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Obsah Contents

THE RELATIONSHIP AMONG COLLABORATION-ORIENTED MANAGERIAL ENVIRONMENT, JOB SATISFACTION, AND WORKPLACE CREATIVITY

Igor BORISOV, Szergej VINOGRADOV

Abstract

The objective of this study is to explore the relationship among collaboration-oriented managerial environment as the main condition for organizational innovation, employee job satisfaction and workplace creativity, using the microdata of the sixth (2015) European Working Conditions Survey. The analysis was carried out only for the private sector. The results of the canonical correlation analysis showed a positive moderate correlation between the scales of the collaboration-oriented managerial environment and job satisfaction for the Nordic and CEE country groups. The results indicated also a positive moderate correlation between workplace creativity and employee job satisfaction. A weak-moderate positive correlation has been found between the collaboration-oriented managerial environment and workplace creativity in both country groups. There was no considerable difference found in the strength of the intercorrelations among the study scales for Nordic and CEE countries. The study concludes that the managers need to realize the importance of creativity-supporting, inclusive and challenging working environment for enhancing the level of job satisfaction.

Key words

collaboration-oriented managerial environment, job satisfaction, workplace creativity, canonical correlation analysis

JEL Classification: J28, J53, M54

1. Introduction

The academia, research and industry discuss the term industry 4.0 or even the 4th industrial revolution controversially. The technologies of future production will cause far-reaching changes to the socio-technical production system. Theory related studies show that implementable concepts socio-technical production system is introduced as a reference where the man or employee represents one of the elements (Fischer, & Herrmann, 2011; Appelbaum, 1997; Rousseau,1977) Based on this technology-driven changes on the job design and requirements on competency are identified which can lead to the regulation of job action (Rousseau,1977)

Taking this into account in the last decades, organizational structures based on job enlargement, enrichment, and management practices aimed at functional flexibility largely contributed to enhancing the discretion and responsibility workers have in work. As a consequence of this approach, currently, 'Soft' HRM, characterised by a greater acceptance of collective representative forms of participation, including unions, in partnership with direct forms of participation in the dominant managerial philosophy in the EU (Gollan and Markey, 2001). This paper calls for further development in this concept.

2. Literature overview

Collaboration-oriented managerial environment

The proverbial creativeness begins with the activation of some person or persons to sense or seize a new opportunity. However, even if people are able to generate new ideas, they must also feel confident that their attempts at creativity will be well received. The signals they receive about the expectations for creativity play a role in activating or inhibiting creativeness. And once a worker has generated an idea, he or she has to engage in social activities to find friends, backers and sponsors surrounding an idea, or to build a coalition of supporters who provide the necessary power behind it (Galbraith, 1982; Kanter, 1988).

It`s been proved that the leadership behaviour influence on the perceived work environment and demonstrated the impact of the perceived work

environment on creativity (e.g., Amabile et al., 1996; Mumford et al., 2002; Witt & Beorkrem, 1989). Each of the three most famous theories of organizational creativity: the componential theory of Amabile (1997), the interactionist theory of Woodman, Sawyer, and Griffin (1993), and the multiple social domains theory of Ford (1996) includes the work environment as an influence on employee creativity.

The collaboration-oriented managerial environment increases employee work autonomy, level of motivation and feelings of fairness, and also develops a sense of engagement among employees which ultimately increases organizational creative problem solving as well as reduces the prohibitive cost emerging as a result of dissatisfied employees. This environment playing a strong role in promoting the themes of a "soft" components that determine the quality of interaction creating a balance between the interests of the organization, represented by innovation, and, on the other hand, the interests of employees, represented by the degree of their satisfaction. According to Borisov & Vinogradov (2019), the collaboration-oriented managerial environment is defined as the 'environment that helps to motivate employees to engage in innovation through the active constructive elements of working interactions'. This leads to broader perspectives that help stimulate creativeness.

Job satisfaction

The quest to establish a single definition of job satisfaction is beset with difficulties. Although absolute standards (in relation to pay, for example) are important in establishing a floor of job satisfaction, they are inevitably limited in their application to comparative research. Similarly, debates over whether job quality should be defined in objective or subjective terms often lead to something of a dead end. Clark (1997) argue that if employees are not satisfied with the task assigned to them, they are not certain about factors such as their rights, working conditions are unsafe, co-workers are not cooperative, supervisor is not giving them respect and they are not considered in the decision-making process; resulting them to feel separate from the organization. Furthermore, he highlighted that in current times, firms cannot afford dissatisfied employees as they will not perform up to the standards or the expectations of their supervisor, they will be fired, resulting firms to bear additional costs for recruiting new staff. So, it is beneficial for firms to provide a flexible working environment to employees where they feel their opinions are valued and they are a part of the organization. Employee morale should be high as it will be reflected in their performance because, with low morale, they will make lesser efforts to improve

Although the approach in our research does not operate explicitly from a shared definition of job satisfaction, they exhibit a significant consensus on the key dimensions of job satisfaction. To illustrate some of these key dimensions, satisfactory jobs allow individuals to develop and deploy their skills and offer some degree of challenge commensurate to the demands of the job and the capabilities of the individual.

In this study job job satisfaction is enriched by the second element - "job engagement". The scope of job engagement may vary immensely depending on the degree, form, level and range of subject matter (Marchington and Wilkinson, 2000). Job engagement can be direct or indirect, it can go from simple information sharing through consultative processes to participation in co-determination instances (Knudsen et al, 2011). While job engagement is shown to have a positive influence on the quality of work in Nordic countries and for certain self-managed teams, its impact on workers' well-being is non-existent or negative in other countries and for most types of teamwork (Kalleberg et al., 2009; Knudsen et al, 2011). The extent to which employees actually perform more innovatively in response to higher job demands is argued here to be contingent upon fairness perceptions of the ratio between effort spent and reward received at work (Janssen, 2000). Feeling valued and secure helps people relax enough to be creative, as Amabile's (1983) experiments on the conditions facilitating creative problem solving indicate.

Workplace creativity

Many of mechanisms underlying the hypothesized effect on creative behaviour derive from the intrinsic motivation principle of creativity: People will be most creative when they are primarily intrinsically motivated, by the interest, enjoyment, satisfaction, and challenge of the work itself; this intrinsic motivation can be undermined by extrinsic motivators that lead

people to feel externally controlled in their work (Amabile, 1993). For reasons, which are explained below further, speaking of creativity, we point out its two components - 'degree of autonomy' and 'inclusive and challenging working environment'.

It is largely consensual that the degree of autonomy workers has in their job and the extent to which they participate in relevant work-related decisions are key dimensions of job quality (Findlay et al, 2013; Heller, 2003). It may refer to the scope of the latitude to make decisions on the content, methods, scheduling and performance of work tasks (Breaugh, 1985). The degree of the latitude is an outcome of the way in which work is organised and of the extent and forms in which it is controlled. It may range from being able to choose the ordering of one's tasks to be able to decide which tasks to do as well as how and when to do them, which would mean full self-determination at work and freedom from any type of control.

Scholars consider that it is beneficial for workers' self-esteem, and personal growth even when it is associated with work intensification and work pressure (Karasek and Theorell, 1990). On the same vein, shows that even the workers who do not desire to have high work autonomy - workers with 'low growth' need strength benefit from it in terms of skill development and learning opportunities (Gallie, 2013). Job environment demands are instigators of work actions. Some research has found that, although workload pressures that were considered extreme could undermine creativity, some degree of pressure could have a positive influence if it was perceived as arising from the urgent, intellectually challenging nature of the problem itself (Amabile, 1988; Amabile & Gryskiewicz. 1987). Similarly, Andrews and Farris (1972) found that time pressure was generally associated with high creativity in R&D scientists, except when that pressure reached an undesirably high level.

Perceived work-related problems, incongruities, discontinuities, and emerging trends are often instigators of the generation of novel ideas (Drucker, 1985). A bit higher job demands are precipitate employees to respond with higher levels of creative activities in order to cope with the intensified job requirements (Bunce & West, 1994). Responding creatively to higher job demands can be conceived as a particular form of problem-focused coping in occupational settings. As such, creative work behaviour may help the individual to improve his or her fit with higher job demands by generating, promoting, and realizing ideas for modifying oneself or the work environment.

However, 'moderation in all things'. That`s why people are more likely to tolerate stress when they request cooperation from others. Mutual respect makes teamwork easier. High cohesion of an inclusive working environment may cause liking for workmates as well as result from it (Staw, 1975). In an extension of the "Pygmalion Effect" to the corporation, supervisors who hold high expectations of subordinate's abilities may enhance that person's productivity (Wortman & Linsenmeier, 1977).

Country groups

Given that firms' decisions are influenced by their specific circumstances as well as by the institutional context in which they take place, it is relevant to investigate the influence of both individual-level and country-level factors. Macro-level traits may determine elements of working conditions directly or via their effect on managerial attitudes and choices. Furthermore, these characterizations are often underpinned by differences in geography, centred on individual countries or specific regions, or types of countries, for example, advanced or developing (Ghai, 2003).

Holman (2013) draws on institutional theory and successfully uses multi-level logistic regression analysis to explain differences among countries in the patterns of job types. He finds that social democratic institutional regimes (Denmark, Finland, Sweden) have the greatest proportion of high-quality jobs, Southern-European countries (such as Italy, Greece, Spain) have especially high proportions of passive-independent and insecure jobs, whereas transitional institutional regimes (Eastern European countries) have high proportions of high-strain jobs. He argues that these country variations in job quality are rooted primarily in differences among institutional regimes in their employment policies and the relative organizational capacity of labour.

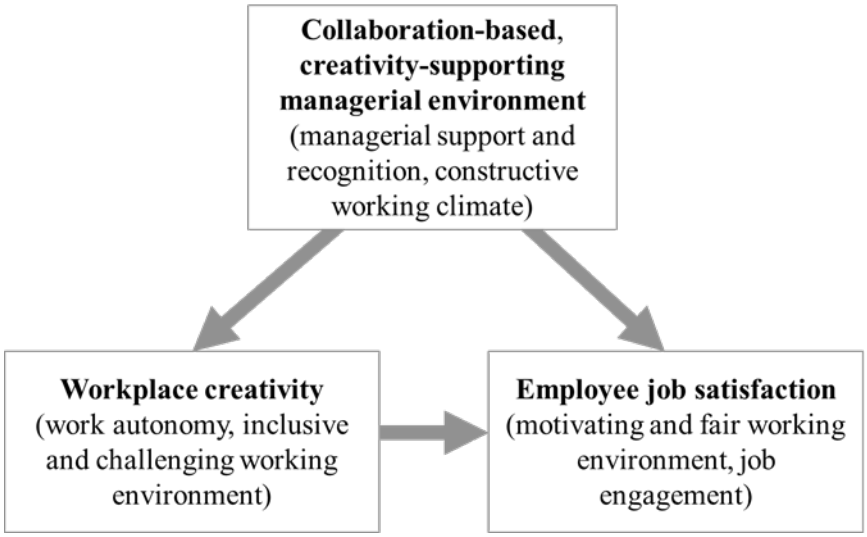
Following this trend, in order to identify the main differences between EU countries, we made the distinction among five country groups on the

basis of their institutional conditions (i.e. social welfare system, labour culture issues etc.). Note that our typology is analogous to country grouping used in comprehensive institutional studies as well as organizational studies using the same database (Gallie & Zhou 2013, Makó et al. 2018).

3. Methodology

The main goal of this study is to investigate the relationship among the managerial environment, the workplace creativity and the employee job satisfaction in European country groups. The authors assume a positive correlations among the study dimensions: the collaboration-oriented managerial environment has a positive effect on the workplace creativity, the job creativity in turn enhances the employee satisfaction. The authors assume that strength of relationships is different across European country groups: the relationship among the study dimensions is stronger in the countries with higher level of workplace creativity. The study covers only the private sector. A research model is presented in Figure 1.

Fig. 1. Research model: the relationship among the elements of the managerial environment, the workplace creativity and the employee job satisfaction



Source: authors' calculations based on the microdata of the sixth (2015) EWCS.

Microdata from the 2015 (sixth) wave of the European Working Conditions Survey were used to build indexes of the creative workplace, job satisfaction, and collaboration-based managerial environment and provide a picture of the relative level of these constructs in five European country groups. The following country groups were defined in the study: 'Nordic' (Denmark, Finland, Sweden), 'Continental' (Austria, Belgium, France, Germany, Luxembourg, Netherlands), 'Anglo-Saxon' (Ireland, United Kingdom), 'Mediterranean' (Cyprus, Greece, Italy, Malta, Portugal, Spain) and 'Central and Eastern European' (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) countries.

To measure the collaboration-oriented managerial environment was selected 13 statements (Appendix, Table 1). Based on the results of factor analysis (Borisov & Vinogradov, 2019) two scale variables (subdimensions) – Managerial support and recognition and Constructive working climate – were computed to assess the level of the collaboration-based

managerial environment. The authors used also two scales to measure the Employee job satisfaction: Motivating and fair working environment (4 items) and Job engagement (5 items). Cronbach's alpha reliability coefficient was used to examine the internal consistency of the scales.

The level of the workplace creativity was assessed based on 11 items, which were combined into two scales (subdimensions): Work autonomy (5 items) and Inclusive and challenging working environment (6 items). From 11 items 4 were measured on the five-point Likert scale, the other 7 variables were binary (Yes/No). The five-level ordinal items were transformed into binary variables, as follows: 'always' and 'most of the time' were recoded into 'Yes'; 'sometimes', 'rarely', and 'never' were recoded into 'No'. Kuder-Richardson 20 (KR-20) reliability coefficient was used to examine the internal consistency of the scales of Workplace creativity. The percentages of "Yes" or "Most of the time" and "Always" responses are presented in Table 1. The proportions of positive responses for most of the items are higher in Nordic countries and lower in CEE countries.

Data were analyzed by IBM SPSS Statistics 25 statistical software package.

Table 1. Descriptive statistics for items of two scales of Workplace creativity, by country groups

		NRD	AGS	CON	MED	CEE
Work autonomy *(KR-20 = 0.736)*						
Q53c. Generally, does your main paid job involve - Solving unforeseen problems on your own?	percentages of "Yes" responses	91.4	79.5	84.8	81.1	75.1
Q54a. Are you able to choose or change - Your order of tasks	percentages of "Yes" responses	79.1	65.1	65.5	57.9	54.4
Q54b. Are you able to choose or change - Your methods of work	percentages of "Yes" responses	76.8	61.8	68.6	58.6	55.2
Q54c. Generally, does your main paid job involve - Your speed or rate of work	percentages of "Yes" responses	72.6	67.7	66.4	63.0	66.6
Q61i. Which best describes your work situation - You are able to apply your own ideas in your work?	percentages of "Most of the time" and "Always"responses	90.4	82.4	74.7	72.1	68.7
Inclusive and challenging working environment *(KR-20 = 0.654)*						
Q53e. Generally, does your main paid job involve - Complex tasks?	percentages of "Yes" responses	70.2	60.6	63.8	46.7	62.1
Q53f. Generally, does your main paid job involve - Learning new things	percentages of "Yes" responses	88.5	77.3	72.6	62.4	63.6
Q71c. At your company or organisation - A regular meeting in which employees can express their views	percentages of "Yes" responses	64.5	57.5	52.2	37.5	44.8
Q61c. Which best describes your work situation - You are consulted before objectives are set for your work?	percentages of "Most of the time" and "Always"responses	50.1	55.3	44.1	36.1	48.2
Q61d. Which best describes your work situation - You are involved in improving the organisation or processes?	percentages of "Most of the time" and "Always"responses	48.7	47.8	48.0	44.0	38.5
Q61n. Which best describes your work situation - You can influence decisions that are important for your work?	percentages of "Most of the time" and "Always"responses	54.1	49.6	43.2	33.8	38.7

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

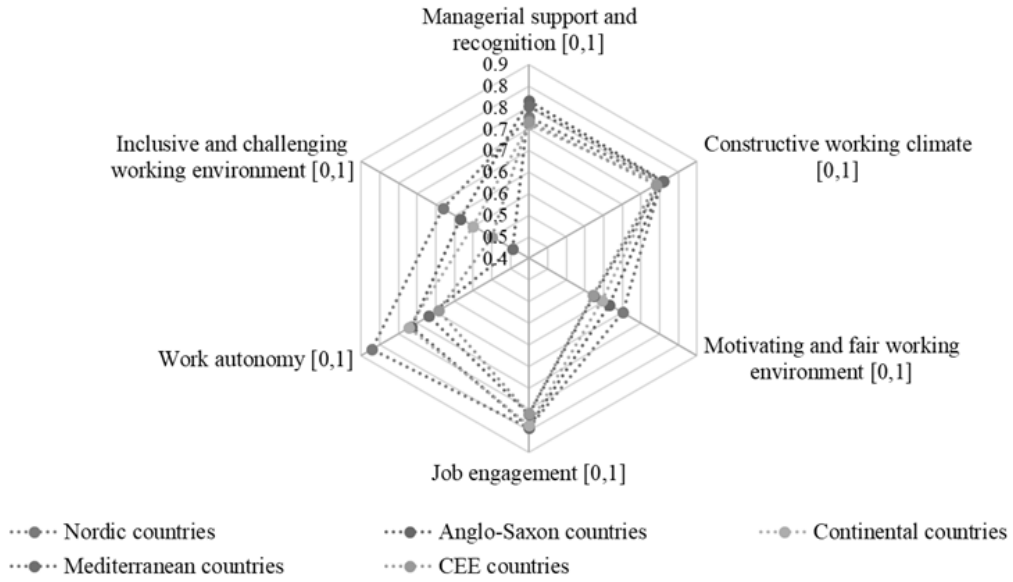
The values of all scales were normalized into [0, 1]. Because the Kolmogorov-Smirnov test showed non-normal data distribution within European country groups, the Kruskal-Wallis test followed by post hoc Dunn-Bonferroni tests was applied for inter-group comparisons.

Canonical correlation analysis was applied to explore the underlying structure of how sets of study variables are associated. In the first study case the two scales of the Collaboration-oriented managerial environment were the first set of variables and the two subdimensions of the Employee job satisfaction were the second set. In the second case the authors investigated the relationship among the scales of the Collaboration-oriented managerial environment and the Workplace creativity. In the third case it was explored the impact of the workplace creativity on the job satisfaction.

4. Findings

Figure 2 shows the mean values of scales of Collaboration-oriented managerial environment, Workplace creativity and Employee job satisfaction for the European country groups.

Figure 2. Comparison of mean values of scales of Collaboration-oriented managerial environment, Workplace creativity and Employee job satisfaction for European country groups



Source: authors' calculations based on the microdata of the sixth (2015) EWCS

During examining two subdimensions of the Collaboration-oriented managerial environment, it can be established that Anglo-Saxon countries have a significantly higher level for the Managerial support and recognition compared to all other country groups (Table 2). The Managerial support and recognition is held in low esteem by employees in the Continental and CEE countries. In case of the second subdimension of the Collaboration-oriented managerial environment – the Constructive working climate – it can be stated, that the Anglo-Saxon countries have a significantly higher mean score compared to the Continental and CEE countries in private sector.

Table 2. Homogeneous subsets of country-groups by the levels of the subdimensions of the Collaboration-based managerial environment and the Employee job satisfaction in private sector, based on the Dunn-Bonferroni post hoc test

Managerial support and recognition					Constructive working climate				Motivating and fair working environment					Job engagement		
Cntry groups	Homogeneous subsets				Cntry groups	Homogeneous subsets			Cntry groups	Homogeneous subsets				Cntry groups	Homogeneous subsets	
	1	2	3	4		1	2	3		1	2	3	4		1	2
CON	8752				CEE	8839			CEE	9146				MED	9124	
CEE	8803				CON	9014	9014		MED	9167				CEE	9228	
NRD		9195			NRD		9212	9212	CON		9594			CON		10142
MED			9764		MED		9251	9251	AGS			10251		AGS		10280
AGS				10369	AGS			9447	NRD				10993	NRD		10323
K-W test: p-value	<0.001				<0.001				<0.001					<0.001		

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

As result of examining the two aspects of the Employee job satisfaction – Motivating and fair working environment and Job engagement – it can be concluded that the average level of the motivating and fair working environment and job engagement is higher in Nordic and Anglo-Saxon countries, however in Mediterian and CEE countries the employees have a lower opinion of the working environment and job engagement. Two homogeneous subsets can be identified based on the value of the Job engagement: the first – Mediterranean countries and CEE countries –having the lower value, and all other groups of countries that have higher value of the employees' job engagement.

The level of the work autonomy is significantly higher in Nordic countries compared to all other country groups (Table 3). The CEE countries have the lowest level of work autonomy. Based on the value of Inclusive and challenging working environment significant differences have been shown for all pairs of country groups. The Mediterranean countries have the lowest level of the Inclusive and challenging working environment, the Nordic countries have the highest one.

Table 3. Homogeneous subsets of country-groups by levels of the Work autonomy and the Inclusive working environment in private sector, based on the Dunn-Bonferroni post hoc test

Work autonomy					Inclusive and challenging working environment					
Country groups	Homogeneous subsets				Country groups	Homogeneous subsets				
	1	2	3	4		1	2	3	4	5
CEE	8975				MED	7918				
MED		9422			CEE		8873			
AGS			10212		CON			9746		
CON			10306		AGS				10396	
NRD				11947	NRD					11267
K-W test: p-value	<0.001				<0.001					

Note: Homogeneous subsets are based on asymptotic significances. The significance level is 0.05. Each cell shows the sample average rank of score/index. AGS= Anglo-Saxon countries, NRD= Nordic countries, CON= Continental countries, MED= Mediterranean countries, CEE= Central and Eastern European countries

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Correlation analysis was conducted to determine the relationship of scales of the collaboration-based managerial environment, the workplace creativity and the job satisfaction, by country groups. The results of the correlation analysis show a positive significant relationship

among the study variables for all country groups (Appendix, Table 2). The strongest – positive moderate – correlation was observed between two scales of the collaboration-based managerial environment and motivating and fair working environment. The second scale of employee job satisfaction – the job engagement – had a positive weak-moderate correlation with the managerial environment. The work autonomy had the weakest correlation with scales of managerial environment and job satisfaction.

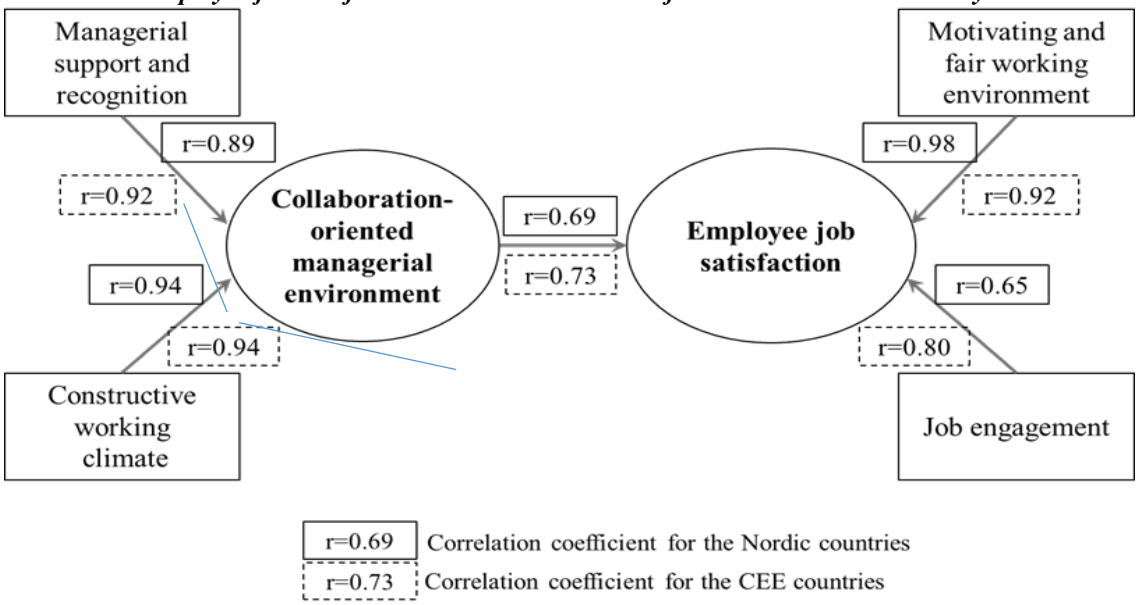
There was no considerable difference found in the strength of correlations among country groups.

For canonical correlation analysis two country groups were selected: the Nordic and the CEE countries. The Nordic country group was chosen because it had the highest level of the workplace creativity. The CEE country group had the lowest values for most of study variables.

The results of canonical correlation analysis for the two-two scales of the Collaboration-oriented managerial environment and the Employee job satisfaction showed that these sets of variables were associated in one way in the case of Nordic countries, as evidenced by one significant canonical correlation (Appendix, Table 3). For the CEE country group two significant canonical functions were obtained (Appendix, Table 4). Whereas the explanatory power of the second canonical correlation function was very weak (R2=0.01), the relationship among the sets of variables was examined based only on the first canonical function.

The canonical structure (Figure 3) showed the canonical variate for the Collaboration-oriented managerial environment to be strongly defined by the managerial support and constructive working climate, in both country groups. The canonical variate for the Employee job satisfaction has been strongly defined by motivating and fair working environment, the job engagement had a positive strong correlation (r=0.80) with this canonical variate in the CEE countries and positive moderate (r=0.65) in the Nordic countries. The results of canonical correlation analysis confirmed a medium strength relationship between the Collaboration-oriented managerial environment and the Employee job satisfaction in both country groups. There was no considerable difference found in canonical structures for Nordic and CEE countries.

Figure 3. Relationship among scales of Collaboration-oriented managerial environment and the Employee job satisfaction based on the results of canonical correlation analysis

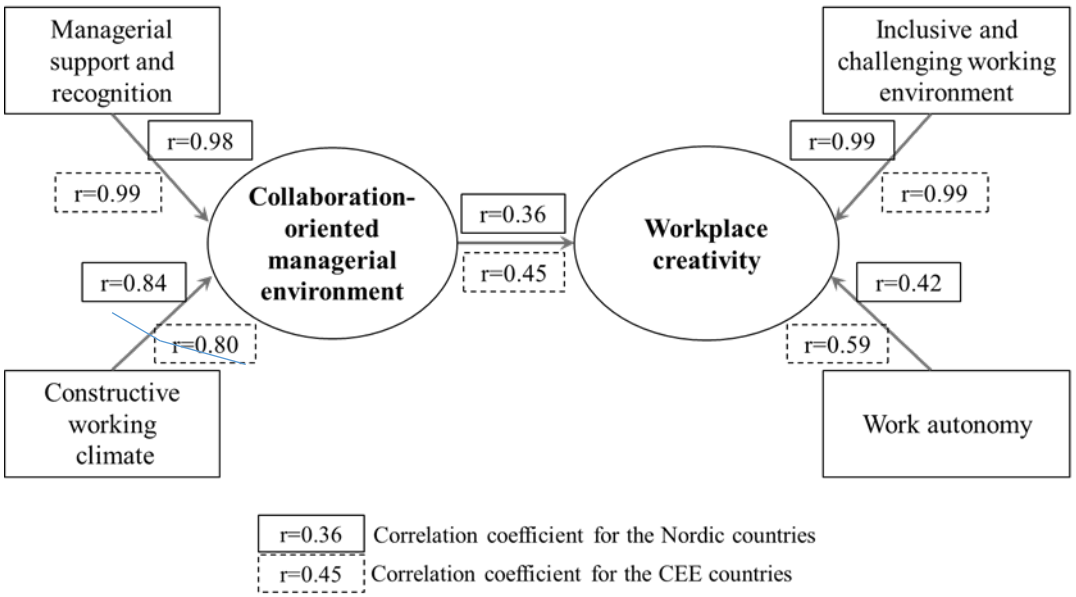


Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Figure 4 shows the relationship of variables included in the canonical correlation model for Collaboration-oriented managerial environment and the Workplace creativity. The results of canonical correlation analysis for the two-two scales of the Collaboration-oriented managerial environment and the Workplace creativity showed that these sets of variables were associated in one way, since only the first canonical function has proved to be significant in both country groups (Appendix, Table 5, 6).

The canonical structure (Figure 4) showed the canonical variate for the Collaboration-oriented managerial environment was strongly comprised of the managerial support and constructive working climate, in both country groups. The canonical variate for the Workplace creativity has been strongly defined by Inclusive and challenging working environment scale, the work autonomy had only moderate correlation with this canonical variate (rNordic=0.42, rCEE=0.59) in both country groups. The results of canonical correlation analysis confirmed a weak-moderate relationship between the collaboration-oriented managerial environment and the workplace creativity in both country groups. There was no considerable difference found in canonical structures for Nordic and CEE countries.

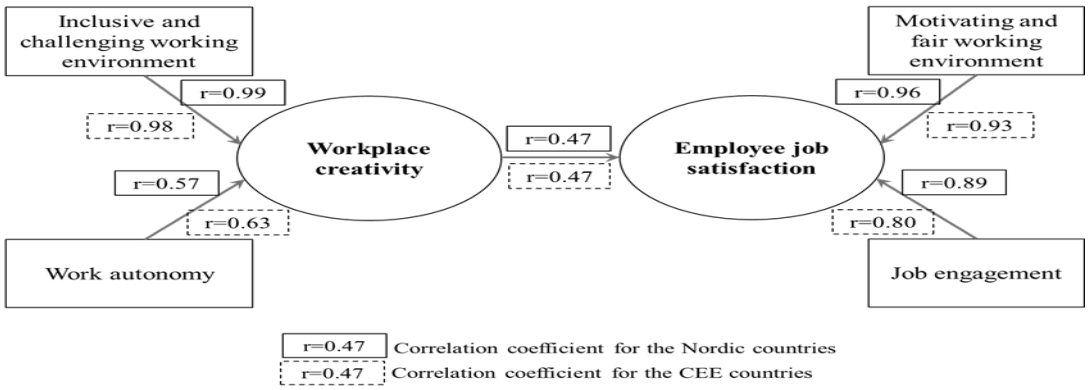
Figure 4. Relationship among scales of Collaboration-oriented managerial environment and the Workplace creativity based on the results of canonical correlation analysis



Source: authors' calculations based on the microdata of the sixth (2015) EWCS

The results of the canonical correlation analysis applied for exploring the relationship among scales of Workplace creativity and Employee job satisfaction produced only one significant canonical correlations in both country groups (Appendix, Table 7, 8).

Figure 5. Relationship among scales of Workplace creativity and the Employee job satisfaction based on the results of canonical correlation analysis



Source: authors' calculations based on the microdata of the sixth (2015) EWCS

The canonical model (Figure 5) showed that the canonical variate for the Workplace creativity has been strongly defined by Inclusive and challenging working environment scale, and only moderate defined by the work autonomy, in both country groups. The canonical variate for the Employee job satisfaction has been strongly defined by both of the scales, the Motivating and fair working environment and Job engagement, in both country groups. The results of canonical correlation analysis confirmed a moderate relationship between the workplace creativity and employee job satisfaction in both country groups. There was no considerable difference found in canonical structures for Nordic and CEE countries.

5. Discussion and Conclusion

Empirical research carried out on the microdata of the sixth (2015) European Working Conditions Survey has shown a significant positive relationship among collaboration-oriented managerial environment, employee job satisfaction, and workplace creativity. However, collaboration-oriented managerial environment and the employee job satisfaction showed a stronger positive linear relationship, than the correlation between collaboration-oriented managerial environment and the workplace creativity. The research results indicated a positive moderate correlations between the workplace creativity and the employee job satisfaction.

The results of the descriptive analysis reveal an extremely diverse situation across countries. Which, perhaps, indicates a greater connection of this score with the national social capital than with the economic sector.

This paper has indicated through secondary data analysis and the development of a novel modular theoretical framework, the interrelationships among the collaboration-oriented working environment that promote creativity and employee job satisfaction. The paper contributes to the literature by presenting a theoretical framework built from extant secondary data that articulates testable relationships for future primary data empirical research.

The paper is limited by the fact that it is conceptual and further testing of the modular framework is presented using primary data research is called for before the model can be considered generalizable. In this regard, it is recommended that further primary research should use qualitative and quantitative analyses to establish the validity and generalizability of the model. The paper has also relied on secondary data reports that are the perceptions and interpretations of second party investigators which have then been further interpreted by the current researcher. As mentioned earlier this tertiary data interpretation remains tentative and open to change.

Appendix

Table 1. Components of the Collaboration-oriented managerial environment, the Employee job satisfaction and the Workplace creativity

Dimensions	Subdimensions (scales)	Statements (items)
Collaboration-oriented managerial environment	Managerial support and recognition *(Cronbach's α = 0.900)*	Q61b Your manager helps and supports you (1= strongly disagree, 5= strongly agree)
		Q63a Your immediate boss respects you as a person (1= strongly disagree, 5= strongly agree)
		Q63b Your immediate boss gives you praise and recognition when you do a good job (1= strongly disagree, 5= strongly agree)
		Q63c Your immediate boss is successful in getting people to work together (1= strongly disagree, 5= strongly agree)
		Q63d Your immediate boss…– Is helpful in getting the job done (1= strongly disagree, 5= strongly agree)
		Q63e Your immediate boss…– provides useful feedback on your work (1= strongly disagree, 5= strongly agree)
		Q63f Your immediate boss…– encourages and supports your development (1= strongly disagree, 5= strongly agree)
	Constructive working climate *(Cronbach's α = 0.867)*	Q70a Employees are appreciated when they have done a good job (1= strongly disagree, 5= strongly agree)
		Q70b The management trusts the employees to do their work well (1= strongly disagree, 5= strongly agree)
		Q70c Conflicts are resolved in a fair way (1= strongly disagree, 5= strongly agree)
		Q70d The work is distributed fairly (1= strongly disagree, 5= strongly agree)
		Q70e There is good cooperation between you and your colleagues (1= strongly disagree, 5= strongly agree)
		Q70f In general, employees trust management (1= strongly disagree, 5= strongly agree)
Employee job satisfaction	Motivating and fair working environment *(Cronbach's α = 0.800)*	Q89a Considering all my efforts and achievements in my job, I feel I get paid appropriately (1= strongly agree, 5= strongly disagree)
		Q89b My job offers good prospects for career advancement (1= strongly agree, 5= strongly disagree)
		Q89c I receive the recognition I deserve for my work (1= strongly agree, 5= strongly disagree)
		Q89e The organisation I work for motivates me to give my best job performance (1= strongly agree, 5= strongly disagree)
	Job engagement *(Cronbach's α = 0.718)*	Q89d I generally get on well with my work colleagues (1= strongly agree, 5= strongly disagree)
		Q90a At my work I feel full of energy (1= always, 5= never)
		Q90b I am enthusiastic about my job (1= always, 5= never)
		Q90c Time flies when I am working (1= always, 5= never)
		Q90f In my opinion, I am good at my job (1= always, 5= never)
Workplace creativity	Work autonomy *(KR-20 = 0.736)*	Q53c. Generally, does your main paid job involve – Solving unforeseen problems on your own? (Yes/No)
		Q54a. Are you able to choose or change – Your order of tasks (Yes/No)
		Q54b. Are you able to choose or change – Your methods of work (Yes/No)
		Q54c. Generally, does your main paid job involve – Your speed or rate of work (Yes/No)
		Q61i. Which best describes your work situation – You are able to apply your own ideas in your work? (1= always, 5= never)
	Inclusive and challenging working environment *(KR-20 = 0.654)*	Q53e. Generally, does your main paid job involve – Complex tasks? (Yes/No)
		Q53f. Generally, does your main paid job involve – Learning new things (Yes/No)
		Q71c. At your company or organisation – A regular meeting in which employees can express their views (Yes/No)
		Q61c. Which best describes your work situation – You are consulted before objectives are set for your work? (1= always, 5= never)
		Q61d. Which best describes your work situation – You are involved in improving the organisation or processes? (1= always, 5= never)
		Q61n. Which best describes your work situation – You can influence decisions that are important for your work? (1= always, 5= never)

Source: authors' construction based on the questionnaire of the sixth (2015) European Working Conditions Survey (EWCS)

Table 2. Descriptive statistics and overall correlations for scales of the Collaboration-oriented managerial environment, the Employee job satisfaction and the Workplace creativity, by country groups

Country groups	Variable	1	2	3	4	5	6	Mean	SD	Cronb. α/ KR-20	n
NRD	1. Managerial support and recognition	1	.696**	.602**	.389**	.145**	.364**	.73	.22	.894	1453
	2. Constructive working climate		1	.631**	.422**	.159**	.315**	.75	.19	.828	1455
	3. Motivating and fair working environment			1	.457**	.246**	.455**	.65	.22	.724	1505
	4. Job engagement				1	.222**	.316**	.79	.11	.653	1534
	5. Work autonomy					1	.441**	.82	.23	.587	1522
	6. Inclusive and challenging working environment						1	.63	.27	.602	1469
AGS	1. Managerial support and recognition	1	.693**	.653**	.383**	.229**	.352**	.77	.23	.925	1345
	2. Constructive working climate		1	.681**	.486**	.178**	.302**	.76	.20	.873	1343
	3. Motivating and fair working environment			1	.432**	.258**	.383**	.62	.25	.804	1376
	4. Job engagement				1	.217**	.316**	.79	.14	.713	1414
	5. Work autonomy					1	.539**	.71	.31	.730	1414
	6. Inclusive and challenging working environment						1	.58	.28	.624	1353
CON	1. Managerial support and recognition	1	.640**	.616**	.405**	.197**	.358**	.71	.23	.896	4701
	2. Constructive working climate		1	.638**	.487**	.129**	.261**	.75	.19	.855	4613
	3. Motivating and fair working environment			1	.509**	.254**	.419**	.59	.23	.762	4925
	4. Job engagement				1	.217**	.315**	.79	.13	.710	4970
	5. Work autonomy					1	.514**	.72	.31	.730	5130
	6. Inclusive and challenging working environment						1	.55	.29	.637	4803
MED	1. Managerial support and recognition	1	.713**	.616**	.449**	.249**	.382**	.75	.21	.900	4382
	2. Constructive working climate		1	.612**	.504**	.190**	.302**	.76	.19	.870	4313
	3. Motivating and fair working environment			1	.456**	.230**	.385**	.57	.25	.803	4564
	4. Job engagement				1	.279**	.354**	.76	.15	.707	4538
	5. Work autonomy					1	.503**	.67	.33	.749	4745
	6. Inclusive and challenging working environment						1	.45	.30	.659	4346
CEE	1. Managerial support and recognition	1	.734**	.639**	.508**	.256**	.442**	.72	.21	.901	6055
	2. Constructive working climate		1	.624**	.578**	.217**	.365**	.74	.19	.884	5997
	3. Motivating and fair working environment			1	.508**	.278**	.432**	.57	.25	.838	6218

4. Job engagement	1	.229**	.364**	.76	.15	.746	6347
5. Work autonomy		1	.483**	.64	.33	.735	6317
6. Inclusive and challenging working environment			1	.50	.30	.653	5996

*Note: ☐ correlations among scales of the Collaboration-oriented managerial environment and the Employee job satisfaction; ▭ correlation among scales of the Collaboration-oriented managerial environment and the Workplace creativity; ▬ correlation among scales of the Workplace creativity and the Employee job satisfaction; **correlation is significant at 0.01; AGS= Anglo-Saxon countries, NRD= Nordic countries, CON= Continental countries, MED= Mediterranean countries, CEE= Central and Eastern European countries.*
Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 3. Measures of overall model fit for canonical correlation analysis for scales of the Collaboration-oriented managerial environment and the Employee job satisfaction, Nordic countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.69	.48	258.79	2718	< .001
2	.03	.00	.92	1360	.337

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 4. Measures of overall model fit for canonical correlation analysis for scales of the Collaboration-oriented managerial environment and the Employee job satisfaction, CEE countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.73	.54	1320.06	11082	< .001
2	.11	.01	61.80	542	< .001

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 5. Measures of overall model fit for canonical correlation analysis for scales of the Collaboration-oriented managerial environment and the Workplace creativity, Nordic countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.36	.13	49.31	2634	< .001
2	.04	.00	2.14	1318	.143

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 6. Measures of overall model fit for canonical correlation analysis for scales of the Collaboration-oriented managerial environment and the Workplace creativity, CEE countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.45	.20	313.84	10616	< .001
2	.00	.00	.13	5309	.717

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 7. Measures of overall model fit for canonical correlation analysis for scales of the Workplace creativity and the Employee job satisfaction, Nordic countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.47	.22	96.12	2814	< .001
2	.06	.00	4.64	1408	.031

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

Table 8. Measures of overall model fit for canonical correlation analysis for scales of the Workplace creativity and the Employee job satisfaction, CEE countries

Canonical function	Canonical correlation	Canonical R^2	Approx. F	DF	p
1	.47	.22	368.25	11154	< .001
2	.00	.00	.11	5578	.737

Source: authors' calculations based on the microdata of the sixth (2015) EWCS

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EVALUATING OF ECONOMIC VIABILITY OF LOGISTICS COMPANIES

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Abstract

In the global economic conditions, ensuring the viability of logistics companies depends on a variety of external and internal factors that determine the need to systematically assess changes in these factors. A systematic approach to the modern interpretation of economic viability not only identifies critical factors that influence the viability of organizations, but also allows to develop an appropriate system of indicators to measure them. In order to achieve a high level of economic viability of a company, it is particularly important to apply new tools and methods that take into account not only internal but also external performance parameters. Globalization, new rules of competition and the movement of capital are creating the conditions, the need and the increasing demands for evaluation of economic viability. The need for evaluation economic viability is based on the ability of the organization to innovate, to adjust its actions and to develop the strategy, ahead of its competitors, to maintain high productivity in a long run. In this article, we have distinguished the main indicators and methods of evaluation, which are intended to assess the viability of the subject and thus to reveal the determinants of economic vitality. Relating on the theoretical analysis of factors and indicators, the evaluation model of logistics companies on evaluation of their economic viability is presented.

Key words

economic viability, economic viability assessment, logistics sector, logistics companies.

JEL Classification: C40, C50, C52

1 Introduction

In today's economic climate, effective business development is crucial to ensure its viability. Enterprise development is a prerequisite for the emergency of new forms and innovations, which are closely linked to the formation of external and internal relationships. Although Lithuanian and foreign scientific works focus on the assessment of economic viability, it is not widely studied in the field of logistics companies. Many scientists and theorists define economic viability through the concepts of "efficiency", "sustainable development", "productivity" and "stability". The authors also present their interpretations of the terms "viability", "efficiency", "sustainable development", "productivity" and "stability".

Economic viability development issues have been analysed by Garbie (2016), Ionescu (2018), Rosha & Lace (2018), Savickiene (2016), Qerimi, Hajdar & Fejza (2017) and others. The economic viability of a company is usually understood as the balance between the growth and sustainability of the company. "Viability" is a universal phenomenon, an essential element of any existing system. It is therefore difficult to define it in a single sentence to make it generally acceptable. This is why the authors present different concepts of viability. An important feature of viability processes is time, because development takes place in real time, and only time determines the direction of development.

It is important to emphasize that besides the complexity of the concept of "viability", the development process of logistics companies is greatly influenced by many external and internal factors, including economic, social, ecological, legal, political, technological and others. Although different classifications of economic viability determinants are presented in the scientific literature, there is a general agreement that the economic viability of logistics companies is largely determined by internal (controlled) and external (non-controlled) factors.

2 Theoretical Background. Factors of economic viability of logistics companies

There are different classifications of factors determining economic viability in the scientific literature. When assessing economic viability, internal and external factors must be taken into account (Galinienė, 2015; Koleda & Lace, 2010; Savickienė, 2016). In some cases, contradictions can be discerned when it comes to material factors, but there are usually three groups of factors: economic factors, market factors and specific factors of the company.

Other scholars categorize factors as: competitive environment, globalization of industry, downward pressure on prices, consumer management, political position, technological environment, economic development, ecological environment (Minalga, 2008; Palšaitis, 2011); controlled factors, non-controlled factors (Palšaitis, 2010); physical, economic, social, political (Galinienė, 2015); economic-social and ecological environment (McKinnon et al., 2018) and so on.

Palšaitis (2010) divides factors into controlled and uncontrollable. According to Palšaitis, controlled factors include customer service, inventory, transportation and packaging. Non-controlled factors are divided into economic factors, competition, technology, geographical environment, socio-cultural environment, and political and legal environment.

Savickienė (2016) attributes human resources, social, financial resources, natural and man-made resources to internal factors. The market and legal environment are attributed to external factors. Dzikevičius and Jonaitienė (2015), meanwhile, attribute the assessment of economic, political, legal, socio-cultural, technological, ecological and other factors that can have both positive and negative effects on a company's capabilities and state to external environmental factors. Internal environmental factors include the assessment of the company's organizational, managerial performance, personnel management policy, and financial analysis.

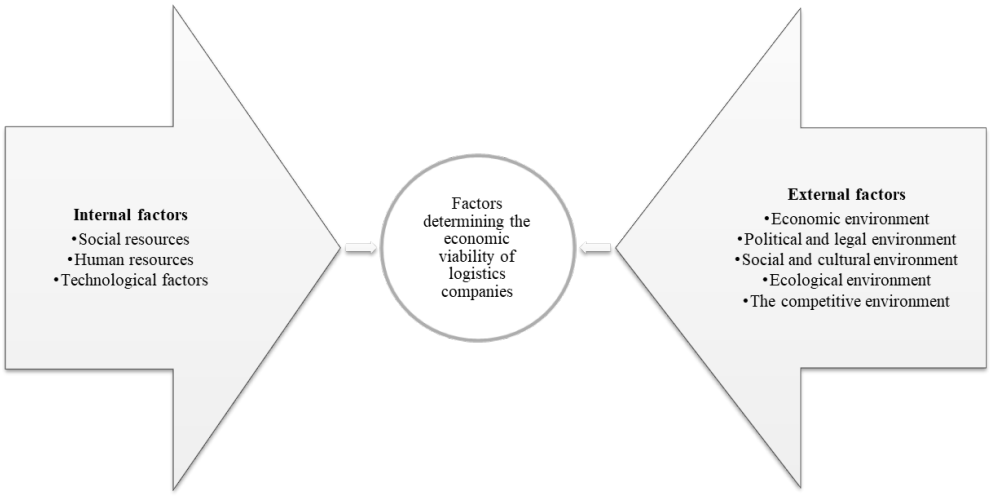
Sekliuckienė and Repečkienė (2014) classify the factors into microenvironmental (direct impact environmental) factors and attribute these factors to consumers, competitors, suppliers, laws, etc. Meanwhile, macro-environmental (indirect environmental) factors include economic, political, social and technological factors. The authors emphasize that the economic situation of the country is one of the most important components.

Galinienė (2015) distinguishes four groups of the following factors: 1) physical: natural and societal (non-natural) factors, 2) social: approach to development, development and ecology, 3) economic: main business directions, income from investments, the range goods and of services, (4) political: environmental policy, fiscal taxation and monetary policy.

The research conducted by the authors of the article shows that it is expedient to divide the factors of economic viability of enterprises into internal (or controlled) and external (or non-controlled) factors (see Figure 1).

Internal factors (controlled). These are the factors that are caused by the company itself and depend on professional competence of the management, the organizational structure of the company, the ability and the efforts of the employees to work as a team and the internal control system. Avdeeva, Belyantseva, & Smorodina (2018) emphasize that the growth of sales revenue is accompanied by the efficient use of all resources and thus the best result is achieved.

Figure 1. Factors determining the economic viability of logistics companies



The following internal factors affecting logistics companies are distinguished as social, human and technological factors.

Social resources. McKinnon et al. (2018) points out that in order to achieve the sustainability of the company the social aspect should not be ignored, that in order to achieve true sustainability, an organization should notice the value of its employees and encourage their capabilities. McKinnon also states that "human sustainability requires the integration of human resources policies and practices to ensure a long-term operation of the company and a positive response from the employees in the form of equitable behavior, development and well-being" (p. 95).

Tekin, Bitiktas & Kilic (2017) emphasize the importance of ethics in the logistics sector and point out that the ethics of supply chain management focuses on business relationship interactions through ethical strategies and programs. One of the most common ethical problems in the supply chain is customers complaints on delivering a faulty products. However, if the supplier providing the product service is legally and de facto independent, the defect is passed on to the seller. Thus, a company with a well-established culture and good business ethics tends to be more socially responsible for logistics activities.

Human Resources. According to Chang (2015), the success of logistics companies is highly dependent on the productivity of human labor. Human resource management is very important for a logistics company. Respect for employee performance is an important aspect of HRM (human resources management). Its aim is to evaluate each employee's contribution to the company's operations. It is also an ongoing process that evaluates the performance of each employee in relation to certain criteria and organizational goals. Taking into account the organizational achievements, strengths and weaknesses of employees, their salaries are adjusted in the future. The author (Chang, 2015) also proposes an analytical hierarchical process (AHP) approach to state the employee performance by the amount of work, organization skills, commitment, teamwork, communication and externalities.

Vasić, Potkonjak, Stanojević & Dimitrijević (2015) agree with Chang (2015) that the success

of a company depends on human resource management and add that management systems are one of the most successful tools for implementing the quality of continuous increase of customer needs. In other words, human capital is one of the key factors in a long-term development of a company.

Technological factors. Improvement in modern tracking technologies to anticipate / predict congestion offer new opportunities for improving vehicle routing and the ability to dynamically change established routes to meet specific traffic conditions (McKinnon et al., 2018). Sekliuckienė and Repečkienė (2014) report the following technological variables:

- ✓ technological advancement;
- ✓ technology penetration;
- ✓ innovative infrastructure.

External factors (uncontrolled). These are factors that operate independently of the company.

Economic factors. The key elements of vitality, as well as their interactions, are largely influenced by economic changes (Galinienė, 2015; Sekliuckienė, Repečkienė, 2014). Palšaitis (2010) also agrees that the economic environment is the most important of all external environments and separates out these impacts of the economic environment on logistics:

- ✓ companies may have problems with rising prices;
- ✓ in order to meet cash needs during the inflation period, more attention must be paid to improving the efficiency of individual logistics processes;
- ✓ long-term inflation and the downturn have a major impact on the company's sales revenue, which results in a drop in profits;
- ✓ due to the slowdown in market growth, logistics professionals need to carefully organize their operations to maximize productivity for each euro spent on logistics;
- ✓ the structure of the capital is significant because the excess of assets over the liabilities may cause the company to suffer considerable losses due to inflation. Conversely, companies benefit from inflation if their liabilities exceed their assets;
- ✓ foreign currency fluctuations may give rise to some uncertainty in decision making.

Political and legal environment. Galinienė (2015) distinguishes from the stream of political factors: environmental policy, fiscal policy and taxation, monetary policy and industrial regulation. The expression of these factors includes cross-border agreements, legal regulations, restrictions and other documents that promote or restrict the volume of cargo transit, rail-port interoperability. These include economic development, the state of the economy as GDP, trade growth rates, and so on. (Palsaite, 2005). Political-legal environment can affect a company financially, when political factors in a country negatively influence the expected movement of invested capital and eliminate the reasons for investing (Palšaitis, 2010). The author also emphasizes that if the company carefully analyzes the situation and takes certain protective measures, the political-legal aspects do not cause problems and do not increase the company's costs.

McKinnon et al. (2018) emphasize that the government has always intervened in the freight transport sector to correct market anomalies and intermodal competition. According to this modern scientist, "the need for freight movement is influenced by government policies related to the economics, industry, regional development, environment, energy, land use, waste recycling, for which various departments are responsible" (p. 316). The author also distinguishes the following seven categories of policy measures:

- ✓ taxes (fuel taxes, vehicle excise duty and road use tax);
- ✓ financial incentives (e. g. subsidizing the use of cleaner modes of transport);

- ✓ regulation (status of carriers, their tariffs, etc.);
- ✓ liberalization (for example, by allowing the owners of their own lorries to transport goods from other companies on the return journey);
- ✓ management governance of state-owned enterprises (in most countries freight companies are state-owned, so the government has a direct influence on them);
- ✓ infrastructure and land-use planning (planning of the land needed for logistics activities);
- ✓ advice and encouragement (e. g. promoting environmental practices in freight transport).

Social and cultural environment. Social factors are those habits and behaviors that are determined by the way and state of society (Galinienė, 2015). This is the attitude towards law enforcement, governmental support, attitude towards development, development and ecology. Palšaitis (2010) identifies the following components of the socio-cultural environment that influence logistic management: language, religion, education, technology, politics, infrastructure development and regulatory systems. The author states that a company must constantly monitor its business interactions with changes in the social environment in order to understand their impact on company's profitability, supply chain management strategies, outlets, market segmentation policy, and sales promotion.

Sekliuckienė and Repečkienė (2014) distinguish these social factors:

- ✓ availability of medical services;
- ✓ number and infrastructure of medical insurance companies;
- ✓ availability of accommodation services;
- ✓ cultural infrastructure.

3 Research and Discussion. A set of indicators to measure the economic viability of logistics companies

It is expedient to start evaluating the efficiency of the logistics company with the analysis of the composition of profit, its structure and dynamics. The further measuring of the performance includes sales, net profit, assets and return of capital.

- ➢ **Gross profitability of sales** is calculated using the formula (1):

$$\text{General profitability} = \frac{\text{Gross profit}}{\text{Sales revenue}}; (1)$$

Indicates the gross margin for each euro of sales. This allows to compare the results of competitive activity. Low indicator can express the company's pricing problems.

- ➢ **Net profitability of sales**. This indicator is usually calculated in corporate practice and is calculated using the formula (2):

$$\text{The net profitability} = \frac{\text{Net profit}}{\text{Sales revenue}}; (2)$$

Displays the net profit of one euro of sales revenue. This shows the efficiency of the company. The higher the value of the indicator, the better control of all costs of the company.

- ➢ **Assets profitability** is calculated using the formula (3):

$$\text{Assets profitability} = \frac{\text{Net profit}}{\text{Property}}; \quad (3)$$

Indicates pure profit fore ach euro of the company's all assets. Discloses whether the company is using its assets effectively.

- ➢ **Return on Equity (ROE)** is calculated using the formula (4):

$$\text{ROE} = \frac{\text{Net profit}}{\text{Personal capital}}; (4)$$

Indicates how efficiently the equity of the company is used (invested money and assets of

the owners of the company), i. e. one euro of equity represents a net profit.

Boundaries for the assessment of profitability ratios to assess the economic viability of firms (see Table 1).

Table 1. Boundaries for the assessment of profitability ratios

Indicators	Profitability ratios, %				
	Very good	Good	Satisfactory	Unsatisfactory	Bad
General profitability	x>35%	35%>x>15%	15%>x>7%	7%>x>0%	x<0
The net profitability	x>25%	25%>x>10%	10%>x>5%	5%>x>0%	x<0
Assets profitability	x>20%	20%>x>15%	15%>x>8%	8%>x>0%	x<0
ROE	x>30%	30%>x>20%	20%>x>10%	10%>x>0%	x<0

To assess the ability of a company to meet its liabilities, the following solvency ratios have to be calculated: leverage ratio, equity ratio and leverage.

- **Debt coefficient** or otherwise known as gross debt ratio is calculated using the formula (5):

$$\text{Debt coefficient} = \frac{\text{All obligations}}{\text{All assets}}; (5)$$

Indicates how much of the company's profit is financed by credit funds. Very good if less than 0,3.

- **Property coefficient** is calculated using the formula (6):

$$\text{Property coefficient} = \frac{\text{Personal capital}}{\text{All assets}}; (6)$$

Compares personal capital to the company's property. Allows to evaluate the company's ability to develop its performance without external sources of financing.

- **Financial leverage** is calculated using the formula (7):

$$\text{Financial leverage} = \frac{\text{Obligations}}{\text{Personal capital}}; (7)$$

Indicates the amount of debt for each euro of personal capital, i. e. what part of funding is on credit. Big indicator indicates higher financial risks as the business will have to pay not only the interest but also pay back the debts.

Table 2. Boundaries for the assessment of solvency ratios

Indicators	Solvency ratio values
Indebtedness ratio	0,3< 0,7
Equity ratio	The higher the better
Financial leverage	~0,5

When evaluating the efficiency of the planned business it is expedient to calculate the following turnover ratios: total assets turnover, long-term and short-term assets turnover and equity turnover.

- **Turnover of total assets** is calculated using the formula (8):

$$\text{Total assets turnover} = \frac{\text{Sales revenue}}{\text{All assets}}; \quad (8)$$

Indicates the amount of income for each euro of the company's property. The higher the indicator the more efficient the use of assets.

- **Turnover of fixed assets** is calculated using the formula (9):

$$\text{Fixed assets turnover} = \frac{\text{Sales revenue}}{\text{Permanent assets}}; \quad (9)$$

Indicates the amount of income for each euro of permanent assets, i. e. how efficiently the company's fixed assets are used.

- **Turnover of current assets** is calculated using the formula (10):

$$\text{Current assets turnover} = \frac{\text{Sales revenue}}{\text{Temporary assets}}; \quad (10)$$

Indicates how efficiently the company's short-term assets are used, i. e. the amount of income for each euro of short-term assets.

- **Equity turnover** is calculated using the formula (11):

$$\text{Personal capital turnover} = \frac{\text{Sales revenue}}{\text{Personal capital}}; \quad (11)$$

Compares the sales of a company with its working capital. A low coefficient value indicates poor performance of capital efficiency.

Recommended thresholds for assessing performance are given in Table 3.

Table 3. Boundaries of performance measurement

Indicators	Sizes of performance indicators				
	Very good	**Good**	**Satisfactory**	**Unsatisfactory**	**Bad**
Total assets turnover	x>2	2>x>1	1	1>x>0	x<0
Fixed assets turnover	x>1,5	1,5>x>1	1	1>x>0	x<0
Current assets turnover	the higher the better				
Personal capital turnover	the higher the better				

After analyzing these indicators described above, it is not difficult to compare the results of different companies' performance, to uncover the reserves and to present reasonable ways of company's management. This is one of the key tools for highlighting the economic viability of logistics companies.

Conclusions

1. Economic viability is the ability of a company to innovate, to adjust its actions and to develop strategy ahead of its competitors, that can maintain high productivity in a long run. Companies that are able to maintain high levels of business efficiency, sustainability, productivity and stability can at the same time ensure economic viability in a long run. Only a combination of these indicators can ensure good long-term results.
2. The main factors determining and changing the economic viability of logistics companies are divided into internal or controlled (social, human resources and technological factors) and external or non-controlled (economic, political-legal, socio-cultural, ecological and competitive environment).
3. The most widespread view is that economic viability can be objectively measured by logical and econometric methods of economic analysis and specific methods.
4. To assess economic viability, it is best to choose the following financial ratios commonly used in practice: profitability,

operational efficiency (asset management), solvency (liquidity) and capital markets. In the analysis of these relative ratios, it is not difficult to compare the results of different companies, to uncover the reserves, and to present the results of the management of company. This is one of the key tools for highlighting the economic viability of logistics companies.

5. The methods and indicators most commonly used to assess economic viability are named and grouped in different ways. It causes the problem of the choice of indicators and methods for assessing the economic viability of a company. Different authors use different indicators to achieve the same goal. In addition, there is no integrated overall viability indicator consisting of the sum of the individual indicators described above, after evaluating the significance of each of them.

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COSTS AND REVENUE OF COMPANIES IN CIRCULAR ECONOMY

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Abstract

The circular economy is a strategy of sustainable development that creates functional and healthy relationship between the environment and human society. The theory of sustainable development arises of conflict between population growth and economic growth on one side and limited natural resources on the other side. It is based on principles of long-term development with a focus on the needs of future generations and on preserving essential functions of the ecosystem. The circular economy describes an economic concept that aims to save resources by minimization of consumption of material and energy during the whole life cycle of products, including repair, reuse, and recycling. This paper aims to identify contributions of the model of circular economy from point of view of its utilization within conditions of the business companies, based on content analysis and own analytical research. The first part of the paper is dedicated to explaining the idea (concept) of circular economy as recognized by foreign authors, international organizations, etc. In the second part, this concept is applied to conditions of the business companies from the perspective of increase of production and consumption (increase of revenue), as well as from the perspective of decrease of production and consumption (decrease of costs) by the innovations.

Key words:

circular economy, sustainable development, costs, revenues, firm, innovation

JEL Classification: D23, D24, F61, P28, Q2

Introduction

The circular economy is a sustainable development strategy that creates functional and healthy relationships between nature and human society. Although environmental protection is nowadays a common requirement, in the modern sense the term began to be used only in the 1960s, and in the international context, interest in it only increased following the United Nations Conference on the Environment in 1972 (Moldan 2015).

The circular economy is the perfect closure of material flows in long-lasting cycles, opposing our current linear system, where raw materials are converted into products, sold and burned or landfilled at the end of their life. The circular economy and its basic principles are based on the idea that all product and material flows can be reconnected to their cycle after they have been used, where they will again become sources of new products and services. This means that waste as such will no longer exist. While replacing primary materials with secondary materials can offer part of the solution, recycling is not a final, but also attractive, solution because its processes are energy intensive and generally mean degradation of materials - all of which leads to an increase in demand for original materials. The circular economy goes beyond recycling because it is based on a restoring industrial system leading to the disappearance of waste. Recycling can be conceived as the outer packaging of the whole circular economy, requiring greater energy consumption as the inner packaging of the circular economy, which means in particular repair / treatment, reuse or treatment (Inštitút cirkulárnej ekonomiky 2019). Therefore, the aim is not only to improve the life cycle and use of the product itself, but also to minimize energy consumption.

The idea of material circulation is not new, but it is currently receiving attention and respect. It was first presented in 1966 by economist Kenneth Boulding. In his work, he calls the closed economy of the future a cosmonaut economy in which a country becomes a spacecraft without limited supplies of all resources, whether for pollution or resource use, and in which one has to find its place in a cyclical ecological system capable of continuous

reproduction (Boulding 1966). Since then, a number of concepts have emerged that seek to change the processes in the economy to work more sustainably. These include the circular economy, which is presented in contrast to the long-term dominant linear movement of material by the economy - the source is obtained and processed by the product, which becomes the subject of consumption and at the end it is waste. This arrangement in the last century supported, among other things, the downward trend in real prices of raw materials, but today it is reaching limits. These include world population growth and the growing middle class, volatility of the raw materials market, depletion of natural resources and negative environmental impacts (Ellen MacArthur Foundation 2017).

Literature overview

Jay Gronlund (2015) also defines the circular economy on the basis of the Circle Economy, a member organization in the Netherlands, at six points, in addition to requiring that materials used in production circulate endlessly and energy used for production comes from renewable or sustainable sources. It is then the interest of maintaining ecosystem, value, human health and society. Specifically, promoting the ecosystem and rebuilding natural capital, generating value, promoting human health and a cohesive society and culture (Gronlund 2015).

The circular economy is also a very important concept supported by the EU, several national governments and many businesses around the world. According to Korhonen, Honkasalo, Seppala (2018), however, the scientific and research content of the circular economy concept is superficial and disorganized. According to them, it appears as a collection of vague and separate ideas from several disciplines and scientific concepts. The obligation to draw up waste prevention programs is laid down in Directive 2008/98 / EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (hereinafter referred to as the "Waste Framework Directive"). The main aim of the measures taken in waste prevention programs is to break the link between economic growth and the environmental impacts of waste generation. In the current EU Environment Action Program, the circular economy is part of a vision by 2050. Specific measures were then introduced by the European Commission in the so-called Circular Economy Package as early as 2014. However, with the new Commission, the original proposal was withdrawn in the following year new. In both versions, the package consists of a Communication presenting the Commission's strategy in this area and a proposal to amend 6 waste management directives (European Commission 2015).

Through the European Structural and Investment Funds, the European Union supports many projects in member countries aimed at transitioning and promoting the circular economy (circular economy). One example is the Interreg - Slovak Republic - Hungary Cross-Border Cooperation Program and the “Circular Economy” project, which was implemented by April 2019 and financed by the European Regional Development Fund. The project "Circle of Circular Economy" was intended to bring these principles to schools, to acquaint them with the coming generations and to show them how practical solutions work in everyday life. The aim was to show this systemic change to pupils not only in theoretical form, but to introduce as many principles of circulation economy as possible into practice and everyday life of school, its pupils and teachers. A major and visible step will be to reduce mixed municipal waste (ZKO) by introducing separate collection and composting at school. The project also involves cooperation of students from the Czech Republic and Hungary. The result is so-called 'Circular Schools'. The project will involve at least 40 secondary (or primary) schools. Of which 20 in Slovakia (Bratislava, Trnava, Ústí nad Labem Region) and 20 in Hungary. Educational activities include lectures, workshops or seminars on the following topics: Waste management - Waste resources, Biodegradable waste management - Composting, Renewable energy, Water management, Transport, Clothing industry, Green buildings - Sustainable buildings.

Another interesting project that was implemented in 2019 is the project “Office without a basket”. The aim of the project was to reduce the negative impact on the environment through proper sorting and prevention of waste at work. In the office, many of us spend up to a third of our lives, so it is important that we

reflect on the consequences of our day-to-day operations in this environment. The project was therefore focused mainly on waste from office space. The ideal is not to create any waste in the office and therefore to have no baskets (Inštitút cirkulárnej ekonomiky 2019).

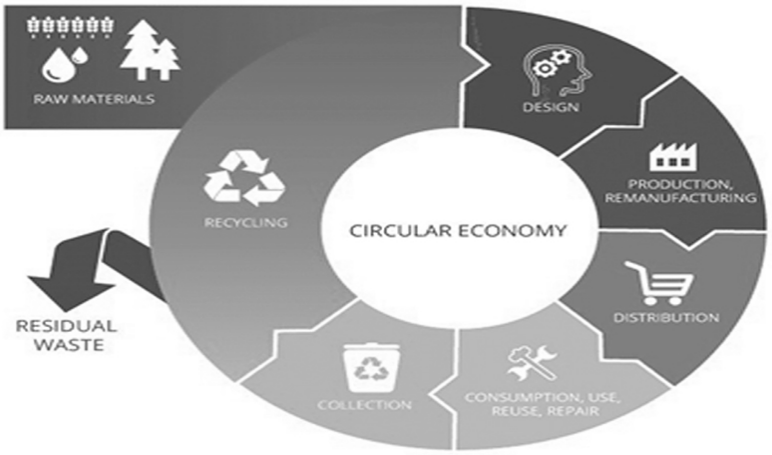
In the Czech Republic, the development can be observed in the desired direction, but overall it has achieved below-average results in the area of resource and waste management within the EU and it is expected to solve many challenges. The circular economy is not one of the government's priorities now, and the related strategic documents do not clearly show the interconnection of the whole cycle. There is also problematic persistent double reporting of waste data, which, among other things, makes it difficult to evaluate the fulfilment of targets. Moreover, the question is whether the sectoral approach to the circular economy will be sufficient in the future and what degree and form of coordination may be appropriate, given the current weakening of the position of the Sustainable Development Council.

According to Cyril Klepek (2018), there are four areas of barriers to the implementation of circular economy principles: cultural, market, technological, and regulatory. Cultural barriers are seen by consumers and businesses, however, according to CSR & Reputation Research 2016, 68% of people in the Czech Republic are willing to pay extra for an environmentally friendly product. Market barriers are high costs, and companies also fear limited competitiveness when switching to another business model. The biggest market obstacle is to obtain secondary raw materials from recycled sources that are comparable in price to primary raw materials. This is also related to the complex search for partners to make changes in the supply chain. Klepek currently sees an opportunity to be the first in the market and gain long-term contracts and a position in the secondary resources market, which will be hard to catch up with. Another barrier is the poor availability of new technologies and their already mentioned high acquisition costs.

According to Ritzen and Sandstrom (2017), this concept offers companies a lot of room for innovation or material savings, while at the same time representing a step into the unknown. Business processes are now optimized in the context of the economy linear and their change would often require considerable investment. The lack of public awareness and the lack of skilled workers are also an obstacle.

According to the latest EEA (European Environment Agency) report, European companies are increasingly adopting circulation business models, which are mainly focused on operational efficiency and waste reduction. Another promising development is the transition from product-based business models to service-based models. Corporate culture, market factors and the complexity of the system seem to be the biggest obstacles to making greater use of such models.

Picture 1. Process of circular economy



Source: Inštitút cirkulárnej ekonomiky 2019

1. Ideology of circular economy in terms of increasing production and consumption

According to many authors, the circular economy in the harsh conditions of the prevailing system is not used for the benefit of the environment but for the fundamental imperative of most market players, which is profit. According to them, the ideology of the circular economy can lead to increased and not reduced consumption as the planet would need (Profant 2019). The fact that buying green products helps the planet can induce us to shop and consume more. So the question arises as to whether it really is a new economic model, as it is presented by most authors, or just another unsustainable ideology disguised in a new coat. In essence, it is about reusing things instead of throwing them away and making new ones at multiple levels. At the level of finished products, it may be a move to the second hand market or minor repairs. At a lower level, it is still a matter of using the whole thing, but with replacing parts of the product, such as replacing the battery in the case of a phone. And at the lowest level, this is recycling, i.e. the reuse of materials used in production, such as metals in the case of a telephone. At first glance, the circular economy thus appears to be a meaningful, directly necessary approach to production and consumption. If mineral resources circulate in our economy, instead of being dumped, our lives will finally be in line with the principles of sustainable development.

In author's opinion, the main problem of the circular economy is the very economic context in which the circular economy is to function. The circular model is to ensure the competitiveness of landscapes, their stable economic growth and a healthy environment. At the same time, however, the circular economy should become part of the functioning of a society based on investment, competition and economic growth. The allegedly new model, or even the system, is neither new nor a fundamental change. Recycling took place long before capitalism began, but more importantly, the fundamental principles of the capitalist economy remain intact. And it is these who jeopardize the meaningfulness of establishing a circular economy. First of all, it is the consumer behavior of market participants. The main goal of many companies is to sell as many of their products as possible, regardless of whether their consumers need them. Advertising serves not only to inform shoppers, but also to convince you that a new product is essential for life and needs to be bought, although the older still serve quite well. Here comes the problem of green consciousness of consumers. Somewhere in the

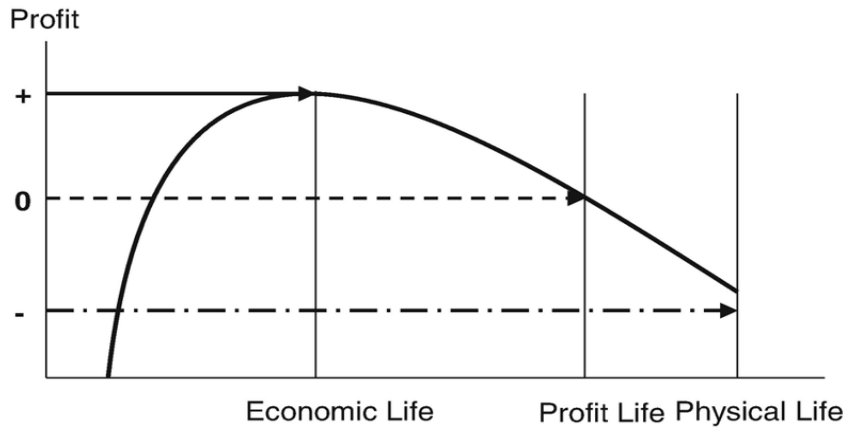
subconscious, we realize that maybe it is not quite right if we throw something that works, whether we buy something that we do not need. The ideology of the circular economy is becoming an ideal helper here, directly saving the economic system based on maximum use of resources, private property and free market.

The desire for and enjoyment of consumption remains undisturbed as non-recyclable goods become a green eco-product. Indeed, the desire to shop is even greater. Experimental research conducted by EMF 2013 shows that people in the toilet use more paper towels when using recycling bins. The feeling of helping the planet by buying green products can encourage us to shop and consume more. Waste is no longer an environmental problem, but becomes a resource that we help to create through our consumption behavior. Simply put, the ideology of the circular economy can lead to increased and not reduced consumption.

According to scientists from the University of California and Loyola Marymount University, any savings that the circulation of material will provide does not mean the same savings for the planet. Conversely, seemingly ecological savings can lead to even greater consumption of the materials due to the lower cost. For example, used or repaired phones will not replace new ones, but will only expand the existing market to include a second-hand phone market that will be sold to consumers in poorer countries. So the total consumption of phones will not decrease, but will increase. Another typical case of growth in consumption within the circular economy may be, for example, virtualization of the economy. For example, online video on demand reduces the demand for physical video delivery, but overall video consumption increases.

As for the value of the product (equipment), it decreases during its long-term ownership. The causes of impairment are mainly the deteriorating appearance and wear of the components. To adjust to the situation, we are correcting. Especially for large construction machines, repair costs are small compared to machine costs. Life Cycle Cost Analysis (LCCA) provides us with useful information about the profitability of a business in long-term ownership of machines. There are three ways of life: physical life, profitable life and economic life. Picture 2 shows that the owner can decide on the life of the device with respect to the expected profit.

Picture 2. Life cycle cost analysis (LCCA)



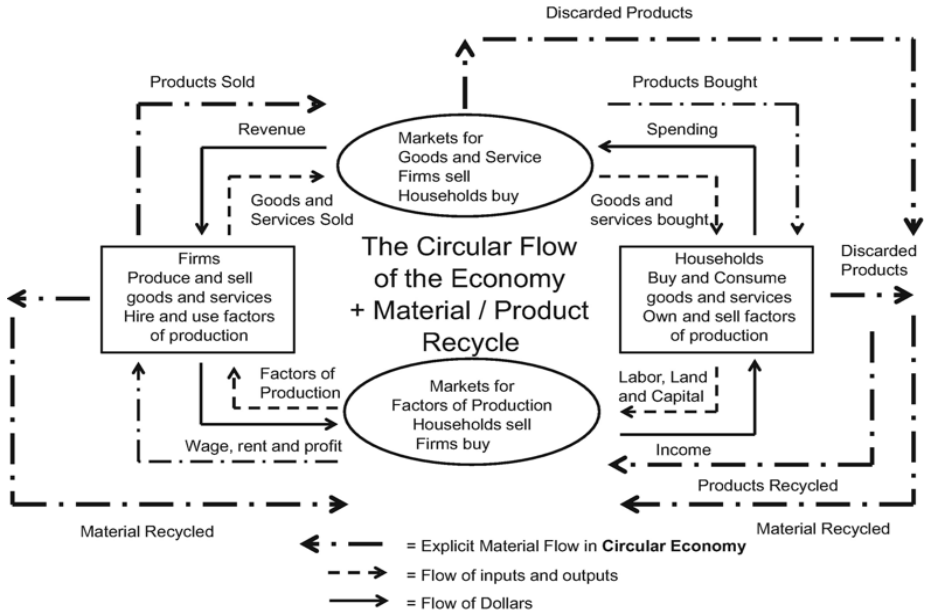
Source: Doughlas 1975

It is important to consider whether, in the current economic system, the circular economy is truly a new sustainable economic model. It keeps us in the idea that we can live as we do now and grow economically, while preserving nature, which in my opinion is difficult in the current consumer behavior.

2. Why it pays to companies introduce circular economy innovations (CE)?

From the theoretical point of view, there are various transmission channels ranging from CE innovations to higher business performance. First, CE innovation, such as reducing energy and material consumption, replacing fossil energy from renewable sources, or recycling waste, water or materials can lead to cost savings at least in the long term. These cost savings allow the company to reduce product prices, leading to increased demand for the company's products. However, in the short term the introduction of CE innovation can lead to additional costs due to the cost of additional equipment or organizational changes. Secondly, taking into account the Porter hypothesis (Porter, van der Linde 1995), new CE-serving products (such as energy-saving products or products characterized by higher recyclability or longer lifetime) may lead to first-move benefits that are also accompanied by higher competitiveness of innovative firms. Thirdly, this process can be re-applied if consumers are willing to pay more for the added ecological value of products, which also has a positive impact on product demand. This argument is also discussed in the Corporate Social Responsibility (CSR) literature (e.g. Ambec, Lanoie 2008, and Hart 1997). "This literature combines the positive returns of greener production opportunities to improve company ranking in the market, access new markets or reduce costs due to increased resource efficiency" (Ghisetti 2018). Especially in regions characterized by high awareness of environmental issues, CE innovation can also enhance the company's reputation, which will also lead to a positive demand effect (Horbach, Rammer 2018).

Picture 3. Material (product) flow in Circular model of economy



Source: Hayashi H. 2004

Although there are arguments for the positive effects of turnover on CE innovation, their effects on employment remain theoretically undetermined, especially since the effects on employment may vary according to the type of CE innovation. Innovation of the CE process (e.g. Energy or material savings in the production process) and innovation of CE products (e.g. higher product recyclability or longer product life) are likely to lead to very

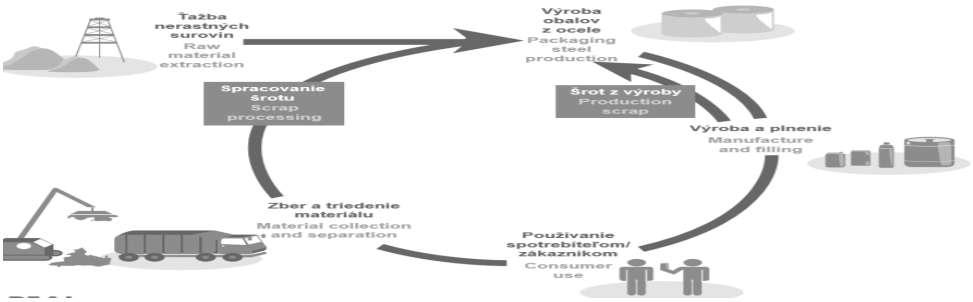
different employment impacts. Process-oriented CE innovations could have negative effects, as implementing these innovations can lead to higher labor productivity. Productivity can increase because CE process innovation often requires reworking the entire production process from material selection to final product design. Such modernization could also lead to the replacement of labor by capital (e.g. increased use of robots) and thus increase labor productivity.

However, increased capital efficiency can lead to higher valuations of capital over labor and thus generate lower wages, which in turn can mitigate the negative effects on employment replacement by capital (Douglas DG, O'Connor EP. 2016).

Implementing CE innovation can be a positive direct effect on employment, where such innovation is available through additional investment or more specialized and successful employees. Completely new CE-related products that generate new demand for a company that produces a positive effect on employment but favors employment will only show disadvantages where the new product does not replace the old product of a more labor-intensive business. Sellers of medicinal products can negatively affect employment due to low demand for products that want to offset higher consumer demand for these products (Harrison 2014).

For example, U. S. Steel Košice, one of the largest integrated producers of rolled producers in Central Europe, embarked on an investment program to improve its technologies that affect the environment, performance and process quality. The steel life cycle is a direct example of a permanent material and a closed material cycle on which the concept of circular economy is based. In principle, this can be attributed to the basic properties of steel, namely its endless recyclability without loss of quality in combination with magnetic properties, making it easily separable from other waste materials. The approach of steelmakers to the recovery of by-products of their production is also important. Effective processing of primary raw materials and their return to the recycling cycle for dust, sludge, debris, scale and oil labeled potential issues on the ground. Convenient possibilities of utilization of other products in furniture production is processing of blast furnace and steel slag in conditions of USSK Company (Ministerstvo životného prostredia Slovenskej republiky, Slovenská agentúra životného prostredia 2019).

Picture 4. Process of processing secondary raw material from primary production in metallurgical industry.



Source: Ministerstvo životného prostredia Slovenskej republiky, Slovenská agentúra životného prostredia, 2019

The annual volume of blast furnace slag processed in USSK reaches an average of 1.2 million tons. About 70% of its annual volume is processed by granulation by rapid cooling of the slag melt with industrial water. It is subsequently used in the cement industry. The remaining part consists of air-cooled blast furnace slag, i.e. artificial aggregate, which has a wide application. It is used in construction of road infrastructure, production of cement, concrete mixtures and various building materials, landscaping and backfilling, winter maintenance of roads and sidewalks. Slag thus provides an alternative to natural rocks such as limestone, andesite, dolomite or granodiorite. Its use removes negative environmental impacts associated with mining of natural aggregates. In the past, this aggregate has helped local and municipal authorities to protect the environment and reduce their significant financial costs associated with the use of natural aggregates. Specifically, in 2012 - 2016, USSK provided 369,768 tons of aggregate to the boroughs of Košice and the municipalities of the Košice and Prešov Self-Governing Regions. Last but not least, the gases produced as an inevitable consequence of blast furnace processes, steel converters and coke oven batteries have been used for years as a secondary energy source and thus substitute for heat and electricity production from fossil fuels. In this way, USSK produces 50% - 62% of its annual electricity consumption (Ministerstvo životného prostredia Slovenskej republiky, Slovenská agentúra životného prostredia 2019).

Conclusion

If a business wants to be a market leader, it must make the best use of its resources, which means that it recycles and reuses them instead of burying them in landfills. More efficient, faster and re-use of resources will increase the competitiveness of individual companies. In the circular economy, the value of products and materials is maintained for as long as possible, since waste production and resource use are kept to a minimum and resources are maintained in the economy once the product reaches the end of its life Cycle and are reused to create added value. This model could create safe jobs in Europe, foster innovation that provides a competitive advantage. In addition, it can provide a level of protection for people and the environment that Europe can be proud of. This model can also provide consumers with more durable and innovative products that deliver financial savings and improve quality of life. On the other hand, it is necessary to perceive this economic model also in connection with consumption behavior of individual market actors and with increasing consumption. The fact that buying green products helps the planet can encourage us to shop and consume more, as many international researches have shown.

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REVENUES AND EXPENDITURES OF MUNICIPALITIES IN THE SLOVAK REPUBLIC

Jakub GIRAŠEK

Abstract

The importance of exploring the structure and characteristics of municipal financial relations contributes to the long-term sustainability and stability of the entire public sector. Municipalities' revenues and expenditures are primarily used to fulfil the aims of their policies. Original and devolved competences as well as some autonomy in decision-making are given to authorities, therefore supervision over their management is important. The expression of self-government is the management of revenues and expenditures. The correct allocation of funds reflects policy objectives. This article discusses about the structure of budgets and offers summary view on part of the financial funds of local governments. It also draws attention to the specific problems, threats and challenges to be faced in the present or in the future.

Keyword

municipalities, revenues, expenditures, COFOG, classification of financial structure

JEL classification: *H 71, H 72*

Introduction and literature review

Analysis of municipal management requires understanding of financial relations. The budget of municipalities can be characterized by four points, a decentralized money fund, a balance of revenue and expenditure for the certain budget period, a financial plan and an instrument for realizing an aims of municipal policy which is part of public policy. (Peková, 1997) The budget must be characterized in terms of current, capital budget and financial operations using generic, organizational, economic and functional classification. (Veverková, 2013)

The revenue generation process is carried out by utilizing of available funds from economic operators, which is at the expense of their welfare. We distinguish this reduction as temporary or permanent, voluntary or enforced. (Medveď – Nemec et al., 2007) Municipal revenues are composed of several components. Define tax revenues is more difficult for municipalities than for the state budget, while maintaining tax justice, tax neutrality and low administrative burden. It is important to define the position of territorial self-government in the tax system of the state. The central government must avoid tax competition between municipalities with regard to the tax burden and incidence. This can also be achieved by limiting the power of municipalities to determine the subject of tax, tax base, tax rates. These measures concern mainly local taxes. (Neubauerová, 2006)

In terms of transparency, tax collection should take into consideration principles such as simplicity because of interest pressure reduction, clarity also for better orientation and control, stability, because frequent changes in tax rules create uncertainty and unintentional elements for individual parties, visibility, having regard to taxpayers which ones feel this directly or indirectly, a clear separation of taxes from mandatory savings and address fees. (Beblavý – Švec, 2001)

In the second place are non-tax revenues such as revenue from own business. In developed countries, these revenues are becoming more traditional. Municipalities derive them from the revenues of municipal enterprises, from renting and selling their own assets, from trading with securities and others resources. Revenues from business activities of municipalities are gradually increasing. The fees represent an additional non-tax revenue, covering especially the current expenses related to the provision of public services to citizens. Administrative fees has special status. Between them we include fees for administrative acts,

penalties for example, offenses, for polluting public spaces and revenue from extra-budgetary funds such as reserve funds.

Non-tax receipts also include non-repayable cash transfers provided as specific purpose subsidies from the public budget. They are provided for specific tasks with the most common goal of supporting education, improving housing, maintaining communications, security and fire protection. Unlike special subsidies, purpose subsidies are not tied to area in which they will be used. For example, they are used to balance municipal budgets and they are usually specified by law. Other revenues include recoverable credit facilities, revenues from pooling of funds, donations and proceeds from public collections and other incidental revenues. (Neubauerová, 2006)

The existence of public expenditures is linked to the existence of the public sector, its organization, objectives and reflects the relationship with private and non-profit sectors. The part of the state's interventions, which is reflected into money, is considered as public expenditures. (Sivák, 2007)

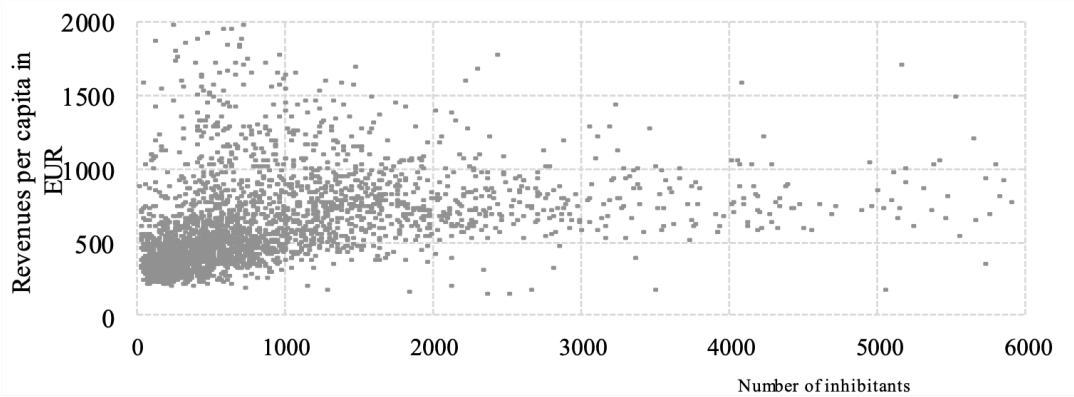
Public expenditures also include expenditures of municipal budgets, which are intended for specific economic activities. These expenditures are non-repayable. The creation of autonomous budgets respects the principle of unity, which helps to avoid any special-purpose links between revenue and expenditure. The structure of expenditures depends primarily on the decision of municipalities and their volume depends mainly on the revenue base. Balanced budget policy must be respected during budgeting process. Expenditures are provided for covering of the needs of the local population through public goods at the instigation of the preferences of the local population. They are affected by the scope of the responsibilities and powers of self-governments. The distribution of expenditure-financed tasks should be made with the aim of maximizing economy and efficiency. (Neubauerová, 2006)

1. Revenues of municipalities

1.1 Dependence between revenues of municipalities and quantity of population

The following chart describes the relationship between the revenues of municipalities and the number of inhabitants. There has been taken all receipts and receipts of financial operations according to the economic classification of the budget classification as well as financial operations which provide the possibility of replenishing funds. If we did not include them in the calculations, there would be no significant changes in the result. The graph only shows municipalities with less than 6 000 inhabitants, because at higher numbers there are no longer extreme values and at the same time it only captures revenues up to 2 000 EUR per capita.

Figure 1. Revenues of municipalities depending on the quantity of population in 2017



Source: own processing according to FIN 1 - 12: 2012 – 2017: Finančný výkaz o príjmoch, výdavkoch a finančných operáciách.

In municipalities, it is confirmed that with the increasing number of inhabitants the revenues grow and this is not proportional, i.e. by the same ratio. While the majority of municipalities up to 1 000 inhabitants achieve revenues in the range from 200 to 600 EUR per capita with a median of the given interval 590 EUR, but with a higher average is 712 EUR due to the more extreme values in this population range. For majority of municipalities with 1 000 to 2 000 inhabitants a range is located from 400 to 1 000 EUR per capita and an average is 792 EUR. 635 from 1894 municipalities were located in the first interval, with revenue below 400 EUR per capita and in the next range the number of municipalities decreased to 16 from 579 municipalities. (FIN 1 – 12, 2012 – 2017)

The calculation show that smaller municipalities achieve less revenue per capita. It is important for the state to regularly review the revenue structure and their availability. Possible inequalities between small and large municipalities could be avoided. Municipalities have some similarities in costs with enterprises, where fixed costs increase by jump and variable gradually. Small municipalities have a significant amount of fixed costs, such as the maintenance of municipal office buildings, employee wages at least in such a way as to ensure minimum mandatory administration. In less numerous municipalities, the revenues of municipalities should be prevented from serving too much to cover fixed costs and current expenses. Consequently it would not be left for capital investment, which would result into slowing or stopping the development of the municipality. A solution is the merging of municipalities, if the whole system is properly defined and mechanisms are established to set a minimum amount of finance designated for smaller municipalities. This would eliminate fixed costs and generate savings of public finances.

1.2 Structure of revenues

Next table no. 1 provides a complete revenue structure for 2017 according to the economic classification of the budget classification. For the purposes of calculating the balance, budget deficit or surplus, financial operations are not taken into account under the legislation of the Slovak Republic. However, for completeness, they are presented in the table as they are also part of the budget.

Table 1. Structure of revenues and financial revenue operations by economic classification in 2017 in EUR

Tax revenues		**2 341 994 460**
	Income and capital taxes	1 796 997 499
	Property taxes	347 901 975
	Taxes on goods and services	196 745 621
	Sanctions imposed at tax proceedings	340 385
Non-tax revenues		**572 063 455**
	Revenues from business and property ownership	171 542 957
	Administrative fees, other fees and charges	276 922 112
	Capital income	60 317 809
	Interest from domestic loans, loans and deposits	1 088 298
	Interest from foreign loans, loans and deposits	80 067
	Other non - tax revenues	62 112 214
Grants and transfers		**1 266 603 941**
	Domestic current grants and transfers	1 060 005 906
	Domestic capital grants and transfers	199 041 299
	Foreign grants	7 379 104
	Foreign transfers	177 631
Revenues from transaction with financial assets and liabilities		**256 486 343**
	Revenues from repayments of domestic loans, loans	2 361 461
	Revenues from the sale of equity investments	5 586 582
	Other financial operations	248 512 731
Received loans and repayable financial borrowing		**157 300 962**
	Domestic loans and repayable financial support	151 868 429
	Foreign loans and repayable financial support	5 432 533
Revenues without financial operations		**4 180 661 856**
TOTAL REVENUES (including financial operations)		**4 594 449 161**

Source: own processing according to FIN 1 - 12: 2012 – 2017: Finančný výkaz o príjmoch, výdavkoch a finančných operáciách.

Tax revenues are the most important source of financial funds. Municipalities receive 70 % of the national income tax, excluding withholding tax. In the past this percentage was lower and changed regularly. Until 2016 the share was maximally about 4,6 percentage points lower or 0,3 percentage point higher. The revenue is collected by the tax authorities and transferred to the municipalities. The remaining 30 % of the tax revenue goes to higher territorial units. (Zákon č. 564/2004)

In the second, tax revenues include property tax, which includes land, buildings, and apartments. The taxable amount for each of those taxes is broken down by type. The land is divided into arable land, gardens, built-up areas, forest and water management areas, building land etc. The buildings are subject for tax purposes and they are divided into housing, cottages, detached garages, industrial buildings, including office buildings, warehouses, buildings serving energy etc. The flat tax also includes non-residential buildings. The law sets basic rates, which each municipality has the right to adjust according to its own decision. It can be raised from five to ten times, depending on the type of property. The tax base is set in m^2. Arable land, permanent grassland, gardens, courtyards, built-up areas, building plots are multiplied by their area by a coefficient set by parliament law for each municipality. (Zákon č. 582/2004)

Municipalities entrepreneurial revenues consist mainly of the sale of buildings and land rent – 154 095 756 EUR and of dividends – 9 509 076 EUR. The largest source of non-tax revenues comes from service charges, subsistence allowances and other non-industrial

sales – 244 791 152 EUR. The sale of land and capital assets reach a share more than 80% of capital income. Other non-tax revenues include e.g. funds from non-profit, contributory and budgetary organizations, claims, gambling levies.

83.69 % of grants and transfers are from domestic origin and current character. 699 499 078 EUR is intended to cover expenditures on delegated competences and comes from the state budget 314 499 876 EUR is also from the state budget, but for purposes other than those mentioned above. Domestic capital transfers have origin mainly in the state budget, excluding state special-purpose funds – 140 672 162 EUR.

Revenues from transactions in financial assets and liabilities are no longer classified as a financial operation and are not included in the calculation of the budget balance. 137 953 575 EUR comes from municipal reserves which are the highest item in this group of financial operations. In addition municipalities also use a number of other funds. The second type of revenue financial operations are loans and repayable financial support. Long-term domestic bank loans accounted for the largest ratio of 51,48 %. Abroad the funds came mainly from international organizations and have ratio 3,45 %. (FIN 1 – 12, 2012 – 2017 et MF/010175/2004-42)

The income structure shows the high importance of tax revenues, especially personal income tax. This is an advantage at a time when the economy is growing and with it the wages of citizens, as was the case between 2012 and 2017 in our reporting period. If the economy cools, this can have a negative impact on the income tax for municipalities, because tax revenues are influenced by lower tax base of citizens and consequently it has impact on redistribution money for municipalities. It is more advantageous for the state and more cautious for municipalities if income is distributed in a different tax structure. More advantageous for the state, because any attempt to reduce the tax rate will bring a positive response from citizens, on the other hand, a great opposition from self-governments. This puts at risk the functionality of one of the instruments of state fiscal policy. For municipalities more cautiously, because if the stability of the revenue from this tax is threatened by some influence, it may cause a loss of income. At present, municipalities are vassals of income tax. With this tax, there is a risk that the state may in certain cases with populist motives, lower its rate and thus directly raise us citizens' preferences, because the increase of own citizens' net income will feel earlier by the population than saving measures of municipalities. Based on theoretical knowledge in the first part of the thesis, it can be stated that the structure of budgets and their creation is adapted to the trends of developed countries and is heading towards decentralization.

Population migration is a natural phenomenon of open economies. The population is moving to larger settlements. If they move there and do not register for permanent residence, the income tax revenue from this person will be added to the place of official residence rather than to the actual residence. The persons cause an increase in costs for the municipality by staying in the territory of one self-government for a long time. During moving from a smaller municipality to a larger, the problem is partially alleviated by the calculation of the part of this tax for that municipality. The size coefficient multiplies the number of inhabitants and thus creates a multiplier effect. More inhabitants means the higher the coefficient. This relationship ensures an increase in income not by arithmetic series, but by geometric. Naturally, Bratislava has the highest coefficient. During preparing legislation, municipalities that are not Bratislava and Košice and have a population of over 100,000 were forgotten. The law does not set any size coefficient for them. (Zákon č. 564/2004)

Non-tax revenues are created primarily by the municipalities themselves. Their existence helps partially cover the costs of administration. Positive is also the possibility to impose fines and determine their amount and thus improve compliance with laws, generally binding regulations. Grants and transfers serve, among other things, to finance the transferred competences. The central government, in cooperation with local and regional authorities, should regularly check the balance between competence and funding. Original competences are mainly financed by taxes. Care should be taken to ensure that the original competences have ample financial resources, while transfers

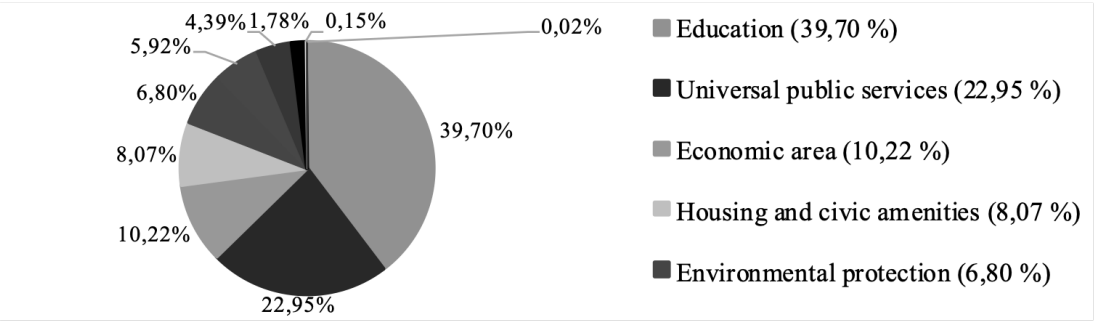
are not sufficient for the transferred competences. This also applies inversely. This problem may arise because grants and transfers have a specific use and also taxes that should be non-purpose, so the state indirectly orders them to finance certain public goods, so taxes are bound to competence. This fragmentation of sources of income may be the subject of further consideration. It has already mentioned positives and negatives.

2. Expenditures of municipalities

2.1 Expenditures of municipalities according to function classification

Expenditures of municipalities are also divided according to functional classification of budget classification. Figure no. 2 shows the proportion of individual types of expenditure according mentioned classification.

Figure 2. Expenditures of municipalities by function classification in 2017 in %



Source: own processing according to FIN 1 - 12: 2012 – 2017: Finančný výkaz o príjmoch, výdavkoch a finančných operáciách.

The largest share, over three quarters, is spent on education, amounting to 1 704 036 175,59 EUR. In the second place, the volume of funds goes to universal public services in the amount of 985 149 056,91 EUR. (FIN 1 – 12, 2012 – 2017) In the case of municipalities, this class should be understood as administrative expenses and staff, material provision for municipal institutions. It does not include those institutions that are engaged in activities specified by another class of functional classification, such as schools. (Legend for COFOG) In this category 81.13% expenditures are intended for the municipality authority and office, 12.52% for public debt transactions, 6.35% for financial budgetary matters and other general public services.

The third class in terms of municipal expenditures is the economic area with a volume of 438 671 971,88 EUR. 80,87 % of this class goes to roads and rail transport. (FIN 1 – 12, 2012 – 2017) This concerns road management and supervision over roads. This includes grants, loans and subsidies for construction and maintenance. (Legend for COFOG) The other less than 20 % are different constructions and care for the general labour area. (FIN 1 – 12, 2012 – 2017) The term constructions does not mean expenditures related to the constructions itself, but the costs associated with supervision of constructions, regulation, standardization and certification. The concept of general working area is the expression of labour affairs, cooperation with other levels of government and the private sector. (Legend for COFOG) Agriculture, forestry, hunting, fisheries have only a minimal impact on municipal budgets.

346 206 307,44 EUR was budgeted for housing and civic amenities. Of these, 45,07 % were categorized as municipal development (FIN 1 – 12, 2012 – 2017) with the aim of administration and development of services, planning, improvement of facilities, development of public utility facilities, maintenance of parks, orchards, playgrounds. (Legend for COFOG) Development expenditures

no longer include the construction itself. 54.93 % was earmarked for housing development, public lighting and other civic amenities and housing.

The fifth class is environmental protection with a reserved finance amount of 291 780 238,37 EUR. Of this amount, 72,98 % is waste management, 16,36 % is wastewater management and 10,66 % is pollution reduction, nature and landscape protection and other environmental activities. (FIN 1 – 12, 2012 – 2017) Waste management combines transport of waste, its collection, sorting, recovery and disposal. Within the waste water the sewerage system is managed, sewer networks are built, water is cleaned by valid methods such as mechanical, biological, chemical etc. (Legend for COFOG)

254 007 571,41 EUR was earmarked for recreation, culture and religion. Recreation-sports services and cultural services, each receiving over 40% of that amount. 15% was divided between publishing, religious and other cultural services. (FIN 1 – 12, 2012 – 2017) This kind of service is provided to individuals or groups on a collective basis. Culture for municipalities consists especially from the operation of cultural and sports facilities such as playgrounds, sports halls, swimming pools, gymnasiums, libraries, galleries, museums, memorials, but also from the support of people, i.e. athletes, artists, grants. In addition, municipalities prepare strategies, implement laws, apply research in recreation, culture, religion and perform other tasks. (Legend for COFOG)

The social security area with a volume of 188 307 166,97 EUR was placed below 5% of total expenditures. The largest part in the amount of money – 70,45 % head for old-age people. It is followed by social assistance to citizens in material and social need with a share of 14,4 % and 15,15 % is directed mainly to the areas of family and disability. A small amount around 1 percentage point was provided to solve unemployment, illness. (FIN 1 – 12, 2012 – 2017) As regards the category of old-age, it also includes, inter alia, the provision of nursing services for old-age pensioners, who are dependent on the assistance of another person, for the purposes of necessary household work and basic life activities, the provision of funds to nursing facilities. (Legend for COFOG)

2.2 Structure of expenditures

Table 2. Structure of expenditures and financial expenditure operations by economic classification in 2017 in EUR

Current expenditures		**3 491 758 464**
	Wages, salaries	1 333 185 002
	Insurance	485 119 019
	Goods and services	1 188 343 578
	Current transfers	467 784 887
	Interest payments (loans, repayable financial support)	17 325 978
Capital expenditures		**636 539 031**
	Acquisition of capital assets	598 636 898
	Capital transfers	37 902 133
Expenditures from transactions with financial assets and liabilities		**163 667 418**
	Loans, repayable fin. assistance and other expenditure operations	25 362 239
	Principal repayment	138 305 18
Expenditures without financial operations		**4 128 297 495**
TOTAL EXPENDITURES (including financial operations)		**4 291 964 913**

Source: own processing according to FIN 1 - 12: 2012 – 2017: Finančný výkaz o príjmoch, výdavkoch a finančných operáciách.

Most funds went to paying wages and salaries. In the case of municipalities, there are mainly tariff, basic and personal salaries with a volume of 1 100 973 460,12 EUR. Health insurance is paid mainly to the General Health Insurance Company, where 68,8 % of it is directed. 340 742 776,72 EUR went to the Social Insurance Agency for all types of social insurance, including contributions to the Solidarity Fund. Employees contributed to the third pillar of old-age savings 10 728 915,36 EUR. Expenditures on goods and services include part of 21,64 % of general municipal services, 15,35 % of routine maintenance of buildings, 14,11 % of energy payments, 8,01 % of food, 6,18 % of material. Other types of expenditure such as meals, water, sewerage, off-job wages, fees, interior furnishings and others were below 5 % in this group of current expenses. Current transfers to contributory organizations with a 24,97 % portion in current transfers have a significant weight. 19,95 % of transfers was directed to the transport companies. Other types of transfers did not exceed 10%.

Acquisition of capital assets consists of 43,65 % of expenditure on reconstruction and modernization, 30,98 % is determined for the revitalization of new buildings, 6,81 % for the purchase of buildings. The preparation of project documentation, purchase of land, tools, technology, vehicles and other groups of capital expenditures take less than 5 %. The main contributors to the expenditure financing operation were repayments of long-term bank loans – 96 558 681,27 EUR, short-term bank loans – 9 240 239,62 EUR and other debt instruments – 26 967 036,62 EUR. (FIN 1 – 12, 2012 – 2017)

During categorizing of expenditures according to functional classification the most resources goes to education, which is also under pressure. Municipalities are trying to change the funding of this competence. A high share of funding for schools should not endanger the financing of other areas of public goods. As it is known from practice that capital investment depends primarily on income from parties other than the municipal's own revenues, therefore their fluctuation is linked to the announcement of possibilities to draw funds from, e. g. the European Union Structural Funds. The increase of current expenditures may be related to the increase in municipal revenues, especially tax revenues.

Conclusions

The data are from year 2017, because at the time of the solution the data were not available for year 2018. In the area of revenues it was found that the total revenues of municipalities increased with the increase of the population. Municipalities under 1 000 inhabitants achieved an average income – 712 EUR, while municipalities between 1 000 and 2 000 inhabitants had an average income – 792 EUR. It has been shown that tax revenues have reached the highest ratio on total revenue. Grants and transfers followed their non-tax revenues. Fourth, with approximately the same share were the proceeds from transactions in financial assets and liabilities and loans and repayable financial support.

The selection of expenditure by function showed that 39,70 % went to education, i.e. regional education, especially at kindergartens and primary schools, 22,95 % to general public services, 10,22 % to economic, 8,07 % for housing and civic amenities, 6,80 % for environmental protection. Other areas ended up below 5 %. Current expenditures reached the highest share of total expenditure. Capital expenditures were ranked second in the share of total expenditures.

The correct structure of revenues and expenditures and their stability over time ensure the proper functioning of the public sector along with other factors. It is important that the original and delegated competences of the local authorities are always supervised and the financial structure of the budgets is adapted to them. Justice must be taken in mind when allocating funds to municipalities and small municipalities must not be disadvantaged. When allocating tax revenues, it is necessary to respect a certain autonomy of local governments, but they must not be misused as a result of which certain competences will be neglected. Expenditures must be sustainable and authorities

should respect interdependence of current and capital expenditures.

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PUBLIC ELECTION AS AN IMPORTANT PART OF DEMOCRACY

Martina JAKUBCINOVA

Abstract

Public election is an important element of modern democracy. It is an achievement of democracy built on the State power sovereignty. This power is derived from the sovereignty of citizens, thus enabling citizens to participate in governance. Governance can be direct or indirect, based on a functioning system of regular free elections. The present article points to a change in preferences and degree of use of the right to participate in the presidential election as a voter. It also maps the current situation and expectations of Slovak citizens in relation to the new Head of State. For this purpose, we conducted an opinion survey in which we followed the respondents' attitude to the issue of the Head of state. Therefore, we try to draw conclusions from the results in this article.

Key words

Constitution, Democracy, President, Public election, Voter

JEL Classification: D72, H70, H11.

Introduction

Making decisions in everyday life is not easy. This is much more difficult if you have to decide on the fate of the country and its citizens. In the distant past, these decisions were made by monarchs. The common people could only dream of promoting their own proposals in this area. Over time, billions of people now have this right in many countries of the world. Modern democracy is built on the possibility of freedom of expression through public election. Thanks to it, the fate of the country is regrouped to the citizens of the State. It should be our responsibility to participate in its transformation and to actively address the burning issues. In this context, we looked at the results of the presidential elections held in 2019. At the same time, we conducted our own survey, which we compare with the official results of companies mapping satisfaction with the outcome of the presidential election.

1. Public election as a tool for solving the State issue

Public election is a powerful decision-making tool based on collective preferences. Tullock (2008) refers to public election as a way of "using economic tools to solve traditional problems of political science". It is also important to realize the fact that, although it is a vote of individual, it rarely, almost never, decide about elections. In the context of collective decision-making, the integration of individual preferences into collective decision-making is therefore important, which can be regarded as a fundamental pillar of public election. The mission of the public election is to enable citizens to participate in the administration of the State, to develop the principles of an open society and to eliminate unwanted issues in the community.

1.1 Public elections as part of democracy

Democracy in modern understanding is characterised as people rule. It consists of possibility of expressing and deciding. The world's first known democracy (around the 5th - 4th centuries BC) is tied to Ancient Greece and its leader Cleisthenes. Cleisthenes introduced a system of political reforms in which the ancient Greeks were the first to advocate the idea of active participation and the role of citizen in state administration (Meiggs, 2013). To dispose of and use the freedom of the free people (Cartwright, 2018) can be described as a revolutionary idea of the ancient period. The unprecedented system of equality of votes of the free people (one voter = one vote) is so progressive that in terms of regularity and justice nothing has been invented to date more effectively. Within the current organization of the world, up to 99 states (50.25% of the world states) defined by the UN (own borders and fully independent government) are in favor of democracy.

In connection with the theory of public elections, it is also important to appeal to the reciprocity of the economy and politics. As stated by Kútik (2013), there is a parallel between the market

mechanism and the public election mechanism. Both mechanisms are built on buyers / clients and sellers. The market mechanism creates an economic market, with the intention of making a profit. The public election mechanism creates a political market that aims to achieve trans-individual goals, that is, the public interest. In both mechanisms there is competition for the client / customer and the production of goods (material / immaterial).

Involvement in the public election process can be described as the most important indicator of a democratic society. However, it remains true that even if the voter is the most important player in the public election, "he is largely ignorant of political issues" (Downs, 1957). The voter has its own system of evaluating the providers of goods (candidates). On this basis, it always chooses, as reported by Malý et al. (2012), "better" (for yourself). Voters cannot rationally assess the implications of such a decision (Kútik, 2011).

Table 1. Obligatory turnout

Country	Type of sanction				Comments
	1	2	3	4	
Argentina	x	x	x		
Australia	x	x			
Belgium	x	x	x	x	
Bolivia		x	x		18 years of age(married); 21 years of age (single).Mandatoryvoting by lawbut are yet to enforceit.
Brazil		x			
Bulgaria					Mandatoryvoting by lawbut are yet to enforceit.
Costa Rica					Mandatoryvoting by lawbut are yet to enforceit.
Democratic Rep. of the Congo					Mandatoryvoting by lawbut are yet to enforceit.
Dominican Rep.					Members of themilitary and national police cannotvote. Marriedpersonsregardless of age. Mandatoryvoting by lawbut are yet to enforceit.
Ecuador	x				Up to age 65.
Egypt	x	x			Mandatoryvoting by lawbut are yet to enforceit.
Gabon					Mandatoryvoting by lawbut are yet to enforceit.
Greece					Mandatoryvoting by lawbut are yet to enforceit.
Honduras					Mandatoryvoting by lawbut are yet to enforceit.
Lebanon					Excludesmilitarypersonnel. Mandatoryvoting by lawbut are yet to enforceit.
Liechtenstein	x	x			Up to age 70.
Luxembourg	x	x			
Mexico				x	Mandatoryvoting by lawbut are yet to enforceit.
Nauru	x	x			
Panama					Mandatoryvoting by lawbut are yet to enforceit.
Paraguay		x			Up to age 75.
Peru		x	x		Up to age 75.
Singapore		x	x	x	
Thailand					Mandatoryvoting by lawbut are yet to enforceit.
Turkey	x	x			
Uruguay		x	x		

Type of sanction: 1 Explanationvs. Sanction , 2 Finesanction, 3 Disenfranchisement, 4 Ordersanction
Source: ownprocessing by IDEA (2019)

His long-term interest in addressing political issues is absent. We believe that voter education is needed (Brooks, 2018, ACE, 2015). It is also necessary to emphasize the importance and personal responsibility of the voter (Tuck 2008, OSCE, 2012, Acevedo, Krueger, 2004). However, if we misinterpret these facts, there may be an undesirable effect, the consequences

of which may be fatal. Significantly, voter decisions signify the participation model - the right of the citizen to vote versus obligatory voter turnout (Table 1).

1.2 The President as one of the representatives of democracy

The president is the supreme executive of the State and the Head of State. However, the universality of the post of president is not possible. It results from historical, geopolitical and many other contexts. For this reason, the real power of the President is classified as a presidential office with high powers and responsibilities (USA) and an office with relatively weak and largely ceremonial responsibilities and powers (the vast majority of Europe). In the second category, the Prime Minister (the "Executive Director") holds a strong executive position.

The second model applies in the Slovak Republic. According to the Constitution of the Slovak Republic (Act No. 460/1992), the President is a representative of the State and its Head, but the highest executive body is the government. Nevertheless, it is for the President to convene the constitutional meeting of the National Council of the Slovak Republic and its dissolution, appointment and dismissal of representatives and members of the government, central state administration bodies, professors, rectors, judges, to hold a referendum or to ask the government for information to perform its tasks.

However, we would like to draw attention especially to the change in presidential election method and putting the president into office. According to the original text of the Constitution of 1992, the election of the President was in the hands of representatives of the National Council of the Slovak Republic. The winner came from a secret election, requiring at least 3/5 of the constitutional majority (90 votes).

In practice, however, the election of the second democratic Slovak president has been stalled (Table 2). During the 5 regular rounds of the election of the Head of State (subsequent rejection of new candidates) insufficient number of deputies participated in the electoral act. At that time, the post of President was held by the Prime Minister. Based on this fact, discussions were held as to whether the Slovak Republic needed such a post. Therefore, the way the Head of State was elected changed. The primary impetus was the impact of the Head of State election on constitutional conditions. That is why the Constitution was amended in 1998. Since this constitutional amendment, citizens have been directly involved in the election of the Head of State. The candidate for the post of the Head of State of the Slovak Republic must obtain an absolute majority of valid votes of all eligible voters. This should prevent the state that the Slovak Republic did not have a president. The amendment of the constitution also clarified the conditions for taking office. The President takes office at noon on the day of expiry of the mandate of the previous President by taking the oath by the President of the Constitutional Court of the Slovak Republic (formerly the President of the National Council of the Slovak Republic).

The author of this article maps the issue of public election. In this context, attention is paid in particular to the issue of the election of the President under the conditions of the Slovak Republic. When collecting and processing theoretical knowledge, information and data related to the issue, the author draws on the available sources. Analyzing and drawing conclusions leads to empiricism. The empiricism consists of the findings and analysis of the data resulting from our investigation. Respondents were addressed directly and through a distributed questionnaire with the intention of capturing a wider range of respondents (men-women, first-time voters). The results were processed using descriptive statistics and mathematical calculations. Tables were used to display the selected data. We have drawn conclusions based on deduction.

Table 2. Indirect election of the President of the Slovak Republic

Election	Candidate	Round No. 1	Round No. 1
		Number of votes	Number of votes
1993			
I.	Roman Kováč	69	78
	Milan Ftáčnik	30	31
	Anton Neuwirth	27	-
	Jozef Prokeš	17	-
II.	Michal Kováč	105	-
1998			
I.	Štefan Markuš	34	37
	Juraj Hraško	22	24
	Augustín Kurek	14	-
II.	Ladislav Ballek	49	50
	Milan Forgaš	5	0
III.	Milan Sečánsky	59	72
	Brigita Schmögnerová	43	47
	Zdeno Šuška	5	-
IV.	Vladimír Abrahám	13	-
V.	Otto Tomeček	86	86
VI.– IX.	-		

Source: own processing by ŠÚ SR

2. Data and methodology used in article

The article is based on the currently solved issue, which is the status of Public elections. Our goal is to highlight the relationship between citizens and head of state. When processing the theoretical knowledge and data related to the issue we were based on available resources related to the issue of Public election (print and electronic versions). We also used a questionnaire. We followed the respondents' attitude to the issue of the Head of state by The questionnaire. The questionnaire was distributed to 173 respondents who had the opportunity to comment on 6 closed questions. This questionnaire has been distributed citizens in print and electronic versions. The results were processed using mathematical calculations. In the final part of our work, we look at the conclusions we have drawn from the deduction.

3. Results and findings

The last election of the President of the Slovak Republic brings several firsts. These relate to the number of candidates (15 candidates), the volume of money invested (candidates € 2.7 million, third parties € 0.9 million) and the degree of transparency (Act of the National Council of the Slovak Republic 181/2014 Coll. On election campaign).

In monitoring the issue of the relationship between the amount of money spent and public opinion we can talk about causality, which is not clear (Table 3). Nevertheless, it can be stated that without sufficient financial security it is very difficult to succeed in this kind of policy. On the other hand, it should be stressed that the current political situation and political marketing (media reality, streaming, etc.) significantly influence success / failure. Thanks to the Election Campaign Act, we had the opportunity for the first time to closely monitor the movements and sources of funding for the election campaign (candidate, third party). The obligation to disclose flows related to it in a separate account has significantly contributed to the transparency and openness of the process.

Table 3. Results related to the election of the President

Candidate	Round	Campaigne			
		Own finances [€]	Rank	Third party [€]	Rank
	I.	Pre-election survey [%]		Result of election [%]	
	II.				
Béla Bugár	-	382 861,72	4.	46 233,07	6.
	I.	4,1	5.	3,10	6.
Zuzana Čaputová	-	499 438,72	1.	158 741,14	3.
	I.	46,3	1.	40,57	1.
	II.	60,5	1.	58,40	1.
Martin Daňo	-	0	15.	0	-
	I.	0,3	11.	0,51	9.
Štefan Harabin	-	344 704,41	5.	-	-
	I.	11,7	3.	14,34	3.
Eduard Chmelár	-	32 039,80	11.	-	-
	I.	4,0	6.	2,74	8.
MarianKotleba	-	55 655,63	10.	98 799,18	4.
	I.	9,5	4.	10,39	4.
Milan Krajniak	-	193 989,36	6.	94 466,30	5.
	I.	2,4	8.	2,77	7.
József Menyhárt	-	61 772,22	9.	16 926,89	7.
	I.	-	-	0,05	15.
František Mikloško	-	64 696,64	8.	-	-
	I.	4,0	6.	5,72	5.
Robert Mistrík	-	454 161,51	3.	227 799,83	2.
	I.	-	-	0,15	13.
Maroš Šefčovič	-	492 336,07	2.	262 533,23	1.
	I.	15,2	2.	18,66	2.
	II.	39,5	2.	41,59	2.
Róbert Švec	-	764,87	14.	-	-
	I.	0,3	11.	0,3	10.
Bohumila Tauchmannová	-	24 706,88	13.	-	-
	I.	0,5	9.	0,16	14.
Juraj Zábojník	-	73 178,94	7.	-	-
	I.	0,5	9.	0,28	11.
Ivan Zuzula	-	27 284,72	12.	-	-
	I.	0,3	11.	0,17	12.

Source: own processing by MV SR (2019), statistic,sk (2019)

Based on the results of the presidential elections, Zuzana Čaputová took office for 2019-2023. She is the first woman in this position since the establishment of an independent republic. More than 150 days have passed since her appointment. It is therefore possible to address the issue of citizens' satisfaction with the newly elected Head of State.

In the Trust Surveys (Focus, 2019 - The Trustworthiness of Political Leaders) we can speak of an increasing trend in the popularity and confidence of the Head of State. At the same time, we can say that from the first day of joining the political scene and taking office, she managed to rank among the most trusted people in this environment (June 49%, September 56%). We achieved the same result in our investigation (59% of respondents). The results (Table 4) also show that up to 80% of respondents are satisfied with the outcome of the presidential election. Among the respondents, 68% of men and women would vote for Zuzana Čaputová when re-electing the head of state. Another positive finding is the fact that the elections are not indifferent to the citizens of the Slovak Republic (voter turnout: 48% of eligible voters - 1st round, 41% of eligible voters - 2nd round).

Table 4. Investigation results (September-November 2019)

Questions												
Answers	18 – 23 years old				24-62 years old				more that 63 years old			
	women		men		women		men		women		men	
	n	%	n	%	n	%	n	%	n	%	n	%
Did you take part in the presidential elections?												
Yes	32	18,49	27	15,60	31	17,91	34	19,65	5	2,89	4	2,31
No	14	8,09	8	4,62	5	2,89	6	3,46	0	-	1	0,57
Undecided	0	-	2	1,15	1	0,57	3	1,73	0	-	0	-
Are you satisfied with the outcome of the presidential election?												
Yes	39	22,54	32	18,49	29	16,76	34	19,65	3	1,73	2	1,15
No	5	2,89	4	2,31	2	1,15	2	1,15	2	1,15	3	1,73
Undecided	2	1,15	1	0,57	6	3,46	7	4,04	0	-	0	-
Would you vote in the presidential election again?												
Yes	40	23,12	30	17,34	27	15,60	30	17,34	5	2,89	4	2,31
No	3	1,73	1	0,57	2	1,15	2	1,15	0	-	0	-
Undecided	3	1,73	6	3,46	8	4,62	14	8,09	0	-	1	0,57
Would you vote the same?												
Yes	32	24,06	23	17,29	29	21,80	27	20,30	5	3,75	4	3,00
No	0	-	4	3,00	2	1,50	5	3,75	0	-	0	-
Undecided	0	-	-	-	-	-	2	1,50	0	-	0	-
Would you elect a candidate other than the current head of state?												
Yes	7	4,04	5	2,89	3	1,73	8	4,62	2	1,15	5	2,89
No	33	19,07	28	16,18	30	17,34	30	17,34	3	1,73	0	-
Undecided	6	3,46	4	2,31	4	2,31	5	2,89	0	-	0	-
Do you consider the President as a trust worthy person?												
Yes	25	14,45	23	13,29	24	13,87	24	13,87	4	2,31	3	1,73
No	3	1,73	3	1,73	5	2,89	9	5,20	0	-	1	0,57
Undecided	18	10,40	11	6,35	8	4,62	10	5,78	1	0,57	1	0,57

Source: Focus, 2019 - The Trustworthiness of Political Leaders

On our results we can conclude that citizens are satisfied with the outcome of the presidential election. The popularity of our head of state is growing. Citizens continue to be interested in public affairs. On the other side, it is necessary to increase interest and participation in elections. Young voters notoriously neglect the importance of voting, but their voice is an important one on both sides of the aisle. Young people are the next generation in politics, and they should be involved to vote. When new generation understand politics, then they are able to do politics in the future better. Young people should be involved in training to take over the world when the older generation passes away. On the other side, we need people in older generations to be mentors, to guide political newcomers through the process of becoming involved. Participating in politics is difficult and often scary.

Conclusion

The post of the President of the Republic is a significant post. In addition to representing the country, it is also an indicator of democracy within the country. The possibility to intervene in its selection has different forms. The Slovak Republic experienced its choice in both indirect and direct form. We appreciate the fact that the citizens of the State elect this representative for themselves to this day. While participation in this act is not as great as we would like, it is nevertheless the best that we have achieved so far. The political situation is one of the keys we make when choosing a candidate for this post. The current situation presents the need for new direction and faces. This fact is confirmed not only by the results of the election itself, but also by other investigations or surveys. On the other hand, I call for the possibility of participating in elections to become a personal duty. Voters, and young voter especially, have the power to alter political future for the better. By losing this right we could get back a few decades, which would

not have a positive impact on the development and growth of the country, population and democracy. Voting in not only the presidential elections but also local elections is a practice that the young adults need to take up. People who do not vote have no right to complain about the state of the government or the policies being passed. It is time to take the country in our control.

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DISPARITIES AMONG REGIONS OF THE VISEGRAD GROUP COUNTRIES

Dana JAŠKOVÁ

Abstract

Regional disparities among countries and its measurement is an important topic in the frame of enlarged European Union. We can identify several approaches and methods of measurement and evaluation of disparities between states and regions at Visegrad group countries level. The methods differ in structure of using indicator of disparities and ways of their processing. The aim of the paper is to apply specific model of composite weighted aggregate index of regional disparities in the case of Visegrad group countries. In the theoretical part are briefly described various procedure of construction of Composite Indicator, their advantages and disadvantages. The construction of this aggregated indicator is based on the application of more complex and multidimensional statistical methods.

Key words

Regional disparities, Composite Indicator, multivariate statistical methods

JEL Classification: C34, C52, R23.

Introduction

One of the objectives of the European Union (EU) for increasing competitiveness is to improve the socio-economic level of the regions of its Member States. This is conditional on the level of economic and social development, which varies from one region to another. The region is perceived in the EU as both a major element and an indicator of economic development. The activity of improving prosperity and performance in the regions is referred to as regional policy. By regional policy we mean a set of objectives, tools, methods and measures that lead to reduction of disparities in the socio-economic level of individual regions. The reason for implementing regional policy is the different levels of social and economic development between regions, referred to as regional disparities in the specialist regional literature. Regional disparities create inequalities between individual comparison units. Disparities not only have a purely social and economic dimension, but can be understood more broadly, such as spatial, geographical, political, social, environmental inequalities. Disparities can be both negative and positive; they can be measured by several indicators. In practice, however, the comparison of regional disparities is limited by the availability of suitable data and the methodology of construction of some indicators. The most widely used indicators of regional disparities in practice are: Gross Domestic Product, Gross Value Added, Average Wage in the Region, Unemployment Rate, Infrastructure Level, Foreign Direct Investment Level, Population Data and the like.

The basic idea of the EU and the creation of an integrated European space is to continually increase competitiveness and continuously improve the economic development of a Member State. In the real world, the level of economic, economic and social development in EU countries is not the same. The aim of creating a balanced European area is the relative balance between regions, which is based on the principle of equalizing regional disparities. Knowledge of the economic level of regions and disparities is necessary because of the proposal of further steps for realization of development of individual regions. Regional development is a set of processes that take place within a defined area (region) and contribute primarily to positive changes in its socio-economic situation. The main role of regional development is to reduce regional disparities and promote economic growth with the aim of raising the standard of living of the inhabitants of the region. The definition of regional development is subject to a multidisciplinary (comprehensive) approach. This means combining knowledge from several scientific fields of which regional development is a part. These include: geography, economics, spatial planning, sociology, demography and the like.

This paper focused on Visegrad Group (V4), the Czech Republic, Hungary, Poland and

Slovakia, that belong among the transformed economies of the former Eastern Bloc and whose regions can be generally regarded as less developed when compared with the regions of the traditional EU countries (EU 15). The aim of this paper is to assess the development of disparities among regions of the Visegrad Group countries, to identify the way in which factors determine these disparities. To clarify the social and economic differences between the V4 regions, an aggregated indicator, called the Composite indicator, is applied. The composite indicator design uses more complex multivariate statistical methods.

1. Regional disparities

According to one definition of regional disparities (RD), this term can be understood as distances between regions in abstract metric space. This space can be described by either a selected region descriptor or a set of descriptors, both statically and dynamically. There is large literature on growth processes and with the heavy focus on disparity issue across the European states (Sloboda, 2006). In the previous period, progress was made in the methodology of measuring the dynamics of regional development. RD analysis requires the application of more complex statistical methods. For this reason, there are several universal indicators. We know two basic tools for measuring regional development - static and dynamic (Habánik et al.,2014). Static tools include Composite indicator. Beta and sigma convergence are the most widely used concepts of dynamic analysis.

In this article we follow especially the literature where the Visegrad Group states have been examined. We follow both the classical studies (Nardo et al., 2005; Saisana et al., 2005) and the recent studies (Cuaresma et al., 2014; Zdražil, Kraftová, 2012). The literature provides mixed results on the study of growth disparities – their extent and nature; based on different approaches and its main objectives. Of course, the economic theory says that the effects of economic integration are very ambiguous. However, most authors do agree that the liberalization of the economic environment, in connection with integration, does at least develop the market, and increase pressure to achieve efficiency and higher living standards. Thank to this it can generally be regarded as a beneficial phenomenon. According to some studies the effects resulting from this integration are so unequivocally positive for the participating regions that the fact is indisputable.

The theoretical literature on the development of regional disparities and their relationship to social and economic factors are really wide, even if we are focusing on the Visegrad Group countries and examining the last one or two decades. Smetkowski (2014) underlined that the central and Eastern European countries which became members of the EU have significantly caught up in affluence in relation to the “old” Member States (EU 15). It was a result of a good economic climate until the financial crisis. Kutcherauer et al. (2010) explained that the value of dispersion indicator of regional GDP has fallen down in the whole EU27 within 2001 and 2007.This indicates a convergence process. Regional disparities have grown up in the newest member countries, including countries V4. Koisova (2019) examines regional disparities of V4 countries using the RCI index and the DEA model.

Measurement methods, individual instruments and levels of regional disparities can be classified from different aspects. From the aspect of mathematical difficulty to simple and complicated. By the time to static and dynamic. According to the informative value of deterministic and stochastic, from the material point of view one-dimensional and multivariate. Depending on the number of regions involved in the bi-regional and multiregional analysis. The combination of methods is predominantly used, which provides better opportunities for disparities evaluation (Michálek, 2012).

Several authors recommend using multiple indexes when measuring RD size. It would be best to use a more comprehensive indicator that would be able to capture and describe the widest spectrum of disparities and predict their real level. Summary or complex indicators are simplified models of reality. The construction and consequently the measurement results through these models include some aspect of subjectivity. When selecting indicators, as well as the method of numerical processing (Michálek, 2012; Melecký, 2016).

2. Materials and methods

The analysis of regional differences of V4 countries is evaluated in the paper using an aggregate indicator known as the Composite Indicator (CI). A detailed methodology for its construction was published by the OECD in 2008 (OECD, 2008). The OECD's Handbook on Constructing Composite Indicators (Nardo et al., 2005) describes different methodologies that can be applied to combine varied information in to construction CI. Saisana et al. (2005) describe seven steps in which uncertainties arise in the construction of a composite indicator: selection of sub-indicators, data selection, data editing, data normalization, weighting scheme, weight's values and composite indicator formula. A composite indicator is an indicator that is constructed from several sub-indicators, which are often non-directional, have different levels and variability, and exhibit different degrees of interdependence in pairs. Sub-indicators assess the region from different, often contradictory, perspectives. The composite indicator, constructed from these sub-indicators, should allow a more comprehensive, coherent and synthesizing view of the level of the region. (Minařík, 2013)

Composite indicators which compare region performance are increasingly recognized as a useful tool in policy analysis and public communication. The number of *CI*s in existence around the world is growing year after year. Bandura (2008) cites more than 160 composite indicators.

Despite the growing interest, composite indicators represent a controversial object. The lack of a standard method of calculating it, and in particular the presence of subjectivity involved in the way it is constructed, gives rise to a justified distrust. (Booysen, 2002). Aggregation fulfils the important purpose of comparing several regions. The development of the landscape can be monitored using a composite indicator. CI summarizes and completes the view of such multi-faceted phenomena as human development, social inclusion, knowledge economy, competitiveness. However, the summarizing process inevitably leads to a loss of basic information. If more than one sub-indicator is entering the aggregation, it may happen that the first country is better compared to the two regions and the second country is better than the other. Micklewright (2001) argues that, in the absence of a good composite index, excessive public attention can once again focus on only one or several dimensions, thereby abolishing the original intention to render a multidimensional phenomenon. In fact, this could compromise the credibility of the evaluation of regions.

2.1 Properties of composite indicator

The assessment of the social development of the region is diverse, taking into account the purpose pursued, the choice of method and its correct application, as well as the choice of indicators for their evaluation. A key role is played by the way they are integrated into a single indicator and the subsequent correct interpretation of the results. The indicator represents a special subset of the statistical results. The indicator is a statistical tool that monitors the nature and level of phenomena and processes, monitors their evolution, changes and trends. This implies certain characteristics of the indicator: significant, transparent, analytical, complete, credible, internally and externally comparable, inter-temporal. (Michálek, 2014)

These requirements must be respected when selecting appropriate indicators. The number of indicators should be neither small (distorted real situation) nor too large (loss of clarity and transparency of interpretation). Indicators must be regularly measured and officially published. When assessing the development of the region, there is a logical need for an integrated view of the issue under consideration. This is related to the CI design . There are currently several ways to calculate it. One of the most modern approaches is the construction of the so-called BoD - Benefit of the doubt composite indicator (Rogge, 2012; Cherchye et al., 2007). Its construction is using DEA models (Verschelde, Rogge, 2012).

The construction of the CI composite indicator can be described by the following steps:

1. Creation of a theoretical framework
2. Selection and combination of sub-indicators, assessment of their importance and statistical

characteristics, normalization and aggregation of original indicators, determination of their weights
3. Add missing data, multicriteria analysis
4. Stardatization
5. Assignment of weights to a pointer
6. Aggregation
7. Uncertainty analysis
8. Joining the constructed composite indicator with the original indicators, visualizing the results.

Summary indicators have both advantages and disadvantages. The following table briefly summarizes the positive and negative aspects of the aggregated indicators.

Table 1. Positive and negative aspects of the CI

Advantages	*CI* can be used to summarize a complex phenomenon and thus facilitate decision making
	CI may be easier to interpret than the set of indicators used to construct it
	CI makes it easy to compare the performance of a given region over time with other regions
	CI can help simplify the set of indicators while adding new information.
Disadvantages	*CI* may lead to incorrect and non-robust conclusions if it is incorrectly constructed or interpreted.
	The possibilities of simple *CI* interpretation can lead to simplified conclusions, *CI* should be used together with input indicators to more sophisticated conclusions.
	The construction of *CI* involves several decision phases.
	Using weights can be a source of debate.
	The use of *CI* increases the amount of data required because it is necessary to collect data for all input indicators. Missing data reduces the quality of statistical analyses.

Source: Saisana and Tarantola, 2002

Methods for the compilation of aggregate indicators include direct aggregation techniques, methods used for data purification, their modification, statistical processing and control of the results obtained and their presentation. A well-designed aggregate indicator should always include partial trends as well as contradictory developments of individual components and factors. When constructing the composite indicator, it is important to proceed from the correct definition of the measured characteristics and also from the knowledge of the essential links of the problem under investigation (Hrach, Mihola, 2006).

From a mathematical point of view, it is necessary to keep in mind the aggregate indicators that generally apply to all mathematical models. These indicators can never perfectly describe the reality as a whole, they only testify to the part that has been described by the data, and the telling level is always due to the methods used to process the data (Hrach, Mihola, 2006).

2.2 Methods of construction of summary indicator

Methods of construction of aggregate indicator can be divided into statistical-analytical methods, which are focused on the selection of sub-indicators and statistical-descriptive methods, which allow calculation of the aggregate indicator.

The essence of analytical methods is to verify the validity of hypotheses about the significance of individual variables and the suitability of the model in terms of their mutual relations. These methods can be classified as exploratory or extrapolation methods of data analysis.

One-dimensional statistical methods are based on the calculation of basic statistical characteristics, as well as on graphical and tabular representation of data. The basic statistical characteristics provide information on the properties of the population in terms of revealing variability, degree of symmetry and spike, the normality of distribution, and also revealing outliers and suspicious elements in the selection. The identification of outliers is the first impulse to doubt whether the data originates from a normal distribution. This assumption is important, but is often not critical to all methods. Normality can be assessed using graphs and tests.

Multivariate methods do not have predefined hypotheses that would lead to a decision to accept or not. To a large extent, these methods depend on the experience of analysts, expertise

and knowledge of the subject matter. When constructing aggregate indicators, these methods serve to find the optimal number of key indicators. These are cluster analysis, correlation analysis, and major component analysis. The methods of multivariate statistical analysis, which are used to analyse regional disparities, provide us with solutions to the following tasks:

- reduction of excessive number of variables,
- multivariate classification that allows rules to be used to classify objects into one of several group,
- object typology, or ordering or hierarchical sorting into relatively equal groups and determining the order of these groups according to selected criteria.

The statistical-descriptive methods allow the compilation of an aggregate indicator using aggregation techniques and an analytical-hierarchical process that is based on different ways of determining weights for individual sub-indicators in aggregating them. The starting point of all these methods is the matrix of entities (municipality, region, state) and their indicators. The aggregate indicator may be produced in a weighted and unweighted form. (OECD, 2008)

2.3 Construction of the composite indicator

The following methods can be used to normalize input indicators: Normalisation based on interval scales, Standardisation z-scores, Min-Max, Distance to a reference, Indicators above or below the mean, Methods for cyclical indicators and Percentage of annual differences over consecutive years.

We can define the weight in the context of composite indicator creation as a value that expresses the relative importance of the indicator in comparison with others. The determination of the weights of the indicators involved in the composite indicator can be accomplished by several methods. They can be divided into two groups. The first group consists of subjective decisions. This includes the following methods: Expert decision, Scoring method. The disadvantage of these weighting methods is, above all, a high degree of subjectivity, which is based on personal perception of preferences.

The second group consists of methods that are based on an accurate (objective) assessment of the weights of the original indicators. The following 7 methods are used in the analysis of regional disparities ($v = 1, \dots, 7$):

1. Equal weighting (EW)
2. Principal component analysis (PCA)
3. Benefit of the doubt (BOD)
4. Unobserved components models (UCM)
5. Budget allocation process (BAP)
6. Analytic hierarchy process (AHP)
7. Conjoint analysis (CA)

There is no uniform approach for aggregating individual indicators into one aggregate indicator. Saisana and Tarantola (2002) list several basic types of aggregation techniques that they consider to be the basic methods of aggregation. These methods are divided according to the way of inclusion of sub-indicators into the calculation into linear, geometric and multicriteria. Aggregation methods also vary. While the linear aggregation method is useful when all individual indicators have the same measurement unit, provided that some mathematical properties are respected. Geometric aggregations are better suited if the modeller wants some degree of non-compensability between individual indicators or dimensions. The MCA method is recommended in the case when highly different dimensions are aggregated in the composite, as in the case of environmental indices that include physical, social and economic data.

The following table (Table 2) shows the compatibility between the different methods of aggregation and weighting:

Table 2. Compatibility between methods of aggregation and weighting

Weighting methods	Aggregation methods		
	Linear	Geometric	Multicriterial
EW	+	+	+
PCA/FA	+	+	+
BOD	+ (Min-Max)	-	-
UCM	+	-	-
BAP	+	+	+
AHP	+	+	-
CA	+	+	-

Source: Saisana and Tarantola, 2002

3. The research results and discussion

As a reference point for the analysis we chose regions at the NUTS II level, since NUTS II is the default level at which EU regional policy is implemented (European Commission, 2015). Within the Visegrad Group countries we are therefore working with a sample of 37 NUTS II regions, 8 of which are Czech (CZ1 – CZ8), 8 Hungarian (H1 – H8), 17 Polish (PL1 – PL17), and 4 Slovak (SK1 – SK4). Socio-economic disparities are characterized by some selected official indicators. For this analysis, it was selected 9 indicators that represent the most frequently indicators used in Cohesion Reports, some of them represent the EU Structural indicators. The reporting period was 2014 and 2017. Some important indicators (e.g. GDP) are not yet officially published in 2018. Indicators characterizing the socio-economic level of the region are given in the following table.

Table 3. Socio-economic indicators

Type of disparities	Indicator	Label
Economic disparities	Gross domestic product	1GDP
	Gross fixed capital formation	2GFCF
	Income of households	3IH
	Human Resources in Science and Technology	4HRTS
	Employment in technology and knowledge-intensive sectors	5ETKI
Social disparities	Employment rates (% of population aged 15-64)	6ER
	Employment rate of woman (% of woman population aged 15-64)	7ERw
	Unemployment rate (% of population aged 15-64)	8UR
	Long-term unemployment - 12 months and more (% of population)	9LUR

Source: Own research

The input data were subjected to statistical analysis. Data consistency and multicolinearity were excluded. Given the different unit of data examined, they were normalized by the Min-Max method, in the case of a positive scope, according to the relation:

$$I_{i,t} = \frac{y_{i,t} - y_{min}}{y_{max} - y_{min}}$$

and in the case of the negative scope of the indicator according to the relation:

$$I_{i,t} = \frac{y_{max} - y_{i,t}}{y_{max} - y_{min}}$$

where $y_{i,t}$ is value of i-th indicator in year $t\ (2014; 2017)$, y_{max} is a maximal value of i-th indicator and y_{min} is a minimal value.

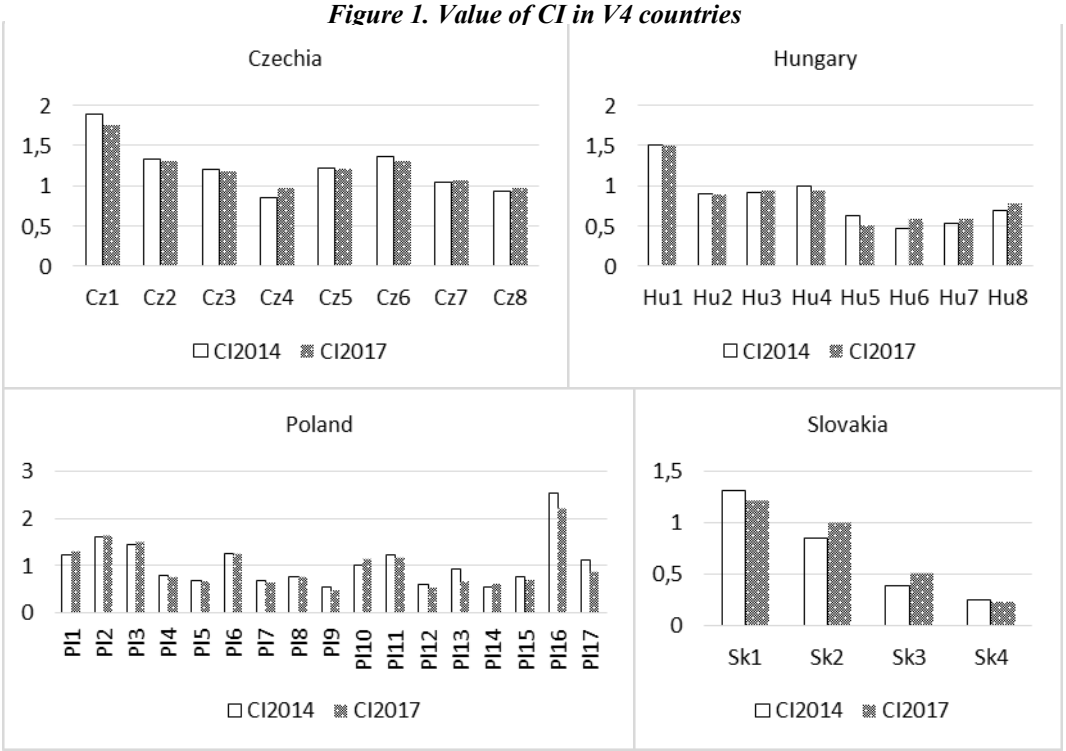
The first EW method was used to determine the weights of each indicator. Using equal weighting method, the equal weight is calculated for each indicator by formula $w_{1,i} = \frac{1}{Q}$, where Q is number of indicators. In this case there is a risk that pillar with more indicators will have a higher influence in the composite indicator. But in our case is only one pillar. The main strength of the method is the simplicity.

The principle of using the above method was that the values of the indicator were compared with each other I. The worst region was assigned a value of 0 and the best value was 1. In most countries, the capital was the best region in all respects. Subsequently, a composite indicator C_t^r was calculated for each region *r* in year *t* using a linear aggregation method based on the following formula:

$$C_t^r = \frac{\sum_{i=1}^{n} I_i^t . w_{1,i}}{\frac{\sum_{i=1}^{n} \sum_{t=1}^{T} I_i^t w_{1,i}}{R}},$$

The composite indicator takes values around 1. A value greater than 1 characterizes an above-average region. Value less than 1 below average region. In the following graph, in four figures, there is a comparison of regions within the country in 2014 and 2017.

Figure 1. Value of CI in V4 countries



Source: Own processing

In each V4, country is the highest ranked region per capita. (Cz1, Hu1, Pl16, Sk1). The highest value of the *CI* composite indicator is in the Warszawski stoleczny - Pl16 region (the capital of Poland), $CI_{2014}^{Pl16} = 2{,}55$ a $CI_{2017}^{Pl16} = 2{,}25$. The worst rated V4 region, in terms of the composite indicator, is the Eastern Slovakia region – Sk4, $CI_{2014}^{Sk4} = 0{,}25$ a $CI_{2017}^{Sk4} = 0{,}24$.

In the Czech Republic, the highest ranked region is Prague – Cz1, $CI_{2014}^{Cz1} = 1{,}89$, $CI_{2017}^{Cz1} = 1{,}76$. The worst is region Northwest – Cz4, $CI_{2014}^{Cz4} = 0{,}93$, $CI_{2017}^{Cz1} = 0{,}98$. Two regions are rated below average; the other six regions are above average. There is not much difference between regions, which means the homogeneity of the NUTS 2 regions.

Of the eight Hungarian regions, the best-ranked region is the capital city of Budapest

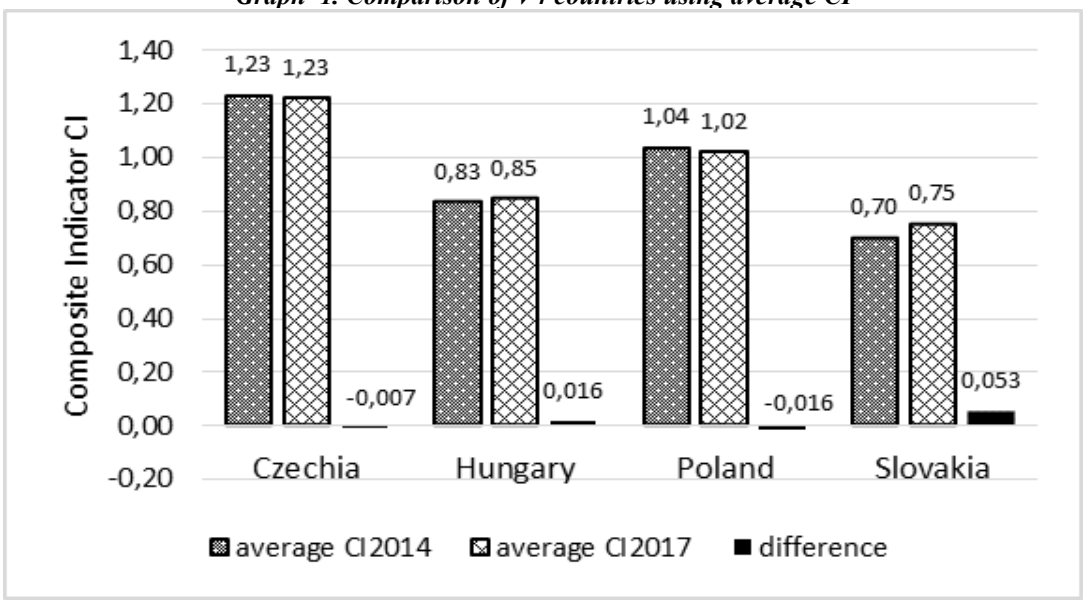
$CI_{2014}^{Hu1} = 1{,}51$ $CI_{2017}^{H1} = 1{,}50$. The worst rated region is Észak-Magyarország – Hu6, $CI_{2014}^{Hu6} = 0{,}48$ $CI_{2017}^{H1} = 0{,}59$. Unlike the Czech Republic, the difference between the best and worst regions is almost 1.

In Poland, the region of the capital is highly above average. *CI* is very high, also in comparison with other capitals of the V4 countries. Of the 17 Polish regions, 9 regions were rated below average. This shows the inhomogeneity of the Polish regions, at the NUTS 2 level. The worst rated region is Warminsko-Mazurskie – Pl9, $CI_{2014}^{Pl9} = 0{,}53$, $CI_{2017}^{Pl9} = 0{,}50$.

In Slovakia, four regions were evaluated at the NUTS 2 level. The highest rated region is Bratislava – Sk1, $CI_{2014}^{Sk1} = 1{,}31$, $CI_{2017}^{H1} = 1{,}23$. The worst rated region is Eastern Slovakia. As mentioned, this region is the worst rated region of all V4 regions.

The following graph shows the V4 countries compared to each other. For each country, the average *CI* value for all regions is expressed in both years and the difference between these values is expressed.

Graph 1. Comparison of V4 countries using average CI

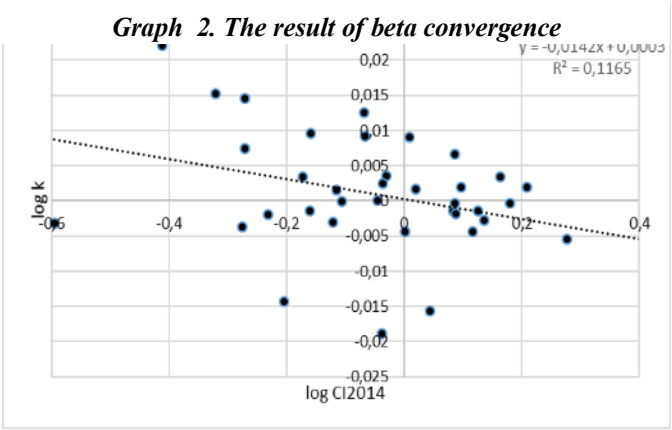


Source: Own processing

The best-rated country is the Czech Republic, while the assessment of its regions shows homogeneity. The average appreciation in 2014 and 2017 is approximately the same, above average in time. Poland is also on average, although there has been a slight decline over the period under review. Below-average V4 countries are Hungary and Slovakia. For these countries, there has been a slight increase in three years. The GDP indicator is very important for economic comparison of the V4 countries. The highest average value for all V4 regions in Poland is € 24186, followed by the Czech Republic € 19582, Slovakia € 1902, and Hungary's € 13193 is the worst in 2017. Hungary and Slovakia are lagging behind the Czech Republic and Poland in all monitored indicators in the period under review.

The reduction of regional disparities is finally analysed by beta convergence. The process of convergence means reducing the differences between objects over time. Under the concept of beta convergence, less developed regions are growing faster than developed ones. The subject of the research is the situation in 2014 and the situation at the end in 2017. The dependence of the growth coefficient k on the initial value CI_{2014} is examined. The result of the analysis is on the following chart.

Graph 2. The result of beta convergence



Source: Own processing

Obviously, over time, regional disparities are diminishing, as the regression coefficient is negative. Statistically, however, the linear regression is not significant as the coefficient of determination is $R^2 = 0{,}1165$. It can therefore be concluded that regional disparities between V4 regions do not diminish.

Conclusion

Nowadays, regional policy, European integration, cohesion policy and regional development are often deceptive expressions mainly in the context of the development of countries that are members of the European Union and countries whose priority is to continuous increase the political, social, economic and environmental level of their own regions. The priority of European integration is continually reducing disparities at the level of economic regions and to enable residents, businesses and others to participate in the benefits that the European Union has achieved in building a common area. The main problem of the European Union is regional disparities concerning differences in elementary economic indicators, competitiveness of economies and business entities. Following the accession of 10 countries to the European Union in 2004 and the subsequent accession of two Balkan countries in 2007, the size of the European market as well as its population has increased considerably. This has doubled the differences.

Regional disparities are evaluated in this article using an aggregate indicator, the composite indicator CI. The composite indicator is constructed from nine simple indicators. With a single value, one can comprehensively look at the position of the region in terms of several socio-economic aspects. The best-rated regions were the capitals of the V4 countries. Warszawa, the worst score in the Eastern Slovakia region, achieved a very high score. These results are generally known. Dynamic analysis was performed using the beta convergence method, subsequently. The analysis does not imply a reduction in regional disparities between the regions of the V4 countries.

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IMPACT OF THE SHARING ECONOMY ON FUTURE BUSINESS MODELS

Vilma KAROBLIENE, Vaida PILINKIENE, Anna FERUŚ

Abstract

The growth of the sharing economy is probably one of the most meaningful global socio-economic evolution in the past ten years (Koen Franken, 2017). The definition "sharing economy" is mostly used to describe the business model with digitized platforms for peer-to-peer exchanges (Geissinger et al., 2019; Belk, 2014; Juho et al., 2016). This article presents an approach to research that estimates the sharing economy and principally the main factors and conditions, what stimulates and drives the development of sharing economy as a perspective business model. Firstly, we define the understanding of sharing economy as one of the most engaging business models in nowadays according to economic literature study. Secondly, we conduct the analysis of the perspective and sustainable evolution of sharing economy mostly in the past decade. Furthermore, we identify forces which are driving the sharing economy for economic development. Thus, we design the conceptual framework of the sharing economy as a perspective and digitally based business model.

Key words

international business, business dynamics, economic development, sharing economy, business models, digitalization.

JEL Classification: O10, O11, O12

Introduction

The growth of the sharing economy and its importance on economic development stimulates questioning, what factors and conditions are encouraging the sharing economy as a perspective business model. In the recent ten years the definition "sharing economy" is constantly analyzed as one of the business models where digitized platforms operate in the process of peer-to-peer exchanges (Geissinger et al., 2019, Hamari et. al., 2016, Belk, 2014). However, Mi and Coffman (2019), Wilson (2014) highlight importance of a community-based online platform in the sharing economy, while others (Kathan et. al. 2016, Barhdi and Eckhardt, 2012), characterize this economic model as case with non-ownership and temporary access-based type of economy. Our research studies, mainly based on surveys done by Acquier et. al (2017), Richardson (2015), Frenken (2017), Srineck (2017), demonstrate the sharing economy as an umbrella conception with its main cores – access-based, community-based and platform-based economies.

Therefore, the economic research studies and statistical data presents that the sharing economy is creating considerably amounts of economic value to different types of sectors and especially it makes an influence on hospitality and transport sectors. In 2014, Airbnb received about 425,000 guests per night and it was generally 22% larger amount than Hilton Worldwide (PwC, 2015). Hereinafter, the sharing economy is developing rapidly and 105 million of U.S. inhabitants or 51% of U.S. adult population, were consumers of the sharing economy platforms as the users of the providers of goods and services in 2015 (Godelnik, 2017).

The aim of this article is to clarify the main factors and conditions what stimulates and drives the development of the sharing economy as a perspective business model and to put it into interpretation by designing a conceptual framework. Thus, we presented the main driving forces principally based on research studies of Hodkinson et. al (2017), Owyang (2013), Goudin (2016), Bocker and Meelen (2016), Frenken and Schor (2017), Curtis and Lehner (2018), Mi and Coffman (2019), and further, we conceptualized the framework of the sharing economy as perspective business model.

Yet, in economic research papers there are limited insights how the sharing economy has directly changed the traditional business models and what are the future reflections of the sharing economy versus the traditional business models, thus this could be the future economic research.

Understanding of the Sharing Economy

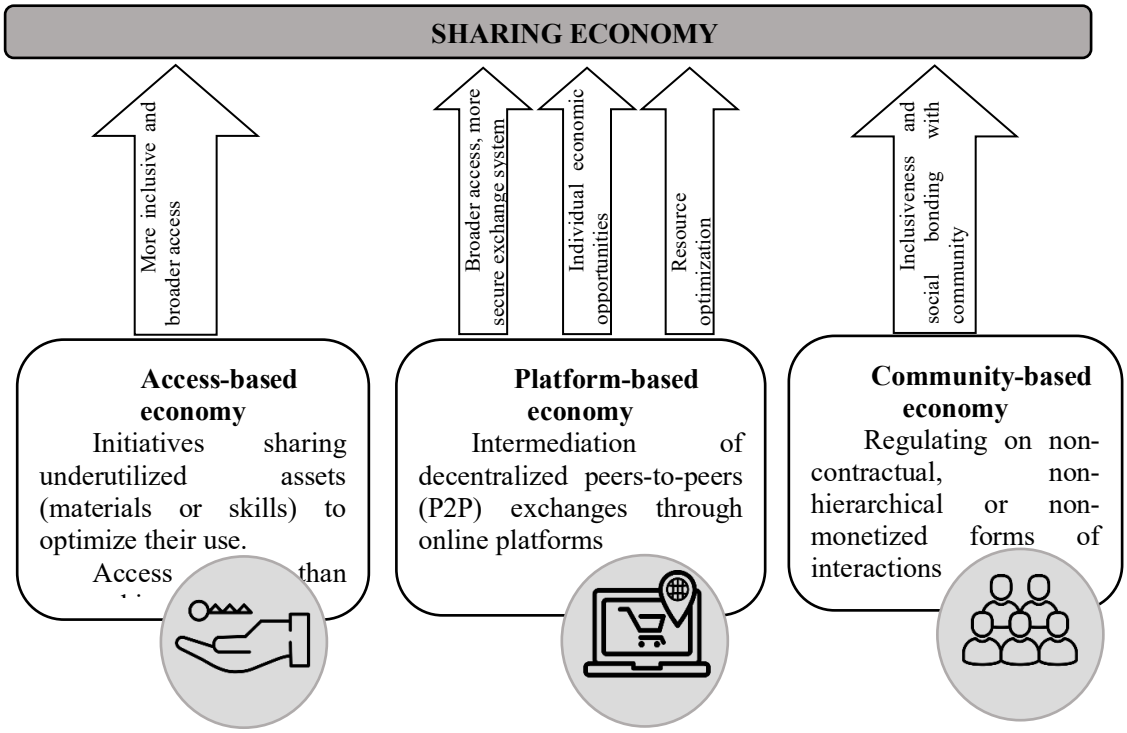
The prompt progress of the sharing economy over the last decade has significantly risen the usage of the definition "sharing economy" in research literature, but still there are a lot of discrepancies among researchers explaining this business model.

As highlighted by the European Economic and Social Committee (2016), the concept of the sharing economy has been trying to link a number of activities over the past couple of decades, and this business model that has become the subject of scientific discussion, covering a wide range of different activities, services and goods and recently has so far not had a single concept. In addition to the concepts of the sharing economy used in the scientific literature by researchers, there are considerable amount of its synonyms: "collaborative consumption" (Bostman and Rogers, 2010), "commercial sharing systems" (Lamberton and Rose, 2012), "co-production" (Humphreys and Grayson, 2008), "the mesh" (Gansky, 2010), "access-based consumption" (Bardhi and Eckhardt, 2012), "non-ownership form of consumption" (Habibi et. Al., 2017), "in web platforms facilitated peer-to-peer exchanges" (Aloni, 2016), "access-based consumption of products and services that can be online and offline" (Barnes, Mattsson, 2016) and so on. All these concepts have been suggested by different authors to avoid inaccuracies and ambiguities. Although, this term has recently become widespread among researchers, there is no common determination of sharing economy meaning. Thus, sharing economy interests substantially many different disciplinary issues including economy, marketing, customer performance, law, innovation, sociology, geography and anthropology (Acquier et al., 2017). This leads to the situation that it is difficult to characterize sharing economy in common and acceptable definition by different research audiences and this contributes to the sharing economy as an umbrella construct. According to our research study, definition "sharing economy" could be explained as an umbrella term not only for sharing of items, but also second-hand markets, exchange platforms, peer-to-peer lending, engagement economy (Frenken, 2017, Acquier et al., 2017) which operates through online platforms (Hamari et al., 2016). Examples of such kind of business models are Zipcar, Airbnb, Uber, Freecycle, Facebook, YouTube, Twitter and other business models where customers can online access and use item corresponding to their needs.

Based on economic literature review, sharing economy conceivably could be described as model, acting on these essential cores: access economy, platform economy and community-based economy (Acquier et al., 2017, Figure 1). Considerably, corresponding aspect about the sharing economy, presented by Richardson (2015), is that this business model operates through three performances: community, access and collaboration.

In the access -based economy consumers make transactions, who are built not on the ownership of the goods, but on the accession to them, and this promotes to the optimization of the use of different items. The access-based transactions have been long existed in for-profit business models (for examples leasing furniture, or rental equipment) and in non-profit business models (for example taking books for reading in public libraries). Consequently, the access economy has been transformed into the model offering services as an alternative to the products, and a lot of items are shared now rather than being purchased, and this kind of economy could be non-profit, or for profit, public – private collaboration, or cooperative case (Acquier, 2017).

Figure 1. The main cores of the sharing economy



Source – adapted model, based on Acquier et. al (2017), icons sourced from "The Noun Project".

Research conducted to Acquier (2017) study, shows that the access-based economy gives advantages for customers to achieve wider and cheaper services in short period. This makes an impact on environmental issues, because the access-based economy promotes sustainable solutions instead of irrepressible purchasing of products.

The platform-based economy is another essential core of the sharing economy. In economic literature it is defined that the platform economy is a package of performances that intermediately acts in a decentralized way between peers thought Web-based platforms. Based on Srineck (2017) research study, digital platforms arguably are gaining significant weight in contemporary capitalism. This idea supports Evans and Gawer's (2016) global survey resulting that about 70% of unicorns (private start-up company with a value upper than $1 billion) are platform based companies. The total value of such kind of companies was more than $4.3 trillion in 2016, so this demonstrates the importance of platform-based economy, which is also one of the core elements of the sharing economy. Such platforms generate economic value by linking and arranging transactions instead of producing themselves and create potent network effects on the whole ecosystem joining users and suppliers.

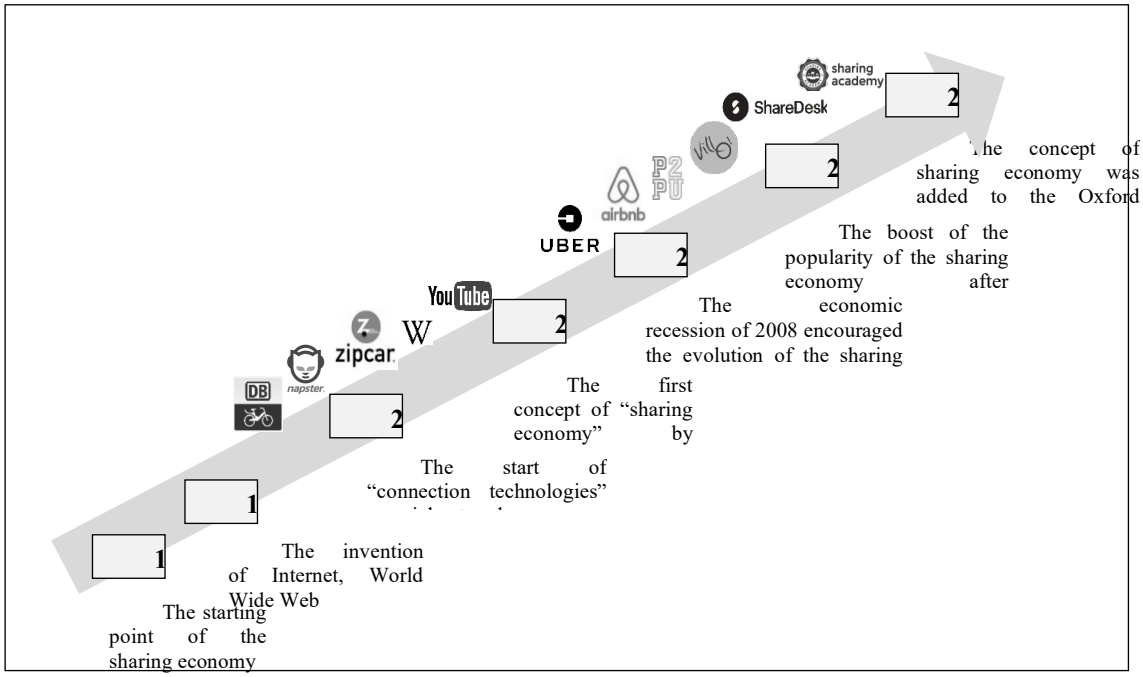
Evolution of the Sharing Economy

The interpretation of sharing as "consumers granting each other temporary access to their underutilized physical assets, possibly for money" (Frenkenand Schor, 2017: 4-5), points that the business model of the sharing economy exists as long as humanity itself. Such kind of collaboration was common among groups of relatives, families, friends or neighbours, but the scope of collaboration was limited because of trustworthiness of unknown customers (Frenken, 2017). The book "Community Structure and Collaborative Consumption: A routine activity approach" written by Marcus Felson and Joe L. Spaeth in 1978 is principally committed as the starting-

point of the sharing economy (Dudek and Salek, 2016). Although the content of collaboration consumption described in this book was far from the definition of the sharing economy used during this decade, but the idea of the sharing provided interest from the academy and business sides. The development of information communication technologies and expansion of Web 2.0 has enabled the progress of online platforms development generating user content and item sharing collaboration (Hamari et al., 2016) or as other researchers (Zhang et al., 2018) stated, expansion of the ways "for sharing underused resources and skills" (Figure 2). According to Marshall (2019) 1990 was the starting point of the modern sharing economy, when Berners - Lee, together with the team, created an innovative technology for public purposes, such as e-mail and user friendly Web. Initially, the Internet was mainly used mostly by the communities of researchers, but in 1995 it was already used for commercial purposes, too. The examples of such businesses are Book Stacks Unlimited, who started e-commerce in 1992 and Amazon, who was launched two years later. Ebay was established in 1995 by founder Pierre Omdyar with an aim to sell goods and services online and had an ambition to make a collaboration between individual sellers and as well as buyers (Marshal, 2015).

The development of modern technology was one of the key factors enabling evolution of the sharing economy in the early 21st century. Social networks and exchanging of data establishes trust among individuals who didn't know each other and promoted rapidly expanding sharing of underused items and experiences or skills. Such an example is Napster, allowing free of charge peer-to-peer sharing of digital audio and media files, and it is called the pioneering player in the role of the sharing, using information communication technologies. Another example is Call a Bike – German bike hire system established in 1998 and is operated since 2000. Subsequently, the exchanging of digital content, such as self-made video materials or photography included open source software storage (for example, GitHub, SourceForge), content sharing platforms (for example, YouTube, Facebook, Instagram), online encyclopedias (for example, Wikipedia) and peer-to-peer sharing (for example, The Pirate bay), became more and more popular (Zhang et al., 2019). The progress of social networks, or as Sunjoo Oh and Moon (2016) calls "connection technologies", enabled the boost of social relations, and this resulted the trust among the sharing items providers and users, and the development of the sharing economy. Furthermore, because of the advantages of social network technologies, product sharing became not forced by location and time. The era of social networking and data or item sharing platforms between consumer communities engaged the establishment of the first sharing economy-based companies offering car rentals (Zipcar, Greenwheels, GoGet), bike rental (Call a bike, City Rader), peer-to-peer money lending (Zopa, Lending club, Prosper), accommodation (Couchsurfing) and other services. Sunjoo Oh and Moon (2016), Hamari (2016) and others stated that two of the main reasons, that encouraged the evaluation of the sharing economy, are the global economic recession in 2008 and prompt development of communication technologies. Marshall (2015) points out that the boom in the sharing economy growth has been recorded in late 2008 after the global economic crisis. Declining consumer confidence in business, rising unemployment, falling consumer purchasing power have forced people to cut their expenses and explore new ways for earning money. The global economic recession influenced changings in habits of the individuals and for example one survey shows that Americans are reducing their consumption and are assuming about a simpler living by giving priority to sharing, but not owning (Sunjoo Oh and Moon, 2016). Goudin (2016) near the bellow listed two main reasons that forces the evaluation of sharing economy, lists factor of underused resources of skills. Particularly, during the economic recession, there were established sharing economy platforms such as Airbnb and Uber the world leading international business models.

Figure 2. Evolution of the sharing economy



Source – created by authors with logos from respective company websites.

After 2010, then Botsman and Rogers published the book "What's Mine is Yours: The Rise of Collaborative Consumption", the definition "sharing economy" has become considerably popular among researchers and business players (Cheng, 2016). Authors Bostman and Rogers were the first authors, who pointed the differences between the sharing economy and collaborative consumption. They marked that the main characteristic of the sharing economy is the usage of the platform, in which persons are sharing underused items. Nowadays the possibility to share a home, a car or a food became tangible with technology platforms like Airbnb, Uber, EatWith and others (Belk, 2014).

Thus, among researchers still there are a lot of discussions in explanation of definition "sharing economy", but despite of all these disagreements the concept of sharing economy was included to the Oxford dictionary in 2015 and it is clarified as "*An economic system in which assets or services are shared between private individuals, either for free or for a fee, typically by means of the Internet".*

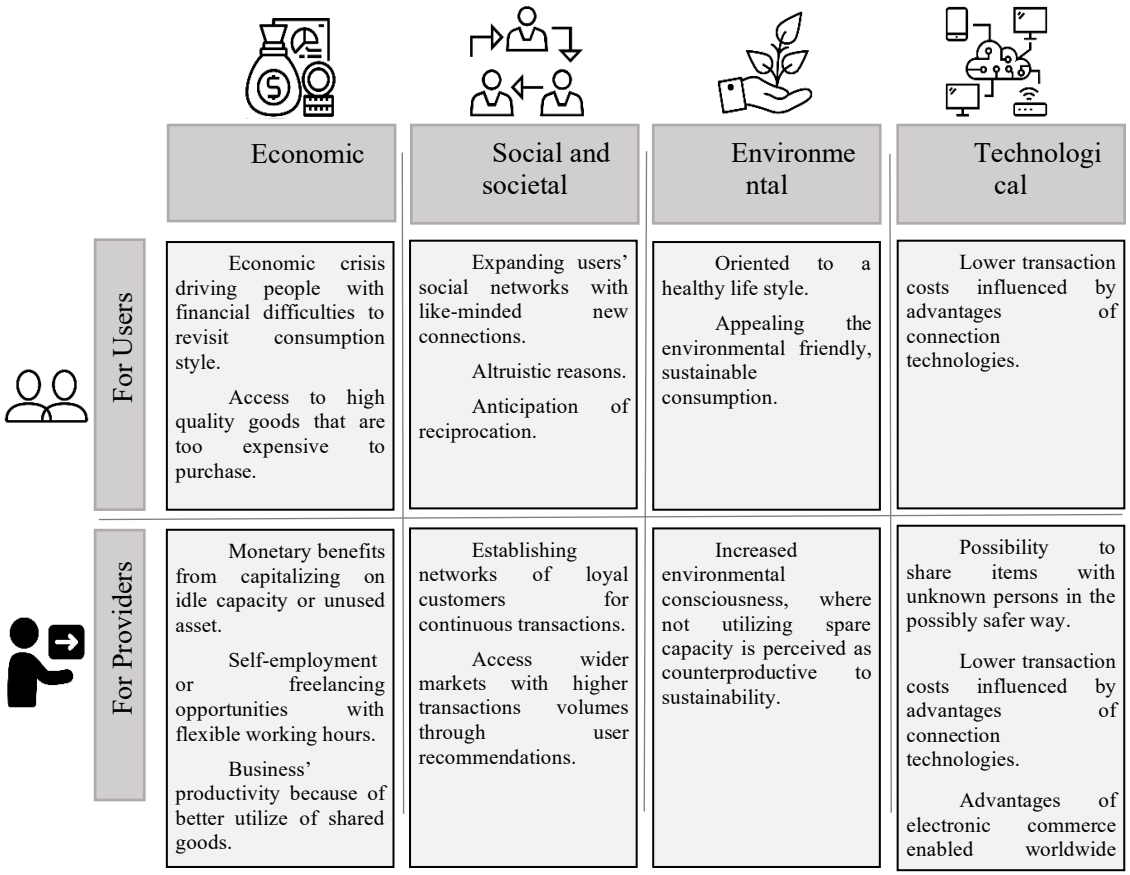
Driving Forces of the Sharing Economy

According to the report made by PwC (2015), the sharing economy produced $15 billion in revenue in the whole world in 2015, and it is forecasted that ii will produce $335 billion in revenue within upcoming ten years. Based on Campbell (2018), in China, corresponding to official figures, the sharing economy should generate approximately 10% of China's gross domestic product (GDP) by 2020 and it should even give rise to 20% by 2025. The same author reports that this model of economy operates $500 billion in transactions between around 600 million individuals in 2017. Thus, it is important to clarify, what are the most relevant forces, leading to such a significant role in the economic development with the perspective of the sharing economy.

Research studies based on works of Goudin (2016), Bocker and Meelen (2016), Hodkinson et al. (2017), Owyang (2013), argue that the sharing economy reveals on the various forces that are related to economic, social and societal, environmental and technological factors that affect users and providers of the sharing economy in various approaches (Figure 3).

The **economic, social and societal, environmental and technological efforts that** are encouraging development of the sharing economy and drives forward providers and of this business model – users and providers. A survey, made by Bocker and Meelen (2016) in Amsterdam, showed that sharing in accommodation sector is more economically stimulated, and sharing in such sectors like car and meal sharing, are mostly forced by social factors. This study also displayed that young, low-income owned persons are more economically oriented, and young, higher-income owned and obtained higher education persons are more socially and societally motivated; besides female are more environmentally reasoned than man. Study of Bocker also showed, that the sharing economy users are more economically motivated than the providers.

Figure 3. The main sharing economy's driving forces according different actors



Source – adapted based on Hodkinson et. al (2017) and Owyang (2013), icons sourced from "The Noun Project".

The global economic recession and decline in economy has resulted the allocation of the financial resources of people. After crisis 8 out of 10 American inhabitants were purchasing less, and 9 out of 10 were looking for an easier life in the perspective of items using, but not owning. Thus, the sharing economy gave such an advantage for users, even for the access to prime quality goods that were too expensive to own (Oh and Moon, 2016). The **economic forces** driving the sharing economy as a perspective model of economy are indisputably positive**.** The economic dimension of the sharing economy is reflected with maximization of goods and services productivity. The sharing of the specific item, that its owner would use only a few times,

is exhausted to the maximum, as access with economic added value is granted to every user of the sharing economy and as the result of such collaboration users save time, money and other resources, and providers earn extra income. As Oh and Moon (2016) claims, the sharing economy generates transactions "that value social relations over monetary benefits". Frenken (2017), Mi and Coffman (2019) predicate that lower transaction costs between providers and users are one of the main impact. Ewans and Gawer (2016) point that the sharing economy drives productivity of economy through eminently efficient matching of goods or services providers and users.

The expanding usage of the smartphones, the decreased information data's costs, big population of people in urban cities, also stimulated the development of the sharing platforms. This excess capacity generates perfect conditions for collaborations that match supply and demand. As Hodkinson and others (2017) pointed in their white pater: "with uncertainty around pension systems across the world, sharing assets has the potential to augment pension income and can help prevent old-age poverty". This statement authors explained with the possibility of the advantages of the sharing economy, for example, the older person living in the big city and owning a car with the possibility of the car sharing platform could earn periodical income with the feasibility of ride sharing. This would generate economic added value as for the sharing economy provider, as well for the user, and as the result creates conditions for financial flexibility (Owyang, 2013).

Recent studies done by Frenken and Schor (2017), Curtis and Lehner (2018) proposes that the sharing economy is directed by **the social and societal factors,** or as the researchers commit is economically gained over altruism. Furthermore, users of the sharing economy lists that social issue is significantly meaningful and more valuable in the societal perspective than traditional business model. Frenken and Shor (2017) argues that sharing platforms gives an advantage for users with possibility to build new social connection, and even new relationships between participants of the sharing economy. In the sociological review Ladegaard (2018), based on Boston sample, argues, that hosting service providers are keen to make the collaborations with services users from foreign countries, who could be called "comfortably exotic", this means contrasting enough to be impressive, but comparable enough to be appropriate. Thus, the sharing economy reduces social inequality by enabling more equivalent distribution of goods and services.

Based on PwC study (2015) 78% of the sharing economy users comply, that the sharing economy scales down irrelevant waste. Mi and Coffman (2019) also point that this model of economy makes confident **environmental impact** by reducing the amount of recourses used for the customers' needs and helps to reduce pollution, promotes sustainable community. Zhang and Mi (2018) stated, that bike sharing reduced carbon dioxide (CO_2) emission by 25.000 tons, and nitrogen oxide (NO_x) emission by 64 tons in Shanghai, and saved 8.358 tons of petrol.

Recently, the platforms of the sharing economy deliver exceptionally opportunities for sharing for inhabitants of urban cities. The assets of goods, skills or knowledge give a profitable basis for sharing using **communication technologies in exchanging platforms**. Frenken (2017), Mi and Coffman (2019) predicate that lower transaction costs between providers and users are one of the main impact encouraging the economic progress of the sharing economy. Nowadays the financial transactions are possible in the easier and cheaper way than it was operated in the past, so this advantage is based on the opportunity of communication technologies.

All these factors might argue, the emergence and development of the phenomenon of the sharing economy during the past decade and this business model is substantially prevalent in cities (Hodkinson et al., 2017). Sharing can augment supply during the peak seasons and correspond to the needs of high demand: for example, the touristic places can gain from the sharing economy with the support of the sharing platform, which allows owners or the hosting services providers make accommodation feasible during peak moments, rather than starting building new constructions. On the other hand, the sharing economy sometimes results abundance of supply: for illustration, in China, such businesses like MoBike (bike-sharing), or Molisan (umbrella-sharing) have designed an overflow of bicycles and umbrellas at sharing stores, instead of elaborating the use of current

recourses (Hodkinson et al., 2017). The amount of the sharing economy has been significantly increased since 2010: a global survey, made by Ewans and Gawer (2016), points that the sharing economy's companies had a total market amount of $4.3 trillion achieved in 2015 and had directly employed 1.3 million persons all globally. This study stated that the sharing economy is one of the considerable catalyst of innovation during recent periods and this corresponds to the fact that in 2014 9 sharing economy platforms were owners of 11.585 patents in the USA. Thus, a lot of stat-up companies uses the sharing economy business model and has been directly funded by venture capitals, incubators, accelerators or other investment resources (Ewans and Gawer, 2016). However, the regional allocation and the value of sharing economy platforms vary considerably across the globe. In 2015 Asia had 82 sharing economy platforms, North America 64, Europe 27, Africa and Latin America 3, but if analyzing the global market value of this innovative business platforms, the leader is North America with generating 72,6% ($3,123 billion), and Asia 21,6% ($930 billion), and Europe 4,2% ($181 billion), and Africa and Latin America 1,6% ($69 billion) in 2015 (Ewans and Gawer (2016)). This corresponds, that the sharing economy contributes particularly to the development of global economy.

The main driving forces of the sharing economy, as a perspective business model, correlate with each other and result the developing collaboration via digital platforms between main actors of the sharing economy – the providers, the users and governance. Thus, the sharing economy, as an innovative and promising business model, is based on digital platforms, accessed to underutilized goods, and serviced in the most efficient ways, and built on the sustainable communities. Significant amount of goods and services are nowadays shared instead of owned, and this method is enabled with the usage of decentralized exchanges between the providers and the users within digital platforms. Dakhlia et al. (2016) such platforms call "club goods", characterizes as assets with lower transactions charges which could be sometimes near zero. The sharing economy interactions are based on community building between the main actors of this business model, because it

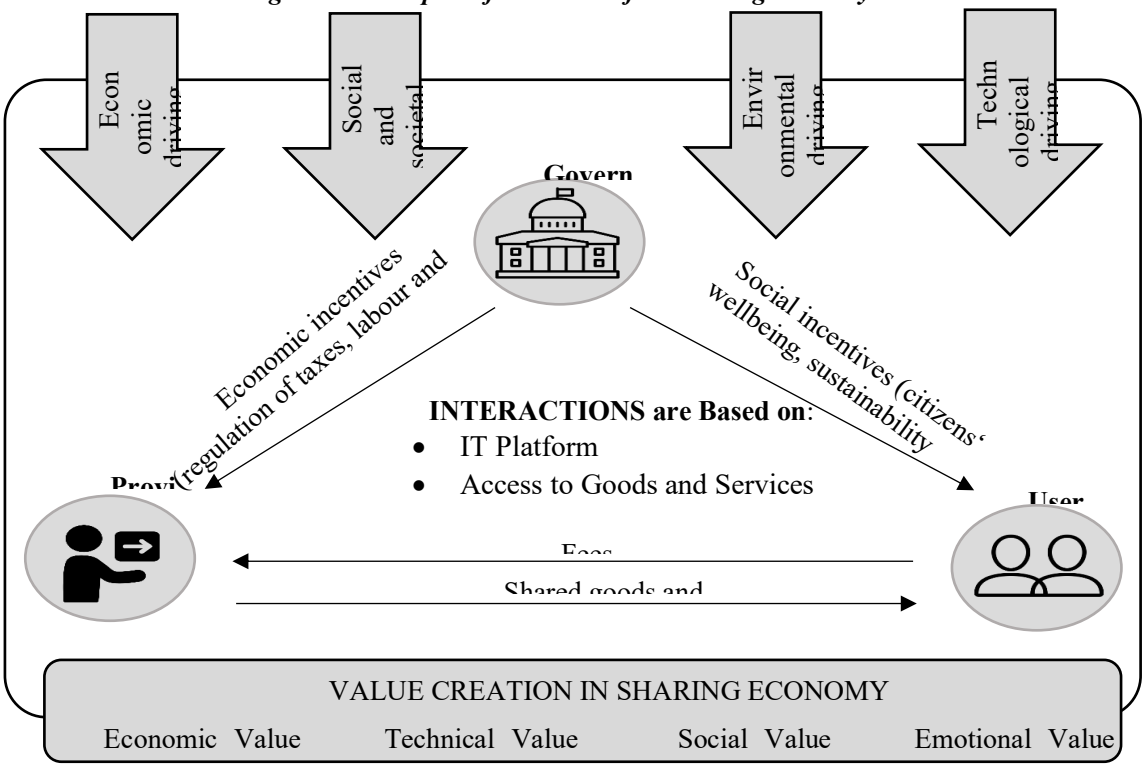
The Conceptual Framework of the Sharing Economy as a Perspective Business Model

Our research study shows that the sharing economy is a perspective business model, which commits considerable impact on regional and global economies, and gives the opportunities for more sustainable world by giving users, who do not have enough financial recourses or do not want to buy new items, the access to underutilized items for a cost or for free; and for providers, owning such underutilized goods to earn more income or to benefit from social perspective. The sharing economy in economic research papers is constantly describing as a measure solving such challenges like overconsumption and income inequality. Sharing based business model with the advantages of communication technologies in exchanging platforms promotes for the collective use of remaining or new goods and services.

The narrow analysis of the researchers, who studied the sharing economy phenomenon, gives the scientific scope to present the main outcome of this study – the conceptual framework of the sharing economy driving ahead as a perspective business model (Figure 4). This model was developed based on the main cores of the sharing economy, the main actors of the sharing economy, the essential factors driving this innovative business model.
promotes a community conception, creates social engagement, captures values of social missions via collective scheme. The users of the sharing economy gain the advantages as lower expenses on wider assortment of goods and services, progress of individual competences and entrepreneurship, flexible capital flows and etc. This business model has affirmative impacts via reduction in the complete and compulsory resources, enables reduce carbon footprint, emissions and redundant waste. Speaking about transport sector, car sharing action can condition environmental impact by decreasing the amount of kilometers drove. Such behaviors could lead to better human life by moving persons' practice from car ownership to sharing. Services and goods providers perform a critical economic part in controlling and decreasing transaction costs. The providers as well as users mainly have an aim to maximize the economic profit, whilst governments principally strive for wellbeing of

citizens. However, this business model causes significantly impact on the evolution of innovative economies and growth of GDP in the countries, regions and all around the globe. The sharing economy will develop sustainable economic growth through bilateral cooperation between government, users and providers of underutilized goods and services.

Figure 4. Conceptual framework of the sharing economy



Source – created by authors, icons sourced from "The Noun Project".

Conclusion

The concept of sharing is used for a long time, but the sharing economy, as a perspective business model was encouraged with the development of digital innovation, Internet, social, communication technologies which committed sharing conceivable with all its' advantages. Together, these processes have created changing methods of the traditional business models with innovative ones, and the attractiveness of the sharing economy mostly concentrates on the exceptional speed in which persons can operate with goods or services. As Martin et al. (2015) pointed that the sharing economy becomes "more commercially-oriented over time". The online platforms enhanced the productivity of transactions, corresponding to lower transactions costs and increased underutilized assets exchanging between peers. Some researchers argue, that the sharing economy is an alternative to market capitalism and it might certainly sustain capitalism instead (Acquier et al., 2017).

This paper, from an academic perspective, points the understanding of the sharing economy as an innovative and perspective business model, presents principally the main factors driving to approaching economy's development and demonstrates the conceptual framework of the sharing economy. The framework, created by authors of this research study, supplements the research works done by Acquier et al. (2019), Mi and Coffman

(2019), Petropoulos (2017), Acquier et al. (2017), Belk (2014), and others, and states that the sharing economy mainly generates significant impacts on economy and creates economic, technical, social, emotional, environmental values for all the participants of this business model – providers, users and government. Thus, this business model gives a challenges and perspective economic impact mostly on urban places and these insights should be illustrated in future research. This research study analyzes perspectives of the sharing economy and value creation for the whole individuals participating in this business model, so future study should include not only advantages of the sharing economy, but also the economic disadvantages of such business model too.

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LEARNABILITY AS THE KEY SKILL OF THE FUTURE

Eva ŽIVČICOVÁ, Monika GULLEROVÁ

Abstract

The paper addresses learnability or ability to learn as the key skill needed for the future due to changes brought about the fourth industrial revolution. Learnability is seen as one of the skills that need to be developed continuously by individuals to remain attractive for the labour market. The authors draw attention to the distinction between knowledge and learnability. Learnability, as opposed to knowledge, is a process having three levels. In addition, the learnability quotient and its attributes are dealt with. Last but not least, ten key qualities of learning under Industry 4.0 are provided.

Key words

Learnability, knowledge, learnability quotient, learning 4.0

JEL Classification: J 24

Introduction

We are witnessing a revolution in the world of work. Technology is rewriting the rule book: 65% of roles which will be filled in a few years do not exist yet; 45% of current tasks could be automated. Therefore, a person's employability – that is their ability to secure or keep their desired job – no longer depends on what they already know but what they will be able to learn. This is what we are calling the Skills Revolution (McKinsey 2015). Today's learning challenges, at work, at home, in society are vastly different from the past. The new responsibilities occurred. Many changes around the world can be seen daily. It is said that the information will double every 72 days by 2020. How to deal with it? How to ensure the skills and personal growth necessary to keep pace with one's own needs and those of the world around? The ability to expand one's mind and strive for lifelong learning is critical to the success. By dedicating themselves to learning, people can get ahead in every aspect of their life. All it takes is a commitment. The most successful people read an average of 2-3 hours per day. They belong to organizations that encourage learning the most current information and share ideas. For individuals dedicated to continuous learning, it means that they use every opportunity that can help them to be more effective in getting the results for which they are responsible. Many research outcomes suggests that learning intelligence shows how we manage our learning environment to meet our learning needs.

1. LEARNABILITY

In a dynamic market environment, it's important for individuals to seek out continuous skills development in order to remain attractive to employers, and for companies to enable their workforce to learn new skills and to adapt to new processes and technologies. Learnability can be an indicator of career mobility (as it indicates how agile an individual is). "Employers need to recognize and reward learnability. They need to nurture it to avoid losing out or lacking critical skills on their workforce." (ManpowerGroup 2016). Learnability is not exactly a new concept in information technology, nor in cognitive science. Learnability has been a key concept of usability (Folmer & Bosch, 2004, in Duchastel 2009) in the area of software system design.

There is a clear difference between 'knowledge' and 'learnability' according to Vikas Gupta, MD, Wiley India (2019). Learnability refers to the 'ability to acquire knowledge efficiently and effectively'. In this rapidly changing world, what defines our success is not the things we know, but our ability to learn the new (which is learnability).

Learnability is "a degree of effort employed to achieve a level of competence in completing a task. A system is considered easy to learn if competencies required to use it are acquired after only a few repetitions of the task" (https://Igi-Global.com) In another words, it is the desire and ability to quickly grow and adapt such skill

set to remain employable throughout working life. It is the ability to learn. At the same time it is the ability to adapt to new situations and the ability to understand the rules of a changing game and excel at them.

Learnability is defined as the ease and speed with which the users get familiar with the use of a new product. With high learnability, users can intuitively learn to use a product without training or manuals. However, in the context of e-learning, the definition of learnability includes the ability of users to effectively learn and retain the skills and knowledge. Learnability is measured by the learning effort of using a new system. (https://www.igi-global.com/dictionary/evaluating-usability-improve-efficiency-learning/16765).

Understanding an individual's learnability potential is a key indicator of the support they'll need to succeed. Operators recognize and reward learnability because they do not want to lack critical skills in their workforce. Learnability matters because it shows that a person is employable. Specifically it indicates (https://safety4sea.com/cm-learnability-a-three-stage-process):

- agility or resilience to adapt to the consequence of change,
- critical thinking skills,
- decision making,
- creativity and innovation,
- emotional intelligence.

At this point it is important to differentiate 'knowledge' and 'learnability'. As said above, learnability refers to the 'ability of acquiring knowledge efficiently and effectively'. Knowledge can refer to a theoretical or practical understanding of a subject. However, being knowledgeable does not imply learnability. For example, someone may not know to acquire new knowledge independently by himself. One thing is sure, knowledge does not provide skills and courage, only practicing does (https://safety4sea.com/cm-learnability-a-three-stage-process).

Learnability is the single most important factor that determines the pace at which an individual grows. As technological innovation accelerates the pace of change, there is growing awareness that individuals who seek learning opportunities will be better positioned for career growth. Today, professional success is determined both by an individual's ability to adapt to change and their willingness to own the progression of their career.

Learnability is playing even more critical role in the development of future-ready leaders. For leaders, changes are even faster and they are supposed to acquire a significant understanding of these new skills with more precision to compete with competition and avoid any mistake.

There are three levels of learnability (https://safety4sea.com/cm-learnability-a-three-stage-process):

- High Learners: People who are eager to learn, positive about their prospects and take responsibility for their own training and development.
- Potential Learners: People who believe that education and personal development will lead to further career success, however they're not High Learners yet.
- Low Learners: People who, although were born with an intense desire to learn, somewhere along the line lost passion for learning.

2. LEARNABLITY QUOTIENT

Learning is the minimum requirement for success in many areas. Information and knowledge of anything are growing every day. This means that your knowledge must also increase to keep up. Although people like animals have built-in physiological processes that do not require learning, most of what we do or think is gained and changed by our experience. That means our behaviour is learned. Learning is defined as a relatively constant change in our behaviour as a result of practice or experience. Research psychologists dealing with these changes want to know exactly what happens during this experience (Wingfield, 1997).

Companies are facing a diversity of learning challenges nowadays. In an attempt to align learning practices with today's learning challenges, they use emerging discoveries from brain science and psychology to help them to survive the boom of knowledge and ever-

accelerating technology. This calls for a significant upgrade in everybody's learning mindset and practices.

The Learnability Quotient represents a new way for users to assess their learning styles and receive recommendations for how to develop and engage, while providing validated, data driven insights to our clients. We define Learnability Quotient as "…ability and willingness to learn new knowledge, skills and personal characteristics effectively and efficiently and apply these learned characteristics, knowledge and skills for self and others' including organization's growth" (Daftuar,2011). In the organizational and particularly managerial context, a person can be said to have high Learnability Quotients (LQ) if s/he has, among others, the following attributes (https://slideplayer.com/slide/12991937):

- knows how to learn,
- willing to learn,
- willing to change,
- following high quality learning,
- following sound learning Methods,
- willingness to apply learned material to successfully solve personal and management Problems.

Daniel Coyle author of The Talent Code refers to learning quotient. In evaluating learning quotient, measurable skills such as diligence, relationship-building, going outside one's comfort zone, enthusiasm, and metacognition (thinking about thinking) are rated. Most importantly, these are not fixed qualities: they can be increased, grown, and as Coyle writes, "profoundly affected by environment and group culture."(https://www.learnabilityquotient.com/en). With results expressed via three dimensions:

- Adventurous: The intrinsic desire to explore;
- Intellectual: Motivated to learn;
- Unconventional: Questions the status quo), the Learnability Assessment empowers organizations and individuals to succeed.

Here's how it might work: rate yourself from 0 to 5 on the following questions according to the usual scale: 0 for strongly disagree; 5 for strongly agree.

1 You work on your skills for an hour or more every day
2 You are focused on process, not the immediate outcomes
3 You have strong relationships with mentors/coaches, and use them as models and guidance
4 You are keenly aware of how much you do not know, and the gap between your present abilities and your long-term goals
5 You can accurately and precisely describe the skills you want to build
6 You think about improving your skills all the time
7 You approach your daily work with enthusiasm
8 You are balanced between building with repetition and seeking innovations
9 You are comfortable going outside of your comfort zone
10 You are constantly adapting and refining your learning process

By this yardstick, a perfect LQ would be 50. Most of us would fall in the 25-30 range or so, which, among other things, speaks to the inherent challenges of creating a daily routine and sticking to it (http://danielcoyle.com/2013/07/01/whats-your-lq-learning-quotient).

The following statements describe behaviours related to 10 key qualities of Learning 4.0 — the approach to learning for today's fast changing and "smart" age (McLagan International, Inc., 2017). Think of it as the fourth version of your internal learning "software." P. McLagan (2017) says if you were born with version 1.0 – you learned by trial and error and imitation. Then, when you went to school, you upgraded to 2.0 with new study and socialization skills. As an adult, you launched 3.0 – the learning approaches that helped you deal with the new challenges of family, work, and citizenship. But these approaches to learning are not enough today. Advances in media, technology, artificial intelligence, and all the other challenges of modern life require everyone to upgrade to a smarter, more confident, more skilled approach for managing information and personal learning and change.

Table 1. Ten key qualities of Learning 4.0

		Doesn't describe me	Somewhat describes me	Often describes me	Almost always describes me	Always describes me
1	At any time, I can close my eyes and imagine myself – in detail – as I would like to be and feel at the end of this year					
2	At any point, I can tell you, with precision what is happening in me on several levels: what I am thinking, what I am feeling emotionally, where there is tension or stress in my body					
3	People around me would describe me as someone who is open to learning and change — a person who is always improving myself, takes risks, accepts new challenges, and questions my approaches and opinions in the face of new information or challenges to my point of view					
4	When I am reading or listening to something — or in any experience, I am like a chess master who looks for patterns on the board: I search for the deeper lessons and key points and ideas					
5	I see my life filled with learning opportunities — e.g., in a chance meeting, when I am working alone or with others, when something catches my interest, when I have a problem, when things don't go my way, and more… My curiosity and desire to explore new ideas and insights is aroused many times every day – whether I choose to follow them or not, I recognize them					
6	I'm a shrewd and perceptive user of information. When I hear or read about something important, I question where it came from, what the motives of people producing it may be, and whether I can trust it. I recognize when people are trying to persuade or manipulate me. And, I catch my own biases when they are affecting my judgment					
7	I know how and where I prefer to learn, and the kinds of learning resources and tools I like to use. But I am confident about my ability to learn in any situation, whether it is my preferred way or not.					
8	When I want to change a habit or start behaving in a different way, I manage myself and influence the people and things around me so that the changes I want to make become a reality					
9	I readily adopt new technologies or methods that will help me be more efficient and effective in my life – even when it means giving up old habits and stepping outside my comfort zone.					
10	My fellow team members and people I coach/develop would say that I stimulate a climate where others grow, learn from mistakes, try new things, and innovate.					

McLagan International, Inc., (2017) Retrieved from: https://learning4dot0.com/assess

3 Conclusion

Hogan Assessments, ManpowerGroup has developed a web-based visual assessment to identify each individual's LQ (Learnability Quotient) - providing insight into their motivation and style of learning. Benefits to the Individual:

- Enables you to understand your Learnability profile

- Provides resources to help you improve your learnability

Benefits to the Organization:

- Enables decision making around development
- Indicates employee agility/mobility

How can managers do a better job of fostering learnability in the workplace? A recent Harvard Business Review (https://www.rightmanagement.de/wps/wcm/connect/right-de-en) article, "It's the Company's Job to Help Employees Learn," suggests starting with three things:

- Select for it. Focus on employees with higher learnability—curious and inquisitive individuals who are genuinely interested in acquiring new knowledge.
- Nurture it. Managers who want their employees to learn new things will encourage that behaviour by doing it themselves. Be a catalyst not a blocker of employee learning- career long.
- Reward it. If you want to change people's behaviour, you should show them that you mean it. It is not enough to hire curious people and hope they display as much learnability as you do.

Gauges motivation for self-development Learnability helps individuals cross over, regardless their learning style; their different personality types. The question is, how do we make the second enhance their learnability level and the last ones to be potential learners though? Training has always been a key component of businesses. According to Training Magazine, organizations spend between $1,075 to $1,886 for training on each employee annually. However, training tended to be focused on company processes, product or service information, operational issues, etc. Companies are now shifting from a training mindset to a learning mindset.

According to the ManpowerGroup report (2018), "with talent shortages at a 12-year high and new skills appearing as quickly as old ones disappear, more companies are planning to build talent than ever before, and this is projected to increase by 2020. Companies are realizing they can no longer expect to find just-in-time talent, on tap. Eighty-four percent of organizations expect to be upskilling their workforce by 2020."

Though learnability is an individual skill, companies need to take an active role in their employees' learnability. There is an ongoing war for talent; providing employees with the necessary tools and resources to reinvent and upskill themselves will help foster loyalty and it can also create a clearer career growth path for an individual within a company. Just as it has become crucial for people to embrace learnability, it's also important that companies promote a culture of learning. People need to know how to prepare for high growth roles of the future and that their employer supports their learning. The return on investment for upskilling is clear: in North America the cost of turnover and replacement can exceed 30% of wages, while the cost of training remains less than 10% of wages.

As said above, learnability has nothing to do with qualifications or job titles an individual already has. Once we gain experience we have to be able to sharpen our practicality. Learnability is a way to expand experience. Anyone can become a constant and deliberate learner by:

1. Getting membership in communities
2. Reading, observing, measuring and listening critically
3. Writing, organizing knowledge and sharing your ideas
4. Interacting with technology
5. Exposing yourself to demanding situations
6. Participating in and organizing social and knowledge events
7. Building wide networks

The labour market acts as a living entity in constant evolution. Hence that many theorists, researchers and experts in emerging professional skills have come lately to one of the most innovative concepts in the field of HR, which is a result of the advent of the fourth industrial revolution: learnability.

In 2018, the very own World Economic Forum reflected the concept of learnability, defining it as "the curiosity and the capability of learning new skills in order to remain employed in the long term". For this international body, the characteristics that define "a good learnabiliter" are the following: easy learner of new concepts

or procedures, willingness to research and acquire knowledge in new fields ("thirst for knowledge"), and a positive attitude before new challenges.

Today's learning challenges, at work, at home, in society are vastly different than when you were a kid. You've grown and have different responsibilities. And the world around you looks and is different almost every day. Information will double every 72 days by 2020. How do you deal with it? How do you ensure your skills and your own personal growth keeps pace with your own needs and those of the world around you? It's time to align your learning practices with today's learning challenges — and for you to use emerging discoveries from brain science and psychology to help you survive and thrive in this age of knowledge and accelerating technology. This calls for a significant upgrade in everybody's learning mindset and practices — an upgrade to Learning 4.0.

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