, the need to achieve sustainable economic development that does not harm the environment, conserve natural resources or exacerbate tensions in society has been increasingly discussed over the last decade. The purpose of the research is to evaluate the economic growth and decent work environment in G20 countries during 2013–2018 as G20 countries are the fastest growing countries in the world, and their economy describes the major part of the global economy.

Design/Methodology/Approach. Qualitative data analysis based on the comparative analysis of scientific literature, content analysis, interpretation, comparison and grouping is used, in order to analyse the theoretical aspects of sustainable development and its goals, especially goal 8: decent work and economic growth. TOPSIS method helps to rank G20 countries according to the indicators of SDG 8.

Findings. The results showed that Japan reached the best work environment and the most significant economic growth during 2013–2018. The United States is in second place and the third – the Republic of Korea. In the bottom three are Argentina, Brazil and South Africa.

Originality/Value/Practical implications. Since it is challenging to identify the achievements of the economic and work environment development, as an essential part of sustainable development goals, the results could lead to future insights that will create value to policymakers, economists and other stakeholders.

Keywords: Sustainable Development; Economic Development; Economy; G20; Sustainable Development Goals.

JEL codes: O10; O11; E0; Q56.

Introduction

The importance of sustainable development, the need to achieve sustainable economic development that does not harm the environment, conserve natural resources or exacerbate tensions in society has been increasingly discussed over the last decade. Sustainable development is legitimised as a fundamental long-term ideology of societal development and is understood to be a compromise between the environmental, economic and social goals of society, enabling public well-being for the present and future generations. Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs and without causing significant damage to natural resources. There are 17 sustainable development goals, and the eight-goal (SDG 8) is the most related to the economy as the primary purpose of this goal is to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Based on G20 (2020), The Group of Twenty (G20) is the premier forum for international economic cooperation and brings together 19 developed and developing countries and the European Union (EU). Collectively, the G20 economies represent around 80% of the world's economic output, three-quarters of world trade, two-thirds of the world population. It is essential to analyse how these countries develop because these are the fastest-growing countries in a world, and their economies together describe a significant part of the global economy.

The problem: it is difficult to identify the achievements of the economic and work environment development, as an essential part of sustainable development goals, in G20 countries during the last few years.

The object: the sustainable development goal 8: decent work and economic growth.

The aim of the research: to assess the achievements of sustainable development goal 8 in G20 countries.

Tasks: to analyse theoretical aspects of the economic development and sustainable development goal 8; to provide a methodology for the assessment of SDG 8 in G20 countries; based on the provided methodology, to evaluate the SDG 8 in G20 countries.

Methods: qualitative data analysis based on comparative analysis of scientific literature, content analysis, interpretation, comparison and grouping is used, in order to analyse the theoretical aspects of the economic development and sustainable development goal 8. The TOPSIS method helped to rank G20 countries according to the indicators of SDG 8.

Limitations: the period of 2013–2018, not the full scope of indicators, which could influence the results.

The theoretical framework of the economic development

Nowadays, economic development is a highly discussed subject. It has many definitions, and the authors describe the concept of economic development differently (Table 1).

The concept of economic development can be described through different subjects such as social, environmental, economic and technological. All the concepts of economic development have been analysed in a lot of scientific articles. Seidman (2005) described economic development as a process of creating and utilising some assets in order to improve economic well-being and quality of life. Greenwood and Holt (2014) presented economic development as an overall increase in the standard of living. Moreover, they separated economic development and economic growth because economic development is better described as the increase of standard living and economic growth measures such as income per capita do not correlate with the improvement in the quality of living (Greenwood & Holt, 2014). According to Bove and Elia (2017), security is another vital subject in economic development, 'economics and security are heavily intertwined: economic motivations often exert an important role in affecting the decision to go to war, whereas conflict matters for the economy and can shape the paths to economic development'. Fodor and Glass (2018) analysed the indicators that reflect economic development. [The indicators] "include the level of economic growth and foreign investment as well as features of the labour market structure, for instance, the size of the public and service sectors and job/sectoral segregation, as well as the impact of state austerities, such as the generosity of leave policies and childcare availability". Economic development is highly related to education. Schmid, Kolesnikov and Youtie (2017) explain that "education, research, and economic development are closely intertwined' and even 'drafted an economic development plan that focused on developing the region's higher education, research, and innovation capacity".

Table 1. The definitions of economic development (Source: author's compilation based on Engle (2009), Ghosh (2017), Greenwood & Holt (2014), Seidman (2005), Boianovsky (2017), Fagerberg & Srholec (2017))

Author	Definition
C. R. Engle (2009)	"Economic development occurs as economies diversify, provide a greater variety of goods and services, and as the purchasing power of consumers increases."
Karl F. Seidman (2005)	Economic development is "a process of creating and utilising physical, human, financial, and social assets to generate improved and broadly shared economic well-being and quality of life for a community or region."
Daphne T. Greenwood, Richard P. F. Holt (2014)	Economic development is a "broadly based and sustainable increase in the overall standard of living for individuals within a community."
Ritwick Ghosh (2017)	The priorities of economic development are climate adaptation, poverty alleviation, disaster management and urban planning.

Jan Fagerberg, Martin Srholec (2017)	"Improving national technological and social capability is a must for achieving (sustainable) economic development and improving living conditions."
Mauro Boianovsky (2017)	"The growth of developing economies was determined by their ability to implement technical progress."

Moreover, economic development can be related to social and technological aspects. Fagerberg and Srholec (2017) claim that 'improving national technological and social capability is a must for achieving (sustainable) economic development and improving living conditions'. One of the economic concepts of economic development is that 'economic development occurs as economies diversify, provide a greater variety of goods and services, and as the purchasing power of consumers increases' (Engle, 2009). As a result of the greater variety of goods and services and the purchasing power of consumers, the standard of living increases. Furthermore, because of that, the level of education and income increases, more significant employment opportunities occur, the level of emigration decreases (Engle, 2009). Endres and Harper (2019) argue that capital is the main element in analysing economic development. Another concept of economic development is presented by Boianovsky (2017); his thoughts are based on Harrod's and Domar's ideas of economic development, which says 'that the growth of developing economies was determined by their ability to implement technical progress. Domar observed that the incremental capital-output ratio was more likely a passive result of the interaction between the propensity to save and technological progress, not a causal factor'. However, Wahl (2018) explains that political institutions can highly improve economic development, 'inclusive political institutions can have positive development effects related to limited government, securing property rights, better checks and balances, improving fiscal capacity, providing public goods, and promoting trade and commerce'. Others argue that economic development is highly related to strategic international economic partnerships and multilateral credit because it improves infrastructure, employment and investments (X. Chen, 2018). There are also some environmental aspects of economic development. Aguilar and Song (2018) conducted a research, which showed that 'at early stages of economic development[,] extractive forest practices may offer a sizable contribution to a country's economy but at the expense of widespread deforestation and forest degradation'. Other authors argue that one of the essential elements of economic development is climate adaptation because it is 'a form of economic development that incorporates climate threats at an early stage of economic strategising[sic] rather than merely in terms of risk management' (Ghosh, 2017). There are a lot of different approaches to economic development, but it can be concluded that economic development is a process that improves economic, social, environmental and technological indicators or factors of a country.

The overview of sustainable economic development and the sustainable development goal 8

Sustainable development is another process related to economic development. Nowadays, sustainable economic development is a highly discussed topic, 'during the last couple of years; sustainability has become topical in transnational public-private partnership (TPPP) projects primarily because of the enormous impact TPPP projects have on the environment, economic, and well-being of people' (C. Chen, Yu, Osei-Kyei, Chan, & Xu, 2019). Economic development and sustainable development differ a little bit. Sustainable development aims at ensuring development that is conducive to the well-being of people today without diminishing the chances of future human well-being (Mitra, 2016). Moreover, 'sustainability and sustainable development are foremost human concerns, largely due to the imbalance between evolving human needs and the availability of natural resources to support them' (Borland, Bhatti, & Lindgreen, 2019). By other means 'sustainable development requires that wealth, in a comprehensive sense, should not decrease over time' (Rickels et al., 2016). One of the main subjects of development is innovation, in order to increase development, it is necessary to generate innovative ideas and improve sectors of economy, environment and sociology. 'Whereas traditional innovation relates to the development of new products, materials, processes, services, and organisational forms to gain competitive advantage, sustainable innovation refers to the generation of new ideas, goods, services, processes, or management systems that can deal with environmental problems' (Ukko, Saunila, Rantala, & Havukainen, 2019). In summary, every country seeks to

increase economic development by increasing the standard of living, and overall well-being of the country and sustainable development seeks to achieve the same goal but also without diminishing the well-being of a future human.

There are seventeen sustainable economic development goals: no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities, responsible production and consumption, climate action, life below water, life on land, peace, justice and strong institutions, partnerships for the goals (United Nations, 2015b). All of these goals are set for economic growth, social inclusion and environmental protection without diminishing the well-being of future generations.

The primary purpose of the goal 'The sustainable development goal 8: decent work and economic growth' is to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. There are a few targets in order to reach this goal. All targets can be divided into two parts: decent work (Table 2) and economic growth (Table 3).

Table 2. Targets and indicators for decent work (Source: author's compilation based on the International Labour Organization, 2018)

Target	**Indicator**
Achieve higher levels of economic productivity	The annual growth rate of real GDP per employed person
Achieve full and productive employment and decent work for all by 2030	Average hourly earnings
	Unemployment rate
Substantially reduce the proportion of youth not in employment, education or training	The proportion of youth (15–24) not in education, employment or training
Take immediate and effective measures to eradicate forced labour, end modern slavery and eliminate child labour	Proportion and number of children aged 15–17 years engaged in child labour
Protect labour rights and promote a safe and secure working environment	Frequency rates of fatal and non-fatal occupational injuries
	Increase in national compliance of labour rights
Develop and operationalise a global strategy for youth employment	Total government spending on social protection and employment programmes

Targets that are related to decent work: to achieve higher levels of economic productivity, to promote development-oriented policies and encourage the formalisation and growth of enterprises, to achieve full and productive employment and decent work for all by 2030, to substantially reduce the proportion of youth not in employment, education or training, to take immediate and effective measures to eradicate forced labour, end modern slavery and eliminate child labour, to protect labour rights and promote the safe and secure working environment, develop and operationalise a global strategy for youth employment (United Nations, 2015a).

Table 3. Targets and indicators for economic growth (Source: author's compilation based on the International Labour Organization, 2018)

Target	**Indicator**
Increase gross domestic product growth at least by 7 per cent in the least developed countries	The annual growth rate of real GDP per capita
Promote development-oriented policies and	The proportion of informal employment in non-

encourage the formalisation and growth of enterprises	agriculture employment
Improve progressively, through 2030, global resources efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation	Material footprint
	Domestic material consumption
Promote sustainable tourism	Tourism direct GDP
	Number of jobs in tourism industries
Strengthen the capacity of domestic financial institutions	Number of commercial bank branches and ATMs
	The proportion of adults with an account at a bank
Increase aid for Trade support for developing countries	Aid for trade commitments and disbursements

Targets that are related to economic growth are: to increase gross domestic product growth at least by 7 per cent in the least developed countries, to improve progressively, through 2030, global resources efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, to promote sustainable tourism, to strengthen the capacity of domestic financial institutions and to increase aid for trade support for developing countries (United Nations, 2015a).

The methodology of assessment of the sustainable economic development goal 8 achievements

In order to more precisely investigate the work environment and economic growth in G20 countries, the moving average method for forecasting is performed for missing data. The moving average forecasting aims at finding a missing data of annual growth rate of real GDP per capita, GDP per person employed, final consumption expenditure, unemployment rate, the proportion of youth (15–24 years) not in education, employment or training, number of commercial bank branches and account ownership at a financial institution or with a mobile-money-service provider from 2013 to 2018 of G20 countries.

Moving average method is one of the most popular methods used to predict future data in time series analysis (Hansun, 2013). The moving average method is similar to the mean method that assumes that the best predictor of what will happen tomorrow is the average of everything that has happened up until now, only it is adapted to the cyclical pattern. The predictions can be made according to this equation:

$$\hat{Y}_{t+1} = \frac{Y_t + Y_{t-1} + \cdots + Y_{t-m+1}}{m}, \quad (1)$$

where

t – time;

m – a sum of periods.

After the forecasting of missing data, the TOPSIS method can be applied in order to assess the SDG 8 in G20 countries.

Yalcin, Kilic, & Guler (2020) explain that this is a method of prioritising variants, where the optimal alternative has the shortest distance from the ideal solution and the most significant distance from the ideal to the worst solution. This method is known as determining the rationality of variants in the proximity to the ideal point TOPSIS.

Suppose the values of each indicator are continually increasing or decreasing. Then the ideal best solution that consists of the best indicator values and the ideal worst solution that consists of the worst

indicator values could be determined. The TOPSIS method solution algorithm consists of the following steps:

- construct the decision matrices (normalised, normalised weighted);
- identify the ideal best and the ideal worst alternatives;
- determine the distance between the comparative i and the ideal best and ideal worst;
- determine the relative distance of each i option to the ideal;
- determine the rationality index.

For the TOPSIS method, each indicator has a significance, but there are no limits to determining the significance of the indicators, and their sum need not necessarily be equal to one. The method is used for a large number of indicators. When calculating the shortest distance to the ideal positive solution, and the longest distance to the ideal negative solution by TOPSIS, the relative significance of those distances is underestimated.

The TOPSIS model is described in seven steps below:

Step 1: Construct the decision matrix (based on experts) and determine the weight of the criteria.

$$X = (x_{IJ}), \tag{2}$$

$$W = [w_1, w_2, \dots, w_n], \tag{3}$$

where

X – decision matrix;

W – weight vector, xij $\in \Re$ and w1 + w2 + … + wn = 1.

Criteria of the functions can be benefit functions (more is better) or cost functions (less is better).

Step 2. Calculate the normalised decision matrix. This step transforms various criteria dimensions into non-dimensional criteria, which allow comparisons across criteria. Because various criteria are usually measured in various units, the scores in the evaluation matrix have to be transformed to a normalised scale. The normalisation of values can be carried out by one of the several known standardised formulas. The normalised value nij is calculated as follows:

$$n_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}^2}}, \tag{4}$$

Step 3. Calculate the weighted normalised decision matrix. The weighted normalised value vij is calculated as follows:

$$v_{ij} = w_j n_{ij} \; for \; i = 1, \dots, m; j = 1, \dots, n, \tag{5}$$

where

w_j – the weight of the j-th criteria.

Step 4. Determine the positive ideal (V+) and negative ideal (V-) solutions. The ideal positive solution is the solution that maximises the benefit criteria and minimises the cost criteria, whereas the negative ideal solution maximises the cost criteria and minimises the benefit criteria.

$$V^+ = (v_1^+, v_2^+, \dots, v_n^+) = \left(\left(\max_i v_{ij} \middle| j \in I \right), \left(\min_i v_{ij} \middle| j \in J \right) \right), \tag{6}$$

$$V^- = (v_1^-, v_2^-, \dots, v_n^-) = \left(\left(\min_i v_{ij} \middle| j \in I \right), \left(\max_i v_{ij} \middle| j \in J \right) \right), \quad (7)$$

where

I is associated with benefit criteria and J with the cost criteria, i = 1, … , m; j = 1, … , n.

Step 5. Calculate the Euclidean distance from the ideal best (V+) solution and the anti-ideal best (V-) solution. The separation measures of each alternative from the ideal best (V+) solution and the anti-ideal (V-) solution, respectively, are as follows:

$$S_i^+ = \sqrt{\sum_{j=1}^n \left(v_{ij} - v_i^+\right)^2}, \ i = 1, 2, \dots, m, \quad (8)$$

$$S_i^- = \sqrt{\sum_{j=1}^n \left(v_{ij} - v_i^-\right)^2}, \ i = 1, 2, \dots, m, \quad (9)$$

Step 6. Calculate the relative closeness to the positive ideal solution. The relative closeness is defined as follows:

$$P_i = \frac{s_i^-}{s_i^- + s_i^+}, \quad (10)$$

where

$0 \leq Pi \leq 1$, i = 1,2, … , m.

Step 7. Rank the preference order.

Based on the steps above, the TOPSIS method will be applied for calculations in the research.

The assessment of the sustainable economic development goal 8 achievements in G20 countries

Criteria selection is one of the critical steps in Multi-Criteria Decision Analysis. Criteria must encompass all aspects of sustainable economic development and be able to highlight differences between alternatives. Seven criteria of the annual growth rate of real GDP per capita, GDP per person employed, final consumption expenditure, unemployment rate, the proportion of youth (15–24 years) not in education, employment or training, number of commercial bank branches, and account ownership at a financial institution or with a mobile-money-service provider are used in the MCDA.

All statistical data must be available in order to make accurate calculations. Because of the lack of data, the forecast for some missing data is made by using the moving average method. Moreover, the weights of all indicators are the same (0.1428), thus, they should be considered equally. It means that all criteria are equally important while evaluating SDG 8 of G20 countries. All indicators are measured in different measures; data should be normalised in order to make accurate calculations. Euclidean normalisation method is used in order to normalise data. It should be taken into consideration that indicators as the annual growth rate of real GDP per capita, GDP per person employed, final consumption expenditure, number of commercial bank branches and account ownership at a financial institution or with a mobile-money-service provider must be maximised. It means that the higher the value indicator reach, the better it is. However, indicators as the unemployment rate and proportion of youth (15–24 years) not in education, employment or training must be minimised, it means that the lower the indicator is, the better. After the normalisation, the TOPSIS method can be used in order to assess SDG 8 in G20 countries. Firstly, the ideal positive and negative solutions are found. Secondly, the distance between the actual normalised value and ideal positive and negative solutions is calculated. The last step is to calculate the relative closeness to the positive ideal solution. Finally, the ranking can be made. All these steps are made with data from 2013 to 2018 separately.

In 2013, Turkey was in the first place, Japan was in the second place, and China was in the third place. The last three countries were Mexico, Italy and South Africa. In 2014, the United States was in the

first place, the United Kingdom was in the second place, and Korea was in the third place. The last three countries were Brazil, Argentina and South Africa. In 2015, the United States again was in the first place, Japan was in the second place and the United Kingdom in the third place. The last three countries were the Russian Federation, Brazil and South Africa. In 2016, India was in the first place, China was in the second place, and Japan was in the third place. The last three countries were Argentina, Brazil and South Africa. In 2017, Japan was in the first place, the United States was in the second place, and France was in the third place. The last three countries were Saudi Arabia, Brazil and South Africa. In 2018, the United States was in the first place, India was in the second place, and China was in the third place. The last three countries were Brazil, Argentina and South Africa. It can be seen that the three best and three worst countries repeat during the year.

Table 4. Assessment of SDG 8 of G20 countries (2013–2018) (Source: author's compilation)

Country	**Relative closeness**	**Ranking**
Japan	0.644759	1
United States	0.643069	2
Korea, Rep.	0.613329	3
India	0.612212	4
China	0.609138	5
United Kingdom	0.605965	6
Australia	0.605807	7
Indonesia	0.599021	8
Germany	0.592811	9
France	0.588447	10
Turkey	0.582485	11
European Union	0.580931	12
Canada	0.567808	13
Russian Federation	0.554956	14
Italy	0.544895	15
Mexico	0.524549	16
Saudi Arabia	0.516044	17
Argentina	0.428712	18
Brazil	0.41011	19
South Africa	0.250499	20

The final results (Table 4) showed that Japan reached the best work environment and the most significant economic growth during 2013–2018. The United States is in second place and the third – the Republic of Korea. In the bottom three are Argentina, Brazil and South Africa.

Conclusions

Sustainable development aims at ensuring development that is conducive to the well-being of people today without diminishing the chances of future human well-being. There are seventeen sustainable economic development goals. The primary purpose of sustainable development goal 8 is to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent

work for all.

In order to more precisely investigate the work environment and economic growth in G20 countries, the moving average method for forecasting is performed for the missing data. After the forecasting of missing data, the TOPSIS method can be applied in order to assess the SDG 8 in G20 countries.

The results showed that Japan reached the best work environment and the most significant economic growth during 2013–2018. The United States is in the second place and the third – the Republic of Korea. In the bottom three are Argentina, Brazil and South Africa.

Since it is challenging to identify the achievements of the economic and work environment development, as an essential part of sustainable development goals, the results could lead to future insights that will create value to policymakers, economists and other stakeholders.

Summarising the results ought to be emphasised that the results may have been affected by the research limitations. As the period of the research covers 2013–2018, the update for 2019 and 2020, and the evaluation of the recent drastic changes in the economy due to COVID-19 could lead to different results. Likewise, not the full scope of indicators, which could influence the results, was available. Some of the data were forecasted according to the data of previous years. The full scope of indicators could slightly change and influence the results. The research of other countries, which are not included in G20 and the comparison with the results of this research, would be very welcome.

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DEVELOPING INNOVATIVE COMPETENCE IN ECONOMICS STUDENTS

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Abstract

Research purpose. The main task of this article consists in outlining several conceptions of teaching that we consider crucial to develop knowledge, skills and personal qualities in future managers, which they need in a constantly changing innovative business environment.

Design/Methodology/Approach. Methods of contrastive analysis, method of decomposition and questionnaire survey form the methodological basis of research.

Findings. As a result of empirical research, the article describes the level of students' demand for mastering innovative skills and the extent to which this demand is met in the framework of educational programme.

Originality/Value/Practical implications. The method elaborated in the article is easily applicable in different educational programmes, economic subjects and environments as well as different curriculum plans. It is expected that improved learning skills and satisfaction will increase learning outcomes in long-term outlook. The article suggests new integrated teaching approach to organising collaborative work so that the full potential of students in solving economic problems is developed through and alongside the use of interactive learning tasks. It relies on thorough analysis of reasons for students' critical attitude towards creative and innovative thinking in their profession.

Keywords: Innovative Culture; Innovative Competence; Faint Signs; Creative Education; Critical Thinking; Case Study Learning.

JEL codes: I23; A20.

Introduction

The Russian economic system is expected to turn into an information technology economy with a strong focus on innovative development. But there are significant gaps in the level of development of different sectors, markets, regions, as well as crucial gaps in appropriate cultural support.

The more advanced innovative culture we have, the more deeply the relationships among the scientific sphere, the sphere of production and the needs of society are developed. The active diffusion of innovations in all spheres of public life is only possible in the case of progressive increase in innovative competence of managers. They are expected to tackle problems that require imaginative solutions, because the driving force of any successful innovation is human imagination combined with expertise. In this IT (information technology driven) economy, the innovative competence presents a crucial point of professional development. Thus, Russian economy truly needs much more open-minded managers with firm readiness to fulfil global transformations in a dynamic environment, to face new social issues, to maintain flexible and responsible policy of balanced development and to address the multiple consequences of innovative growth. The innovative skills, aptitudes and values constitute growing IT economy.

Modern companies are functioning and competing in a business environment that is prone to change faster than ever before with the result that the educational system is not keeping pace with business needs (Farashahi, & Tajeddin, 2018). As a result, we face the risk that business needs skills that current academic education is not designed to produce. This issue emerges notably in innovative sphere with innovative theories not corresponding to practical needs. Hussler and Ronde (2005)

supported the idea of the link between the educational structure and the companies' competences to innovate, which are on track to depict considerably the innovative potential of the whole regions.

If business education is behind in providing adequate knowledge and skills in innovative sphere, graduates experience difficulties when applying for position in innovative company and dealing with the challenges of the real world of innovative business.

It has created certain pressure and calls for moving towards professional innovative competences as reflected in professional standards issued in 2018–2019.

In response to this problem, a huge amount of professional standards is appearing every year; these standards are aimed at modifying the results of the educational process. The need for deep transformation in terms of economic learning process itself becomes doubtless.

Therefore, the Russian educational system requires modern methods of teaching business subjects to students in universities. The urgency of this problem results from the fact that the development of students' innovative competence can make a significant contribution to their professional career.

Universities are expected to create value for employers and provide students with real-world learning experience and deep innovative competence. Thus, economics education should be viewed in alignment with innovative thinking conceptions applied to the real-world situations. Valuable learning material has to be found in dynamic innovative spheres of business and explored using interactive learning methods.

According to the most narrow interpretation, innovative competence is related to the creation of product and process innovations, implementation of technological inventions and commercialisation of scientific research results.

However, the wide interpretation connects innovative competence with interdisciplinary approach and a big picture of future development. Innovative competence is linked to critical thinking, creativity and strong analytic skills. Innovative approaches are not exclusively confined to technological research and commercialisation. Any business activity that involves the human mind and human intelligence is a potential source of innovative approach.

New subjects, new aspects of education and new educational tasks require more progressive, efficient and innovative teaching methods. This article considers how to respond to the complexity of innovative economic system, resulting in the educational system facing new challenges related to developing innovative culture and innovative competence in students. Thus, the main focus of this article is to find out and to elaborate flexible teaching approaches and interactive teaching methods.

Literature Review

Given that innovative culture and innovative competence are important components of professional qualifications, these aspects are studied in detail in different research works. According to the conventional definition, innovative competence is the ability to fulfil innovative projects and strategic goals of enterprise. This ability is formed based on the past experience, achieved results in changing business environment (Blokhina, 2019). According to Umemura (2016), the predominant type of company's innovative culture encourages it to support incremental innovation or to be more supportive of radical innovation. The association between institutional environments and innovative competences results in different paths in pioneering an industry at the technological frontier.

Tsou, Chen and Liao (2014) favoured an idea that innovation culture mediates the path between strategic orientation and organisational performance. The authors distinguished two main constituent elements of innovative competence: exploratory and exploitative innovative competences both of them being stimulated by proactive company's market orientation. Exploitative innovation competence affects service delivery innovation when managers start to understand the market trends and the technology availability and become able to customise corresponding product features. These actions in their turn are expected to further stimulate exploitative innovative competence and facilitate innovations.

Ozkaya et al. (2015) supported the idea that knowledge competencies are indeed mediators of the positive relationships between customer and competitor orientations and market-based innovation.

Some authors emphasised the systemic and integrated character of innovative culture, which includes steady motivation for professional training, creativity, personal initiative and intellectual openness, assertiveness and leadership (Zagorulya, 2015). One of the key components is situational competence, which means flexibility and ability to adapt to a changing environment (Yakovleva, 2017). According to some approaches, innovative competence should include visual competence. This means manual and computer skills of creating rich infographics (Maslov & Smirnova, 2015). Mastering innovative forms of communication can also be identified as one of the important components of innovative culture (Ogannisyan, 2017).

According to technological approach (Schmidt & Porteus, 2000), innovative competence characterises a company's ability to turn an investment in new technology into a marketable product and it necessarily includes cost competence defined as ability to produce the new product resulting from the new technology at lower cost.

Another way to define the core of innovative competence is to study what competences innovative companies demand of their employees. Referring to Santandreu-Mascarell, Garzon and Knorr (2013), innovative organisations value employees' characteristics that are tightly linked to entrepreneurs' characteristics meaning seeking information and new opportunities, being able to take risks in innovative ventures and being initiative. Thus there is an overlap between entrepreneurial and innovative competences.

Managerial and cognitive mobility are presented as a significant part in the model of innovation manager competence. Managerial mobility is defined as readiness for changing the content of activity. Cognitive mobility consists of the ability for effective work with new knowledge (Malastseva, 2017). Another distinctive trait of innovative culture is foresight thinking, which means a capacity for building the future of social and economic system (Sidunov, 2015). Innovative manager is characterised (Szczepanska-Woszczyna, 2014) by the ability to sense the needs, anticipate changes, stubbornness combined with persuasion skills and the ability to associate the overall vision with attention to unobvious details.

There is a particular concern about the readiness for innovative. To be ready to fulfil innovations, future manager should have several qualities, such as motivation and aspiration to carry out innovative projects (Akhmetzyanova & Pronina, 2018; Sibagatullina & Zaripov, 2018).

A strong focus is placed on the life cycle of innovative management competences. It presents a classification of progressive stages of competence levels from achieving basic knowledge to managing complex unpredictable situations. A manager with a high level of innovative competence is able to produce new values, principles and approaches in their professional area (Kuklina, 2014).

Innovative culture is based not only on professional skills but also on high level of intuitive thinking. This contributes to active participation in reforming activity that is of exclusive importance in an innovative society (Chelnokova, Kaznacheeva & Terekhina, 2018).

Valuable innovative decisions often result from unexpected leaps of imagination, so that creativity has an increasing role in innovation activity. Creativity can be expressed in the fluency (amount of generated ideas), originality (non-standard approaches), flexibility (using different many-sided approaches to problems), openness to new information and rejection of conventional solutions (Panferov, 2018).

Liu (2010) proved that both competence exploration and competence exploitation are closely related to the creative component of companies' innovative activity. Bosic Yams (2018) suggested that 'innovative competence development should engage both cognitive and emotional capacities' because 'being competent in any field of work today demands to be able to act in both known and unknown situations'.

Creativity is closely linked to innovative competence because they both rely on the ability to be more aware of opportunities around through reflection, questioning taken-for-granted routines, getting new

perspectives and widening the existing ones.

The social value and personal significance of innovative culture determine orientation to its promotion within the whole educational process. At the same time, there is a growing concern in the educational system about how innovative competence may be established, developed, and strengthened within the learning process.

Whitley (2002) highlighted the variety of ways in which business and universities in different countries can develop innovative competences. Contrasting styles of innovative competence development can arise from combinations of different institutional features such as organisation of research training, the flexibility of researchers and the organisation of scientific careers. Some researches showed (Szczepanska-Woszczyna, 2014) that innovative competence may be promoted through strengthening subjective factors (predispositions, trait, skills and abilities and attitudes) and developing working environment.

Quintana-García and Benavides-Velasco (2008) showed that the level of innovative competence is influenced by technological diversification in a positive way, especially when referring to exploratory innovative capability and enhancing novel solutions.

Practical aspects of developing students' innovation culture are presented in several works (Leonov, 2015). One option is to elaborate technics of active comprehension such as the K. Ishikawa Diagram, making conflict cards, the methodology of value hierarchy and others (Kolchina, 2013).

Many authors pay attention to the benefits of synectics methods, which make a significant contribution to disclosing internal creative resources, figurative thinking and prognostic ability. These methods should be systematically applied in business tasks with the result that they fasten innovative behaviour and innovative algorithms (Chelnokova, Kaznacheeva & Terekhina, 2018).

Innovative competence carries with it the idea of using special technics conducive to innovative decision-making. This causes the relevance of lateral thinking methods in modern business. The ‘six thinking hats’ method promotes design thinking that allows for the raising of effectiveness of decision-making process (Sulaimanova & Ergasheva, 2017). The technic of provocation is recognised to be vital to learning tasks associated with non-evident problems. This technic enables manager to move from one known idea to new ideas (Galiullina, 2017). Empirical surveys reveal educational productivity of technologies such as ‘didactic game’, methods of generating ideas in group (‘brain storm’) and ‘project training’. It is recommended to combine them with case study, ‘imitating trainings’ and ‘academic debate’ (Torkunova, 2013). Technology of multidisciplinary cases creation is considered (Gitman, Ye, Gushchina & Gitman, 2014) as crucial to improving the level of graduates’ innovation competences. This case should touch upon pressing issues of conjugate subjects within the curriculum in order to facilitate cross-disciplinary integration and intensification of students’ self-guided work. The main point is that issues suppose alternative solutions so that students are encouraged to research advanced scientific and innovative experience.

There is also a strong focus on evolving suitable patterns of context learning. Context is defined as a system of internal and external conditions of social, professional and educational activity in an innovative sphere having a significant impact on how a person perceives and reforms innovative situations (Malevskaia-Malevich, Leonov, & Zaborovskii, 2018). Educational innovative context should provide conditions to systematically apply special knowledge and skills and then enrich this experience based on the creative approach (Fedotova & Kurakina, 2015). Within this approach a new form of lectures called ‘problem-project lecture’ is elaborated. Learning material contains problems and solutions in implicit form so that students try to identify on their own problems and possible ways of overcoming them (Baranov & Sharafutdinov, 2016). Another way (Naumkin et al., 2016) is using flexible innovative training module added to core curriculum in order to enrich the content of technical disciplines, including the core part, variable and invariable parts.

The idea of contest learning is extended to the conception of coworking space in this work (Murray, Bejarano, & Matsuno, 2016), where coworking spaces are expected to be a real environment of collaborations between academy and industry, which allows students to create innovative engineering projects and thus to strengthen their innovative and technical skills in the atmosphere of social

learning, open discussion, and valuable feedback. Coworking spaces contribute to innovative culture development because they support students' engagement and motivation to solve real problems and unmet needs in an innovative way, with the use of global mindset, deep technological knowledge, lateral thinking and building professional networks.

Some articles reveal the educational appeal of game technologies to the modern higher school. Game technology may be defined as a set of psychological and pedagogical technics that imitate professional activity and use models of real business process. During a business game, students gain active communicative positions when dealing with professional problems (Cherkashina & Morozova, 2015).

As it is shown in the article by Bozic Yams (2018), art-based methods encourage employees to embrace ambiguity, explore unknown fields and exploit different types of knowledge, including the tacit knowledge and intuition. Choreographic tools contribute to developing innovative frame of thinking about using body, movement, space and time in new ways and enable employees to develop their personal innovative practice and create conditions they require to be innovative.

On the basis of the brief review presented above, we can come to a conclusion that there is a growing awareness of the need to respond practically to the increasing demand for innovative competence and creative thinking development. Theoretical problems of innovative competence development are extensively exposed in scientific publications, but some practical aspects of its introduction in pedagogical processes remain less worked out.

Present studied pay considerable attention to the components of innovative culture, but there is some confusion of different notions: innovative culture, informational and communicative culture as well as innovative, research and entrepreneurial culture.

Although the significance of emotional components of innovative culture is accentuated, insufficient attention is given to the principles of teamwork in an innovative sphere. This methodical gap is particularly significant, given the need to ensure suitability of peculiar pedagogical tools to special management disciplines.

As long as innovative competence is a many-sided phenomenon, there is a very eclectic set of methods aimed at promoting and strengthening it within the educational process. More emphasis is placed on methods related to progressive informational and communicative technologies and less emphasis on methods associated with creativity and 'big picture' construction.

Finally, the dynamic aspect of innovative competence development does not seem to be not adequately explored and not sufficiently underpinned by a suitable methodological base. This component is not even mentioned in numerous classifications.

Methodology

Taking into consideration all the remarks listed above, we state the following guidelines of our research.

The main research question is to elaborate a flexible holistic approach to innovative competence formation and innovative thinking support so that it is possible to develop all its components based on an effective well-balanced set of interactive teaching tools and pedagogical technologies.

As the effectiveness of innovative activity largely depends on personal self-identification as the bearer of innovation culture, we insist on considering and strengthening interrelation of social responsibility, an active social position and professional role of innovator in a modern economy development. What is expected to be the most important point within this conception is the responsibility for both social and environmental consequences of economic changes including innovative growth and globalisation processes, as well as awareness about significant social and technological transformations.

Given the significance of the dynamic component of innovative culture, there should be a greater emphasis on developing students' abilities to maintain a complex balance amongst breadth, depth and swiftness of evaluation; to generate the big picture based on the faint signals and focus points; to establish sensitive areas of new possibilities; and to anticipate new tendencies.

This study is designed to determine the principles of educational conception that is predominantly aimed at forming group educational strategies and promoting effective interchange of new knowledge. It should encourage the main point where interactive technologies can contribute to evolving innovative culture in a modern educational process.

More attention should be paid to elaborating principles of selection, combination, and reciprocal intensification of didactic technics and methods promoting different components of innovative thinking. That is why a questionnaire survey clarifying current tendencies in innovative learning will present the core element of this research.

Results

A questionnaire survey was held to identify students' attitude towards innovative culture as a part of their professional competence, to clarify their demand for mastering innovative skills and to estimate to which extent this demand is met in the framework of educational programme. The survey involved students of first and fourth course learning economics and management in the academic year 2019–2010 in the Saint-Petersburg State University of Industrial Technologies and Design

We distributed the questionnaire among 100 students and received 79 completed and usable responses. The sample of 79 students consist of 43 students of first course and 36 students of forth course from various specialisations in economics and management field. Our sample is demographically young because all students were 21–25 years old.

First, students were invited to formulate their understanding of innovative culture. An analysis of definitions proposed by respondents allows us to distinguish knowledge-oriented position, activity-oriented position and perception-oriented position.

Innovative culture as special knowledge is defined as

- peculiar culture of forecasting and conceptual foresights connected with novelties;
- awareness of scientific achievements, production and technological innovations and new informational opportunities related to professional sphere;
- ability to acquaint with innovative approaches to business processes optimisation.
- According to the perception-oriented conception, innovative culture may be determined as
- understanding the value of innovations in terms of professional activity;
- high susceptibility to new breakthrough ideas in professional sphere;
- ability to take into account and pay attention to innovative requirements of customers.
- Innovative culture is tightly associated with the following actions:
- ability to use and combine necessary resources to achieve an innovative goal;
- readiness for introducing new elements into traditional business processes and supporting novelties in conventional work procedures;
- effective knowledge management aimed at strengthening company's competitiveness.

Summarising, the students have to identify the most important components of innovative activity and the impact that different factors have on the pace at which professional competence is gaining innovative feature.

In order to identify students' attitude towards the innovative competence, they were invited to answer the following question: 'How important are innovative culture and innovative skills for your future job?' with options of answers changing top-down from '*Crucial and indispensable*' to '*Absolutely useless*'. The results for first-year students and fourth-year students are presented in Table 1.

Table 1. Significance of innovative culture

Group of respondents	Options of answers				
	Crucial and indispensable	Important	Rather useful	Rather useless	Absolutely useless
First-year students (persons)	21	19	3		
First-year students, share (%)	48.8	44.2	7.0	0.0	0.0
Fourth-year students (persons)	6	18	9	3	
Fourth-year students, share (%)	16.7	50.0	25.0	8.3	0.0

As can be seen, the largest group of first-year students attributes high importance to innovative culture in the professional sphere: slightly less than 50% of respondents classify it as crucial and just more than 44% choose the option 'important'. Negative assessments (the two right columns) were not chosen at all within this group of respondents.

At the same time, answers of fourth-year students differ considerably. Negative assessment makes up more than 8% of respondents, whereas students choosing answers 'Crucial and indispensable' and 'Important' form 16.7% and 50% of respondents, respectively. Furthermore, precisely a quarter of students are not sure about the utility of innovative skills. It seems to be a dramatic shift compared to the results of first-year students. This change in perception may be testimony to the fact that students may lack positive experience of implementing innovative methods in learning tasks. Thus we can state that there is a strong demand for innovative competence amongst students, which implies a serious challenge for the educational system. And when there is no convincing support of innovative culture in the educational process, it is sometimes in ways that could turn a strong innovative motivation into a doubtful confusion about the value of innovative skills.

In order to give a bit more background and precise students' requirements, we asked the following question: 'How far does your profession involve using creative thinking?' with options of answers changing top-down from '*Crucial and indispensable*' to '*Absolutely useless*'. The results for first-year students and fourth-year students are presented in Table 2.

Table 2. Significance of creative thinking

Group of respondents	Options of answers				
	Crucial and indispensable	Important	Rather useful	Rather useless	Absolutely useless
First-year students (person)	17	16	9	1	
First-year students, share (%)	39.5	37.2	20.9	2.3	0.0
Fourth-year students (person)	9	12	10	4	1
Fourth-year students, share (%)	25.0	33.3	27.8	11.1	2.8

The table shows that a little fewer than 40% of first-year students opt for indispensability of creative skills and around 37% insist on their importance, whereas far less than 21% of respondents tend to treat them as rather useful. Thus, more than 95% demonstrate their interest on making use of creative thinking in professional sphere.

The figures related to fourth-year students provide evidence of decrease in aspiration to evolve creative skills: almost 14% of students are sceptical of the value of creative thinking and the share of

highly motivated students decreased by 14.5%, from 39.5% to 25%. It should be pointed out that this pattern represents the changes in percentage rather than the global figures. Students do not receive convincing examples of creative skills being fundamental to advances in business, technologies, and science.

Table 3 allows estimating to which extent the demand for creative skills development is met in the framework of educational programme.

Table 3. Development of creative skills in learning process

Groups of respondents	Questions				
Question for first-year students	Do you expect that creative approaches to professional tasks will be evolved within the framework of educational process?				
	Options of answers				
Group of respondents	Yes, it is an inalienable part of educational programme	Yes, creative approaches will be promoted within the majority of subjects	Rather yes, elements of creativity will be partly developed in the framework of some subjects	Rather no, it is not a necessary component of professional education	No, creativity does not form a part of educational programme
First-year students (persons)	11	16	15	1	
First-year students, share (%)	25.6	37.2	34.9	2.3	0.0
Question for fourth-year students	How could you estimate the level of developing creativity and creative approaches to professional tasks during lectures, discourses and practical tutorials?				
	Options of answers				
Group of respondents	Creative skills constitute an inalienable part of all the topics of educational programme	Creative approaches are actively formed within the majority of subjects	Some elements of creative thinking are evolved in the framework of some subjects	Creative approaches are rarely involved in learning tasks	Creativity is not involved in educational process
Fourth-year students (persons)	7	3	12	13	1
Fourth-year students, share (%)	19.4	8.3	33.3	36.1	2.8

As might be seen, the educational process does not fully comply with the request for familiarising with creative approaches in a professional sphere. Just short of 63% of students expressed the hope that creative skills were to make a contribution to the capture of professional knowledge. As to the real picture, more than one-third of respondents indicate that creative methods are rarely or never implemented in learning tasks. Only around a quarter of students confirm steady development of creative thinking, which presents quite poor figure compared to the expectations.

Insufficient attention to the creative component of the educational programme caused a shift in favour of a more critical attitude towards creative thinking in particular and innovative approaches in the

whole. This situation is giving rise to a certain amount of frustration concerning students' creative fulfilment and their career prospects in innovation-orientated business environment.

Discussion

Subsequent to the analysis presented above, we state that it is necessary to introduce in the educational process a major drive in its aim to consolidate different pedagogical technologies promoting innovative thinking as well as to strengthen the innovative component in the content of special disciplines. There is definitely room for increasing appliance of interactive technologies involving creative thinking in the framework of lectures, tutorials and individual work. We emphasise four conceptions regarded as crucial when talking about developing innovative competence of students.

We have chosen and formulated these conceptions corresponding to the major learning outcomes to be achieved. Following Rubin and Martel theory (2009), there could be distinguished cognitive, interpersonal, and affective learning outcomes. All of them we define as crucial to innovative competence development. Problem-solving skills, associative thinking and ability to see opportunities form the core of cognitive outcomes in innovative sphere. Affective outcomes are related to willingness and readiness for experimentations and novelties. Finally, we consider interpersonal learning outcomes through the ability to creative networking and translate new ideas persuasively. Thus, conceptions of Developing Creativity, Focus on Faint Signs, Handling Mistakes and Questions versus Answers are aimed at forming the framework for these skills development as shown in Figure 1.

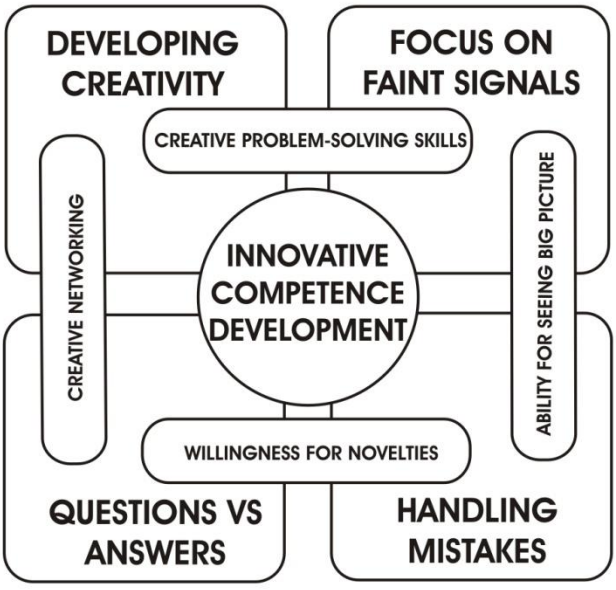

Fig. 1. Innovative competence development

The first conception is associated with developing creativity in economic studies. Economic subjects that usually tend to be thought as uncreative actually have to be taught with placing emphasise on the creative component of business decisions and economic analysis. This component is crucial for both projecting new products and underlying hidden patterns in business environment. Creative play of mind and imaginative generation of ideas present a pivotal starting point for serious research, accurate assessment, long-term testing and the whole process of correcting, modifying, and refashioning all the parameters of the initial ideas. Thus, innovative culture is supposed to involve deep interaction between creative and evaluating thinking, constant shift in the focus of attention from generating solutions to estimating their relevance to the purpose at hand.

We assume that the purposeful development of creative thinking in economic subjects is sure to help students in broadening their horizons, finding new modes of innovative development and deepening their understanding of the business environment around them.

Our second conception is related to the fact that professionals in innovative sphere have to adapt to sweepingly emerging opportunities, which implies that they should pick up early signs of promising tendencies and construct the whole picture of future development according to these signs. Economics needs scientists, economists and entrepreneurs able to profoundly understand social and cultural processes, contextualising each other to such an extent that they present multicomponent, vague-structural and changeable phenomenon. The question is how to put huge amounts of data in order and create a big picture maintaining a balance between depth and breadth of analysis. Here we can refer to the weak signals theory and define conception of big picture prevalence. Weak signal may be defined as an indicator of change hardly perceptible at present, but which will constitute a strong trend in the future. Carrying out the innovative activity means being subject to significant changes in market conditions, about which there is no systematic and adequate information. That is why managers operating in a fast changing environment are supposed to pay increased attention to weak signals and even need weak signals mentalities to be implanted. Within learning courses, students have to find ways to engage with weak signals, to make non-evident connections, to see social aspects of economic tasks, to identify peculiar patterns and to relate them with their past experiences. Working with weak signals requires both imagination and critical thinking. Data, weak and strong signals, hypothesis and informational gaps together constitute the big picture, unique for each researcher and each entrepreneur.

Eventual outcomes of innovative activity might be different from those anticipated at the outset. The conception can change, transform and improve as new opportunities come into view, and, more importantly, it may happen not only because of successful implementation of the initial idea but also because of the revealed mistakes. Each successful innovative decision, let alone breakthrough ideas, needs periods when somebody tests various approaches, takes risks and makes mistakes without fear of failure.

Young professionals are expected to be very alert to the possibilities of informational technologies and to work effectively with tremendous quantity of diverse data. Self-confidence to learn new things and to try new methods not being frightened of totally different experiences is vital to achieve it. Only a very competent approach to handling mistakes may ensure for students the breadth of vision. It is necessary to take account of the value of the process, including inevitable inconveniencies, and not only the inherent qualities of the result. The purpose is to construct productive team work or individual activity in perspective fields of business research, to encourage experimentation and risk taking, but perceive defeats as priceless learning experiences.

Our fourth and last conception is associated with the importance of questioning, exploring, and debating as starting points of any competence or just ‘Why not?’ conception.

Any science, including the economics one, is constantly dealing with two questions: ‘Why?’ and ‘Why not?’. Although the first question is focused on the explanation of existing situation, the second one is aimed at revealing obstacles for future development.

The most important condition implies that these ‘Why not?’ questions should be settled and formulated by students themselves so that these questions become of fundamental importance for them. Obviously, students cannot be strongly motivated and inspired when they get answers for the questions they have not asked and solutions for the problems they have not posed. On the contrary, when students define a standpoint for research on their own, they determine a peculiar circle of problems to overcome and ‘Why not?’ questions to answer. Only if learners pay attention and devote some time and mental energy to outline concretely the sphere of scientific problems, they would genuinely benefit from new knowledge and truly enrich their experience. That is why we believe good accurate questions in students’ works, whether theoretical research or practical task, should be valued as well as good well-founded answers.

Moreover, innovation activity is all about questioning and looking for hidden opportunities and unexpected solutions – it is all about ‘Why not?’. Gaps between human needs, especially unexpressed and non-evident ones, and existing facilities for its satisfaction present the most fruitful, promising field of elaborating innovative ideas. What is highly important, the deeper and the more multi-fold problems are settled and the more refined creative solutions are found. To summarise, the innovative

culture is, in the first place, the art of posing meaningful questions. As a consequence, encouraging students to ask many-sided questions related to the topic concerned is likely to be at the heart of learning approach promoting innovative culture.

The value of problem-solving ability is not only that it contributes to solve well-known problems but that it also enables us to discover problems we had not imagined so that it leads us to new horizons. That is why workshops devoted to solving cases remain one of the most relevant teaching methods and play a significant role in modern economic education, especially the innovation-orientated one. Case study is an active learning method through which students become exposed to diversity and complexity of decision-making contexts in business and learn sequential analysis in broad range of control settings. At the same time, the call for innovative thinking development causes the need to reconsider how we organise case-study learning.

To assure cognitive, interpersonal, and affective learning outcomes through case study method, it should be based on learning through active critical thinking, debates and valued peer-evaluation. The main thing is that case solutions should not be reduced to little more than an obvious algorithmic variable-handling exercise. Individual approach in posing a problem, revealing contradictions, emphasising certain details of innovative environment and foreseeing hidden resources should be valued during case-based education.

The crucial point of our approach to case studies is that students do not only fulfil a paper work for their lecturer to be assessed but they also elaborate an interactive learning task for their peers to be studied through teamwork. This approach adds to their motivation and even competitive excitement when they are enabled to become partly responsible for someone's educational process and mitigate innovative problems.

As to the practical accomplishment of this approach, it will include the following stages.

In the initial stage of case creation, students (let us call them 'the case-making group') find the main question providing an interesting context for investigation. Questions outlined for a future case should be flexible so that they are scaled and suitable to the different scientific interests. The case launch might range from several hours to a week and from particular minute question to complex problem in innovative sphere. At the end of this stage, lecturer should ensure that 'case-making' team has articulated clear expectations of the forthcoming case task to be worked out.

The second stage is divided into two parts: constructing the whole case and presenting it to the second group of students – 'case-solving group'. Creating an interactive task with a group of students may present one of the most efficient methods of building diversified knowledge in the lecture room. Students work together to produce background research, catch weak signs and solid evidence and provide rich case documentation, using various forms of text, audio, illustrations and graphs to share their results. They can add some pictures, diagrams and even videos to the case elaborated to amplify engagement. In this stage, they are supposed to be as concrete as possible when presenting case task and identifying the components of the decision that they want to target.

In the third-stage 'case-solving' groups of students elaborate the decision; construct hypothesis; define the necessary volume of data and available sources of information; fulfil in-depth analysis; confirm, correct, transform or disprove initial guess works; and form complete solution. Students have to be given the opportunity to reflect on their own contribution to innovative idea development with respect to weak signs they observe and background knowledge they have. They must identify what is known, what they observe, what they need to find out and ideas for solutions.

In the final stage, the 'case-solving' groups of students present their solutions in the form of a business presentation. The evaluation of case-solving results has to be planned carefully with regard to different types of criteria to apply and arrange evaluation discussions. These criteria need to be flexible enough to remain sensitive to the qualities and nuances of individual works and stable enough to guarantee that reliability of assessment is not to suffer. A truly complex and interesting solution obviously requires a period where students experiment with data, models and approaches without fear of incorrect answer. That is why the value of this search should be taken into account along with the value of final outcomes. Thus, from our point of view, criteria of case solution assessment are

expected to focus on depth of preliminary research, validity of solution, originality and variety of hypotheses involved, quality of economic models and methods and, finally, on how multi-purpose final solution is.

One possible practice is to organise discussion in the form of investment session – procedure during which investors estimate presented projects (innovative ideas and case solutions) as candidates for funding according to the range of criteria. The choice of limited number of criteria might itself be the subject of separate discussion. Defining and formulating criteria for many-sided assessment of innovative idea related to its value, originality, validity and purposefulness represent useful task involving critical thinking and illustrating the rich diversity of business conceptions.

Within the framework of discussion, students assess their own work as well and may evaluate their level of expertise and their interest in topics concerned. Revealing new skills, acquirements, experience and knowledge, they may precise their own dynamic learning path, which is, indeed, of value when talking about forming a diversified specialist in changing innovative economic system. Obviously, students need to have some foundational knowledge related to peculiar subject and rely on it whilst revealing the pattern and constructing a big picture of the investigated economic situation. At the same time, another part of foundational knowledge is supposed to develop during the case creation and case solving through workshops. Students have to combine existing ideas and methods in unexpected ways or apply them in areas they are not normally associated with. That implies a need for balance between the novelty of the problem topic and its connection to the material students are familiarised with.

Conclusions

Having chosen economics subjects, students look forward to familiarising with all social, cultural, technological and innovative aspects of modern business environment and acquiring the wide range of necessary skills related to innovative activity. The survey questionnaire presented in this article has confirmed this statement. This makes it rather puzzling that the educational system devotes only little effort to promote innovative culture and to provide opportunities for students to succeed in innovative business according to their talents and abilities. Given that the driving force of any change is human imagination, critical thinking and aspiration to novelty, educational system is supposed to promote innovative culture and creative approach to business tasks within economic subjects.

Functional and interactive skills (including cognitive and behavioural skills) needed to practice innovation activity in collaborative network are at the heart of innovative competence: questioning, observing, networking, experimenting and associational thinking. That is why cognitive, interpersonal and affective outcomes were established as key drivers for choosing teaching methods and conceptions that should have more room in the learning process.

Four conceptions for raising innovative competence within economic subjects that we defined as central to modern educational process – Developing Creativity, Focus on Faint Signs, Handling Mistakes and Questions versus Answers – are in fact intimately interrelated and may be regarded as an integrated approach that is aimed at developing flexible skills and innovating thinking. The creation of innovative solution is not accomplished by the calculation alone but by the intuitive search through successive interchange of boons and mistakes. At the same time, focus on faint signs provides new means for creative problem-solving and new forms of access to ideas, data and solutions. It is often through posing meaningful many-sided question that students get engaged in creative search especially when they are tasked with defining standpoint for research.

These interconnected conceptions should be integrated with case practices in a deep and meaningful way. We have presented one possible way of implementing new form of case-oriented practice. Students elaborate business cases for their peers in the form of investment session so that, during these educational experiences, they are getting used to value and use creativity in economic tasks as well as using business challenges as opportunities. The method presented in this article is currently being used within the course ‘Strategic management’ and it has already resulted in changing the attitudes. It is expected that improved learning skills and satisfaction will increase learning outcomes in long-term outlook.

This method is easily applicable in different educational programmes, economic subjects and environments as well as different curriculum plans without significant financial resources, provided these tools are integrated with conventional teaching practices. There are no thematic or organisational limits to this approach, which ensures its scalability. Here it is possible to conclude that this approach to case-study learning shows considerable promise in terms of innovative thinking development.

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RELIABILITY AND REPUTATION OF THE BOARD MEMBER IN LATVIA

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Abstract

Research purpose. The purpose of this article is to investigate the most important risk factors in the assessment of the reliability and reputation of the Board Member for the implementation of responsible business activities in Latvia.

Design/Methodology/Approach. The research methods used in the current article are a comparative analysis of the legal bases and other regulative documents and case studies. The case study is based on the economic and legal analysis of legal acts using descriptive, analytical, deductive and inductive methods, based on which the authors draw conclusions about the reliability and reputation of the Board Member in assessing the key risk factors of their responsibility. The following data collection methods were used to achieve the set goal: analysis of special literature and internet resources and document analysis.

Findings. The risks of the responsibility of a Board Member are still not a completely researched topic in Latvia. There is no common understanding of the reliability and reputation of a Board Member. The legal framework is incomplete, which has a negative impact on the responsible business in Latvia.

Originality/Value/Practical implications. The study contribute to the implementation of a responsible business environment by creating a common understanding of the risks of a Board member‘s responsibility.

Keywords: Reliability and Reputation; Board Member; Entrepreneurship; Legislation; Latvia.

JEL codes: K15; K20.

Introduction

The position of a Member of the Board and Council of a commercial company has a heavy burden of responsibility, because when concluding transactions and managing the day-to-day business of the company, all responsibility lies with company's governing body – the Board. It is important to ensure that the Board works as a whole. The commercial law stipulates that the Board must act as a good and careful master. So the key to a Board Member is to be loyal, to exercise due diligence in decision-making, to have good faith and to abide by the law. The legal status of the company must correspond to the nature and scope of the company. The appropriate legal status for state-owned commercial enterprises is a joint-stock company or a limited liability company. They must be subject to the same administrative structures as private companies and shall be subject to the same legal requirements as set out in the commercial law and other legislative acts for private companies.

The management body of a capital company is elected and approved by the members of the company. When electing the Board and Council Members of the company, the suitability assessment criteria include one of the most important criteria, which is the basis for choosing a Board Member – impeccable reputation. The law imposes a requirement of good reputation. At the same time, it should include specific features, objective criteria against which to measure this reputation. How to measure it? There are different, opposing views on this issue, which are expressed both in publications and in

the special legal literature.

An impeccable reputation is a prerequisite for holding important national positions, which is set by both politicians and public organisations. The important question is how to assess reputation, what are the measurable criteria for ‘good’ or ‘bad’ reputation. Social anthropologist Klāvs Sedlenieks pointed out that reputation is not a legally provable case that could be decided in a courtroom. However, this does not detract from the importance of reputation in assessing the performance of officials.

Reputation is a person's moral assessment, his or her public identity, or, in other words, his or her reliability. A person's public identity can be threatened by various scandals, which can sometimes be artificial, so it is always necessary to make a very careful assessment and it should not be based solely on rumours. Reputation is very difficult to measure by any objective criteria, because it is largely based on public perceptions of whether or not it is fair and ethical.

In turn, reliability is fostered by the company's internal corporate culture, because the employee must feel valued. Thus, the employee treats his or her employer, the company in which he or she works, as a significant value for him or her. It is mutual respect, keeping promises, fulfilling all responsibilities in good faith, and information providing. If, for example, an employee learns about a serious process in the company from newspapers and not from his or her employer in an informative meeting or report, this, of course, does not promote mutual trust.

Literature Review

1) The place of intangible assets in the regulatory framework of reputation and reliability

The concept of intangible assets – intangible or incomprehensible assets. Intangible assets do not have a physical form, they are intangible. They are also not financial assets. Intangible assets or intangible investments (term according to the Law on Annual Accounts and Consolidated Annual Accounts) belong to the group of long-term investment assets, which in turn consists of: development costs; concessions, patents, licenses, trademarks and similar rights; other intangible investments; and goodwill (The Consulting platform ‘Ifinanses’ of the Republic of Latvia, 2020).

Intangible assets in many business sectors today are playing an increasingly important role in a company's financial management and planning. In the legislation of the Republic of Latvia for the accounting of intangible assets, there is not a sufficient unified theoretical basis. The 38th International Accounting Standard (IAS) defines intangible assets as follows: An intangible asset is an identifiable non-monetary asset that is not in physical form and is held for use in the production or supply of goods or services, for lease to others or for administrative purposes (The Consulting platform ‘Ifinanses’ of the Republic of Latvia, 2020).

The most critical and strategic asset a company assesses is its reputation. A ‘reputation improvement plan’ is a critical document for the Board of directors or Members. In practice, reputation improvement plans vary enormously in terms of structure, format and content. A successful reputation improvement plan and programme will only occur when at least the following combined forces are effective: a vision of something better (a clear target embedded in a plan) and a few practical first steps to achieve it (to launch the process). Reputation is not a gift but really hard work. (Klaas Jagersma, 2010)

The most important strategic and long-lasting asset a company owns is its reputation. Whilst corporate reputation is undoubtedly an important and significant corporate asset, serious valuation problems have made these key intangible assets excluded from the financial statements. Therefore, a ‘reputation index’ was created, which covers the main dimensions and assesses the various organisational components, including corporate strategy, financial strength and viability (Kravens, Olivers, Ramamoorti, 2003).

Corporate reputation can be managed and accumulated. Consumers are willing to pay a higher price for the goods and services offered, which in turn leads to greater customer loyalty. Therefore, reputation is one of the most valuable forms of a company's ‘capital’. Ensuring the functional and social expectations of society, on the one hand, and the success of creating a unique identity, on the

other hand, creates trust, and this trust forms the informal structure of the company. This framework provides returns and creates reputational capital. A positive reputation provides the company with a long-term competitive advantage. The higher the company's reputation capital, the lower the costs of supervision and control.

There are many contradictory models of reputation and trustworthiness, but in this study, the authors will strictly adhere to the study of the reputation and trustworthiness system in regulatory enactments both in the Republic of Latvia and in the European Union in relation to Board Members.

There are currently almost 140,000 commercial companies in Latvia, with one or more Board Members at the helm. Each of them is responsible for the company's growth and development, but in the event of failure, a situation may arise where the company's members or creditors want to assess the liability of Board Members. In general, it can be said that along with stricter legal requirements, the burden of liability of the Board is also increasing; therefore, the number of claims and legal proceedings against the Board Members is gradually increasing. (Zivtiņa, 2019)

For many capable and high-potential professionals, this requires a careful assessment of the risks involved in becoming a Board Member. One of the mitigators of these risks is the Board Member's civil liability insurance (D&O liability insurance), which protects the Board Member in cases where sued, for example, to compensate the company for losses (Sorainen, 2019).

2) Reliability and reputation system in the Republic of Latvia

The measure of impeccable reputation and reliability is enshrined in many laws and often in different forms.

One way in which the legislator immediately lists the criteria of impeccable reputation is given as follows: if a person meets the criteria, then there is impeccable reputation, if a person does not meet the criteria, then there is no impeccable reputation. This is the strictest, simplest approach.

The second approach is to include the open concept in legislation. This often leads to confusion, leading to the interpretation of what constitutes an impeccable reputation. In this case, both candidates and evaluators must be very careful, because this allows the manipulation to affect the independence of the official. Even minor infringements that would not be correct could be considered to affect reputation. The guarantee of independence with this vague concept can be easily torpedoed; the risks are pointed out by legal expert E. Pastars.

It is also believed that an impeccable reputation can be proved by other people, authoritative people in certain professions. And as proof, there may be a presumption that you have an impeccable reputation until proven otherwise. According to the commercial law, a capital company is a commercial company whose share capital consists of the total amount of nominal values of shares or stocks. There are two types of companies: limited liability companies and joint-stock companies. Section 140 of the commercial law stipulates that the founder of the company shall be a natural person or a legal person or a partnership who has performed the activities related to the founding of the company or on whose behalf these activities of founding have been performed.

In its turn, Section 1 of the Law on Governance of Capital Shares of a Public Person and Capital Companies stipulates that there are the following types of capital companies: a capital company of a public person, a capital company in which all capital shares or voting shares belong to one public person; a capital company controlled by a public person, a capital company in which one or more public persons have a direct decisive influence; a public-private capital company, a capital company in which all capital shares or voting shares belong to several public persons; private capital company, a capital company in which the capital shares or stocks belong to a public person and another person (except for the owners of personnel shares); state capital company, a capital company in which all capital shares or voting shares belong to the state; capital company of a derivative public person, a capital company in which all capital shares or voting shares belong to one derivative public person; local government capital company, a capital company in which all capital shares or voting shares belong to one local government.

The commercial law stipulates that the governing bodies of the company are the meeting of Members and the Board, as well as the Council. The same regulation is also given in Section 65 of the Law on the Governance of Capital Shares and Capital Companies of a Public Person and stipulates that the management of a company is carried out by a participant, a meeting of Members and the Board, as well as a Council (if one has been established).

The commercial law in relation to capital companies, the founders of which are natural persons or private legal entities, does not prescribe any criteria and requirements for the assessment of reputation and election of the governing bodies of these companies – the Board and Council. The situation is different if a governing body is elected – the Board and/or Council in capital companies where its founders and Members are public persons.

The guidelines for the selection of Board and Council Members also set an impeccable reputation as one of the criteria. Generally defined, an impeccable reputation in the field of corporate governance is an action of a Council or Board Member that does not give an independent observer doubts about the professional performance of the duties of a particular official or a Board or Council Member (G20/OECD Principles of Corporate Governance).

On 25 January 2020, the Cabinet of Ministers approved the procedure for nominating new Members of the Board and the Council. The purpose of the regulations is to promote open, fair and professional selection of Members of the Board and Council of state and derivative public persons, including local governments and capital companies. Until now, the criteria for determining the number of Members of the Board and the Council have been regulated by the Cabinet of Ministers Regulations No. 686 'Procedures for Nominating Candidates for Positions of Board and Council Members in Capital Companies in Which the State as a Participant (have the right to nominate the Members of the Board or Council and Members of the Board in state-owned companies in which the Council has been established', but they are only applied to state-owned companies. In order to improve the procedure for the selection of Members of the Board and Council of both state and local government capital companies, it will be regulated by new Cabinet of Ministers Regulations No. 20 'Procedure for Nomination of Members of the Board and the Council in Capital Companies in Which the Capital Shares Belong to the State or a Derivative Public Person' (Legal acts of the Republic of Latvia, 2020).

The Law on Governance of Capital Shares of Public Person and Capital Companies provides an explanation of the concept of corporate governance, stipulating that it is a set of measures for achieving the objectives of the capital company and controlling the capital company's activities, as well as assessing and managing risks related to the capital company's activities. This is in line with the objective of the new Cabinet of Ministers regulations to ensure compliance of the nomination process for the Members of the Board and Council Member with the principles of good corporate governance and open, fair and professional selection of the Members of the Board and Council, which promotes the establishment of an institution in professional and competent state and derivative public entities, including local governments.

Since this year, the Interdepartmental Coordination Centre (PKC) has been ensuring the selection of candidates for Members of the Council of State Capital Companies together with the shareholders and manages the work of nomination commissions. As the Interdepartmental Coordination Centre explains, 'The approved procedure will be followed when selecting and evaluating candidates for Board and Council Members in the case of management of state capital shares, derivative public capital shares, as well as public capital companies and subsidiaries of public capital companies'.

The new unified approach to the selection of candidates for the Members of the Council and the Board of state capital companies is determined by the amendments to the 'Law on Governance of Capital Shares of Public Persons and Capital Companies' that came into force on 1 January 2020 and the Cabinet Regulation No. 20 'Procedure for Nomination of Members of the Board and the Council in Capital Companies in Which the Capital Shares Belong to the State or a Derivative Public Person' (see Fig.1).

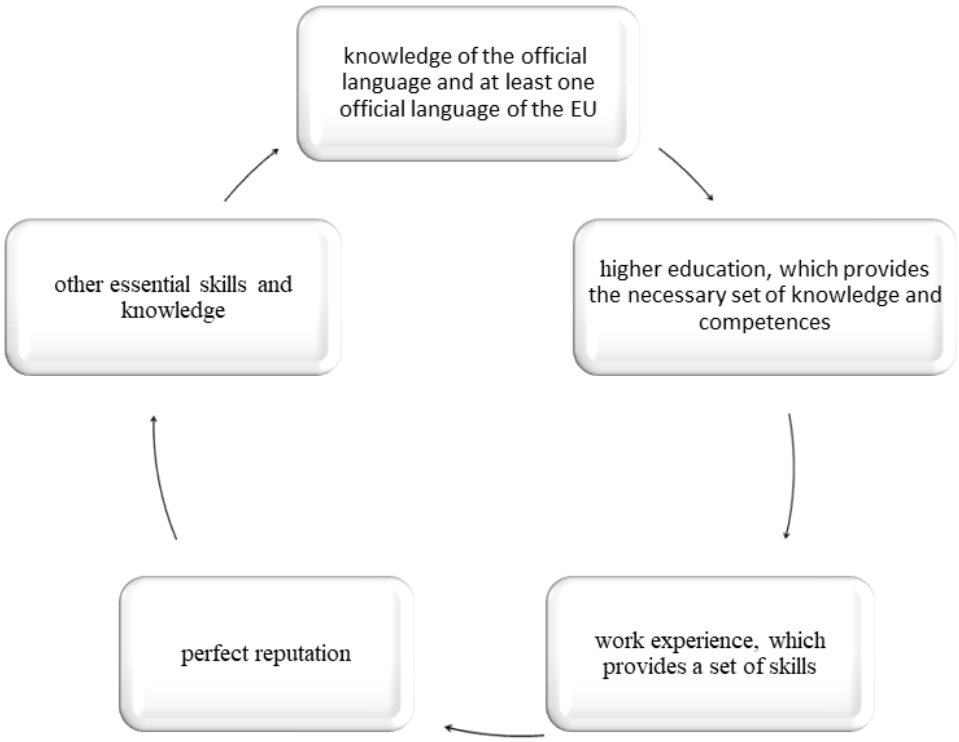

Fig.1. Minimum requirements for the candidate of the Member of the Board or Council of State Capital Companies (Source: Legal acts of the Republic of Latvia, 2020)

As a result of the project initiated by the European Commission (EC) and KMPG Baltics and initiated by the Cross-sectoral Coordination Center, an independent evaluation of the management of state-owned companies was prepared, analysing the existing processes of goal setting, monitoring and performance evaluation. Proposals are also made to improve the governance of state-owned companies, taking into account their different operating profiles and scope.

Upon the completion of the project, an international assessment and comparison of Latvian governance with models in other European Union and Organization for Economic Co-operation and Development (OECD) countries was obtained.

The principles of corporate governance and recommendations for their implementation have been developed, taking into account the requirements set for capital companies in the legislation of the Republic of Latvia, as well as the recommendations of the European Union and the OECD for corporate governance. The principles of corporate governance would be applicable not only to capital companies whose shares are listed on a regulated market organised by NASDAQ OMX Riga, AS, but also to any other capital company.

The purpose of the regulations of the Cabinet of Ministers is to ensure the compliance of the process of nominating the Members of the Board and the Council with the principles of good corporate governance practice, to ensure open, fair and professional selection of the Members of the Board and the Council. The requirements of the regulations for candidates for the position of Members of the supervisory Board and the management Board, in addition to the restrictions specified in the Law on Governance of Capital Shares and Capital Companies of Public Persons (the Law), determine five basic criteria for personnel selection : knowledge of the state language and foreign language required for the performance of professional duties at an appropriate level; appropriate education, which provides the knowledge and competence base required for the position; relevant work experience and skills; as well as impeccable reputation and other essential professional skills and competencies scope.

Andris Grafs, Vice President of the Baltic Institute of Corporate Governance, Head in Latvia, pointed out that in all the Baltic States, there is a tendency for corporate governance to become an increasingly

important issue on the agenda. There are several reasons for this.

First, the responsible business culture is growing in the business environment; entrepreneurs think more about business sustainability, efficiency and growth. If a company is ambitious and plans to grow not 10% a year, but 10 times a year, then effective corporate governance is a component without which it will not be possible.

Second, crises and corporate disputes in other companies call for the review of the principles in which strategic decisions are made, how risks are managed and how cooperation between a company's shareholders, the Board and the Council and so on takes place.

Third, there is an increasing 'pressure' from investors and banks to put corporate governance in order. Each bank assigns a credit rating to a company that needs financing for development, which determines the terms of financing. Summarising the experience of five Latvian banks, including Baltic International Bank, it can be concluded that aspects related to corporate governance affect up to 25% of the credit rating of a company formed by banks: banks evaluate the owners of the company, the operational experience and reputation, the professionalism of company management, strategic decision-making practices, risk management, transparency, the quality of information provided and other aspects. Therefore, it is expected that these issues will be paid more and more attention to by companies themselves, banks and investors in the coming years.

At least one 'reputation case' has been dealt with in depth in court. In 2015, the then Chairman of the National Electronic Media Council (NEPLP) Ainārs Dimants challenged the decision of the Saeima on his dismissal in court. The Saeima relied on Section 59, Paragraph 3, Clause 3 and Section 56, Paragraph 3 of the Electronic Media Law (good reputation). Politicians in the debate emphasised that the Chairman of the Council had lost his good reputation and also referred to the conclusion of the audit report of the State Audit Office that the NEPLP had not acted effectively with finances (Journal 'Jurista vārds', 2019).

In its judgment on 22 September 2017, the Supreme Court indicated that the basis for the release of an official may also include the indefinite concept of law. Such is the concept of good reputation referred to in Section 56, Paragraph 3 of the Electronic Media Law, in the fulfilment of which the institution has a wide freedom of assessment. Its judicial review is limited, that is, in the case of freedom of assessment, the court only examines whether there has been manifested an error or a serious procedural irregularity (Journal 'Jurista vārds', 2019).

Usefulness considerations in the case of freedom of assessment do not have to be made and cannot be examined by the court accordingly. Whilst acknowledging that the applicant had acted unlawfully as the Chairman of the Council, the court concluded that he or she was thereby damaging his or her reputation, which was the basis for his or her dismissal. The Supreme Court finds such a conclusion correct, namely, that a person's unlawful conduct is incompatible with good reputation, regardless of whether and to what extent violations of the law are perpetrated in society in similar situations (Supreme Court Judgement of 11 January 2013 in Case No. SKA-53/2013 (A42680309), Paragraph 8).

Unfortunately, the experience shows that too wide a range of interpretations of reputation only paves the way for political manipulation of the management of social media and thus also threatens the independence of public service media. (Legal acts of the Republic of Latvia, 2015)

It should be taken into account that the commercial law does not set and determine such reputational requirements for capital companies of private legal entities, which are set and developed in the regulations of the Cabinet of Ministers 'Requirements for Candidates for the Positions of the Board and Council' (Legal acts of the Republic of Latvia, 2020).

The commercial law, in accordance with Article 4.1, imposes only a restriction on commercial activities imposed on a natural person and stipulates that if a natural person is deprived of the right to conduct all or a certain type of commercial activities based on a decision in criminal proceedings, the following is prohibited: to be a Member of the Board or Council of a capital company. However, it must be borne in mind that this applies only to a natural person who has been deprived of the right to engage in a certain type of commercial activity and that the prohibitions imposed apply only to the

type of commercial activity specified in the relevant decision. If the legal status of such a person allows him or her to make decisions in a commercial company, he or she is prohibited from taking decisions in matters that relate to the type of commercial activity specified in the relevant decision (Legal acts of the Republic of Latvia, 2000).

In its turn, Article 4.2 of the Commercial Law prescribes restrictions for a natural person based on the criminal or administrative infringement proceedings to hold certain positions, and a natural person is deprived of the right to hold certain positions in a commercial company and its administrative institutions as being a Member of the Board or the Council (Legal acts of the Republic of Latvia, 2000).

As Kalniņš pointed out in his book 'The Further Development of Law/Theory and Practice of Private Law', the content of the criterion 'impeccable reputation' as a concept (general clauses) that can be fulfilled with a certain content can be revealed using legal methods, because 'their content derives from their scope and can be clarified by means of generally accepted examples, by looking at groups of typical cases and identifying their specific elements' (Journal of the University of Latvia 'Law' No 8, 2015).

Methodology

The research methods used in the current article are a comparative analysis of the legal bases and other regulative documents and case studies. The case study is based on the economic and legal analysis of legal acts using descriptive, analytical, deductive and inductive methods, based on which the authors draw conclusions about the reliability and reputation of the Board Member in assessing the key risk factors of their responsibility. The following data collection methods were used to achieve the set goal: analysis of special literature and internet resources and document analysis.

Research limitations. The research is based on a scientific research analysis method analysing reputation and reliability of Board Member, using wide references (journal articles, books, Internet resources and official databases of Legal acts of the Republic of Latvia and OECD), including analysis about

1) different viewpoints from experts and researchers about reputation, at first personal moral assessment/his or her public identity, subjective and objective criteria, concluding the summary of views, corporate reputation can be managed and accumulated and 'Reputation improvement plan' is a critical document for the Board of directors or Members;

2) the place of intangible assets in the regulatory framework of reputation and reliability. Because the most important strategic and long-lasting asset a company owns is its reputation;

3) reliability and reputation system in the Republic of Latvia. The measure of impeccable reputation and reliability is enshrined in many laws and often in different forms: first, to list the criteria of impeccable reputation; second, to include the open concept in legislation; and third, to prove an impeccable reputation by other people;

4) The European Union and OECD recommendations established in Latvian legislation on the criteria set for the Board Members, including the reputation requirements evaluating only the public sector in Latvia;

5) at least one 'reputation case' in Latvia, based on the official information: the Chairman of the National Electronic Media Council (NEPLP) Ainārs Dimants challenged the decision of the Saeima on his dismissal in court; the authors have selected and analysed case No. SKA-53/2013 (A42680309), case No. SKA-767/2017. In its judgment in 22 September 2017, the Supreme Court indicated that the basis for the release of an official may also include the indefinite concept of law. Such is the concept of good reputation referred to in Section 56, Paragraph 3 of the Electronic Media Law, in the fulfilment of which the institution has a wide freedom of assessment.

Authors used document analysis scientific research method to obtain the information and evaluate processes that concern reliability and reputation of the Board Members. Any written and digital materials that include information about phenomenon researched are considered documents. On the

basis of the methods of scientific induction and scientific deduction, the authors of the study conclude that strengthening the existence of credibility and reputation in legislation in the public sector may have consequences that affect the business environment in the private sector.

Results

The guidelines for assessing the reputation of Members of the Board and Council in capital companies, both private capital companies and capital companies with the state capital management institution, as a criterion for holding responsibility for non-performance or removal from office, have not been studied sufficiently in Latvia. As well as, in the case-law, there are only a few cases where an unacceptable reputation is a justification for losing the position of a Board Member. Analysing the current legal situation and criteria that determine the reputation of a Board Member, the work examines the legal factors that influence the impact of the commercial law and the Law on Governance of Capital Shares of a Public Person and Capital Companies and the practice of applying these norms when assessing the reputation of a Board Member in a capital company and applying assessment criteria.

Conclusions

The authors of the study by analysing the content of legal acts regulating the choice of public and private management bodies – the Board and Council – by taking into account the risk factor, good reputation, which affects the implementation of a responsible business environment to ensure compliance with good corporate governance practices, conclude:

- the new, unified procedure for the selection of Members of the Council of capital companies helps to strengthen internationally recognised management principles, ensuring uniformity and transparency of the process in selecting the most suitable candidates for positions;
- a candidate for a Member of the Board or the Council shall be deemed to be a person of an impeccable reputation if there is no evidence to the contrary and there is no reason to have sensible doubt about the impeccable reputation of the person. When assessing the reputation of a candidate for a Member of the Board or the Council, the information available to the shareholder or the Council, as well as the nomination commission, which is available for the assessment, shall be taken into account;
- In Latvia, the general legal framework for the functions, activities and responsibilities of the Board is set out in the commercial law, where Section 169 provides for a broad concept of the liability of the Board and special laws, such as the Law on Management of the diligent owner and jointly and severally with the other Members of the Board must be liable for the damage he or she has caused to the public;
- the content of the criterion ‘impeccable reputation’ as a content-enforceable concept (general clause) can be detected through legal methods. Their content can be clarified with the help of generally accepted examples by looking at typical cases and identifying their characteristic elements;
- if the law prescribes the requirement of good reputation, at the same time, it should include certain features, objective criteria according to which this reputation should be measured;
- the Council of the Coordinating Institution for the Management of State Capital Shares and State Capital Companies developed the guidelines for the selection and evaluation of candidates for Members of the Board and Council of a capital company in capital companies in which countries have the right to nominate Members of the Board and Council. It would also be advisable to include the features included in these guidelines in the commercial law on the selection of Members of the Board and Council in private companies.

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EVALUATION INDICATORS OF GREEN ECONOMIC DEVELOPMENT: THE CASE OF THE BALTIC COUNTRIES

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Abstract

Research purpose. The green economy may become a solution to the existing problems. The European Union must implement solutions related to the green economy in order to solve the existing ecological, economic and social problems in the region, such as pollution in the Baltic Sea region, inequality, greenhouse gas emissions, climate change and so on. It can be assumed that green economy evaluation research conducted in the scientific community does not always reflect the real situation, due to the lack of indicators or limited evaluation methodology. The aim of this article is characterized by academic literature to identify green economic development indicators and evaluate green economic development indices in three Baltic countries: Lithuania, Latvia and Estonia.

Design/Methodology/Approach. The article uses analysis of scientific literature, systematization, comparative analysis, generalization and data normalization methods.

Findings. The analysed scientific literature and reports of international organizations, resolutions and conference agreements allow to compile a list of indicators for the evaluation of green economy development. The results showed that in all the analysed countries, a strong growth of green economy development indices can be seen; in Estonia, they remained the best among the three Baltic countries during the analysed period. An analysis of which individual indicators are most important in the development of the green economy and have the greatest significance for the index has shown that their estimates and position have changed significantly in less than two decades.

Originality/Value/Practical implications. The identification of green economy indicators provides a new approach to the structure of green economy components. Indicators measured over time describe the structural characteristics and quantitative changes of the green economy, and provides a new understanding of the opportunities and directions of green economy development. In the framework of this study, fifteen indicators were selected for the analysis of green economy in the Baltic States. The normalization and further evaluation of these indicators from the point of view of the green economy allowed to determine the significance of individual social, economic and environmental dimensions for the overall green economy index and to show the changes over a period. The collected data also form the basis for further in-depth prognostic studies.

***Keywords**:* Green Economy; Indicators of Green Economy; Green Economy Development.

***JEL codes**:* Q01; Q56; O13; O57

Introduction

The green economy is an area of economic science where policy efforts, technological solutions, societal attitudes and economic actions are focused on ideas that are associated with sustainable development.

The 2012 United Nations Conference on Sustainable Development Rio + 20 adopted an important resolution (A / RES / 66/288 - The Future We Want) emphasizing the importance of the green economy. The Rio + 20 conference emphasized that the green economy is seen as one of the key tools for achieving sustainable development and poverty eradication (United Nations [UNDSD], 2012). In

some Western European countries, the green economy may become a solution to the existing problems. The European Union must implement solutions related to the green economy in order to solve the existing ecological, economic and social problems in the region, such as pollution in the Baltic Sea region, inequality, greenhouse gas emissions, climate change and so on. It can be assumed that green economy evaluation research conducted in the scientific community does not always reflect the real situation, due to the lack of indicators or limited evaluation methodology. It is therefore possible to discuss the issue, which has not been addressed by – how to identify the indicators that describe the development of a green economy. In the past, multiple scientific community researchers have analysed green economy development with inclusion of multiple different indicator, of which majority includes the problem – lack of consistent data (Law, De Lacy, Lipman, & Jiang [2016], Kunapatarawong and Martinez-Ros [2016], Sonnenschein and Mundaca [2015], Stankevičienė and Nikanorova [2017], Moyo [2014], Weber and Cabras [2017]). Other scientific scholars mostly use secondary data to assess green economy in certain regions (Islam, Siwar, Ludin, Chowdhury, Ibrahim, 2012). D'Amato, Droste, Allen, Kettunen, Lahtinen, Korhonen, Leskinen, Matthies, and Toppinen (2017) analysed three differences, but similar concepts – circular economy, green economy and bio economy based on machine-learning analysis of literature, and states, that green economy is most inclusive, but all concepts are limited regarding economic growth paradigm. Analysing the given scientific literature, we can see multiple different variations of green economy analysis. We can state, that there exists misconception on how to evaluate green economy development on a global level. Currently, an actual scientific problem: How and on what indicators can the development of the green economy be assessed?

The *aim of this article* is characterized by academic literature to identify green economic development indicators and evaluate green economic development indices in three Baltic countries: Lithuania, Latvia and Estonia.

Methods: Analysis of scientific literature, systematization, comparative analysis, generalization, data normalization.

Limitations of the research: All macroeconomic and environmental data are collected from publicly available databases: Eurostat, OECD, World Bank. Some data are provided non-periodically. There is a limitation when a large part of the relevant data for the calculation of indices is submitted before 2015, 2016, 2017 or 2018. For indicator data series where data gaps are identified, the arithmetic mean of the existing indicator data series will be added.

Literature Review. The importance of green economy development and identification of evaluation indicators

According to Porfir'ev (2012), green economy can be understood as 'the development, production, and exploitation of technologies and equipment for controlling and reducing pollutants and greenhouse gas emissions and for monitoring and forecasting climate changes, as well as energy saving, resource saving, and renewable energy technologies' (p. 120). According to International Chamber of Commerce (hereinafter ICC) (2012), the description of green economy is stated as 'in which economic growth and environmental responsibility work together in a mutually reinforcing fashion while supporting progress on social development' (ICC, 2012). The green economy depends on economic (environmental costs, investment in renewable energy, labour, poverty, etc.), social (social rights, guarantees, public consumption habits, etc.), technological (development and use of new technologies), ecological (biodiversity conservation, climate change, air quality and pollution, waste management, use of renewable energy sources, use of fossil fuels), political (legislation and the state's approach to the green economy) factors. Every factor is important for the development of the green economy. Researchers link the descriptions of the green economy to the creation of economic prosperity and environmental protection, with a strong focus on reducing carbon emissions.

It should be emphasized that the green economy can be considered as a tool for sustainable development endeavours and green economic development requires political restructuring and investment 'Working towards a Balanced and Illusive Green Economy' (UNEP, 2011). Achieving sustainable development is a key goal of the green economy (Maran and Nedelea, 2017). Nieto,

Carpintero and Miguel (2018) conducted a study to see if the Paris Agreement can have a real impact on climate change and the economy. Scientists (Nieto et al., 2018) concluded that even under the terms of the Paris Agreement, global temperatures should rise by 3 degrees Celsius compared to the pre-industrial period, although changes will depend on the consumption and production patterns of the developed countries. Gultekin, Erenoglu (2018) studied the green economy and emphasized the importance of public policy, highlighting in the conclusions that: 'some countries see development and industrialization policies in front of clean environmental policies. This situation causes the policies towards green economy to be delayed or prevented' (p. 855). An analysis of the scientific literature shows positive examples of the introduction of the green economy – more jobs can be one of the main benefits, regardless of the reduced impact on nature. According to Abu Jamie (2018), 'the adoption of green economy has a positive impact on the States' performance, which will improve the green economy indicators as well. This will lead to an improvement in the economic growth rate. We can say that the green economy offers practical solutions to the problems of poverty, unemployment, and the depletion of resources while maintaining growth levels' (p. 128). It can be concluded that the green economy may become a solution for countries striving for higher economic growth, but according to Abu Jamie (2018), 'relation between adoption of green economy and economy growth may not be established in the first steps of adoption due to the high investment cost in the implementation of green economy strategies' (p. 128).

A similar remark made by Loiseau et. al. (2016) emphasizes that strategies for green economy implementation can be incremental. According to Loiseau et. al. (2016), 'certain solutions are more compliant with mainstream economy and require few changes, whereas other solutions are based on deep transformations of our patterns of production and consumption like industrial ecology or nature-based solutions that require large-scale investments into green infrastructure' (p. 17). In other words, researchers emphasize that the green economy can be an exceptionally important tool in terms of environmental and economic benefits. However, researchers point out that this mutual benefit is not always easily achieved. Barber and Markandya (2013) stated scepticism about the effectiveness of measures in delivering of jobs and improving environment due to lack of political will, concerns about increasing government budgets, deficits when talking about green economy.

It can be assumed that while the green economy can bring significant benefits, it is important to keep in mind the potential negative effects and their magnitude. New facilities (such as wind farms) require space, which can disrupt biodiversity and the landscape, and investors who invest in developing countries may have interests other than return on investment. This poses significant challenges for the development of the green economy, which raises the fundamental question of whether the idea of a green economy is effective. In 2018, examples of the use of the green economy were systematized and analysed according to the decisions made by different countries. Examples of applications of the green economy provided by scientists cover a wide range of economic, technological, social and environmental areas: reduction of fossil fuels, use of renewable energy sources, poverty, greenhouse gas emissions, investment in development of new, green and cost-effective technologies (Gultekin, Erenoglu, 2018). Researchers also stressed the importance of public policy.

In 2012, a survey on the development trends of the green economy was conducted (Porfir'ev, 2012). The researcher stated that the green sector is still small in a global context: 'the estimated value of goods and services produced is $2 trillion or 2.7% of the GWP, the estimated profit is $530 billion, and employment is about 10 million people' (Porfir'ev, 2012 p. 120). For the analysis of green economy, the researcher used indicators such as: share of green sector in the gross domestic product (hereinafter GDP), investment in the green sector and technology, labour force in the green sector and profits made by business. The researcher emphasized that the problem itself is the low growth of the sector, low investment in green technologies and job creation. It can be emphasized that the green economy must be related not only to ecological or social areas and indicators focused on it, but also to financial and economic indicators. State decisions and policies play a key role in the development of the green economy, as taxes, incentives and permits can depend on it.

Global regulations or internationally agreed cross-border agreements may be taken into account for the assessment of the green economy in a global context. One of the most important agreements are 'Kyoto Protocol to the United Nations Framework Convention on Climate Change' (hereinafter

'Kyoto Protocol') (UN, 1998). The main goal of the Kyoto Protocol was to reduce emissions of 6 key greenhouse gases (carbon dioxide CO_2, methane CH_4, nitrous oxide N_2O, hydrofluorocarbons HFCs, perfluorocarbons PFC, sulphur hexafluoride SF_6) (United Nations Climate Change, 2019).

In addition to the Kyoto Protocol, there is another important ruling on climate change – 'Paris agreement' (UN, 2015). The main purpose of this agreement is to ensure that the temperature of planet Earth does not rise by 1.5^{o}C by the end of this century compared to the pre-industrial period. This agreement not only regulates pollution that has a direct impact on climate change, but also increases investment in measures to prevent and respond to natural disasters (UN, 2015).

In order to analyse the development of the green economy, it is necessary to clarify and identify the indicators needed for the analysis. Sonnenschein and Mundaca (2015) assessed the green economy in South Korea. For the study, the researchers selected carbon dioxide (CO_2) emissions (estimated emissions from fuel combustion, excluding emissions from shipping and aviation), total primary energy supply (as an indicator of energy production, imports and changes in available stocks excluding exports), total final energy consumption (total consumption from different consumer sectors), gross domestic product and the entire population of South Korea, regardless of nationality or age.

Pan et al. (2018) evaluated the green economy in China, and selected empirical data for the study according to various economic, energy, ecological indicators: labour, capital, energy, GDP and CO_2. Researchers Pan et al., (2018) additionally grouped all indicators into new groups: urbanization, energy consumption structure and industry structure.

Abu Jamie (2018) conducted an empirical study to assess how the adaptation of the green economy affects the concept of sustainable development and the achievement of goals. For the evaluation, the researcher used economic indicators (net GDP, GDP growth rate, GDP per capita), indicators describing the environment, natural capital and climate change, efficiency indicators, investments in environmental protection. It is important to note that the researcher (Abu Jamie, 2018) systematized environmental and natural capital, climate change indicators, efficiency indicators, and investment in the environment into a separate index of green economy that was compared to GDP indicators.

Unay-Gailhard and Bojnec (2019) investigated the application of green economy principles in Slovenian farms. For the study, the researchers used agricultural land as a factor, classified them according to yield indicators, and singled out the areas in which farmers used the principles related to the green economy in their activities. The researchers compared the data of agricultural land with the changes in the lab or force on the same farms. Such an example of green economy research can be used, but in order to accurately assess the development trends of the green economy, it is necessary to evaluate the green economy from a broader perspective.

Stankevičienė and Nikanorova (2017) analysed economic and ecological well-being in the context of the circular economy. The researchers chose indicators that also reflect the ideas of the green economy: municipal waste recycling rate (%), e-waste recycling rate (%), amount of landfills excluding basic mineral waste (%), eco-innovation index, share of renewable energy% from final energy consumption, greenhouse gas emissions from energy consumption, share of renewable energy in transport fuel consumption, environmental tax revenue, energy taxes per GDP, energy consumption per GDP, energy production per GDP, renewable energy consumption per GDP, renewable energy production per GDP, value added of non-financial business economy, energy efficiency, resource efficiency, electricity produced from renewable sources, renewable energy consumption, energy production, renewable energy production. Such an extensive list of indicators can provide an opportunity to analyse in detail the development of the green economy. Taking into account the indicators analysed by Stankevičienė and Nikanorova (2017), it can be noticed that they can be supplemented with social, technological and political factors.

The indicators analysed by Nahman, Mahumani and de Lange (2016) may explain the development of the green economy, but the researchers note that not all indicators are developed, or the data are insufficient for inclusion in the study. The analysed scientific literature and reports of international organizations, resolutions, conference agreements allow to compile a list of indicators for the evaluation of green economy development. This can be done by developing a matrix where one axis of

the matrix presents all the indicators analysed and the other axis shows the researchers, the international organizations that included the indicator in the analysis.

The resulting matrix is presented in Table 1. Most often mentioned are the indicators of GDP (gross domestic product), greenhouse gas emissions, labour, total primary energy consumption and energy efficiency. Indicators that are most mentioned in other works, have been mentioned more than 4 times. The least mentioned indicators are poverty line (or poverty gap), ecosystems, biodiversity, indoor air pollution, good governance and so on. It can be mentioned that none of the other analysed literature used foreign direct investment, wage and inflation indicators.

Table 1. Indicators of Green economic development (Source: author's compilation, based on EC (2018)[1]; Porfir'ev (2012)[2]; Sonnenschein & Mundaca (2015)[3]; Pan et. al. (2018)[4]; Abu Jamie (2018)[5]; Unay-Gailhard & Bojnec (2019)[6]; Stankevičienė & Nikanorova (2017)[7]; Nahman et al., 2016[8])

Indicators	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Greenhouse gas emissions			+	+			+	+	4
GDP		+	+	+	+		+		5
Labour		+		+		+		+	4
Total primary energy supply (TPES)			+				+	+	3
Total primary energy consumption			+	+			+	+	4
The share of energy consumed from renewable energy sources				+			+	+	3
The share of energy consumed from renewable energy sources				+			+	+	3
GDP growth rate					+				1
GDP per capita					+				1
Energy efficiency	+				+		+	+	4
Investment in the environment		+			+			+	3
Area of agricultural land						+		+	2
Recycling of municipal waste, from all municipal waste	+						+		2
E-waste recycling rate							+		1
Number of landfills excluding basic mineral wastes							+		1
Environmental taxes collected							+		1
Good governance								+	1
New patents related to the environment								+	1
Gėlo vandens gavyba tenkanti vienam gyventojui								+	1
Waste disposed per capita								+	1
Indoor air pollution, PM2.5 and SO_2 emissions								+	1
Natural capital (percentage of marine and terrestrial protected area of the total area)	+				+			+	3
Biodiversity (ratio of endangered plant and animal species to all known species)								+	1
Ecosystems (total area of agriculture, planted forests and cities as a percentage of the total area)								+	1
Average poverty line deficit (based on purchasing power parity), expressed as a percentage of the poverty line								+	1

It can be argued that in order to assess the green economy, research should be based on indicators that describe the greenhouse gas emissions, GDP, labour force, primary energy consumption and production, and energy produced and consumed from renewable sources (share of total energy), energy efficiency (or productivity), investment in environmental protection, agricultural land, municipal waste recycling, natural capital. Indicators measured over time describe the structural characteristics and quantitative changes of the green economy, and provides a new understanding of the opportunities and directions of green economy development. The identification of green economy indicators provides a new approach to the structure of green economy components. Based on the analysis of indicators of various scientific fields (economy, environmental), the complexity of the evaluation of the green economy is emphasized.

Methodology

The study analyses the countries: Lithuania, Latvia and Estonia. All macroeconomic and environmental data are collected from publicly available databases: Eurostat, OECD and World Bank. The dynamics of green economy development indicators will not answer the questions raised. Thus, in the *first stage*, it is necessary to identify which methods of empirical data management and calculation can be applied in the study.

Nahman, Mahumani and de Lange (2016) proposed a green economy index (GEI), which consists of normalized indicators describing the green economy. After collecting the data, the researchers (Nahman et al., 2016) performed data normalization for the selected indicator. To perform data normalization, the researchers chose 2 formulas:

where higher raw values are desirable (as the indicator increases, economic, ecological and social well-being improves):

$$x_i^{'} = \frac{x_i - \min(x)}{\max(x) - \min(x)}, \quad (1)$$

where lower raw values are desirable (as the indicator declines, economic, ecological and social well-being improves):

$$x_i^{'} = \frac{\max(x) - x_i}{\max(x) - \min(x)}, \quad (2)$$

Here:

x_i – the value of the indicator during the period i;

$\max(x)$ – the maximum value of the indicator during the analysed period;

$\max(y)$ – the minimum value of the indicator during the analysed period.

The resulting normalized indicators were calculated by researchers (Nahman et al., 2016) to calculate the arithmetic mean of all normalized indicators for each country, which reflected the green economy index. Such a green economy index is advantageous because it measures a large part of the indicators describing the green economy. However, there is a major shortcoming of this study related to data retrieval – not all indicators are developed, or the data are insufficient for inclusion in the study. It should be noted that there is no common understanding among researchers about how the green economy should be viewed. For example, the green economy index proposed by Fankhauser, Kazaglis and Srivastav (2017) reflects the trend of technological development but does not reveal the characteristics of other indicators of the green economy. The Green Economy Index, presented by Holger et al. (2017), evaluates the green economy from a broader perspective, but it becomes unclear due to the choice of certain indicators. Nahman et al. (2016) provide a green economy index along with detailed indicators but not all indicators are developed, or the data are insufficient for inclusion in the study.

However, this study will be based in part on Nahman et al. (2016) methodology for compiling green economy indices. *In the second stage*, it is important to select the data needed for the study. It is also important to assess the evolution of the indicators at the sampling stage of the following data: Poverty gap (% of the population at $ 1.9 per day); Greenhouse gas emissions, thousand T. CO_2 equivalent; Labour force; Total primary energy supply, (tonnes of oil equivalent, hereinafter TOE); Total primary energy consumption, (TOE); Renewable energy supply, % TPES; Share of electricity from renewable sources, Percentage; Total government expenditure on environmental protection, mln. Eur; Areas of agricultural land (% of total land area); Municipal waste recycling % from all municipal waste; Land protected area, Km^2; Marine protected area, Km^2; Good Governance index; Newly created patents that are directly related to the environment; Foreign direct investment, mln. USD.

In the third stage, the green economy index is calculated. The green economy index is based on normalized indicator data and by averaging normalized data. In this way, the data is made comparable. When analysing the characteristics of the data, attention should first be paid to the unequal periodicity of the available macroeconomic data. Data are provided periodically, for a period of one year, but some data are provided more than 2 years ago. It is also possible to detect the year when data are not provided. This may adversely affect the test results. Similar studies in the past have also been based on annual national data, so the available data are acceptable.

Due to lack of data, the study considered the beginning of the year 2000. There is a limitation when a large part of the relevant data for the calculation of indices is submitted before 2015, 2016, 2017 or 2018. A large part of the data is not provided to the European Statistical Office (hereinafter Eurostat), the World Bank, the International Organization for Economic Co-operation and Development (hereinafter OECD). Some data are not provided for 2018, 2017 or 2016. This will be considered in further research. Due to the lack of data, country data provided by Eurostat, OECD, World Bank will be analysed. In order to assess the development of the green economy, the index of normalized green economy indicators (arithmetic mean of X'i normalized indicators) will be used (Nahman et al., 2016). The data are calculated for each country based on the available macroeconomic and environmental data. For illustration (Table 2.), data of the analysed countries for a fragmented period are presented. According to OECD (2019), the number of patents is presented in fraction, because there is a need to eliminate multiple counting of patents, if it was invented by several different inventors from different countries. For example, if a patent is co-invented by 1 Lithuanian, 1 Latvian and 2 Estonian residents, it will be counted as:

- 1/4 of a patent for Lithuania;
- 1/4 for the Latvia;
- and 1/2 patent for Estonia.

Table 2. Macroeconomic and environmental data (Source: author's compilation, by Eurostat (2019),OECD (2019), World Bank (2019))

Indicators	Lithuania		Latvia		Estonia	
	2015	2017	2015	2017	2015	2017
Poverty gap at $1.90 a day (2011 PPP) (%)	0.5		0.7		0.5	
Foreign direct investment, mln, USD	870.5047	652.5081	707.709	732.724	35.6483	1712.78
Greenhouse gas emissions, thous. T. CO_2 equivalent	20452.77	20737.67	11603.4	11755.8	18278.2	21060.7
Newly created patents that are directly related to the environment	4.7714		2		2.2	
Municipal waste recycling % from all municipal waste	23.256	24.371	24.649	19.167	27.033	25.72
Total government expenditure on environmental protection, mln. EUR	201.3	175	161.8	151.5	150	176.8

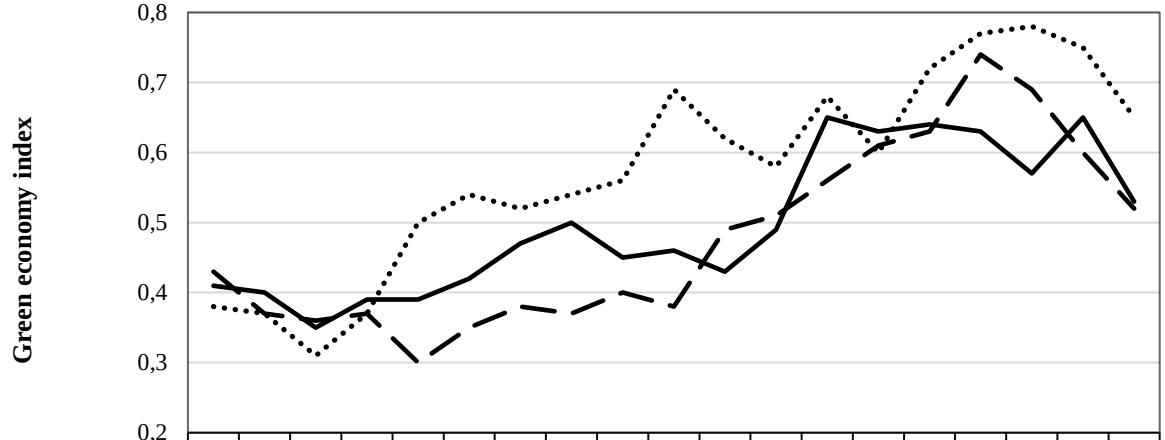
Good Governance index	0.970229	0.904817	0.788549	0.797347	1.19506	1.189771
Renewable energy supply, % TPES	20.09359	12.90016	36.05442	40.38868	16.55702	16.8884
Renewable energy %, from total energy	25.751	25.835	37.539	39.01	28.35	29.21
Labour force	1470309	1469107	1011483	1004754	686173	702172
Land protected area, Km^2	10976.65	11000.23	11723.94	11724.03	8761.703	8795.723
Marine protected area, Km^2	1562.13	1562.13	4628.7	4628.7	7024.235	7024.235
Total primary energy supply (TOE)	7.052	8.130352	4.263	4.734	5.472	5.412
Total primary energy consumption, (TOE)	5,79	6,16	4,27	4,47	5,32	5,64
Areas of agricultural land (% of total land area)	47,97924	45,28986	30,30717		22,84334	
Share of electricity from renewable sources, Percentage	39.40817	16.20439	50.1717	72.51361	14.44509	13.24715
GDP per capita, USD	14291.90	16809.64	13639.69	15684.56	17412.45	20200.38

It should be noted that not all countries present the indicators for the same period, so the results obtained may not be completely accurate. Nahman et al. (2016) also encountered the same limitation in their study. The researchers addressed this issue by replacing the missing data with arithmetic means. Such a methodology will be chosen in this work as well. For indicator data series where data gaps are identified, the arithmetic mean of the existing indicator data series will be added. Such a methodology is applied in other works and is widely described in scientific works and is considered as one of the simplest methodologies (Kang, 2013).

Results. Changes in green economy indices

The green economy index was calculated on the basis of available macroeconomic environmental indicators. The calculated results are presented in Figure 1. The results obtained in the study by Nahman et al. (2016) were multiplied by 10 (the aim was to reveal the assessment in a ten-point system). In this case, the results are displayed as they were during the calculation. The closer the indicator is to 1, the stronger the development of the green economy is considered. Analysing the obtained results, it can be stated that in all the analysed countries, a strong growth of green economy development indices can be seen.

Paying attention to the latest data (2018), it can be noted that Lithuania has the lowest result, but the situation is very similar in Latvia. It can be said that the progress of the green economy in these regions is the lowest, but it is worth noting that some data were not provided in 2018, which may have significantly affected the results of the index.



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lithuania	0,43	0,37	0,36	0,37	0,3	0,35	0,38	0,37	0,4	0,38	0,49	0,51	0,56	0,61	0,63	0,74	0,69	0,6	0,52
Latvia	0,41	0,4	0,35	0,39	0,39	0,42	0,47	0,5	0,45	0,46	0,43	0,49	0,65	0,63	0,64	0,63	0,57	0,65	0,53
Estonia	0,38	0,37	0,31	0,37	0,5	0,54	0,52	0,54	0,56	0,69	0,62	0,58	0,68	0,6	0,72	0,77	0,78	0,75	0,65

Fig. 1. Green economy index 2000–2018 (Source: author's compilation)

It can be stated that the green economy is the most developed in Estonia (according to the data obtained in 2018, presented in Fig.1). *However, when analysing the data, a significant question arises – which indicators are the most important for the development of the green economy.* This can be answered by analysing the compiled index in detail. Since the index is calculated based on the arithmetic average of the normalized values of the indicators describing the green economy, it is possible to analyse the normalized values of each of the indicators separately, distinguishing the most important ones. In order to assess the development, the period from 2000 to 2018 will be analysed.

Data on *Lithuania's* results are presented in Figure 2. It should be emphasized that primary energy consumption, greenhouse gas emissions, poverty line indicators are the inverse – the closer the data is to 0 – the more significant the development of the green economy.

Analysing the data, it can be emphasized that in 2000, in the field of green economy in Lithuania, significance existed for electricity, which is extracted from renewable sources and labour. The labour force in 2000 was the largest in the study period, and since then the labour force in Lithuania has only been declining. It can also be emphasized that in 2000, the indicators of municipal waste recycling were more significant than in 2018. This shows that there are untapped opportunities in this area in Lithuania that can be developed.

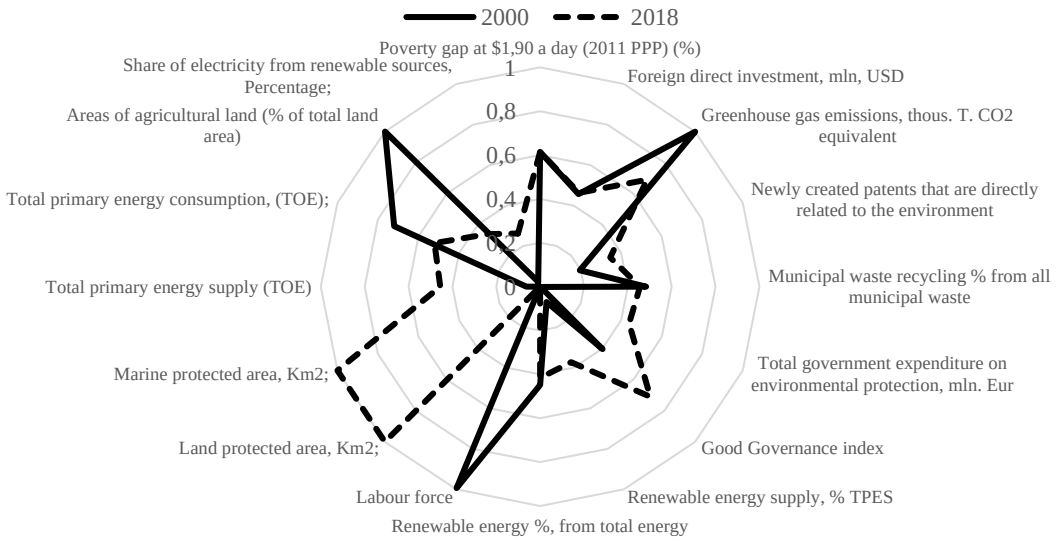


Fig. 2. Normalized indicators for the green economy. Lithuanian data (Source: Eurostat (2019), OECD (2019), World Bank (2019) data)

Considering the data of 2018, it is possible to emphasize the significant development in the following indicators: protected areas, good governance, renewable energy supply, government expenditure, newly created patents. In 2018, the importance of primary energy consumption for the green economy is recorded. This shows that the available energy resources are used more efficiently compared to 2000. Greenhouse gas indicators show significant changes during the analysed period, which reveals that the measures taken by the state are effective, but still, these did not provide the desired result. It can also be emphasized that no significant change in the poverty line indicators has been recorded. This reveals that comparing the period of 2000 and 2018, the poverty level in Lithuania did not change much.

Data for *Latvia* are presented in Figure 3. Comparing the results of 2000 and 2018, it can be stated that the changes are in the following areas: agricultural land, primary energy consumption, primary energy supply, marine and terrestrial protected areas, renewable energy supply, good governance, government expenditure, and greenhouse gas emissions.

Changes in primary energy consumption can be highlighted in the analysis. It can be said that the changed technological environment has provided new opportunities for efficient use of available energy resources, and the increased supply of renewable energy allows for less pollution. The data obtained also show indicators where there is no significant change, which are: foreign direct investment, poverty line, new patents and municipal waste recycling. It can be concluded that the field of energy is very important in Latvia, but more attention needs to be paid to waste recycling, poverty reduction and the development of new technologies. It can also be emphasized that labour force indicators show a similar situation as in Lithuania.

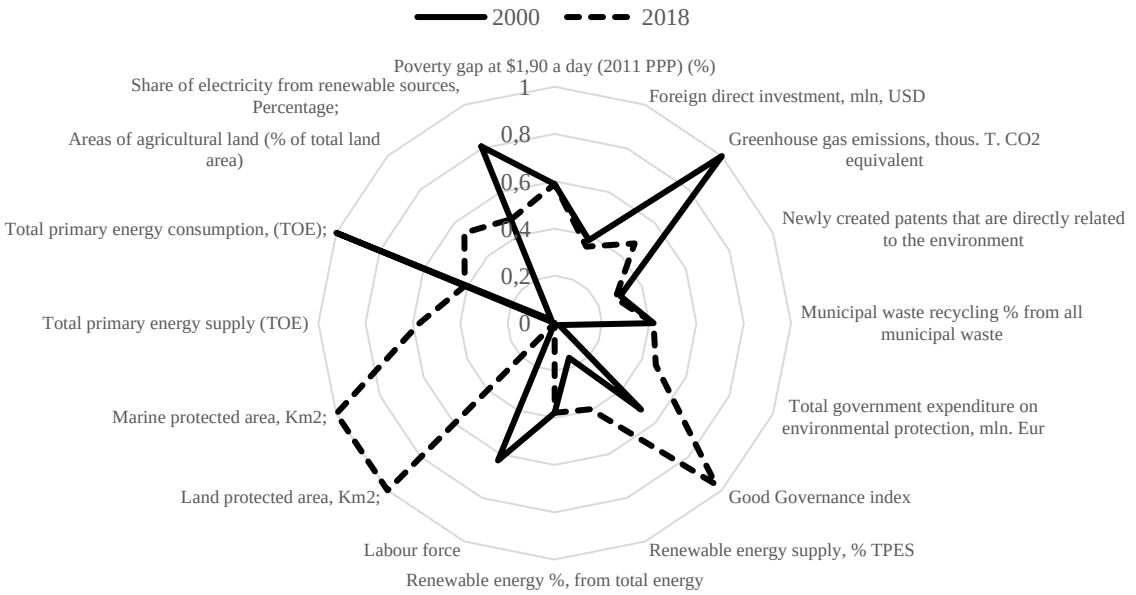


Fig. 3. Normalized indicators for the green economy. Latvia data (Source: Eurostat (2019), OECD (2019), World Bank (2019) data)

The data that characterize the situation in *Estonia* are presented in Figure 4. The available data allow us to assume that the development of the green economy in Estonia is exceptionally significant, and comparing the data of 2018 among the 3 Baltic States, Estonia has the highest green economy index (0.65).

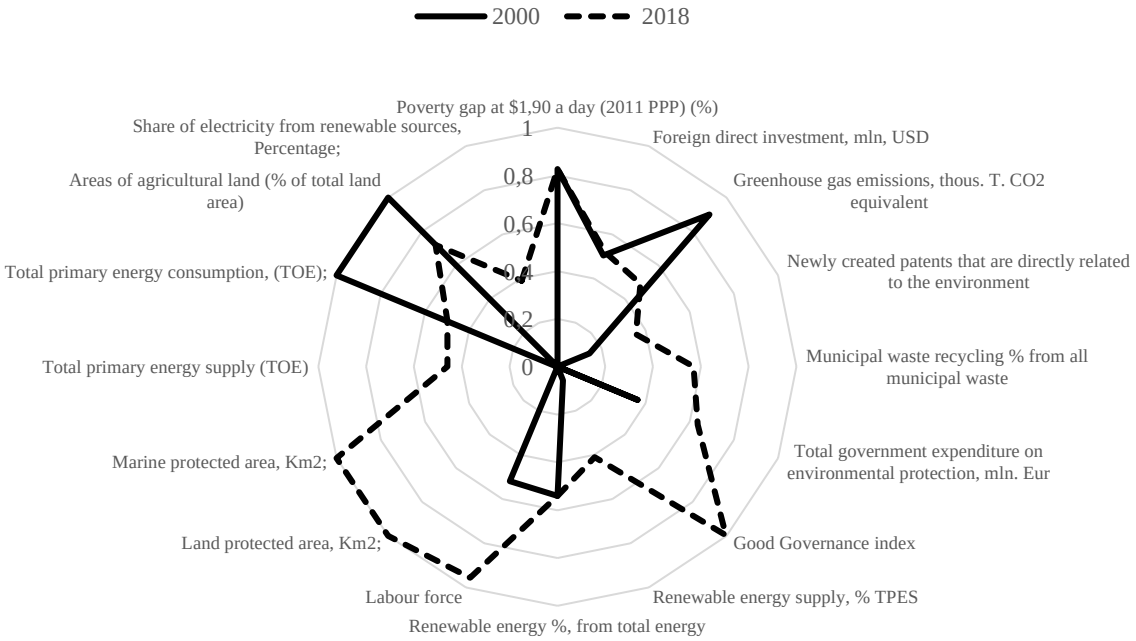


Fig. 4. Normalized indicators for the green economy. Estonia data (Source: Eurostat (2019), OECD (2019), World Bank (2019) data)

This result is due to the positive change in most indicators. Indicators that have a positive change are protected areas, primary energy supply, primary energy consumption, renewable energy supply, government spending on environmental protection, municipal waste recycling, new patents, greenhouse gas emissions.

Although the development of the green economy in Estonia is considered strong, there are opportunities for development. As in other countries of the Baltic region, the issue of poverty is important in Estonia – there is no significant change during the analysed period. The development of renewable energy supply and production in Estonia is very strong, but the share of renewable energy in the country may account for a larger share. For this reason, a new development opportunity is envisaged, which would allow attracting additional foreign direct investment.

Conclusions

Assessing the circular economy is a complex task. The analysis of the scientific literature revealed many indicators for the evaluation of the green economy, but in comparison, the identified indicators are quite similar – economic indicators such as GDP, investment, available capital, social indicators such as employability, urbanization and technology are analysed. On the other hand, their number and detail in research vary widely. It follows that the green economy covers the whole set of research areas and evaluation indicators. Indicators measured over time describe the structural characteristics and quantitative changes of the green economy, and provides a new understanding of the opportunities and directions of green economy development.

In the framework of this study, fifteen indicators were selected for the analysis of green economy in the Baltic States. The normalization and further evaluation of these indicators from the point of view of the green economy allowed to determine the significance of individual social, economic and environmental dimensions for the overall green economy index and to show the changes over a period. All macroeconomic and environmental data are collected from publicly available databases: Eurostat, OECD and World Bank. Some data are provided non-periodically. For indicator data series where data gaps are identified, the arithmetic mean of the existing indicator data series will be added. The collected data also form the basis for further in-depth prognostic studies.

The results showed that in all the analysed countries, a strong growth of green economy development indices can be seen, in Estonia they remained the best among the three Baltic countries during the analysed period. An analysis of which individual indicators are most important in the development of the green economy and have the greatest significance for the index has shown that their estimates and position have changed significantly in less than two decades. In 2000, the highest positions in Lithuania were in terms of greenhouse gas emissions, labour force and agricultural land, in Latvia – primary energy and greenhouse gas emissions, and in Estonia – primary energy and agricultural land. According to the data of 2018, the most significant areas in Lithuania, Latvia and Estonia have become protected marine and land indicators. In Latvia, the indicators of good governance also stood out among the highest, while in Estonia the indicators of good governance and labour force stood out.

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