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Mediating factors influencing the capacities of enterprise network performance

Zhou Lu Lin, James Onuche Ayegba

ABSTRACT

Objective: The study examined the mediating factors influencing the capacities and performance of enterprise network using some food and beverages enterprises in Lagos, Nigeria.

Research Design & Methods: Primary source of data was employed in the study. The data collected from five hundred and thirty nine (539) respondents was analysed with the use of factor analysis which brings out the beauty and reality of the study. Six hundred and fifty seven (657) middle and top level management staff of six food enterprises and beverage enterprises particularly the manufacturing ones through a purposive sampling technique.

Findings: When the original ten variables were analyzed, four variables were extracted from the analysis with eigenvalues greater or equal to 1, which explained 36.414 percent of the entire variance. Hence, the mediating factor influencing the capacities of enterprise network performance is Strategic Decision-Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT).

Contribution & Value Added: Finally, factors influencing the capacities of network performance are Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT). The result of the study is essential because of its significant contribution to the body of knowledge and literature regarding strategic management.

Article type:	research paper
Keywords:	mediating factors; capacities; enterprise network; performance; foods and beverages
JEL codes:	P24, P44, D22, D23, D2

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INTRODUCTION

The situation of business enterprises in the past years has been exceptional, transformative, highly competitive, and in a highly technological environment which is tumultuous. These changes spring up because of technology dynamics, market dynamics, management dynamic, business operational dynamics (demand and supply ends), and others which have direct and indirect connotation on the performance of enterprises. Ahmad *et al.* (2014) noted that enterprises are facing these and more challenges because of the term "dynamics" which affects the overall business performance.

Food enterprises and beverage enterprises are not exempted from the sweeping transformation as they have experienced increasing levels of competition during the last one decade, which create significant issues to maintaining economic balance. It was revealed in the study that there are more challenges posed which seems to be higher than enterprise survival. This challenge is experienced with the tendency at which enterprises thrive during the situation of increased competition. In fact, in the high level of competition that is predominant among all enterprises and challenging situation of the Nigerian economy are crucial factors that rooted enterprise networks to be of essence in realizing enterprise revitalization (Zahra *et al.,* 2006).

Ahmad and Pirzada (2014) also discovered that enterprise networks have significant roles in bringing a level of buoyancy to a nation's economic situations, which is laudable in fulfilling economic development. Because of this importance, there is a need for enterprises to form a formidable network (Hashim *et al*., 2018), which will fortify them to stand against all economic odds (Zhu *et al*., 2013). The study was purposed to examine the mediating factors influencing the capacities of enterprise network performance in some selected food and beverages industry in Lagos, Nigeria using factor analysis.

LITERATURE REVIEW

The position of enterprises in the world development cannot be far-fetched from or beyond the major purpose of realizing economic development. Realizing the performance of enterprises, there is need for the enterprise owners themselves to form a formidable network. Obasi (2013) noted that enterprise networks are essential to achieve development and industrialization. For an enterprise to be transformed and rooted into the unforeseeable future, its capability to expand and broaden horizons for significant outputs must be on the key objectives if not as the organization aim.

FMCGs and CMGs are sectors in Nigeria that have experienced and still experiencing various issues, such as reduced quality of products, less customer satisfaction on products, and many more which are caused as a result of economic imbalances, increasing competition, importation of similar products, increasing petroleum prices, naira devaluation (Industrial Report, 2016). This has created a form of tumultuous environment for most enterprises. Significant numbers of value creation and dynamic capabilities have be identified in strategic management, among are strategic decision-making, product and knowledge creation, technological capability, product innovation capability, top managers alliance, and strategic flexibility (Ibidunni *et al*., 2014; Oghojafor *et al*., 2014; Zhang, 2007; Ibidunni & Inelo, 2004).

The enterprise networks must continuously develop dynamics to new resources that will enhance their sustenance in the unendingly environment (Eisenhardt & Martins, 2000; Oladele *et al*., 2010; Rindova & Kotha, 2001; Teece *et al*., 1997). The creation of value and competitive advantage becomes realistic when enterprises are able to form networks for making best use of resources, opportunities, and capabilities (Teece, 2009). This will enhance highly competitive advantage among the group of enterprises that are able to team up for network. This is highly needed in the modern era (Chirico &Salvato, 2008).

In the views of Rehman and Saeed (2015) and (Wong, 2013), dynamic capability is a form of facility for any organization to flourish in the present dynamic environment. Competitive advantages are secured when intensifying business sustainable options (Seung, 2014), and creating value (Hedvall *et al*., 2019; Hashim *et al*., 2018; Guo *et al*., 2018; Rodrigo-Alarcón *et al*., 2018; Oghojafor *et al*., 2014; Sherazi *et al*., 2013; Machirori & Fatoki, 2013)

Ibidunni and Inelo (2004) noted that sooner, the managers and owners of enterprises will engage in strategic and innovative thinking to sustain the increasing business dynamics and to enhance success of enterprise networks. In the perspective of Eisenhardt *et al*. (2010), for enterprise to sustain in the ferocious competitive environment, there is a need to develop strategies that will enhance more customer demand, changing the legal frameworks and implementing more technology solutions (Shimizu & Hitt 2004). Studies of Stock & Wennberg (2009); Oluwale *et al*. (2013) have shown that product innovation is a value-addition activity for enterprises, and Kemper *et al*. (2013) noted that it has been an approach for realizing competitive advantage.

Though some in some studies, it was theoretically revealed that product innovation is a factor that determines enterprise survival (Damanpour & Wischnevsky, 2006; Daniel & Wilson, 2003; Damanpour & Gopalakrishnan, 1999; Stock& Wennberg, 2009). Rosenbusch*et al*. (2011) noted that empirical results of many studies are contradictory, especially those that treated small and medium-sized enterprises (SMEs). Some empirical researches reveal a positive and significant nexus between product innovation and enterprise survival (Alegre &Chiva, 2013, while other researches reveals negative nexus (Grewal & Tansuhaj (2001). From the result obtained in various studies, there were suggestions that other factors may be affecting the dynamic relationship that existed between innovation on products and the survival of enterprises. In view of this, there is thus a need to embark on the study based on selected foods and beverages enterprises. Based on this background, the study is set to examine the factors mediating between the influencing the capacities of enterprise network performance employing some selected foods and beverages enterprises in Lagos, Nigeria.

The research covers 6 foods and beverage enterprises that are quoted in the Nigeria Stock Exchange (NSE) of the manufacturing sector. This study was carried out because of the alarming report of the Manufacturing Association of Nigeria (MAN) that about 60 percent of the manufacturing company in Nigeria is not functioning well, while 30 percent have gone on comatose, and only 10 percent are operating at a sustainable level (Olamade *et al*., 2013). Food and beverage sector was among the large-scale quoted food and beverages enterprises, from which this study select six (Honeywell Flour Mills Nigeria, 7-Up Bottling Company, Nestle Nigeria, Flour Mills Nigeria, Dangote Flour Mill Nigeria, and Unilever Nigeria) in Lagos State, Nigeria. All are listed in the Nigeria Stock Exchange (NSE). The study will cover Lagos state because the state is currently the industrial, commercial and financial hub of Nigeria.

MATERIAL AND METHODS

This section critically elucidates the approaches that were adopted in realizing the aim of this research. This study will employ quantitative approach that entails a form of survey research as research design for the purpose of exploring the observable fact, and presents a well robust explanation to the identified problems that the study seeks to address.

Research Design

This study adopts a survey research design which will assist in pointing out challenges and managerial dynamics and issues relating to operations in Food and Beverages sector particularly in Nigerian in addition to considering the dimensions of enterprise networks in the form of enterprise supplier interactions, enterprise customer connections and enterprise competitors' interactions, and to moderate the consequence of environmental dynamics in the connection between Dynamic Capacities and Enterprise Networks on Company's Performance.

Sampling

The sample for this study was achieved based on the 14 companies that were listed in the Nigerian Stock Exchange (NSE) bulletin of 2014 as indigenous and multinational enterprises. Among the 14 companies, 6 companies were tagged as foods and beverages enterprises, but 6 enterprises will be selected for this study because of the ease of getting information as earlier explained by (Udemba, 2015; Akpan *et al*., 2016).

According to Zikmund (2003), the various error allowances was determined and the suitable one was chosen based on the discretion of the researcher. The chosen error allowance of 0.04 was employed to establish the sample size as shown in the equation: $n = Z^2/4E^2$; n is denoted as the Sample size; Z is denoted as the Z score (confidence interval which is 2.05; E is denoted as the Error allowance which is 0.04.

Based on the sample size formula, the number of sample size was 656.6406, which is approximately 657. On this note, 657 questionnaires will be distributed to respondents whom are middle and top managers in the listed foods and beverage companies.

Regarding the recommendations of the sample size for factor analysis, the recommendations are more often than not stated with respect to either the least sample size (N) or the least ratio of N to the number of variables, i.e., the number of survey items that is being subjected to factor analysis (Adeniran, Stephens & Akinsehinwa, 2020). Gorsuch (1983) recommended a minimum of 100 sample size for factor analysis, Guilford (1954) argued that sample size should be at least 200, while Cattell *et al.* (1970) made recommendation with a minimum of 250 number of sample size. Also, the following guidance was provided with respect to the determination of sample size adequacy Comrey and Lee (1992), such that the sample size of hundred is poor; sample size of two hundred is fair; sample size of three hundred is good; sample size of five hundred is very good; and sample size of one thousand or more is excellent. In this study, the sample size of six hundred and fifty seven (657) is adequate for factor analysis and reporting as rooted in earlier studies.

Primary data was extracted through a structured questionnaire that was distributed to top and middle management officers responsible for the strategic decision and direction of the companies. This study employed close-ended questions of Likert type five points scale which was modified

Model Specification for Factor Analysis

Adeniran *et al*. (2020) posits that in the situation where by the observed variables are X_1, X_2.... X_n, the dominant factors are F_1, F_2…F_m and the exclusive factors are U_1, U_2…U_n, the variables may be expressed as linear functions of the factors:

$X_1 = a_{11}F_1 + a_{12}F_2 + a_{13}F_3 + \ldots + a_{1m}F_m + a_1U_1$

$X_2 = a_{21}F_1 + a_{22}F_2 + a_{23}F_3 + \ldots + a_{2m}F_m + a_2U_2$

…

$X_n = a_{n1}F_1 + a_{n2}F_2 + a_{n3}F_3 + \ldots + a_{nm}F_m + a_nU_n$

Every equation that is represented is known to be a regression equation; the coefficients a_{11}, a_{12}…a_{nm} were identified with factor analysis which suitably replicated the observed variables from the factors.

RESULTS

The targeted participants in the investigation were approved to voluntarily take part in the exercise. In furtherance to that, the aim of the study was made comprehensible to them. Intensive and joint effort was ensured to realize confidentiality, secrecy and anonymity of information given by the respondents; also, they were assured that all information elicited from them was used solely for the rationale of this work. Research assistants were educated regarding the etiquettes in research for the purpose of ensuring absolute compliance to research ethics during the process of conducting the study.

The following were limitations encountered by the researcher on the acceptance of the methodology: difficulty in data gathering from some of the enterprises however, it was achievable with the help of some staff; generally, the core assumptions of multiple regressions are quite limited because of the presence of normality in the stochastic disturbance terms (error terms), the presence of multicollinearity and homoscedasticity between any pair of independent variables and the error terms could result to unauthentic result which is the reason for making provision for stochastic disturbance term or error term or residual in the model; and hierarchical regression analysis is employed to determine the effect of enterprise networks on the performance of the company through a reconciling task of dynamic capacities, which is made doable because of the inadequate quantification of variables; it may not be apposite if the study seeks to examine more complex relationship.

From the sample size calculated to about six hundred and fifty-seven (657) which equals to the total copies of questionnaires administered by the researcher targeted at the middle managerial staff and the top managerial staff of particular beverages and food enterprises in Lagos State, five hundred and thirty-nine (539) which is about 82 percent copies of questionnaire were valid and returned for data analysis and reporting. The remaining (118) copies of questionnaire were not used in the data analysis because of different invalidity issues. Hence, all the valid questionnaires returned were processed for data analysis, and the response was revealed in Table 1.

Table 1. Response rate of respondents

Questionnaire	Frequency	Percentage
Administered	657	
Returned	539	82
Not Returned	118	18

Source: Field Survey (2020).

Fadare and Adeniran (2018) posit that a response rate of fifty percent and above regarding the copies of questionnaire returned is appropriate for data analysis. Hence, the response rate of eighty-two (82) percent copies of questionnaire returned for this study is appropriate for establishing data analysis.

Factor analysis was adopted to achieve this aim. Several variables have been employed to explicate the complex interconnections and interrelationships of variables. In this regard, the few fundamental variables that are germane to this study remained to be determined. The systematic relationships among these established variables are presented on rank order scales data (Nimalathasan, 2009).

Factor analysis is a technique adopted in achieving statistical analysis. It belongs to the family of General Linear Model (GLM) procedures. It is designed to inform the essential structure for understanding a phenomenon (Spearman, 1904). Factor analysis entails the following such as correlation matrix, communality, eigenvalues, factor rotation, factor loadings, entire variance explained and others.

Table 2 below shows the correlation matrix to identify the direction, and degree of relationships between the variables on five point Likert scales. Correlation matrix in Table 2 revealed the interconnection between the ten (10) variables: Innovation Product Capacity (IPC), Sales Growth Capacity (SGC), Strategic Decision Making Capacity (SDMC), Enterprise Survival Capacity (ESC), Efficiency Enterprise Capacity (EEC), Technological Capacity (TC), Strategic Flexibility Capacity (SFC), Competitive Advantage (CA), Competitive Intensity (CI), and Complexity in Technology or Technological Turbulence (TT). The interconnection between SGC and IPC is very strong and positive at 0.840. The interconnection between ESC and SDMC is very strong and positive at 0.803. The interconnection between TC and EEC is weak and positive at 0.288. The interconnection between CA and SFC is very strong and positive at 0.866. The interconnection between CI and SDMC, CI and ESC are very strong and positive at 0.769 and 0.953 respectively. The interconnection between TT and SDMC, TT and ESC, TT and CI are very strong and positive at 0.791, 0.927, and 0.886 respectively.

It is pertinent to note that there are suspects of multicolinearity (high correlations) between the following interconnected variables: CI and ESC, TT and ESC which correlation values are more than 0.85. Table 3 depicts the Kaiser Meyer Olkin (KMO) test. According to Adeniran & Olorunfemi (2019), Kaiser Meyer Olkin (KMO) is used to determine the level of numerical adequacy of factor analysis that is supposed to be carried out. The determination of KMO that is between 0.9 and 0.8 is excellent, KMO that is between 0.7 and 0.6 is very good, KMO that is between 0.6 and 0.5 is good, From Table 3, the KMO result of 0.685 is very good and acceptable for performing factor analysis, and it is significant at 0.000 which implies that the data do not generate an identity matrix, the data is normal, suitable and acceptable multivariate for factor analysis.

Table 2. Correlation Matrix

Correlation Matrix[a]										
		IPC	**SGC**	**SDMC**	**ESC**	**EEC**	**TC**	**SFC**	**CA**	**CI**	**TT**
Correlation	**IPC**	1.000	0.840	-0.023	0.016	0.018	-0.095	0.031	-0.002	0.038	-0.025
	SGC		1.000	-0.051	-0.069	0.072	-0.044	-0.008	-0.005	-0.056	-0.105
	SDMC			1.000	0.803	0.183	0.052	-0.012	-0.027	0.769	0.791
	ESC				1.000	0.193	0.071	0.032	0.005	0.953	0.927
	EEC					1.000	0.288	0.182	0.085	0.199	0.164
	TC						1.000	0.145	0.102	0.066	0.090
	SFC							1.000	0.866	0.007	-0.007
	CA								1.000	0.001	-0.019
	CI									1.000	0.886
	TT										1.000

Source: SPSS Version 20 (2020).

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.685**
Bartlett's Test of Sphericity	Approx. Chi-Square	4486.783
	Df	45
	Sig.	0.000

Source: SPSS Version 20 (2020).

Table 4 depict communality through Principal Component Analysis (PCA). Communality is the percentage measure of a variable's variation that is being explained by the factors. It is the portion of variance that an initial variable shared with the other variables that is entailed in the analysis. From Table 4, four factors that were identified are SDMC (1), TC (2), EEC (3), and TT (4). The Technological Turbulence (TT) however shows a sign of multicolinearity. Table 5 revealed that the four variables account for 36.414 percent variance explained.

Table 4. Communalities

Variables	**Initial**	**Extraction**	**Hierarchy**
IPC	1.000	0.920	
SGC	1.000	0.920	
SDMC	1.000	0.785	1
ESC	1.000	0.954	
EEC	1.000	0.637	3
TC	1.000	0.683	2
SFC	1.000	0.935	
CA	1.000	0.935	
CI	1.000	0.918	
TT	1.000	0.912	4

Note: Extraction Method: Principal Component Analysis.
Source: SPSS Version 20 (2020)

Table 5. Entire variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.641	36.414	36.414	3.641	36.414	36.414	3.579	35.788	35.788
2	1.957	19.570	55.984	1.957	19.570	55.984	1.865	18.650	54.438
3	1.850	18.495	74.479	1.850	18.495	74.479	1.854	18.538	72.976
4	1.152	11.522	86.001	1.152	11.522	86.001	1.303	13.025	86.001
5	0.693	6.928	92.929						
6	0.284	2.842	95.771						
7	0.160	1.595	97.366						
8	0.118	1.176	98.542						
9	0.109	1.093	99.635						
10	0.037	0.365	100.000						

Note: Extraction Method: Principal Component Analysis.
Source: SPSS Version 20 (2020)

When the original ten variables were analysed, four variables were extracted from the analysis with eigenvalues greater or equal to 1, which accounted for 36.414 percent of the entire variance. Hence, the mediating factor influencing the capacities of enterprise network performance are Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT).

This study is corroborates the findings of Ibidunni *et al*. (2014); Jegede *et al*. (2012); Mohd *et al*. (2013); Olamade *et al*. (2013); Obembe *et al*. (2014) which discover one or more variables as mediating factor influencing the capacities of enterprise network performance. Also, it is also in connection with other studies that were earlier carried out in Europe, Asia, and America. For example, Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT) in Malaysia can be properly traced out in the effect of government policy framework for improving business as it is circumspectly considered for enterprises (Rasiah, 2002). There seems to be focus on innovation policy in the studies conducted in the U.K. (Foreman-Peck, 2013). This is the same with the studies in Brazil on the impact of development policy on enterprises' performance (Garone*et al*., 2015).

CONCLUSIONS

The study examined the mediating factors influencing the capacities of enterprise net-work performance of food and beverages enterprises in Lagos, Nigeria. Six hundred and fifty seven (657) middle and top level management staff of six food enterprises and beverage enterprises particularly the manufacturing ones through a purposive sampling technique. The study made

use of primary source of data. The data collected from five hundred and thirty nine (539) respondents was analysed with the use of factor analysis which brings out the beauty and reality of the study. From the study, Statistical Package for Social Sciences (SPSS) version 23 was used alongside Excel (Window 10) to code, compute, and process the data.

When the original ten variables were analysed, four variables were extracted from the analysis with eigenvalues greater or equal to 1, which accounted for 36.414 percent of the entire variance. Hence, the mediating factor influencing the capacities of enterprise network performance are Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT). Finally, factor analysis revealed that the mediating factor influencing the capacities of enterprise network performance are Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT).

Policy Implications: The result that stemmed out of the study is essential because of its significant contribution to the body of knowledge and literature regarding strategic management. Finally, From the findings, recommendations were suggested that among the mediating factors examined on enterprise network capacities, factor analysis revealed that the mediating factor influencing the capacities of enterprise network performance are Strategic Decision Making Capacity (SDMC), Technological Capacity (TC), Efficiency Enterprise Capacity (EEC), and Complexity in Technology or Technological Turbulence (TT). It is therefore essential for the management of enterprises to prioritize those indicators for realizing better performance.

Suggestions for Further Research: Since this study is limited to ten variables, and six food and beverage enterprises across Lagos, Nigeria, future studies may consider more variables that will be more robust for factor analysis. Also, samples may be drawn from enter-prises across south-western states. Comparative analysis with other countries may be conducted by the researcher in future studies. It may also be conducted by researchers that want to imitate the study.

Research Limitations: Since this study is limited to ten variables, and six food and beverage enterprises in Lagos. These enterprises were among the large-scale quoted food and beverages enterprises (Honeywell Flour Mills Nigeria, 7-Up Bottling Company, Nestle Nigeria, Flour Mills Nigeria., Dangote Flour Mill Nigeria, and Unilever Nigeria) in Lagos State, Nigeria. Finally, factor analysis was adopted for data analysis

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Determinants of GDP growth in Scandinavian countries with special reference to scientific progress

Adam Chlebisz, Mateusz Mierzejewski

ABSTRACT

Objective: The study is aimed at verifying the main determinants of GDP growth in Scandinavian countries with special regard to scientific progress.

Research Design & Methods: The theoretical part presents economic growth models (Romer learning-by-doing model and McMahon endogenous growth model). In the empirical study, they were verified on the example of Scandinavian countries. For this purpose, multiple regression analysis was used. Models have been developed to explain GDP per capita (as a measure of development) using variables determining work, human and physical capital. The variables included especially determinants of education, scientific development and new technologies.

Findings: The study showed that the economic growth of Scandinavian countries is strongly associated not only with the development of factors mentioned in classical growth models (referring to scientific progress) but also the others, e.g. witch increase of medium and high-tech exports as % of manufactured exports in Sweden and Denmark. Moreover, it was indicated that scientific progress plays a particularly important role in the economic growth in these countries.

Contribution & Value Added: The study provides current confirmation of theoretical models of economic growth for highly developed countries, where education and human capital are very important in the context of their development. Also, key determinants constituting the economic development of these countries were indicated. Similar verification may be used in the future for medium-developed and developing countries.

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INTRODUCTION

Understanding the nature of economic growth and identifying its components is one of the key problems in economics. As North (2010, p. 7) states, "understanding economic growth makes it possible to improve human well-being, reduce misery and extreme poverty". Contemporary models of economic growth are focused on knowledge or science as a key determinant. On the other hand, education itself has long been seen as an extremely important indicator of economic prosperity (Hanushek & Woessmann, 2020).

Along with the growing role of human capital in modern enterprises, research on explaining economic growth has changed significantly (Garncarz & Mierzejewski, 2019). In the context of the study on the impact of education on economic growth, several mechanisms are indicated in the literature. One of them is to increase human capital through education, which then increases the productivity of work and thereby obtains a higher level of production balance – neoclassical theory, including Mankiw, Romer and Weil (1992). Lucas (1988), Romer (1990a), Aghion and Howitt (1998), in turn, focused on the innovative potential of the economy, the development of new technologies and products in growth research. A different approach was characterized by Nelson and Phelps (1966) as well as Benhabib and Spiegel (1994). They considered education as the dissemination and transfer of knowledge necessary to deepen information, as well as understanding, handling and implementing already developed new technologies to promote economic growth.

As indicated by a study by Sala-i-Martin, Doppelhofer and Miller (2004) on a sample of 88 countries for 1960-1996, the strongest factor influencing GDP per capita was primary education. The strong positive correlation between quantitative measures of education and economic growth has been repeatedly confirmed in studies of later studies(Chlebisz, Gruszowski & Igielski, 2019), and the most common measure used has been the average years of education for the working-age population (Krueger & Lindahl, 2001; Topel, 1999). As Mas, Hofman and Benages (1998) emphasize, the most often used to measure the intensity of knowledge components are research and development expenditure in the production sector, while human capital in service sectors.

Human capital is a very important determinant of economic growth (Galor & Tsiddon, 1997). Research indicates that it is not only a transmission and embodiment of available knowledge in people, but it is primarily responsible for the creation of new knowledge, which is a source of innovation and technological changes. These in turn drive all production factors (Mincer, 1984). Scientific progress in this paper is defined as an increase of value of qualitative variables and the improvement of quantitative variables determined by science, education, innovation and research development, which then testify to the increase in human capital, which in turn translates into economic growth (Becker, 1993; Pelinescu, 2015).The effect is indicated to be visible in at least two aspects: (i) human capital influences the internal rate of innovation (Romer, 1990b); (ii) human capital influences the rate of diffusion of technology in the spirit and also an increase of 1% of the capital stock leads to a 0.13% increase in the rate of economic growth (Nelson & Phelps, 1966). Hence, investments in education and training are extremely important for the development of a given country (Wilson & Briscoe, 2004). In the Scandinavian countries they are at a very high level compared to other European countries (OECD, 2020). However, the literature lacks attempt which show the relationship between the variables determining

education, innovation and scientific development and the economic growth of these countries. Based on Sweden, an attempt was made to reconcile evidence on the effect of schooling on income and GDP growth. It was then shown that the increase in the level of education is not significantly related to the economic growth of the country (Krueger & Lindahl, 1999). In turn, studies conducted on data from Norway showed that investing in innovation has a positive effect on the Norwegian economic growth (Silfvenius, 2014). However, there is still no approach that would take into account more variables and would include Scandinavian countries in total. This study aims at verifying the main determinants of GDP growth in Scandinavian countries, with special regard to scientific progress. Therefore, the following research hypothesis was formulated: scientific progress has an essential impact on GDP growth in Scandinavian countries.

LITERATURE REVIEW

Economic growth models can be divided into two groups: neoclassical and endogenous models. neoclassical models assume the occurrence of decreasing revenues from reproducible factors of production and constant revenues from the scale. The classic model represented by Ricardo and Malthus assumes that the economy will stagnate in the long run, because with non-variable technology and natural resources, capital investments and labour inputs are subject to the law of diminishing revenues – which was justified by traditional factors of production: land, physical capital and unskilled labour (Sato, 1964). This group includes the Solow (1956), Ramsey (1928) and Diamond (1965) models. Neoclassical growth theory does not precisely explain the main determinants of long-term growth, indicating that technical progress, which is exogenous in nature, remains the main factor in this time horizon. The category of these models is widely used to explain the differences between the economic states of different countries – the Solow model indicates that the differences occurring at the level of GDP per capita income are largely explained by the savings rate, the rate of human capital accumulation and the population growth rate. It is built based on trade flows between market participants (Wang, 2019).

Endogenous models assume at least constant revenues from reproducible production factors. Their characteristic feature is the rate of return explained by the model itself (in the case of neoclassical it is adopted based on exogenous assumptions that relate to the development of important parameters, e.g. technical progress). Another element that distinguishes endogenous models is the perception of the accumulation of production factors for long-term growth. According to them, the accumulation of knowledge allows the economy to maintain a permanently higher growth dynamics, while in the light of neoclassical theories this factor is only temporary. The endogenous approach focuses on the attempt to quantify and identify the impact of determinants that shape long-term economic growth (Florczak, 2009). The basic endogenous models are Romer's learning-by-doing model (Romer, 1986), Lucas model (Lucas, 1988), Rebelo model (Rebelo, 1991), and models with the increasing number of goods and models with the improving quality of goods. The new growth theory also includes the Mankiw-Romer-Weil model (Mankiw *et al.*, 1992). It is an extended version of the Solow model, which in turn presented next to capital and labour – technological progress, which was responsible for increasing productivity (Florczak, 2009).

Romer learning-by-doing model

One of the flagship examples of models aimed at explaining contemporary economic growth is the Romer learning-by-doing model. Compared to neoclassical models, the Romer model does not assume decreasing revenues from reproducible factors of production. In this approach, knowledge is the only reproducible factor of production that shows growing revenues at the level of the entire economy. According to the author of the model, the knowledge that arises from the investments of individual enterprises can spread unlimitedly across the entire economy, and what's more, it can be used by enterprises without incurring additional costs (Romer, 1986).

The production function in the discussed model is marked by:

$$f_i(a_i, k_i, A) \tag{1}$$

where:

a_i- level of knowledge of a given company;
k_i- expenditure of other factors of production (capital, labour, etc.);
A - the general level of knowledge in the economy (sum of knowledge possessed by N companies).

From the assumption that knowledge is the only reproducible factor of production, it follows that $k_i = const$. We also assume that all enterprises in the economy are identical, therefore:

$$f_i(a_i, k_i, A) = f(a, k, A) \tag{2}$$

$$A = Na \tag{3}$$

At the level of the entire economy, which is the main aspect of this article, the function of the economy in the model is recorded as:

$$f(a, k, A) = f(a, k, Na) = F \tag{4}$$

The marginal productivity of knowledge at the level of the entire economy is increasing, while at the level of a single enterprise it is decreasing or permanent, therefore:

$$\frac{d^2 f(a,A)}{da^2} \leq 0; \qquad \frac{d^2 F(a,)}{da^2} > 0; \tag{5}$$

Production in the model can be allocated in two ways: consumption (c) or for investments (i), which create new knowledge: $f = c + i$. The accumulation of knowledge takes place according to the function $g(i/a\ )$, showing decreasing revenues and the constrained constant γ:

$$\frac{\dot{a}}{a} = g\left(\frac{i}{a}\right) < \gamma \tag{6}$$

The restriction introduced was set so that consumption and utility would not grow indefinitely. The utility function in the model has the form:

$$U = \int_0^\infty u(c) e^{-pt} dt \tag{7}$$

where:

$p > 0$ - time preference rate.

The market equilibrium in the presented model is determined based on the optimization problem maximizing the indicated utility function taking into account the limitation of knowledge accumulation and the production equation:

$$U = \int_0^{\infty} u(c)e^{-pt}dt \ \rightarrow max. \tag{8}$$

Provided that $\dot{a} \geq 0$ and $a(0)$ is given, as well:

$$U\dot{a} = ag\left(\frac{f(a,A)-c}{a}\right) \tag{9}$$

As shown in the above equations – households, by giving up current consumption, contribute to investment growth. Consequently, this leads to the accumulation of knowledge in the economy, showing growing revenues and allowing faster production growth from a given size of savings.

The perfectly competitive economy in the Romer model is not optimal in the Pareto sense. Investments in knowledge made by one enterprise contribute to the increase in the general level of knowledge in the economy, which is a common factor of production. A single enterprise in its investment decisions does not include these positive externalities, which results in the fact that the marginal knowledge product from a single enterprise is smaller than the marginal knowledge product at the level of the entire economy.

This means that a perfectly competitive economy accumulates too little knowledge and shows a lower growth rate than the economy managed by a central planner. This conclusion is because the Romer model takes into account positive externalities. State intervention is therefore important from the perspective of the entire economy to ensure an adequate level of knowledge accumulation. Without state involvement, companies will only consider private costs and benefits. As a result, in a highly competitive economy, the level of knowledge and the rate of GDP growth will prove lower than in an economy with an active state.

McMahon endogenous growth model

An alternative to the Romer model presented is the model of endogenous growth proposed by McMahon(2018), which was based on the work of Lucas, covering with his interest the impact of science and technology on the formation of national income(Lucas, 2009; Lucas & Moll, 2014).

$$Y_t = I_t(AK_t^{\beta}(\mu_t h_t N_t)^{1-\beta})h_{at}^{\gamma} \tag{10}$$

where:

Y_t - goods and services measured in GDP;
I_t - new ideas used to create and use available technology;
A - level of technology that remains constant in the absence of new ideas;
K_t - physical capital;
μ_t - share of hours that were not devoted to learning in the total available time (including working time);
h_t - average human capital defined as knowledge (acquired during the training period) and other skills;
N_t - population;
h_{at} - the average level of education.

The key issue in the described model is to indicate the role of external factors, including public activities in shaping social values in the form of altruism or cultural development. Also, the importance of public education activities is underlined to support the humanities, which can contribute to improving the quality of life for future generations, while they are less popular compared to the private sector. This relationship is contained in the value $I_t$representing the emergence of new ideas, as well as the share of time spent on learning $(1-\mu_t)$.This one would be much lower (especially in areas not directed at applied research) if the state did not play an intervention role.

The objective function aims to maximize the actual consumption per capita stream and in the case of this model is an indicator of optimal growth:

$$\int_0^{\infty} \frac{1}{1-\sigma}(c_t^{1-\sigma}-1)e^{-pt}\,\delta t \tag{11}$$

The consumption stream over an infinite time horizon($t=0,\dots,\infty$) is discounted using the p rate. The model also assumes the presence of consumer risk aversion marked byσ. Therefore, it is assumed that the state and individual households treat education (and the costs and benefits associated with it) in the long term. In turn, the value-added of human capital generated by households is given by the formula:

$$\frac{\delta h}{\delta t} = G_t/Y_t\delta(1-\mu_t)h_t \tag{12}$$

where:

$\frac{\delta h}{\delta t}$ - gross investment value in the creation of human capital;

G_t/Y_t - is the part of the income allocated by the state to education (both public and private);

δ - accumulation factor assuming that $1-\mu_t=0$, and therefore all remaining time available is allocated by the unit to education.

In the model, only the activity of households and universities enables the implementation and application of innovative ideas. New technologies are created based on education, which also includes work (it can be employed in research units, enabling scientific development and other "creative" forms of work). The presented model assumes the creation of capital based on work in a given period, but also thanks to the ideas used during learning:

$$l_t = \alpha h_t^{\eta} \tag{13}$$

$$h_t = h_{t-1}\frac{\delta h}{\delta t} - dh_{t-1} \tag{14}$$

Hence, human capital arises not only based on increasing the number of graduates of individual degrees of education but also during their professional work. The value of human capital in a given period can be aggregated by the sum of:

$$H_t = \sum_{t=0}^{\infty} N_t I_t h_t \tag{15}$$

The model, therefore, allows for taking into account the increase in human capital as an increase in the number of graduates and as the ability to spread knowledge after the end of the period of formal education.

The economic growth path defined as optimal, using the above assumptions, was presented in the model by the Hamiltonian equation:

$$H(K,h,\theta_1,\theta_2,c,\mu,t) = \frac{1}{1-\sigma}(c^{1-\sigma}-1) + \frac{\theta_1\left(I\left(AK^{\beta}(\mu hN)^{1-\beta}\right)h_a^{\gamma} - Nc\right)}{N} + \\ + \theta_2(G/Y\delta(1-\mu)h) \quad (16)$$

This equation makes it possible to determine the optimal growth in consumption and income per capita, and also indicates the optimal path of development. Income is the sum of consumption, investment and government expenditure in a given period. In the model, the increase in income and consumption are equal, because the other variables are considered exogenous. Accordingly, the path of consumption growth can be determined based on:

$$\left(\frac{\delta c}{\delta t}\right)c_t = MPP_{Kt} - p \quad (17)$$

This means that the optimal consumption growth rate is equal to the marginal efficiency of discounted physical capital. In a perfectly competitive economy, the marginal efficiency of discounted physical capital will be equal to the return on physical capital, which translates into a return on human capital:

$$MPP_{Kt} - p = MPP_{Ht} - p = \left(\frac{\delta c}{\delta t}\right)c_t \quad (18)$$

Based on the equation representing the optimal path of economic growth, it is also possible to determine a common rate of consumption, income and capital growth:

$$\left(\frac{\delta c}{\delta t}\right)c_t = \frac{(1-\beta+\eta+\gamma)}{1-\beta}\left(\frac{\delta h}{\delta t}\right)h_t \quad (19)$$

According to the model, the growth rate will be the higher the growth rate in investment in human capital will be. Also, along with the increase in external factors affecting education (e.g. new ideas or also an increase in government spending), this growth is accelerating. Hence, along with the increase in expenditure on the development of public education, the common growth rate of consumption, income and capital is accelerating. The same translation applies to social gratification resulting from the emergence of new skills. Along with the increase in education, there is an increase in the unit's wage to the entire population.

MATERIAL AND METHODS

Statistical data and research method

The study aimed to verify the determinants of GDP growth in Scandinavian countries with special regard to scientific progress. The research hypothesis was formulated as follows: scientific progress has an essential impact on the GDP growth in Scandinavian countries. Hypothesis verification process was carried out in the following way: the theoretical part represents the assumptions of Romers' learning-by-doing model and McMahons' model. Both models propose factors which explain economic growth, but their variables differ. Nonetheless, these are the two classical growth models that take into account scientific progress and human capital, unlike other models which focus on different types of determinants. By applying the multiple regression, all variables from the above models and other additional variables were combined, which made variable assessment possible, as to explain economic growth in the Scandinavian countries. The explanatory variables include selected data series related to key growth factors (such as: labour, human and physical capital) and additional ones determining scientific progress. The explained variable was GDP per capita (PPP based). The analytical software package Statistica was used to

create the model. The data was downloaded from the World Bank (World Development Indicators), CEIC Data, ILOSTAT and International Monetary Fund databases. These databases provide access to the longest time series of variables allowing verification of the research hypothesis. The choice of the length of the tested series was dictated by their availability. For each of the analysed countries, the longest possible time series of variables was selected (for 1990-2016 with an annual frequency).

Table 1. List of indicators used in the analysis

Type of variable	Indicator	Source
Dependent variable	GDP per Capita: PPP	World Bank (World Development Indicators)
Independent variable	Adjusted Savings: Education Expenditure	World Bank (World Development Indicators)
	Capital Stock: General Government	International Monetary Fund
	Capital Stock: Private	International Monetary Fund
	Employment in Services: Modeled ILO Estimate: % of Total Employment	World Bank (World Development Indicators)
	Expenditure: Net Investment in Nonfinancial Assets	InternationalMonetary Fund
	Foreign Direct Investment: USD mn: Annual	CEIC Data
	Gender Parity Index (GPI): Secondary School Enrollment: Gross	World Bank (World Development Indicators)
	Gender Parity Index (GPI): Tertiary School Enrollment: Gross	World Bank (World Development Indicators)
	Medium and High-Tech Exports: % Manufactured Exports	World Bank (World Development Indicators)
	Patent Applications: Non-Residents	World Bank (World Development Indicators)
	Patent Applications: Residents	World Bank (World Development Indicators)
	School Enrollment: Tertiary: % Gross	World Bank (World Development Indicators)
	Working time arrangement coverage: Full-time and part time workers	ILOSTAT

Source: World Bank (World Development Indicators), International Monetary Fund, CEIC Data and ILOSTAT (access: 23.06.2020).

RESULTS AND DISCUSSION

The models were developed based on the above-mentioned independent variables. In addition to obtaining a high adjusted coefficient of determination ($\mathrm{R}^2_{adjusted} > 0.95$), the model had to meet the requirements of normal distribution using the Shapiro-Wilk test ($\mathrm{p\ value} > 0.05$). The results of the study for three selected countries are presented below.

Figure 1. shows the GDP per capita trend model explained by values representing scientific development in Sweden. The adjusted coefficient of determination takes the value of 0.9965, which indicates a very good fit of the model to the values observed in reality.

The Shapiro-Wilk test of normality ($SW - W = 0.9714$; $p = 0.7441$) showed that the model meets the requirements of normal distribution. The following equation of the model explains the evolution of GDP per capita in Sweden:

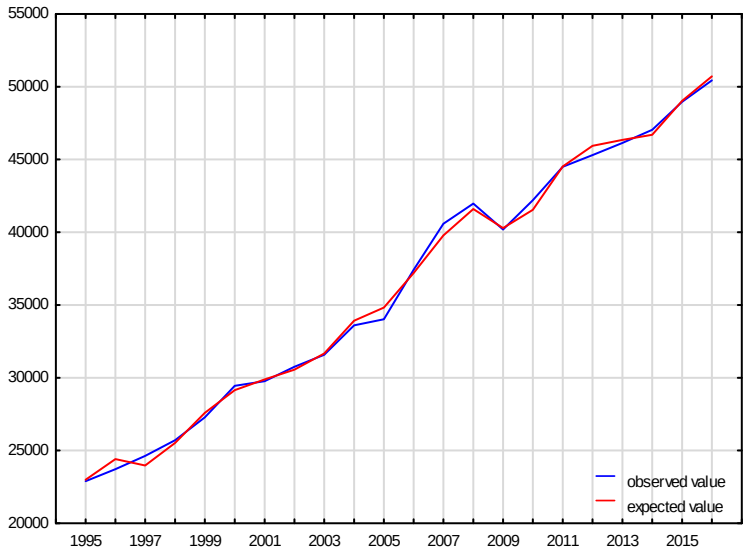

Figure 1. Expected regression model values relative to observed GDP per capita (adjusted by purchasing power parity) in Swedenin 1995-2016 period
Source: own calculations based on data from the World Bank (World Development Indicators), International Monetary Fund, CEIC Data and ILOSTAT(access: 23.06.2020).

$$Y_S = -68176.9 + 36.987 * x_1 - 6.4761 * x_2 + 582.216 * x_3 + 9.238 * x_4 - \\ - 75.713 * x_5 - 12427.9275 * x_6 + 1.5983 * x_7 \quad (20)$$

where:

Y_S - model regression function for Sweden;
x_1 - Capital Stock: General Government;
x_2 - Capital Stock: Private;
x_3 - Medium and High-Tech Exports: % Manufactured Exports;
x_4 - Working time arrangement coverage: Full-time and part time workers;
x_5 - School Enrollment: Tertiary: % Gross;
x_6 - Gender Parity Index (GPI): Secondary School Enrollment: Gross;
x_7 - Patent Applications: Residents.

The study shows that the change in GDP per capita in Sweden is affected by:

- positively: Capital Stock: General Government; Medium and High-Tech Exports; Working time arrangement coverage: Full-time and part time workers; Patent Applications: Residents;
- negatively: Capital Stock: Private; School Enrollment: Tertiary: % Gross; Gender Parity Index (GPI): Secondary School Enrollment: Gross.

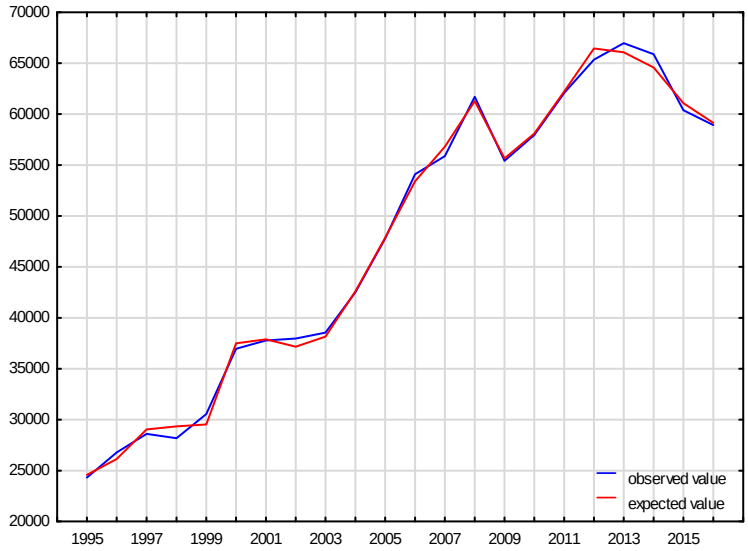

Figure 2. Expected regression model values relative to observed GDP per capita (adjusted by purchasing power parity) in Norwayin 1995-2016 period
Source: own calculations based on data from the World Bank (World Development Indicators), International Monetary Fund, CEIC Data and ILOSTAT(access: 23.06.2020).

The adjusted coefficient of determination in Norway reached 0.9963, which indicates a very good fit of the model. There were also no grounds for rejecting the hypothesis of normal distribution (Shapiro-Wilk test: $\mathrm{SW-W} = 0.9603$; $\mathrm{p} = 0.4961$). The model equation took the following form:

$$Y_N = -191638.49 + 3272.3457 * x_1 - 670.8313 * x_2 + 38.6884 * x_3 - \\ - 43.8548 * x_4 - 66748.2877 * x_5 + 2.0461 * x_6 - 16.653 * x_7 \quad (21)$$

where:

Y_N - model regression function for Norway;
x_1 - Employment in Services: Modeled ILO Estimate: % of Total Employment;
x_2 - Medium and High-Tech Exports: % Manufactured Exports;
x_3 - Working time arrangement coverage: Full-time and part time workers;
x_4 - Capital Stock: General Government;
x_5 - Gender Parity Index (GPI): Secondary School Enrollment: Gross;
x_6 - Patent Applications: Non-Residents;
x_7 - Capital Stock: Private.

The variables that turned out to be significant for this model are:

– positively related: Employment in Services: Modeled ILO Estimate: % of Total Employment; Working time arrangement coverage: Full-time and part time workers; Patent Applications: Non-Residents;

– negatively related: Medium and High-Tech Exports: % Manufactured Exports; Capital Stock: General Government; Gender Parity Index (GPI): Secondary School Enrollment: Gross; Capital Stock: Private.

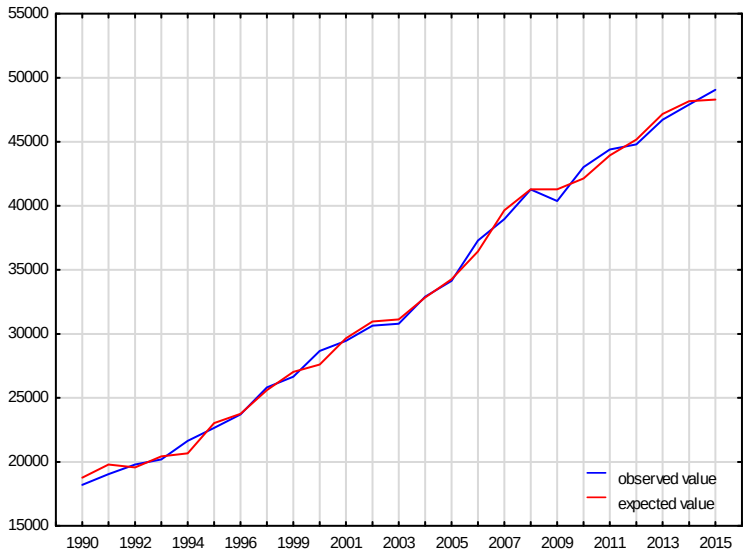

Figure 3. Expected regression model values relative to observed GDP per capita (adjusted by purchasing power parity) in Denmark in 1990-2015 period
Source: own calculations based on data from the World Bank (World Development Indicators), International Monetary Fund, CEIC Data and ILOSTAT(access: 23.06.2020).

The model showing the GDP per capita of Denmark using the variables determining the development of science reached the value of the adjusted coefficient of determination 0.9963. The high coefficient was shaped by variables that are components of the following equation:

$$Y_D = -23104.5016 + 38.0182 * x_1 + 0.1951 * x_2 - 9296.1249 * x_3 + \\ + 315.9805 * x_4 + 0.1841 * x_5 \quad (22)$$

where:

Y_D - model regression function for Denmark;
x_1 - Capital Stock: General Government;
x_2 - Expenditure: Net Investment in Nonfinancial Assets;
x_3 - Gender Parity Index (GPI): Tertiary School Enrollment: Gross;
x_4 - Medium and High-Tech Exports: % Manufactured Exports;
x_5 - Adjusted Savings: Education Expenditure.

After the Shapiro-Wilk test ($SW - W = 0.9224$; $p = 0.0582$), there were no grounds for rejecting the normal distribution hypothesis. The model shows that the following variables have the greatest impact on shaping GDP per capita in Denmark:

– negatively: Gender Parity Index (GPI): Tertiary School Enrollment: Gross;

– positively: Capital Stock: General Government; Expenditure: Net Investment in Nonfinancial Assets; Medium and High-Tech Exports: % Manufactured Exports; Adjusted Savings: Education Expenditure.

CONCLUSIONS

It can be stated that the determinants of the classical economic growth models proposed by Romer and McMahon, which include expenditures of other factors of production (capital, labour, etc.) and the emergence of new ideas (e.g. patent applications), had an impact in explaining the increase of GDP per capita in Scandinavian countries. However, not only that: the additionally proposed indicators defining scientific progress, e.g. growth of net investment in non-financial assets in Denmark, as well as medium and high-tech exports as % of manufactured exports in Sweden and Denmark (in case of Norway, this variable has had an opposite effect) also had a significant impact on the dependent variable. The presented relationships, the theoretical introduction of economic growth models, literature query and empirical verification has allowed to formulate the most important conclusions:

– Both in Sweden and Denmark, the medium and high-tech exports as% of manufactured exports has the largest impact on GDP per capita growth. In Norway, on the other hand, employment in service as% of total employment has the largest positive impact on GDP per capita growth. This shows the high dependence of the service sector and the export of modern technologies in the context of economic growth in these countries.
– Each country has different factors determining economic growth. However, the variable that repeated in each model is negatively affecting the Gender Parity Index (in Sweden and Norway in secondary and in Denmark in tertiary education).
– For this group of countries as a whole, it cannot be determined whether the size of capital stock (both general government and private) has a positive or negative impact. The case of each country should be considered separately.

As a whole, the study provides current confirmation of theoretical models of economic growth for highly developed countries, where education and human capital are very important in the context of their development. Additionally, thanks to the conducted empirical analysis the proposed hypothesis that: scientific progress has an essential impact on the GDP growth in Scandinavian countries, was confirmed. A similar verification may be used in the future for medium-developed and developing countries to check the impact of this category of variables on GDP per capita.

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Paradigm shift in the management of environmental and social challenges

Kenneth Chukwujioke Agbim

ABSTRACT

Objective: Despite the various approaches that have been adopted to control the negative consequences of environmental and social challenges, these consequences have persisted. Studies that have critiqued these challenges and the proffered solutions with the intent of offering a more encompassing and result oriented solutions are rare in the literature. Thus, based on the unprecedented dimensions the challenges have assumed, this study seeks to propose a holistic and more encompassing approach for managing the challenges.

Research Design & Methods: The study adopts a research methodology that is based on a critical review and analysis of 25 related papers. The keywords employed to select the papers that were published between 1980 and 2020 are environmental challenges, social challenges and strategic development goals.

Findings: The approaches adopted so far to manage environmental and social challenges have not yielded the desired results. This is because: all the stakeholders are not involved in the formulation and implementation of the approaches; the approaches are formulated and implemented as though environmental and social challenges are not interrelated; the approaches vary among the different institutions, countries and regions; in some areas, the level of implementation is partial, while in others it is full.

Contribution & Value Added: Environmental and social challenges are interrelated. As such the Environmental and Social Responsibility Network (ESRN) is proposed as a more encompassing approach since it will bring together all those who are directly and indirectly affected by the challenges.

Article type:	literature review
Keywords:	environmental entrepreneurship; social entrepreneurship; corporate social responsibility; social innovation; NGO
JEL codes:	L31, O35, M14, P28, Q56

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INTRODUCTION

The externalities of the production processes and consumption patterns in industrialized and developed countries of the world have been of great concern to individuals, organisations, governments and researchers. The same concern is being expressed about the poverty levels in developing and industrializing countries. Unarguably, while the affluence in the developed and industrialized economies have given rise to environmental challenges, the poverty in developing and industrializing countries have resulted to both environmental and social challenges. Consequently, the world is today confronted by unprecedented, complex, inter-related and interconnected global challenges. The most common of these challenges in the literature are environmental and social challenges.

These challenges include climate disruption, ozone depletion, over population, shortage of clean and accessible freshwater, ecosystem degradation, soil erosion, species decline and extinction, poverty, terrorism, and disease outbreak. Aside their harmful effects, these challenges have led to the emergence of opportunities for the development of areas of study, businesses, Non-Governmental Organizations (NGOs), institutes, and government ministries and agencies. In entrepreneurship, researchers and academics alike have invariably referred to these challenges using various terms namely, environmental business, ecological entrepreneurship, eco-enterprise, social entrepreneurship, sustainable entrepreneurship and green entrepreneurship (Armocida *et al.*, 2020; Ogionwo, 2016; World Health Organization, 2020).

Thirty years after the World Commission on Environment and Development (WCED) coined the term "sustainable development", sustainability discourse within the public sphere has reached unprecedented levels (WCED, 1987). This cannot be said of the applied approaches so far. Even though so many opportunities have been discovered from the challenges, the end to the challenges themselves is yet to be achieved. Owing to the increasing level of poverty in most countries of the world and the unprecedented loss of natural resources; the true capital of any nation, it is therefore important to protect the environment, and to ensure that there are enough resources to fill the needs of both the current population and future generations in general and the poor in particular. This call has been triggered by: current researches in this area; challenges of enforcing environmental standards and laws by governments and NGOs; the high cost of waste management; information from individuals, households, communities, organisations, and the market place, the corruption bedevilling the implementation of government welfare programmes; and consequences of man's activities in the environment.

Researchers, policy makers, organisations, institutions and individuals have alluded to the persistence of these challenges amidst the proffered different solutions to both the environmental and social challenges. However, undoubtedly, the relatedness of these challenges and the proffered solutions are holistically not well understood in the public glare. Moreover, studies that have critiqued these challenges and the proffered solutions with the intent of offering a more encompassing and result oriented solutions are not only rare but have not been sufficiently brought to the fore. Upon this thrust and through the review of relevant literature, this paper: examines the typology, causes and effects of environmental and social challenges; examines the previous approaches adopted in managing environmental and social challenges; and makes a case for environmental and social responsibility network.

MATERIAL AND METHODS

The research methodology adopted in this study is critical review and analysis of related literature. Papers published between 1980 and 2020 were considered in this study. These papers were generated from EBSCOhost database using "environmental challenges", "social challenges" and "strategic development goals" as keywords. Journal articles that did not focus on the causes, effects and responses or proffered solutions to the challenges were excluded. In all, 25 papers were selected and analysed in the study.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Typology of environmental and social challenges

The major environmental issues that the world is facing today are degradation of air and land, water scarcity, deforestation, water pollution, climate change, ozone layer depletion, flooding and a decline in biodiversity. Most societies are dealing with social challenges such as food crises, unemployment, aging population, energy problems, health care challenges, poverty, terrorism, inequality, water scarcity, demographic shift, sexual violence, infrastructural inadequacies and economic challenges. There are also social challenges that are consequences of evolving lifestyles, social institutions and structures. These include hunger, illiteracy, epidemic and high rate of population growth (Ogionwo, 2016; WESS, 2013). More recently, coronavirus disease, codenamed COVID-19, confined the whole world to several months of compulsory holidays (Armocida *et al.,* 2020; World Health Organization, 2020).

Causes of environmental and social challenges

Environmental and social challenges are caused mainly by natural forces and/or human influences (Ibimilua & Ibimilua, 2014). These challenges result from imbalances, corruption and inequality (Dilys *et al.*, 2011). Some of the factors behind environmental degradation are population growth, polluting technologies and overexploitation of ecosystems driven by unsustainable consumption and production patterns (UNEP, 2015). Climate change further damages the ecosystems and causes harmful effects on human livelihoods, agricultural productivity and food security (Dugarova & Gülasan, 2017). As the global population increases and forest land is converted to agricultural and other uses, the world's forests continue to shrink, which causes loss of habitat for millions of species (FAO, 2015, 2016; Flower, 2006). Coronavirus disease that is plaguing the world originated from Severe Acute Respiratory Syndrome (SARS-CoV-2). However, the pandemic was first noticed in Wuhan, China (Gript, 2020; Human Rights Watch, 2020).

Effects of environmental and social challenges

The destruction of forests and vegetation cover could bring in its wake surface runoff that erodes the soil, siltation, floods, and local climatic change. People turn to new land and start the process all over again owing to the loss of soil fertility. Gases such as water vapour, carbon dioxide, ozone, methane and nitrous oxide together create a natural greenhouse effect. In addition, human activities such as cement production, land use conversion, gas flaring, fossil fuel combustion and bush burning are also contributing to

the greenhouse gases. The resultant effect is climate change (IPCC, 2015). Climate change results in but not limited to flooding, cyclone, fires, hail, windstorm and permafrost melting. Climate change affects river flow, with serious implications for human settlements and agriculture. It affects human infrastructure, including transportation, energy demand, human settlements, the property insurance industry, and tourism (Flower, 2006). Climate change negatively impacts food security and economic growth. It also leads to poverty and increased displacement (IPCC, 2015).

The most affected part of the population by climate change are the least responsible for causing them and have limited capacity to cope with the consequences due to the lack of adequate infrastructure, public services and social protection systems. Climate change is contributing to various health threats such as malnutrition and outbreaks of infectious diseases, including malaria, diarrhoea (UNRISD, 2012, 2016) and more recently COVID-19. COVID-19 negatively impacts the social, economic, health and educational sectors, and economy of most countries. It poses untold fear and challenges to researchers and health-care providers. The highly contagious nature of the pandemic and the quarantine and social distancing measures adopted to curtail the spread has consequently made some parts of the environment isolated and deserted. Some of these places are being used for isolating those who tested positive and/or as burial ground for those who died of the pandemic (Armocida *et al.*, 2020; Hargreaves *et al.*, 2020; Rosenthal *et al.*, 2020; Weir, 2020).

The role of poverty in deforestation is increased by overpopulation and the search for fuel wood by impoverished people (Anand, 2013). The constantly rising world population is shrinking forest reserves, and increasing air and water pollution. Crude oil spillage and some of the chemicals used in agricultural production are adversely affecting surface and underground water. Rapid population growth also strains school, medical and transportation systems. High population growth and urbanization is gradually reducing the ability of individuals to afford a balanced diet, decent shelter and clothing, and have access to clean water (Flower, 2006; Khan & Chang, 2018). High level of consumption and unacceptable waste disposal practices pose grave risks. Many of those who bear these risks do not benefit in any way from the activities that produce the wastes (Anand, 2013).

As environmental and social challenges are growing, the cost for failing to solve them is increasing dramatically (OECD, 2011). Despite the negative consequences of these challenges, opportunities have been created from them. Aside the policy shifts and new partnerships that are prompted by responses to these challenges, the technological innovations that led to the use of cell phones for communication, the use of satellite imagery and improved telecommunication mapping systems (Gelsdorf, 2010) are some of the manifest positive evidences of these challenges as depicted by the previous approaches adopted in their management.

Previous approaches adopted in the management of environmental and social challenges

Strategies such as government ministries, global goals/strategies, NGOs, Corporate Social Responsibility (CSR) and social innovations have previously been adopted to tackle these problems.

The government ministries

Until now, the thinking in some quarters is that the main actor to tackle environmental and social challenges is the governments through their respective ministries of environment and social development (Fujii & Shintani, 2008). In the past, the responsibility for global challenges was placed in environmental ministries and institutions (WCED, 1987). These ministries and institutions had little or no control over the destruction caused by agricultural, industrial, urban development, forestry, and transportation policies and practices. However, the governments of various nations particularly in Africa have been able to initiate different policies, programmes and schemes to tackle environmental and social challenges. The governments achieved little or no success because most of the programmes usually do not get to the poor, underprivileged and marginalized. Moreover, the programmes were diverted from the target areas. In spite of the efforts of the government to preserve and keep the environment clean through its public environmental sanitation, water and waste management enterprises, environmental challenges are increasingly visible in the global south (Mbebeb & Songwe, 2011; McFarlane, 2011).

Global goals and strategies

Environmental and social challenges cannot be implemented by government alone due largely to limitation in their management ability, and human and financial capital capacity (Moses & Olokundun, 2014). The Millennium Development Goals (MDGs) and Strategic Development Goals (SDGs) came to be because governments of developing countries were unable to tackle environmental and social challenges like developed countries (Dugarova & Gülasan, 2017; Shintani, 2011). The MDGs was aimed at reducing extreme poverty and other time-bound targets between 2000 and 2015 (United Nations Millennium Project, 2015). During the MDGs, substantial efforts were made to safe guard the environment. For instance, the threats to biodiversity which are caused by environmental degradation, pollution, overexploitation and acidification of ocean and seas are not confined to terrestrial ecosystems. Despite increasing actions to safeguard biodiversity, pressures on biodiversity have continued to grow (Laffoley & Baxter, 2016).

Furthermore, substantial gains were made in various dimensions of poverty; child mortality rate, maternal mortality ratio and illiteracy rate (UN, 2015a). Despite these gains, a large proportion of people are still living in poverty across the regions, within countries, between urban and rural areas, and across households. In addition, in spite of the progress made in controlling the outbreak of infectious diseases, there was outbreak of Ebola virus disease (Dugarova & Gülasan, 2017; WHO, 2016), the Middle East Respiratory Syndrome (MERS) outbreak in the Arabian Peninsula in 2012 and in South Korea in 2015, the 2009 influenza pandemic, and the 2015 Zika virus disease (WHO, 2015). Similar conclusions were also reached for all other MDGs (UN, 2015b, 2015c; World Bank Group, 2016). Consequently, the UN came up with a similar set of goals, SDGs 2030 agenda. Ending poverty and reducing inequalities are central to the 2030 agenda of the SDGs (UN, 2015a, 2015 c). The 2030 agenda also focuses on sustainable management of ecosystems and natural resources, sustainable consumption and production patterns, and urgent action on climate

change. This is owing to their critical inter-linkages with other goals like eradicating poverty, reducing inequalities, and promoting inclusive and sustainable economic growth (Dugarova & Gülasan, 2017).

Non-governmental organisation

Aside the contributions of governments, the MDGs and the SDGs in tackling these challenges, and the inability of the efforts of governments alone, and the pockets of failures recorded in the implementation of the MDGs, it is equally important to mention the contributions of NGOs. Mostashari (2005) notes that the term, "NGOs", was used in 1945 owing to the need by the UN to differentiate between participation rights for intergovernmental specialized agencies and those for international private organisations in its charter. Over the past decades, environmental NGOs' activity within the UN processes has intensified. Today, some of the innovations introduced by these NGOs are now a routine element of intergovernmental deliberations. NGOs have made several attempts in providing solutions to mankind challenges. However, in spite of the increasing number of both environmental and social NGOs all over the world, their impact with respect to tackling these challenges has not justified the increase. A case in point is the emergence of environmental NGOs in China. It has been reported that their emergence has not completely put paid to the environmental challenges in the country (Go *et al.*, 2018; Wilson, 2017).

Corporate social responsibility

Corporate social responsibility (CSR) emerged based on the idea that business and society are interrelated, and that CSR contributes to corporate reputation and business performance. Thus, firms are globalising their activities and practices. This is evident in the increasing number of investments in different communities and underdeveloped countries by firms in developing and developed countries (Fujii & Shintani, 2008; Weber, 2008). The inclusion of environmental protection as one of the dimensions of CSR (Sweeney & Coughlan, 2008) is a pointer that like the social challenges, environmental challenges on a broader sphere should also concern organisations. Owing to corporate corruption, the practice and contributions of CSR to the society today, leaves much to be desired. Agbim (2018) asserts that an organisation is obligated to give to the society part of its profit. This is with respect to the impact of the negative externalities its activity makes on the society's ecosystem and facilities, and as a way of endearing itself to the society. However, corporate adherence to all the principles of CSR does not connote high level of corporate ethicality. The global corporate corruption and unethical corporate practices in corporate giants like Arthur Anderson, Enron, Worldcom, Tycon, Qwest, Adelphia and Satyam were perpetrated by the management hiding under the cover of CSR.

Social innovations

Social innovation entails changing certain human consumption pattern, income and lifestyle, creating an environmentally superior production processes, products and services (Singh & Panackal, 2014), and creating enterprises with an environmental and social mission. Social innovation was adopted because it seeks to satisfy new needs not provided for at a defined period of time by the market. It equally seeks to improve the welfare of individuals and communities through social change (incremental or radical). Thus, it brings together different kinds of expertise, skills, and tangible and intangible assets. However,

there is a systemic failure in fostering social innovation. This is because social innovation focuses on local challenges, thus excluding global challenges. Also, social challenges are multidimensional, multidisciplinary and multi-stake holding (e.g., universities, research institutes, private companies, government, civil society, citizens) in nature (OECD, 2011).

To reduce the rate of systemic failure, social norms were applied but failed to yield the much desired results due to the fact that social norms and values shift in complicated and often unexpected ways and respond to myriad forces at both lower and higher levels of social organisation. Policy instruments such as penalties, regulations, and incentives also failed on account of corruption (Carlson, 2001; House of Lords, 2011). Employment of education, ingraining of certain behaviours into all those concerned, introduction of micro-finance and social businesses, and all other measures applied by social and environmental NGOs, foundations, Civil Society Organisations (CSOs), religious organisations and philanthropists have not yielded the much desired outcomes (Christakis & Fowler, 2009; OECD, 2011). The persistence of these problems is a clear proof that man is yet to find the methods and tools with which to apply the interdependence in solving these problems. This suggests that the challenges can be tackled through a network structure.

The case for environmental and social responsibility network

Previous approaches adopted and implemented to manage environmental and social challenges are fragmented and individualistic. That is, the approaches are being formulated and implemented without involving all the stakeholders. The approaches are formulated and implemented as though environmental and social challenges are not interrelated. Even though the challenges are global in nature, the different institutions, countries and regions formulate and implement varying approaches to tackle the challenges. Again, with respect to implementation, while some institutions, countries and regions embark on full implementation, others carry out partial implementation. This is owing to corrupt practices such as diversion of the interventions by the institutions saddled with the responsibility. As such, these approaches have not helped to control the challenges.

Environmental challenges are complex and interlinked, not only in themselves but also with social challenges. The solutions for one environmental or social challenge can lead to or create new environmental or social challenges (Bierbaum et.al, 2018). For example, global warming and land degradation, and their attendant consequences of damages to firms, homes and arable lands for agriculture can create job losses or unemployment, displacements or loss of shelter, health challenges, hunger and poverty. Conversely, poverty can drive a person into illegal felling of trees for the purpose of gathering firewood to sell in the market. Such person may as well engage in tree burning in other to make charcoal which can be sold as cooking fuel. Thus, such acts can contribute to land degradation, deforestation and ozone depletion.

From the foregoing, it can be deduced that acting alone, spirited individuals, philanthropists, companies through their CSR, governments or states through their ministries of environment and social development, and institutions can not completely tackle these challenges. In addition, the pockets of achievements by these individuals and organisations have not been sustained. Consequently, there is need for a new approach that is born out of a new idea and concept. The failure of the previously proffered solutions can be linked to the absence of collaboration among the stakeholders. The collaboration brings together the objectives of different agencies, enhances synergies, untangles complexity, gives feedbacks and builds whole-system resilience. To address the intercom-

nectedness between environmental and social challenges requires systems thinking; the interactions of all the components of the system. It requires the interactions of all the stakeholders (Bierbaum *et al.*, 2018). The term that fits this description is "network". Specifically, the individuals and organisations (or institutions) that have hitherto acted alone in tackling these challenges must be actors in this association. This should include all those contributing to the environmental and social challenges, those affected by the network challenges, those who feel they are not affected, owner-managers of both environmental and social NGOs, the eco-preneurs and socio-preneurs, the philanthropists, manufacturing firms, institutions (local, national and international) and the governments (local, state, federal).

Governments should be involved because they make the largest impact on the environment. By this they are supposed to take the lead in tackling these challenges. However, this is not so going by the GlobeScan poll of experts; of all the efforts by businesses, NGOs and governments, governments efforts in this regard are ranked last (Prahalad & Hart, 2002). NGOs should be made to actively participate in the joint effort to tackle these challenges owing to their previous roles in environmental activism (McGann & Johnstone, 2006), social and community development. NGOs carry out their projects more efficiently and at lower costs than government agencies and work with firms to enhance their CSR (Nikkhah & Redzuan, 2010).

Ecopreneurs and ecopreneurships promote greener firms and economies, generate decent jobs, and fight to eliminate persistent poverty (Choi & Gray, 2008; UNEP, 2011). Environmental entrepreneurships disseminate in the market place information that help make consumers more aware of their environment. The operations of ecopreneurships are closely geared to saving, nurturing or restoring the environment (Menon, 2017). Social entrepreneurs and entrepreneurships focus on the identification of social challenges and the adoption of innovative and entrepreneurial approaches targeted at proffering short and long term solutions (OECD, 2011). Social entrepreneurs always seek to eradicate needs rather than respond to them. Social entrepreneurs facilitate the surmounting of social challenges (El Ebrashi, 2013). The dynamism of social entrepreneurship is undoubtedly a spring board for overcoming social challenges (Moses & Olokundun, 2014).

Network relationships at domestic and international level are effective in controlling environmental challenges (Gelsdorf, 2010; Ibimilua & Ibimilua, 2014; Karaduman, 2014; Khan & Chang, 2018). Networks promote the use of the old and new or social media for learning and reacting to issues such as environmental and social challenges. Networking via social media helps to generate resources that encourages environmental activism and enhances the creation of entrepreneurship (Shane & Venkataraman, 2000). The quality of a network influences the efforts of the network in tackling social and environmental challenges. Similarly, the quality of a network depicts the composition, exposure and connections of the actors. Social networks can profoundly affect human behaviour, which is the primary force driving environmental change (Baker, 2000).

CONCLUSIONS

All the efforts of individuals, the academia, organisations, NGOs and governments to manage the global environmental and social challenges have not yielded the much desired end. Moreover, in few cases where collaborative approaches were applied, the intervention was not encompassing. The proper management of these challenges is needed most now

that the untold adverse consequences are globally affecting both the rich and the poor. Conversely, the poor and the rich will be better off if the challenges are well managed. Consequently, this study established that Environmental and Social Responsibility Network (ESRN) is a more encompassing and appropriate intervention proposed to manage environmental and social challenges. The ESRN approach entails bringing all those who are directly and indirectly affected by these challenges (e.g., spirited individuals, community leaders, CEOs of organisations, directors of NGOs, heads of governments and heads of institutions) to form networks at community, State, National and International levels. This approach is justified on the ground that these challenges are intertwined, interrelated and interdependent as such does not require a fragmented and individualistic approach. It needs to be tackled jointly by every person and organisation concerned.

This paper extends existing literature from the previous fragmented and individualistic approaches to tackling these global challenges to ESRN; a more holistic and encompassing approach. The findings of this study will spark off debate among spirited individuals, the intelligentsia, development practitioners, scholars and researchers that will generate the modus operandi for ESRN in all the suggested operational levels. Researchers will also be inspired to investigate why specific environmental and social challenges have persisted. It will equally motivate all those who are directly and indirectly affected by the challenges to be more committed to ending or reducing them to the barest minimum. The conceptual nature of this paper on its own is a limitation. To make the views expressed in the paper more holistic and concrete, it should be contrasted with empirical survey using triangulation method.

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Linking relational capabilities and entrepreneurial orientation of an organization

Rafał Kusa

ABSTRACT

Objective: The aim of the paper is to examine relational capabilities of an organization in the context of entrepreneurial orientation and to identify potential interconnection between them.

Research Design & Methods: The sample consists of 363 small- and medium-sized enterprises (SMEs) representing both service and manufacturing (high- and low tech) industries. The correlation analysis was employed to test the associations among variables. The variables were dimensions of entrepreneurial orientation (i.e., risk-taking, innovativeness, and proactiveness), dimensions of relational capability (i.e., the intensity of inter-organizational relations, resources involved in inter-organizational relations, and management of inter-organizational relations), and firm's performance.

Findings: The findings show that all dimensions of relational capabilities are associated strongly with risk-taking, while their associations with innovativeness and proactiveness are weak, however statistically significant. The access to external resources, their utilization, and sharing their resources are the most important aspects of relational capabilities. All variables are significantly correlated with performance.

Contribution & Value Added: The study's results imply that relational capabilities may play an important role in pursuing entrepreneurial opportunities. The findings confirm the importance of behaviours focused on sharing resources (including knowledge). This observation has a practical implication for entrepreneurs.

Article type:	research paper
Keywords:	relational capabilities; inter-organizational cooperation; entrepreneurial orientation; risk-taking; innovativeness; proactiveness
JEL codes:	L14, L22, L26

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INTRODUCTION

Relational capabilities as well as entrepreneurial orientation is perceived as an important determinant of an organization's performance. Modern models of competitive advantage indicate the role of relational sources in achieving sustainable and inimitable competitive advantage (Czakon, 2005). Entrepreneurship is also perceived as a source of competitiveness, especially at the initial stage of an organization's development (Bednarczyk 2001). Both entrepreneurial approach and relational capabilities are important characteristics of an organization in terms of pursuing entrepreneurial opportunities. Moreover, they can occur interconnected. It is displayed through sharing ownership in business start-ups (Ruef, 2010) or involvement of entrepreneurs in inter-organizational networks or clusters. Identification of entrepreneurship with individuals is presented by Morris (1998) as one of the myths regarding entrepreneurship. Within an organization, entrepreneurship is practiced by teams Morris (1998) and Johannisson (2003) presents entrepreneurship as "a collective phenomenon" (Ribeiro-Soriano & Urbano, 2009, p. 422). Consequently, entrepreneurial teams and collaboration among employees is a subject of collective entrepreneurship (Ribeiro-Soriano & Urbano, 2009). Forming cooperation relationships with external partners can be considered as a manifestation of entrepreneurship of an organization (Franco & Haase, 2013). Moreover, external collaboration enables a firm to be entrepreneurial; in parallel, entrepreneurial organizations have the capacity to form collaborative relationships outside the organization. These characteristics are a subject of collaborative entrepreneurship (Ribeiro-Soriano & Urbano, 2009). Collaborative entrepreneurship can lead to the creation of economic value through the sharing of information and knowledge (Gupta & Govindarajan, 2000). As the basis for collaborative entrepreneurship, companies use relational capital (Welbourne & Pardo-del-Val, 2009). Thus, collaboration, both inside and outside the organization, is associated with entrepreneurial activity. Relational capabilities (along with, for example, the choice of appropriate partner(s), the management of the partner relationship, the accumulation of relational capital) can determine the effectiveness of inter-organizational collaborations (Yao et al., 2009). Despite numerous concepts reflecting the role of collaborative relations in entrepreneurial activity, and the role of relational capability in building collaborative relations, links between entrepreneurship and relational capabilities are not fully explained.

Thus, the general question behind the paper is whether relational capabilities can contribute to the pursuit and exploitation of entrepreneurial opportunities. In this paper, this question will be referred to small and medium-sized enterprises (SME). SMEs are believed to embody the entrepreneurial spirit. In parallel, SMEs face many constraints due to their limited resources. In this preliminary study we will attempt to answer the following detailed questions: Are entrepreneurial behaviours of SMEs associated with relational capabilities? What are correlations between dimensions of entrepreneurial orientation and selected dimensions of relational capabilities (that reflect the intensity of inter-organizational relations, how are they focused on resources, and how are they managed)? Such questions are in opposition to the entrepreneurs' image presented often in discussions about entrepreneurship, wherein entrepreneurs are presented as individual heroes who value their autonomy and behave aggressively towards their competitors. This paper aims

to identify the potential interconnection between entrepreneurship and relational capabilities, in particular, to examine the selected dimensions of relational capabilities of an organization in the context of entrepreneurial orientation (EO).

This a conceptual paper. However, the theoretical propositions regarding potential links between entrepreneurial orientation, relational capabilities, and firm performance are preliminarily examined with correlations analysis as a part of this study; the sample consists of small- and medium-sized enterprises. The theoretical background is based mainly on the literature on organizational entrepreneurship and relational capacity. Specifically, the literature on relational capacity and entrepreneurship, particularly entrepreneurial orientation, is analyzed in terms of mutual connections and common approaches. The remaining article is as follows. First, we identify the main research problems in the fields of entrepreneurial orientation and relational capacity. Second, we present our sample, tool, and method. Third, we present and discuss our findings. And finally, we conclude and recommend future studies' development.

LITERATURE REVIEW

Entrepreneurial Orientation

Entrepreneurship is exhibited in various ways. Entrepreneurship can be identified with creating organizations (Shook et al., 2003). Gartner (1989, p. 47) states that "what differentiates entrepreneurs from non-entrepreneurs is that entrepreneurs create organizations, while non-entrepreneurs do not". An entrepreneurial act of creating a new organization can take place within an existing organization, which is perceived as one of the manifestations of corporate entrepreneurship (Sharma & Chrisman, 1999). Entrepreneurship is perceived as "a process by which individuals – either on their own or inside organizations – pursue opportunities without regard to the resources they currently control" (Stevenson & Jarillo, 1990, p. 23), however, McGrath and MacMillan posit that "entrepreneurship is about the relentless pursuit of opportunities as well as resources" (Ma & Tan, 2006, p. 714). Thus, the role of resources is differently presented in the concepts of entrepreneurship.

The process of entrepreneurship comprises identification and evaluation of opportunity, development of a business plan, determination of required resources, and management of the resulting enterprise (Hisrich et al., 2005). The entrepreneurial process does not end when the organization is founded, and it can repeat periodically (Kusa 2017a). Entrepreneurship is also presented as a set of attitudes (namely, the desire to achieve, the passion to create, the yearning for freedom, the drive for independence, hard-working, calculated risk-taking, continuous innovation, and undying perseverance [Ma & Tan, 2006]).

One of the most common conceptualizations of firm-level entrepreneurship is the entrepreneurial orientation (EO), which is characterized by "a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities" (Lumpkin & Dess, 1996, p. 137). According to EO, the main dimensions of entrepreneurship are risk-taking, proactiveness, and innovativeness (Covin & Slevin, 1989). Anderson et al. (2015, p. 1583) define EO as "a multidimensional construct consisting of two non-interchangeable dimensions – entrepreneurial behaviours and managerial attitude towards risk" where "both di-

mensions are fundamentally necessary for EO to exist". Other operationalizations augment EO with autonomy and competitive aggressiveness (Lumpkin & Dees, 1996), inter-organizational cooperation (Kusa, 2017b), or coopetition (Kusa 2020).

There is numerous evidence proving the positive impact of EO on firm performance (e.g., Hughes & Morgan 2007). Additionally, firm-level entrepreneurship is perceived as a tool of strategic development of an organization (Bednarczyk, 1996) as well as internationalization (Narayanan, 2017). EO is also linked with innovation intensity (Benazzouz, 2019).

Dimensions of EO can be associated with inter-organizational relations. In particular, proactiveness, which refers to a firm's initiatives and actions to 'shape the environment' (Lumpkin & Dess, 1996, p. 147), can require cooperation with other entities. Furthermore, an abundance of resources (which is one of the reasons for collaboration) can encourage proactiveness (Khan & Manopichetwattana, 1989). Relational capacity, which enables sharing resources, can interrelate with attitude toward risk-taking. Finally, associations between innovativeness and relational capital are evidenced in the literature (e.g., Franco & Haase, 2013). Finally, in the case of limited access to resources, inter-organizational collaboration along with relational capabilities may be necessary to seize the entrepreneurial opportunity or create a new organization.

To sum up, inter-organizational relations are not present in the concepts of organizational entrepreneurship (including entrepreneurial orientation), however, they are indirectly related to these concepts.

Relational capabilities

Relational capabilities are defined as superior skills to manage resources shared between companies (Rodriguez-Diaz & Espino-Rodriguez, 2006). More specifically, Czakon (2009, p. 57-58) defines relational capabilities as "purposefully created combination of management and governance structures that allow carrying out value creation and learning processes by two or more parties under conditions of joint resources and capabilities exploitation in order to achieve partners' objectives". Relational capabilities are associated with relational capital which is an extension of human capital, where the relationships people have with others are important and the most inimitable (Welbourne & Pardo-del-Val, 2009). The theoretical background of analyzing relational capacities lies in the resource-based view and transactional cost theory. The relational capabilities are crucial for inter-organizational cooperation and networking activity of an organization, especially for small and medium-sized enterprises (Welbourne & Pardo-del-Val, 2009).

Czakon (2009, p. 60) posits that "relational capabilities are numerous, complex, heterogeneous, and equifinal" and its components are governance, asset, knowledge management, value chain management as well as other skills, resources, structures, and processes. More specifically, among components of relational capabilities are the ability to absorb competencies from others, to combine and coordinate the technical dimension of a large number of firms, to combine existing competencies to generate new knowledge (Lorenzoni & Lipparini, 1999), abilities related to value activities and the value system, capability to exploit current actor competencies through effective knowledge transformation and sharing, open, trusting culture (Moller & Svahn, 2003), learning and innovation, asset orchestration, bargaining, and contractual competence, efficient governance and incentive alignment (Augier & Teece, 2007), improving knowledge management, providing internal coordination, facilitating interaction and accountability, maintaining ex-

ternal visibility (Dyer & Kale, 2007). Some antecedents of relational capabilities can be identified within an organization. They lie in the propensity to the commitment of resources, knowledge, and readiness to cooperate (Czakon, 2009).

Welbourne and Pardo-del-Val (2009) have built the relational capital scale. This scale comprises following measures: (1) the level of customer service (future and to date); (2) the relationship managers have with employees (future and to date); (3) the quality of relationships with clients (future and to date); and (4) the relationships with external firms such as partners (future and to date). Ebers and Maurer (2014) have built a two-items scale for both inter- and intra-organizational tie strength. They measured inter-organizational tie strength based on the closeness and communication frequency between project team members and their colleagues at the external project partner firms Additionally, they posit the importance of trust and absorptive capacity. To measure inter-organizational trust, they refer to three items: the degree to which project team members and their external colleagues could trust each other (1) to decide and act professionally and competently; (2) to receive all necessary and reliable information; and (3) to keep their promises. They measure absorptive capacity on the basis of the manifestations of external knowledge acquisition processes (as indicators for potential absorptive capacity) and internal knowledge transfer processes (as indicators for realized absorptive capacity).

In this study, we will focus on the following dimensions of relational capabilities: resources involved in inter-organizational relations, management of inter-organizational relations, and manifestations and results (intensity) of inter-organizational relations.
Relational capabilities can be crucial in the case of organizations that have limited resources, for example, small enterprises (Welbourne & Pardo-del-Val, 2009). In this study, relational capabilities will be confronted with dimensions of entrepreneurial orientation and firm performance in the SME context.

MATERIAL AND METHODS

The empirical analysis of the paper is based on data that were collected in February 2020. The data were gathered among a population of Polish small- and medium-sized enterprises (SMEs), specifically with 5-249 employees. The sample consisted of the firm representing both manufacturing (high- and low tech) and service industries. Our choice of sampling was motivated by two criteria. First, we selected SMEs as they rely to a great extent on external resources than large companies and, consequently, the role of external relationships is significant. Second, a multi-industry approach was preferred, because we expect the role of relational capabilities can vary regarding the dominant type of activity. The informants were business owners or general managers or HR managers or R&D managers; all with more than three years of work experience in the company. A total of 363 questionnaires were collected with the PAPI technique.

Our variables were firm performance, dimensions of entrepreneurial orientation, and dimensions of relational capabilities. Some items employed to measure the EO dimensions (risk-taking, innovativeness, proactiveness) and firm performance were proposed previously by Hughes and Morgan (2007); some of these items were modified. The coefficient "Risk-taking" consists of items related to acceptance of a high level of risk (if it would give a chance for above-average profit), the firm's courage in the exploitation of risky opportunities, readiness to radically change the plans (if it would give a chance of gaining above-

average profit), and perception of risk-takers within the organization. The coefficient "Innovativeness" comprises items related to active introducing improvements and innovations within the organization, creativity in methods of operation, innovativeness of products, and the role of innovations in the company's success. The coefficient "Proactiveness" includes items related to analyzing the external environment, identifying future trends, opportunities and needs, initiating actions (to which other organizations respond), and taking the initiative in every situation (e.g., against competitors, in projects, and when working with others). The coefficient "Performance" comprises items that reflect market share of the company's product (relative to competing products), the level of income, economic results and the firm's growth (relative to the firm's direct competitors), increase in income over the past years, and position (dominance) of the firm in its market.

Based on a literature review, to measure the relational capability we have separated sub-dimensions of relational capabilities and have built three coefficients. The coefficient "Intensity of Inter-organizational Relations" consists of items related to search and cooperation with partners, participation in networks, and incomes gaining through inter-organizational cooperation. The coefficient "Resource-Focused Inter-organizational Relations" comprises items related to access to external resources (including knowledge), as well as utilization of resources and sharing their own resources. The coefficient "Inter-organizational Relations Management System" includes items related to the role of inter-organizational cooperation in every-day operations, policies, procedures, and duties of employees related to collaboration, and adjustments of our operations to the requirements of the cooperation. In total, our questionnaire consists of thirty items measuring the seven variables. Each item was assessed by the respondents on a seven-point scale. The overall value of each index was counted as an average of the items included in the index. All variables (coefficients) were tested in terms of reliability; the Cronbach's alpha coefficient for each variable are around or above 0.8, which represents satisfactory strengths of the association regarding its sub-items (Nunnally & Bernstein, 1967). The variables and results of reliability analysis are presented in Table 1.

Table 1. Variables characteristics and Cronbach's alpha characteristics

Variable	Abbreviation	Number of items	Cronbach's alpha
Risk-Taking	RISK	4	0.89
Innovativeness	INNO	4	0.82
Proactiveness	PROACT	4	0.79
Intensity of Inter-organizational Relations	REL.INT.	4	0.83
Resource-Focused Inter-organizational Relations	REL.RES	4	0.87
Inter-organizational Relations Management System	REL.MNGM	4	0.86
Performance	PERF	6	0.84

Source: own study.

RESULTS

The associations among our variables were tested with correlation analysis. The results of the analysis are presented in Table 2.

Table 2. Correlation matrix (n=363; all correlations: p<0.001)

Variable	Mean	St.dev.	RISK	INNO	PROACT	REL. INT.	REL. RES	REL. MNGM	PERF
RISK	3.91	1.27	1.00	0.49	0.44	0.49	0.47	0.42	0.54
INNO	4.44	1.01	0.49	1.00	0.63	0.27	0.26	0.22	0.46
PROACT	4.51	0.90	0.44	0.63	1.00	0.20	0.20	0.20	0.49
REL.INT.	3.58	1.23	0.49	0.27	0.20	1.00	0.85	0.82	0.40
REL.RES	3.80	1.28	0.47	0.26	0.20	0.85	1.00	0.84	0.42
REL.MNGM	3.81	1.25	0.42	0.22	0.20	0.82	0.84	1.00	0.42
PERF	3.95	0.97	0.54	0.46	0.49	0.40	0.42	0.42	1.00

Source: own calculations in Statistica.

The results of our analysis show that relational capabilities are significantly associated with all dimensions of entrepreneurial orientation as well as firm performance. In particular, coefficients related to relational capabilities are less strongly correlated with performance than dimensions of entrepreneurial orientation, however, all correlations are stronger than 0.4. The correlations between particular dimensions of entrepreneurial orientation are high; the strongest correlation is visible between performance and innovativeness, while the weakest between proactiveness and risk-taking. Among the dimensions of EO, risk-taking is correlated with performance most strongly. Referring to dimensions of inter-organizational relations, all of them are strongly correlated with each other. All dimensions of inter-organizational relations are correlated with performance in a similar range (0,4-0,42). Each variable related to relational capabilities is strongly correlated with risk-taking (stronger than 0.4), while they are less associated with innovativeness and proactiveness (however, the correlations are statistically significant). Among variables reflecting relational capabilities, Inter-organizational Relations Management System is associated with EO dimensions in the weaker degree than two others, i.e., Resource-Focused Inter-organizational Relations and Intensity of Inter-organizational Relations.

Thus, the results of correlation analysis confirm our assumption that relational capabilities are associated with entrepreneurial orientation and its dimensions, as well as the performance of a firm.

DISCUSSION

The results of our study imply that entrepreneurs need to develop relational capabilities and employ them when they pursue entrepreneurial opportunities.

Our findings are in line with Welbourne and Pardo-del-Val (2009) who observed the role of relational capital in small enterprises. In particular, they posit that relational capital, which comprises, among other elements, the relationships (future and to date) with clients and external firms (such as partners) is a fundamental asset for firms. We have observed that the Intensity of Inter-organizational Relations (which relates to search and cooperation with partners, participation in networks, and incomes gaining through inter-organizational cooperation) is significantly correlated with a firm's performance. Additionally, Welbourne and Pardo-del-Val (2009) report that ability to negotiate with others and develop collaborative agreements are specific for high performing companies. In our study, the coefficient "Inter-organizational Relations Management System"

(which reflects policies, procedures, and duties of our employees related to collaborations, and adjustments of our operations to the requirements of the cooperation) is strongly correlated with firm performance.

The results of our study confirm the proposition of Ebers and Maurer (2014) that external embeddedness can strengthen social skills and a relational capability. In our sample, "Inter-organizational Relations Management System" (which includes, among others, items related to the role of inter-organizational cooperation in every-day operations, and duties of employees related to collaboration) is strongly correlated with the intensity of inter-organizational relations. Our findings to some extent confirm those of Ebers and Maurer (2014) showing that the components of absorptive capacity (which relates in their research to gaining knowledge from outside the organization through inter-organizational cooperation) have effects on organizational innovation and performance. Our results indicate a weak correlation between dimensions of relational capabilities and innovativeness of a firm (0,22-0,27); the correlations between dimensions of relational capabilities and performance are stronger (0,4-0,42) in our sample.

Cooperation behaviours based on relational capabilities are in opposition to competitive approach (which is highlighted in entrepreneurial concepts), however, does not exclude it. Instead of replacing a competitive approach with collaboration, entrepreneurs may develop coopetition (i.e., simultaneous cooperation and competition). Coopetition offers numerous benefits, including strengthening innovativeness (Klimas & Czakon, 2018) which is directly connected with entrepreneurship. Anyway, both collaboration and coopetition rely on relational capabilities. Our results tend to confirm the previous observations that entrepreneurship is linked with cooperation. However, these links are sometimes indirect, e.g. Bednarczyk (2019) reports that e-entrepreneurship supports the social economy and sharing economy which both are based on cooperation.

CONCLUSIONS

The aim of the study was to investigate the links between relational capabilities and entrepreneurial orientation of an organization. This preliminary study shows that relational capabilities are associated with entrepreneurship. Thus, they deserve recognition of entrepreneurs when planning the opportunity pursuit. According to the findings of this study and recommendations presented previously in the literature, we can posit that entrepreneurs need to combine the competitive and cooperative approach towards other business entities, which requires relational capabilities. These are the main practical implications of this study. Additionally, this study indicates that all dimensions of relational capabilities are associated strongly with risk-taking, while their associations with innovativeness and proactiveness are weak (however statistically significant).

Our study has some limitations. The main one comes from its method. We use correlation analysis that indicates some associations, however, it does not explain the causal relationships either potential moderating or mediation effects. This indicates the need for more advanced examination of relationships among our variables – this study unveils the validity of such study. The next source of limitation is the sample. It covers enterprises operating in several industries, however, it does not represents a variety of activities of small and medium-sized enterprises. Whereas, the industry can affect the performance of

an enterprise. Similarly, the size and location can impact performance. Thus, the investigation focused on specific types of enterprises is recommended to reflect the possible differences sourced in the characteristics of a company. Additionally, different results can be achieved regarding the structure of an organization's aim. Consequently, the above-mentioned associations require examinations in both for-profit and no-profit sector. Finally, we introduced the new measures of relational capabilities. These are subjective measures reflecting the opinions of informants. These measures focus on several dimensions of relational capabilities, however, not all aspects of relational capabilities are covered. Thus, the construct to measure the relational capabilities may require to be augmented. Additionally, proposed measures may require to be tested with other samples and contexts. Above-recommended studies would enable to adjust the implications for researchers and practitioners regarding the role of relational capabilities in entrepreneurial activity and to develop the research methodology.

This study contributes to the theory of entrepreneurship by unveiling the relationships between entrepreneurial orientation (and its dimensions), relational capabilities (and its dimensions), and a firm's performance. The finding of this study indicates the possible direction of future studies; specifically, the study's results suggest the necessity to augment the concept and operationalization of entrepreneurship with dimensions related to relational capabilities and cooperation behaviours. Basing on observed correlations between dimensions of relational capabilities and dimensions of entrepreneurial orientation, it is recommended to further study the associations between these factors. Additionally, this study contributes to the relational theory by exposing entrepreneurship as a field wherein relational capabilities play an important role.

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Commemoration or commodification? A stakeholder's discourse around the establishment of the martyrdom museum

Magdalena Sawczuk

ABSTRACT

Objective: The purpose of the article was to explore a mode of stakeholders' discussion arrangement with the support of social media platforms, about the project of a new dark- heritage oriented museum.

Research Design & Methods: The study was realized within the qualitative approach and case study method. The project of the new museum in Krakow was selected purposively for analysis.

Findings: The results revealed differences in stakeholders' demands, barriers in participative projects as well as how conflicting values are managed. Moreover, the usage of social media may sway the stakeholder's attributes, as well as enhance participation of the other.

Contribution & Value Added: The study contributes by analyzing a multi-stakeholder dialogue focused on the wider museum environment. The practice of participation is hard for effective realization, even if stakeholder expectations are similar.

Article type:	research paper
Keywords:	Communication; dark tourism; museum; social media; stakeholders
JEL codes:	D83, L32, M14, Z32

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INTRODUCTION

As tourism is relevant for many museums and heritage sites, one stream in the debates refers to the commodification (e.g. Halewood & Hannam, 2001). They have special forms when concerned the sites related to dark heritage and tourism. It is associated with the decisions on how to oscillate between the commemoration and daily life (Krisjanous, 2016). Moreover, the digitalization changes the way how heritage sites are presented

and promoted (e.g. Surugiu & Surugiu, 2015) and how they communicate with the environment.

Research on museum management primarily are focused on the visitors' perspectives. Although residents are sometimes overlooked, local communities can be indicated as one of the stakeholder groups (e.g. Serravalle *et al.*, 2019). Within the dark heritage sites, the discussion refers to the contradictory perspectives of the residents and tourists and how to present the history and heritage (e.g. Tucker *et al.*, 2017), whereas the process of creating a formal dark tourism destination is less explored. To a large extent, a process of negotiating between different stakeholders is poorly investigated (e.g. Meijer van Mensch, 2011).

The aim of the study was to analyze and explore a stakeholders' discussion which took place with the usage of social media sites and concerned the project of a new museum. The study was focused on the creation of KL Plaszow Memorial Site in Krakow in the Małopolska. The results present positions and roles of the entities involved, as well as how the communication between multiple stakeholders looks like. The article is introduced by the presentation of the material and methods. Then, the theoretical background is presented- the recognition of the general idea of stakeholders and also in the museums and tourism context with the support of digital tools. The commodification and management in the dark heritage sites are also discussed, and how it can be related to social media. Then, the narration goes to the findings and discussion. The article is concluded by the indication of involved as well as passive stakeholders. Moreover, the associations between entities are presented as well as the barriers in dialogue processes. The article is finished by the study limitations and future research directions.

MATERIAL AND METHODS

The purpose of the study was to explore stakeholders' discussion around the project of the new dark heritage-oriented museum. This objective is situated in the social media context- how the usage of digital tools can influence the multi-stakeholder dialogue. Moreover, the purpose was specified by two research questions:

RQ1: Which entities can be perceived as stakeholders in the case of the museum's creation?

RQ2: What are their roles and held attributes?

A qualitative approach with the case study method was applied. The object of the study was a discussion concerning the project of a Museum- Memorial Site KL Plaszow in Krakow. Discussion sometimes highlighted the problems in the Auschwitz-Birkenau State Museum, thus this was also a reference point. The Museum-Memorial Site KL Plaszow is situated close to the to one of the most recognizable dark tourism destinations. Moreover, comparing with other martyrdom museums, the idea of KL Plaszow formal commemoration is quite new.

The research was conducted by the content analysis method to identify, how stakeholders are related to each other and which arguments and attributes they used. The data was gathered from different sources and after that, analyzed by the codes creation, according to the grounded theory assumptions. Codes were formed within the approach "incident-to-incident" (Hensel & Glinka, 2018). Then, data were compared to verify, if some points are indicated by more than one side and which attributes they hold.

The preliminary data were collected in November 2019. Then, the study was realized in January and February 2020. It included data from the Museum of Krakow and City of Krakow websites and social media profiles, as well as articles from regional or professional websites (e.g.https://www.architekturaibiznes.pl/krakow-miejsce-pamieci-kontra-miejsce-do-zycia, 2576.htm, access: 26.03.2020). The reports from the social consultations were also important sources, as also legal acts and official notes about the way of KL Plaszow commemoration. They represent rather an official voice of the heritage management, thus to grasp a multiplicity of stakeholders' engagement, also selected Facebook profiles were analyzed. Group of residents created a page "Stop ogradzaniu Krzemionek" to present their point of view concerning the investment plans. This page was created on the 18th of March 2019 and all posts between this date and the end of February 2020 were taken into account. The time range of the collected data dates back to 2016 when the first information about the museum was uploaded. The sources were chosen purposively, to look more deeply into each entity engaged and what is their role in the analyzed project as well as which are their attributes, according to the theoretical model. The literature review was made with the usage of scientific databases, like Scopus and Web of Science. To search and select the literature, a keywords were applied: museum, dark tourism, community as also stakeholders.

LITERATURE REVIEW

Stakeholders and their attributes

The best known stakeholders definition is this made by Freeman, who defined them as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984). Stakeholder management can be understood as an approach to organizing relations between businesses and societies (e.g. Roloff, 2008). Their existence is connected with the diversity of the posed expectations, which should be fulfilled, due to the possible influence on the organization's being (e.g. Shymko & Roulet, 2017). This influence can be positive or negative, concerning e.g. the flow of resources (Frooman, 1999). Besides the general modes of classification (generic or specific, primary or secondary), also other points are proposed. One of them is the concept of shapeholders- entities such as social activists, regulators or media with no stake in the company, but with the ability to shape the future (Kennedy, 2017). They perceive their success in the petitions, media information or public votes (Osiyevskyy & Biloshapka, 2017).

Apart from the categorizations, a key task in stakeholder management is to analyze them to decide, which expectations should be prioritized (e.g. Bettinazzi & Zollo, 2017). The stakeholder salience model is one of the modes of prioritizing. It is basing on the three attributes – power, legitimacy and urgency (Mitchell *et al.*, 1997). Based on their combinations is possible to identify a particular level of the stakeholder salience- the degree, in which managers should prioritize competing stakeholders' claims (Mitchell *et al.*, 1997). Legitimacy is a general perception, that entity's activities are proper, appropriate or desirable (Suchman, 1995). The urgency reflects the necessity for immediate action and can be followed by the time sensitivity and criticality (Mitchell *et al.*, 1997). Third attribute- power concerns the situation, where one entity can influence the other to do something, which will not be otherwise done (Mitchell *et al.*, 1997). Concerning the research fields, stakeholders' attributes were analyzed e.g. within the frame of the

tourist industry (e.g. Saito & Ruhanen, 2017), where museums and historical sites belong.

Museums and dark tourism

Museums can be placed in the frame of heritage tourism or museum' tourism. Heritage overall has different forms. One includes places like cathedrals, artworks or cityscapes, whereas other sites are places of military conflicts or deaths (Clarke *et al.*, 2017). This form of tourism is defined as *dark tourism* and concerns traveling to places related to death and suffering. The history of this activity is rather long, yet the scholarly definition was created by Foley and Lennon in mid-nineties (e.g. Mangwane *et al.*, 2019). Besides these terms, also "thanatotourism", "morbid tourism" or "grief tourism" are recognized in the literature (e.g. Mangwane *et al.*, 2019). Museums can be dark tourism destinations and one- the Auschwitz-Birkenau State Museum is especially well known around the world (e.g. Stone, 2006; Walter, 2009).

Stakeholders in the heritage context

In heritage tourism stakeholder theory is not deeply explored, yet crucial groups are recognized (e.g. Legget, 2009; Serravalle *et al.*, 2019), as well as some suggestions about attributes as power or legitimacy have been made (e.g. Meijer-van-Mensch, 2011). Governments, museums authorities, staff, volunteers, community and board members can be recognized as museums' stakeholders (McLean, 1997). Stakeholders can be divided into three groups: visitors, governing bodies and the community (Elsorady 2018; Gilmore & Rentschler, 2002).The change towards being visitor-oriented is associated with the social and economic conditions, while due to the uncertain financial conditions, each additional source of income is helpful. However, visitors are not always noted as stakeholders (Legget, 2009). Through supportive income sources, museums can improve their offer and create it more attractive for visitors. It is indicated, that the local community may simultaneously be the visitors (Garrod *et al.*, 2012). Yet, visitors' perspective and experience are intensively taken into account (e.g. Najda-Janoszka & Sawczuk, 2018), whereas residents' voice seems to be quite undervalued (e.g. Alexander &Hamilton, 2016). While analysis is focused on the martyrdom museums, additional stakeholders group should be regarded: survivors (Magee &Gilmore, 2015).

Museums are part of the wider cultural systems (Stylianou- Lambert *et al.*, 2014), thus varied entities can be interested in their' activities. Communication with the audience and including them in value creation processes are becoming more challenging for the museums due to the growing popularity of digital tools. Museums' position as exclusive institutions are moving towards being more accessible and dialogic (Kim, 2018). Besides the possibility to arrange a multi-voices communication, media support the popularization of dark tourism destinations (Suligoj, 2019). Social media are also appropriate for crowdsourcing initiatives, as well as to spread letters and petitions. Thus, the virtual and physical areas are overlapping. Moreover, in the literature is noted an issue called "slacktivism", when people tend to engage rather symbolically, without a meaningful contribution to the project (e.g. Kristofferson *et al.*, 2014). It covers actions, like joining on the Facebook page or liking, whereas meaningful contribution means e.g. volunteering engagement (Kristofferson *et al.*, 2014). These approaches and initiatives support communication at different levels- between museum and audience, museum and other institutions or between social media users.

Relations between visitors and residents seem to be interesting because of their different expectations. Individually they are not able to sign any agreement, yet it does not mean, that they do not make any pressure to shape the environment. Concerning the divergent expectations and the growth of the tourism industry, the literature indicates the necessity to balance between heritage and tourist approaches (e.g. Alexander &Hamilton, 2016). It is also indicated that tourist function should not prevail over the commemorative, religious and education ones (Clarke *et al.*, 2017). All functions are associated with the negotiation of memory, which is about history' preservation and shaping present and future (Bowman & Pezzullo, 2009).

Commodification

The commodification occurs when ideas and resources which are not for sale, becoming the transactions objects (e.g. Halewood & Hannam, 2001). It occurs in museums or heritage centers and is connected to the negotiation of authenticity (Halewood & Hannam, 2001). It is observed also in the dark heritage sites and in one of the most prominent ones, Auschwitz-Birkenau State Museum (Bowman &Pezzullo, 2009). A too intense growth of tourism services can expose contradictory expectations of residents and tourists. The high level of recognition reveals an inappropriate tourist' behaviors in the Auschwitz-Birkenau Museum (e.g. Bowman & Pezullo, 2009), which confirms, that visitors do not always have the "thanatotourism motives" (Biran *et al.*, 2011; Busby & Devereux, 2015). Residents may not be so positively orientated toward the intense tourism growth (Krisjanous, 2016; Tucker *et al.*, 2017) as sometimes dark tourism is perceived as an intrusive sensation (Heidelberg, 2015). The background of the sites should be especially taken into account in management approaches (Heidelberg, 2015).

Theoretical paths reflect the visitors' perspective and experience, which shows the importance of the audience for the museum's existence (Najda-Janoszka& Sawczuk, 2018). It concerns the traditional museum space, nevertheless, the social media potential for the relations with the audience is also noticed. Yet, less is explored how the dialogue between multiple stakeholders can be arranged, which can be important in the case of dark heritage sites, due to their difficult and ethical background.

Even if the potential of social media is recognized, little is explored about the multi-stakeholder communication, especially in social media sites. In the museums' area, due to their widely performed functions, shaping relations with the diverse environment is becoming more challenging. Because of social media increasing importance, it should be relevant to analyze the roles and attributes of stakeholders, as well as how the relations between stakeholders are initiated and shaped in this context.

RESULTS

The discussed area has roots in the Second World War when Germans in 1942 established a concentration camp. A liquidation process had been initiated in August 1944, while the last prisoners left the camp and gone toward the Auschwitz in January 1945. In the wartimes, the camp covered around 80 ha. Nowadays, the 37 ha is listed on the monuments' list as a war cemetery, whereas around 4 hectares is subject to the public discussions about the museum's formation project. In comparison with other martyrdom museums, this place relatively late has been a subject of wider interests (Fig.1).

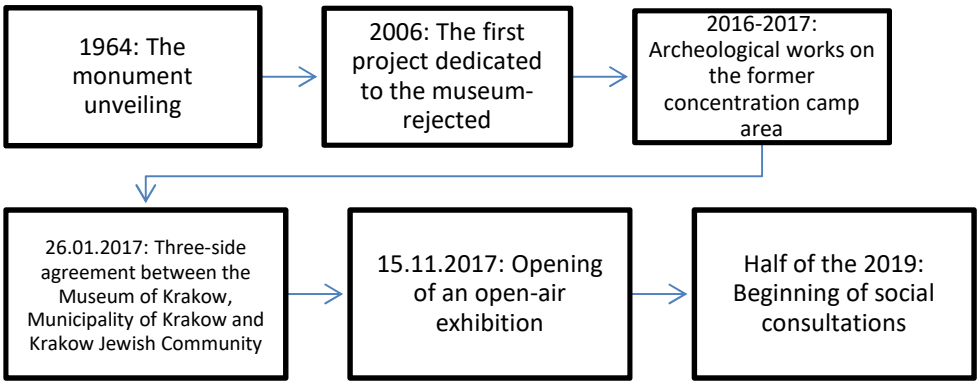

Figure 1. Timeline of the KL Plaszow territory as a dark tourism destination
Source: own work, based on: muzeumkrakowa.pl

Since the II World War till 1964, three other museums were established: Auschwitz-Birkenau State Museum in 1947, State Museum at Majdanek in 1944, Stutthof Museum in 1962. Such a long break was used as one of the "against" arguments during the consultations. The project from 2006 was rejected because of too deeply interference into the area. The idea of formal commemoration was reinvented since 2016, but the intense discussions were arranged in 2019.

The first message posted on the Museum of Krakow website announced that: "The Historical Museum of the City of Krakow conducts work on developing a program to commemorate this place and take care of the camp area" (Museum of Krakow website, 11.03.2016). On 26th January 2017, the Museum of Krakow, Municipality of Krakow and Jewish Community signed an agreement concerning the museum' foundation, where they stated that:

> *"declare their will to build a common, not only local, memory by creating a Museum - Memorial Site of the former KL Plaszow"* (Museum of Krakow website, 26.01.2017).

Therefore, they have formal as well as moral eligibilities concerning the decisions about a new museum. The open-space exhibition is now managed by the Museum of Krakow, but the designed museum will be co-owned by the Municipality of Krakow and Ministry of the Culture and National Heritage. The City of Krakow is the managing body of the Museum, therefore museum is not able to decide in cases concerning e.g. spatial development. The main role of the museum is to uphold the memory of this place and present its importance. Those entities were the most active in all of the discussions. Nevertheless, they represent rather an institutional narration. Therefore, the activity of residents was also taken into account. In March 2019 they created a Facebook group to communicate and unite against the invasive plans of the building investment, but not against the commemoration. They posted:

> *"In our opinion, the best way of commemoration and indication will be creating an open, municipal Płaszów Park of Remembrance, with a cameral branch of the Krakow Museum within its boundaries (Grey House), on the model of Podgórze Museum- which is greatly managed, attracts interested people, enthusiasts of the*

districts and history- owns the functions of a contemporary museum and matched to the district tissue"- 4th September, 2019.

This group named "Stop Ogradzaniu Krzemionek" was created on the 18thMarch, 2019. On the 18th February 2020, it reached 754 likes and 793 followers. Since the June 2019 social consultations were announced, the activity of the group had begun to be more intense by the discussions, official presentations of their opinions as well as addressing expectations directly to the departments or local politicians, as:

"we addressed the questions to ZIM(Municipal Investment Office)- answer in attachment" - 22nd July, 2019;

"city lost a petition- sign the electronic one!" - 5thNovember, 2019.

Therefore, those entities: Museum of Krakow, the Municipality of Krakow as well as residents were included in the analysis. Although Jewish Community has moral claims towards the project, it was rather passive in the discussion, which was notified:

"With Jewish Community, we tried to contact, unfortunately- without results" (Stop Ogradzaniu Krzemionek Facebook page, 20thDecember, 2019).

It suggests, that their lack of involvement is perceived as a lack of the important entity.

Discussion about how former concentration camp should be commemorated has been intensified in 2019 when City of the Krakow announced open consultations dedicated to this issue (https://dialogspoleczny.krakow.pl/konsultacje-spoleczne/muzeum-miejsca-pamieci-kl-plaszow-w-krakowie-konsultacje-spoleczne-wokol-zagadnien-zwiazanych-z-powstajacym-muzeum, 26.03.2020). They took place from June 2019 till January 2020 (after the extension). In the frame of this initiative, five open meetings were arranged (June, September, October, November, and December). The employees were available during the five interdisciplinary expert duties as also residents could send their opinions via electronic tools. From each consultation, reports were created, available on the dedicated website. Besides them, also legal acts and additional materials were uploaded.

A comparative analysis of Facebook posts, reports from social consultations and information provided by the Museum of Krakow and City of the Krakow, revealed the four thematic areas: passing time, way of commemoration, environmental factors as well as behaviors and attitudes. These issues were raised by all entities, but with different intensity and perception of the importance of the problem.

The first topic covered by all entities engaged (city, museum, and residents), concerned the passing time and pace of changes. The idea of the foundation of the KL Plaszow Museum-Memorial Site has been initiated late, especially in comparison with other martyrdom museums. However, this fact was presented in different contexts. City and museum representatives indicated that it is high time to build the museum, as there are no formal barriers for this investment. They do not deny that throughout the years any initiatives were not conducted:

"since the II World War, a memory about the history of KL Plaszow was not realized properly" (an acceptance letter, Museum of Krakow website, 11th September 2019);

> *"he explained that it was only when the area was entered in the register of monuments in 2002, and then recognized as a war cemetery in 2006, the real possibilities to create a place of commemoration were emerged"* (KL Plaszow branch website, 19th November 2019).

On the contrary, for the residents the fact of such late initiatives is a point against the investment. They revealed that throughout the years, the remembrance of this site was cherished only by the local people:

> *"for decades, the city allowed for the development of the area did not care about the area, and suddenly returns to the project from many years ago"* (Facebook page, 22nd October, 2019);
>
> *"It is worth to note, that during 75 years the lack of the fence did not disturb anyone, this form of the site was acceptable for everybody. Also for us."* (Facebook page, 30th January, 2020).

The next group concerned how commemoration should be arranged. It is related to the time perspective, nevertheless, these arguments are more specified. It was the focal point of each discussion which revealed the divergence of expectations. The discussed project covered an idea of the Grey House renovation, build of a new construction named "Memorial" and placement of a "historical stops". The especially controversial point concerned the construction of a fence around the former camp area, as well as deforestation. Krakow municipality but especially the Museum of Krakow, argument that this project is their moral duty, to ensure that the site will be commemorated suitably:

> *"The city of the Krakow claims that our duty, the contemporary residents of Krakow, is the dignified commemoration of this site"* (Museum of Krakow website, 18th December, 2019);
>
> *"an employee of the Krakow Museum emphasized the role of the museum as the "guardian of the heritage" "(social consultation report, 18th November 2019).*

The way of commemoration proposed in the project revealed a variety of conflicting perspectives. The high interference scale into the territory triggered objections, especially addressed by the residents from the group 'Stop Ogradzaniu Krzemionek'. They are not simply opponents, but create and propose their vision of the memorial site and protest against the undue, in their meanings, opinions about their activity:

> *"How long will journalists and the city insult the inhabitants? The facts are that residents commemorated this place by erecting a cross before a monument was erected here"* (Facebook page, 5th February, 2020);
>
> *"There is no opposition for the commemoration- it is opposition for the current commercialized, devastating trees and environment, form"* (Facebook page, 24th September, 2019);
>
> *"We propose a Remembrance Park and cameral museum' branch on this territory as well as the extension of the open space exhibition. We propose a settlement of small architecture, trash cans, toilets"*(Facebook page, 20th October, 2019);

> *"We see the museum branch in the Grey House, maybe in the Podgórze Museum?"* (Facebook page, 20th September, 2019).

The discussion concerned also environmental factors. Residents were more willing to include this perspective. The issues were focused on the ecological situation and the probable intensification of the tourism industry. Representatives of the Museum and the City do not effectively addressed the uncertainties posed by the residents. Reports from the social consultations only five times reflected the ecological problems, but rather in form of the residents' opinions:

> *"The resident turned attention into the increasing climate crisis and lack of the willingness to change from the institution' side"* (social consultation report, 21st October, 2019);
>
> *"The resident indicated the importance of deforestation as the main problem referring to the building of a memorial and parking"* (social consultation report, 16th of December, 2019).

The Museum of Krakow only once indicated the ecological problems, but also the touristic plans were not addressed especially intensively:

> *"Most of those present at the consultation protested the tree felling project for the construction of the Memorial." (Museum of Krakow website, 23rd October, 2019);*
>
> *"On the commercialization allegations director said, that there is no risk, because entrance will not be ticketed, however, there are no answers for the other form of earnings, like guide fee, the price for the memorial sightseeing or usage of the education center" (Facebook page, 17th September, 2019).*

Residents from the Facebook group addressed those consternations very deeply, as they also engaged in other supportive actions. Their Facebook messages have a link to the electronic petition with some comments:

> *"this forest they willing to cut out"* (17th January, 2020);
>
> *"YES for commemorating, NO for concreting"* (16th November, 2019);
>
> *"300 hundred trees under the ax"* (25th September, 2019).

Their consternations also are focused on the possible tourism impact on this territory. The situation in the Auschwitz-Birkenau State Museum seems to be evidence, that tourism intensification can get out of control:

> *"no one wants second Auschwitz in this place" (social consultation report, 16th December, 2019);*
>
> *"if the museum will be open on the area of former KL Plaszow, it will distract tourists from the Auschwitz and intensify activities in Krzemionki surroundings" (social consultation report, 16th December, 2019);*
>
> *"The problems of the Auschwitz Birkenau Museum-Memorial are very carefully observed by us. It is possible to expect (maybe on a smaller scale), that these problems later or sooner will touch us" (Facebook page, 1st February, 2020).*

The last group covered the behaviors and attitudes- how each entity perceived the other and which behaviors should not be accepted. Although the social consultations gave a possibility to communicate between the institutions and community, this project is hard to realize. The discussed project is presented as an appropriate, contrary to the current situation and suggestions addressed by the residents. Even if the activities and arguments of the second parties are not negatively evaluated, lack of effective dialogue and ability to comprehend the other side as even tiredness are presented. It concerned the city and the museum, but also media, which disseminate information:

> *"once again, organizers of the social consultations had to remind the story of the KL Plaszow and related area"* (Museum of Krakow website, 18th November, 2019);
>
> *"the presentation was intermittent by the screaming for the acceleration of presentation time"* (social consultation report, 18th November, 2019);
>
> *"Despite this stipulation, a lack of possibility to receive an immediate response was frustrating for the residents. They showed a disappointing of the consultation process, as well as of the minor sense of influence concerning the project of the KL Plaszow Memorial Site"* (social consultation report, 18th November, 2019).

The residents' messages give a deeper understanding of why they conduct specific actions and how they address opposite arguments. On the one side, they indicate that currently the discussed area is the place for everybody, where people walk, run and ride on the bikes. At the same time, they do not deny the importance of commemoration, but in a way that combines past and present. They also asked for the rectification of the messages, which presented their actions in a negative way or subjective context:

> *"no information about planned 500 thousand tourists per year, no information about any from our postulates, lack of raising an environmental topic and protection of the green areas, it is sad"* (Facebook page, comment to the article from the dziennikpolski24.pl, 21st June, 2019);
>
> *"as we taught by the past experiences, unfair behaviors of the organizers, tendentious questions made for the concrete conclusion- we rejected this form for the classic presentation, discussion and questions"*(Facebook page, 18th November, 2019);
>
> *"operational details consultation with the lack of influence for the basic issues is frustrating for the participants"*(social consultation report, 21st October, 2019);
>
> *"In the last part, questions were addressed, but there was a lack of volunteers to respond. Probably competent people, able to respond, were absent"* (Facebook page, 18th November, 2019).

The social consultations should be finished in December 2019, but time was extended till January 2020. Residents from the group 'Stop Ogradzaniu Krzemionek' postulated extension till March 2020, but without success. The group is still active- address the petitions to the city officials as well as organize meeting sessions (with the president of the Krakow- 29th January, 2020). Despite the distrust and the feeling of being unheeded, they noted positive signs: *"it was an excellent lesson of democracy and self-management, but first of*

all- society participation in ongoing issues of the district"(24th January, 2020). This information concerned the acceptance of the legal act about the opinion of creating and functioning of the Museum-Memorial Site KL Plaszow, which will be included in the social consultation process. Since February the final version of architectural and conceptual solutions is under discussion, but the Facebook page is still updated, concerning the new situations and commemoration of the site. Due to the pandemic, the summary report was created later, which results are not quite satisfying and trigger further activity.

DISCUSSION

The results revealed that the participation and dialogue between multi-stakeholder groups is difficult, even if the core aim is similar. Concerning the lack of activity of Jewish Community representatives, is possible to indicate, that they do not use the held attributes and position (Mitchell *et al.*, 1997). Even if the real ability to influence will be relatively small, their absence was remarked negatively. City of Krakow and Museum of Krakow heave a leading role in the project. City of Krakow coordinates project from the investment side and by including the smaller units, whereas the Museum conducts its traditional role-protection, preservation and guarding of the heritage (Stylianou- Lambert *et al.*, 2014). Therefore, their attribute of power rather tends to be legitimate than coercive or utilitarian. In some way, their attribute is also a competent power, which is held by specialists from some field (Hankinson, 2009). Both the City of Krakow and Museum has a leading role in the discussion, but they represent an official, institutional perspective.

While a lot is debated about how the community is impacted by the heritage sector (Crooke, 2010), little is recognized, how the community can be involved in the process of the museum's creation. The study revealed the huge gap between available institutions and debates on how it should be created. Despite the dominance of the museum's professionals and city officials, a group of active residents was engaged in this project and consultations. Moreover, the activity in social media breached the competence power of the Museum of Krakow, as residents indicated mistakes made by the municipal entities (e.g. Facebook page, 10th June, 2019- a mistake concerning the scientific data about the history of the concentration camp). Therefore, it supports the notion, that in the social media museums should change from the position of the authoritarian custodian to the facilitator, which listens and engage in the dialogue (Holdgaard & Klastrup, 2014). Yet, the practice showed, that the authoritarian position (Kim, 2018) is still observed, also in social media. Due to the specific profile of the museum, the dialogue can be hindered by the afraid of the violation of ethics. These uncertainties are especially recognized in the social media (Kidd &Cardiff, 2017). The fact, that residents propose how the commemoration of KL Plaszow should be arranged, support society's willingness to create a heritage site (Crooke, 2010). Many of their initiatives revealed the willingness to be fully engaged in the project development, nevertheless the inequalities in the relations are observed. The course of the consultations and way, in which residents were treated, triggered a dissatisfaction. Some of the observations converged with the previous research, that local communities are at the final place when discussing the decisions about tourist attractions (Garrod *et al.*, 2012). Arguments presented by residents relate much more to the museum environmental factors. Their contentions more intensively reflect the museum's connection with the culture and sustainable development (Stylianou- Lambert *et al.*, 2014), than the official messages.

Another controversial point in the discussion concerned the possible growth of the tourism industry. The close location to the Auschwitz-Birkenau State Museum and the Schindler's Factory Museum makes these concerns very intense. Whereas Auschwitz-Birkenau Museum is one of the most recognized dark tourism destinations, at the same time is a place, where tourists tend to behave disrespectfully (Bowman & Pezzullo, 2009), which is at a very distance from the highlighted necessity of commemoration. Simultaneously, the appropriate management are relevant to not allow to transform the visiting into "spectacle" caused by the overloaded commercialization (Simone-Charteris *et al.*, 2018). The results do not converge with the previous observations, that at some time this dark tourism narration will be generally supported (e.g. Tucker et al, 2017) by the residents. Their arguments especially converging with the assumptions, that for the residents such an unwelcome attraction is not desirable, also by the hidden dissonance and necessity of balancing between past and present.

Although the group 'Stop Ogradzaniu Krzemionek' started their activity on Facebook, all their projects suggest, that they goes beyond the "slacktivism". They are aware of their limited resources and still try to inform and convinced for their proposition. Probably many of those, who sharing or liking posts will not be present at real meetings (Christensen, 2011), but their objectives are going beyond the passive attitude. Besides the three main entities variously engaged in this project, also different media were interested in this debate. They do not have the ability to influence any decision but can create and shape opinions (Rasche &Esser, 2006). Some of their website's news was perceived by the residents as subjective and unfair. Therefore, the spread of information on social media affects the museum and officials but also social movements. It may mean that each entity involved in some intensively deliberated project should take aware of the social media sphere, monitor news, and contact the audience.

CONCLUSIONS

The debate around the project of Museum-Memorial Site KL Plaszow was interesting for varied entities, yet those deeply involved were not that many. The Museum of Krakow and City of Krakow hold attributes of power and legitimacy, but in different areas. Despite the differences in conducted roles, both perceive their role in a similar way- to realize and finish the commemorative project. The third entity with the ability to influence the project was the residents group 'Stop Ogradzaniu Krzemionek'. As it is possible to conclude, they expect to be more engaged in the decision process and posed the claim concerning the natural environment. Other entities are situated rather in the context of the situation. Due to the growing social media importance, an on-going control and verification of messages seem to be important especially for the residents. Results showed the difficulties in arranging the social consultation process and some messages revealed the limited willingness to dialogue with other groups. This problem was observed not only by the residents on Facebook. Therefore, social media can support dialogue and communication, but in fact, there is still a gap between theory and practice in engaging, especially when project concerns not the museum itself, but also their surroundings. Even if open consultations were arranged, still the officials are situated more on their authoritarian positions without enough ability to dialogue.

This study contributes by analyzing a multi-stakeholder dialogue focused around the museum situated in a wider environment, rather than exhibition or knowledge itself (Schmeltz & Kjeldsen, 2019). Together with the growing importance of the museum's collaboration with other entities (e.g. Elsorady, 2018) and new museum investments, the necessity of dialogue will be gradually more important. The results showed also how is hard to truly engage the voices of many entities and that the social media at the same extent are important during the investment consultations. Besides this, the study has also limitations. The analysis was conducted based on secondary sources, whereas data from the primary sources probably will give the deeper understanding of the problem. Therefore, future research can be focused on the museum's position in the environment after the opening exhibition. Moreover, the results obtained the growing importance of social activists' groups, which are people connected with particular sites and responsible for them. The question, if it is a commemoration or commodification seems to be still open and depends on many factors. Nevertheless, the residents probably will be attempting to control this site, to not allow for the inappropriate behaviors.

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Economic development versus the growing importance of the financial sector: Global insight

Marek Maciejewski, Agnieszka Głodowska

ABSTRACT

Objective: The objective of the article is to show the relationship between the growing role of the financial sector and economic development in the context of the 4 Industrial Revolution (4IR).

Research Design & Methods: The article uses linear ordering based on the standardized sums method. It allowed for the construction of a synthetic indicator of the financialisation of the economy. The values of this indicator were compared with the GDP growth rate of selected countries.

Findings: Studies have shown that, for the countries with the highest economic development level, there is no reason to say that too high level of development in the financial sector slows down their economic growth. Instead, it turned out that the development of the financial sector, which is detrimental to economic growth, occurs in countries in transition and those with an average economic development level. There the level of financialisation of the economy is lower.

Contribution & Value Added: The study was carried out on a large group of countries with different economic development levels, making it possible not only to draw general conclusions but also to address individual countries' specificities.

Article type: research paper

Keywords: financial sector; financialisation; economic development; 4 Industrial Revolution; innovation

JEL codes: G15, O10, O30

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INTRODUCTION

The modern industrial revolution is a natural process that progresses due to technological achievements to date that have emerged in social and economic systems. It is called the fourth industrial revolution (4IR). The first industrial revolution used water and steam to mechanize production. The second industrial revolution used electrical energy to create mass production, assembly lines, and labour division. The third industrial revolution, in turn, involved the development of semiconductors, information technologies (ITs), and personal computers. The new fourth technological revolution is based *de facto* on the technologies and infrastructure developed in the third phase of the process but uses them in a completely new way, one in which technologies become an integral part of the daily functioning of societies and economies (Liu, 2017). Although Schwab and Davis (2018) point out that we are only in its initial phase, the advanced virtualization and digitization have caused unprecedented social and economic changes.

The financial sector is considered to be most affected by innovation (Karabay & Cağil, 2017). The growing dependence of financial market players on complex financial innovations is characteristic of the recent universal financialisation trend. In particular, it contributes to changes in financial services technology, trading of financial instruments, information transfer, financial risk perception, and the role of financial intermediation (Bilan *et al.*, 2019). The causes of this process are known, but the effects are not clearly assessed. The experience of various economies, especially in the global financial crisis, casts doubt on the validity of using controversial technological solutions in the financial sector. Therefore, it raises a question about the strength and direction of the financial market's impact on the real economy. Does the financial sector stimulate economic growth by nature or only under certain conditions, which may concern the level of economic development or the financial sector's maturity and innovation?

The pursuit of answering this research question leads to the realization of this article's primary objective: to show the relationship between the financial sector's growing role and its negative impact on the real economy. This research problem will be conducted based on the analysis of a broad group of countries with different economic development levels. First of all, the importance of technological progress in the development of financial markets is presented and the relationship between the financial market and economic development. In the analytical part we use linear ordering tool based on normalized sums and simple panel regression.

LITERATURE REVIEW

Industrial Revolution and the Financial Sector

The term fourth industrial revolution (4IR) was first used in the Schwab publication (2016) to describe the next phase of the impact of emerging modern technologies on all areas of human activity in the early 21st century. As the name suggests, it is already another revolution taking place in society's systems, gradually changing the complex realities between man and technology and transfers that result in a new way of acting and functioning (Philbeck & Davis, 2019). Three fundamental planes are identified as the source of the

driving forces behind today's dynamic technological changes, among which the most important is digitalization (Schwab, 2016): 1) the physical plane (advanced robotics, autonomous vehicles, 3D printers, new materials), 2) the biological plane (biotechnology, neuroethology, genomics), 3) the digital plane (artificial intelligence, the Internet of Things, Blockchain, digital clouds, big data, virtual reality).

As a kind of universalism, it is assumed that the technological revolution has affected virtually all social and economic life areas. Literature is becoming increasingly rich in studies on the impact of this revolution on economic growth and sustainable development (Lucas, 2009; Davis & Sener, 2012), foreign trade (Bloom *et al.* 2016; Rymarczyk, 2020), international relations (Philbeck & Davis, 2019; Rymarczyk, 2020) and the financialisation of the economy (Kimani *et al.*, 2019). It is not easy to talk about these areas separately. It is evident that 4IR contributed the most to technological and financial innovations (Li *et al.*, 2021). Frame and White (2004) and Karabay and Cağil (2017) state that the financial sector is the most innovative in the world. The industrial revolution in the financial market is a process enforced by both the demand and the supply sides. Growing customer expectations drive the process of continuous change in the financial market. The regulatory environment, bank burdens (capital, liquidity, technology), and consumer protection pressures generate high financial institutions costs (PWC, 2014). The compilation of these factors encourages the "creative destruction" of innovation and the emergence of new players in the financial markets, such as Fintech, which initiates an increasing scale of financial services' digitalization. It has led to a situation where some solutions involving innovative financial technologies have become the only platform for performing operations and technological processes. What is more, technological innovations have become an important tool to compete in the financial market (Paskevicius & Keliuotyte-Staniuleniene, 2018). As a result, new financing methods, virtual money (cryptocurrencies), and complicated algorithms for decision making, innovative entities (Bayón & Vega, 2018) have emerged. The use of 4IR effects in the financial sector is shown in Table 1.

Table 1. Application of 4IR effects in the financial sector

Digital Technology	Financial Services				
	Payment	Advisory	Investment & Trading	Financing & Funding	Insurance
Blockchain	✓	✓	✓	✓	✓
Big data analytics					
Artificial intelligence		✓	✓		✓
Augmented reality		✓	✓		
Virtual reality					
Biometric					✓
Internet of things	✓		✓		✓
Cloud computing			✓	✓	

Source: adapted from Alan *et al.* (2019).

About the consequences of 4IR for the financial market, most of the studies are positive. After all, Schumpeter (1960) already combined entrepreneurship, innovation, and the financial product of credit into the necessary components of positive economic changes. The financial market determines the reallocation of savings from relatively less

profitable investments to sectors with a higher rate of return (Schumpeter, 1960; Dębski & Bujnowicz, 2007). Karabay and Çağil (2016) state that innovation is a noticeable feature of the modern economy's financial services sector. According to the authors, financial innovations increase existing participants' capacity and attract new market players who attract new and innovative products (Karabay & Çağil, 2016). Continuous digitalization of financial services ensures their compatibility with the solutions used so far – gadgets and data analysis platforms provide the possibility of creating permanent and complex consumer solutions. It leads to a situation where specific innovations have become the only possible way of performing operations and technological processes. What is more, they have become a way of competing (Paskevicius & Keliuotyte-Staniuleniene, 2018; Bilan *et al.* 2019). It means that the introduction of 4IR solutions to the financial sector not only benefits the industry itself but also serves the needs of society by making products or investments available to anyone who wants a higher rate of return (Li *et al.*, 2021; Su *et al.*, 2020). Examples of such solutions are cryptocurrencies, hailed as the most significant financial innovation of the century (Li *et al.*, 2021). It is recognized that thanks to technological innovations (e.g., Blockchain), it is possible to conduct complex processes, which are only possible thanks to the applied technologies. They create a new strategic and market value: lowering transaction costs, increasing the pace of financial processes, increasing efficiency, enabling the reduction of fraud, increasing the transparency of operations, and eliminating the problem of information asymmetry (Nowiński & Kozma, 2017; Lee & Shin, 2018; Kiman *et al.*, 2020).

Despite these many advantages of digitizing the financial sector, Koizumi (2019) speaks of the lights and shadows of 4IR. Thampanya *et al.* (2020), in turn, combine the effects of the industrial revolution with the recent global financial crisis, stating that they contribute to financial shocks. The proliferation of complex financial innovations such as asset securitization and new derivatives has weakened risk management solutions. They have led to a kind of risk dilution on the one hand, and on the other hand, they have eliminated the mechanism of limiting excessive risk-taking by banks. That has led to instability and a kind of polarization of innovative financial solutions (Judge, 2012; Głodowska, 2012; Pernell, 2020).

Similarly, Dai and Vasarhelyi (2017) assess blockchain technologies related to, e.g., cryptocurrencies, which the authors consider to be a highly advanced, knowledge-intensive technology, requiring appropriate IT skills and know-how by all those who are to some extent related to this technology. This complexity and opacity can lead to blindness for market participants, with the risk of overuse of these instruments (Iansiti & Lakhani, 2017). Alam *et al.* (2019) talk about the digitalization and disruption of the financial market.

Financial Sector and Real Economy

The impact of the industrial revolution on the real economy can be assessed from both micro and macro perspectives. The implementation of 4IR effects becomes a key component of business strategies (Wang *et al.*, 2020). It is also an essential factor in the international competitiveness of economies (Liu, 2017). However, it also carries risks and uncertainties. Innovation cannot be an aim in itself. That also applies to innovations in the financial sector, which are ultimately supposed to lead to increased efficiency, profitability, and competitive advantage, but at the same time contributing to the development of entire societies and economies. Only in this context did Schumpeter (1960) combine innovation and credit as the main economic driver. His creative destruction, which we can also

refer to the financial market, is meant to transform and replace outdated solutions and mechanisms with new ones. Thus, perversely, it means destruction to create something more modern – better (Głodowska, 2019). Only by considering economic effects can the impact and legitimacy of 4IR in the financial sector be assessed.

The link between the financial market and the real economy is quite apparent. In theory, this was considered within the framework of neoclassical and endogenous concepts. The more effective the financial system, the higher the economy's savings and higher investments are leading to economic growth (Dębski & Bujnowicz, 2007). Most empirical studies indicate a statistically significant relationship between these areas (King & Levine, 1993; Wachtel, 2003; Maciejewski, 2013). Mishkin (2002) and Wachtel (2003) verified the positive relationship between the financial market and the economy's development by reducing transaction costs, better allocation of resources, and risk mitigation. The financial market regulates and balances the mismatched structure of demand and supply in the economy. Therefore, it is an essential link in organizing economic life (Bosek-Rak*et al.*, 2016). According to King and Levine (1993) and Greenwood and Jovanovic (1990), the financial system's development is crucial for economic growth, and a poorly developed financial sector may even inhibit it. Levine (1997) and Scholtens and van Wensveen (2000) believe that the financial system can positively impact economic growth through capital accumulation and technological innovation. Based on a literature review, Yousif (2002) identifies four major research trends relating to the impact of the financial market on the economy: 1) it confirms the positive dependence of economic growth on the financial sector, as stated above, 2) it does not attribute financialization to the driving force of economic growth but only to the co-existing component, 3) it identifies a two-way dependence between the financial sector and economic development, 4) there is no cause and effect relationship between the financial industry and the real sphere.

Kasprzak-Czelej (2010) notes that a well-developed financial system is essential for the economy, and growth processes depend on its individual functions' effectiveness. On the one hand, it is necessary for the financial system's maturity, but on the other hand, for the economy's need. The research confirms the different dependence between the financial market and economies with varying economic development levels (Piketty & Zucman, 2014).

Dabla-Noris and Srivisal (2013) confirm that too high level of finance can harm the economy. Therefore, there is a condition associated with the degree of maturity of the financial sector that must take place to affect the economy positively. It is confirmed by Cecchetti and Kharroubi (2012), who say that financialisation contributes to economic growth only to a certain point, beyond which it is a growth slowing down factor.

The assessment of the financial sector's impact and its innovations on the real sphere was diametrically correlated with the global financial crisis 2007-2008. In the pre-crisis period, innovative technological solutions introduced into the financial market were perceived as instruments of the future, reforming financial systems and providing *de facto* unlimited possibilities of risk transfer and return of capital (Marshal, 2019). The crisis in the American mortgage market in 2007 strongly verified the perception of the so-called innovative solutions of the financial sector.

These innovative and risky and, as it ultimately turned out, toxic financial solutions became the cause of the United States' financial crisis, spreading to other continents and affecting the real sphere (Głodowska, 2012; Thlon, 2011; Taylor, 2010).

This dichotomy is also visible in Babutsidze and Iacopett's (2016) study, discussing the relationship between the financial sector and growth and inequality. The recent crisis has confirmed that the excessive and uncontrolled development of innovative financial products has provoked the financial market's destabilization and the entire economy (Parnell, 2020). Based on the above review, the research hypothesis verified in the paper is introduced:

H1: The excess of the financial sector over the real economy's needs is conducive to creating distortions not only in the financial market but also in the real economy.

MATERIAL AND METHODS

Data published by the World Bank (for the period up to 2017) on the financial market's depth were used to analyze the financial sector's importance. The research area included data presented for 214 countries and dependent territories and 29 depth indicators for financial institutions and the financial market. The lack of data for individual countries with selected indicators in specific years made it necessary to limit the research area to both the analysed period and the number of countries, and financial market depth indicators analysed. The research period 2000-2017, with 97 countries and five financial market depth indicators for which complete data were obtained, was considered a compromise solution that allows the broadest possible analysis. Developing analysis in any direction (period, countries, indicators) would force a significant narrowing of the research area in the other two aspects. The analysed countries included 30 highly developed countries, 58 developing countries, and nine transition countries. Among the indicators of the market and financial institutions' depth, in the relation to GDP was taken into account: bank assets, domestic credit to the private sector, deposits of the financial system, liquid liabilities, and personal credit provided by deposit banks and other financial institutions.

The market and financial institution depth indicators adopted for the analysis were used to construct a synthetic financialisation indicator. They were first of all subject to statistical verification regarding their volatility and mutual correlation to eliminate those that only slightly differed between the countries concerned and those that duplicated information. The critical value of the coefficient of variation was assumed to be 0.1. Simultaneously, the correlation between the variables was carried out based on the reversed correlation coefficient matrix method, taking a critical value of 10. As a result, the GDP ratio of private credit from depository banks and other financial institutions were disregarded in constructing the financialisation indicator, which showed too high a correlation with other market depth indicators and financial institutions.

In constructing the financialisation indicator, the standardised sums method was used, which allows for a linear arrangement of objects described by many different features. This method requires establishing the benchmark and anti-market development values and each country's position in the space between these values. The result is a measure with values in the range [0,1]. The results established for each country indicate their distance, which can be expressed in percentage points, to the ends of the range and the other coun-

tries covered by the analysis. The values of the financialisation indicator constructed in this way for individual countries, in different years, speak of their relative position to each other.

The measure of financialisation is designed to determine the impact of the financial market's degree of development on economic growth. The economic growth has also been expressed in relative terms, using the same procedure and algorithm as for financialisation indicator. As a result, the measure describing the economic growth rate also takes values in the range [0,1].

The juxtaposition of the measures of financialisation and economic growth rate makes it possible to determine their relationships. Their strength and direction have been verified for individual groups of countries, considering their economic development level. Two different ways of distinguishing between groups of countries have been adopted, as they give different results. The first is based on the division used in international statistics into highly developed, developing, and transforming (transition) countries. The second one is based on the value of GDP per capita. In this approach, the analysed countries were divided into four groups based on their location in the GDP per capita ranges determined by the first, second, and third quartiles ($x<Q1$; $Q1<x<Q2$; $Q2<x<Q3$; $x>Q3$).

RESULTS AND DISCUSSION

The first proposed approach refers to the division of countries into developed, developing, and transforming countries (Figure 1). The obtained results indicate that the highest economic financialisation levels, compared to the total number of the studied countries, were recorded in developed countries (A). The calculated financing rate for them ranged from 0.022 to 0.891, and its average value reached 0.238. These countries achieved the highest GDP growth rate in the analysed period only once (Ireland in 2015). The slope of the trend line for this group of countries, determined for the points binding the degree of financialisation and economic growth rate, indicates a weak negative correlation. This means that the increasing level of financialisation of the economy is accompanied by a slowdown in economic growth for this group of countries.

Similar but stronger dependency has been observed for countries in transition (B). However, it should be stressed that the degree of financialisation of their economies was at a much lower level (financialisation index in the range from 0.002 to 0.131, average 0.059). These countries recorded the highest GDP growth rate five times, and only those with the lowest level of financialisation (Armenia in 2003, 2005-2006, Belarus in 2008, and Kazakhstan in 2001). It is worth recalling that in the group of countries transforming, there were only nine countries.

An inverse relationship has been observed for developing countries (C). The calculated financing rate for them ranged from 0.003 to 0.601, with an average of 0.114. This group's countries recorded the highest GDP growth level in 12 out of 18 analysed years of the period 2000-2017. The slope of the trend line set for the points binding the degree of financing and economic growth rate indicates a weak positive correlation. This means that the increasing level of financialisation of the economy is accompanied by an increase in the economic growth rate for this group of countries.

A simple panel regression for such data shows, moreover, that a statistically significant negative correlation between financialisation and economic growth concerns countries in

transition (Table 2). In other cases, although the direction of the relationship was confirmed (for developed countries), its statistical significance was not demonstrated.

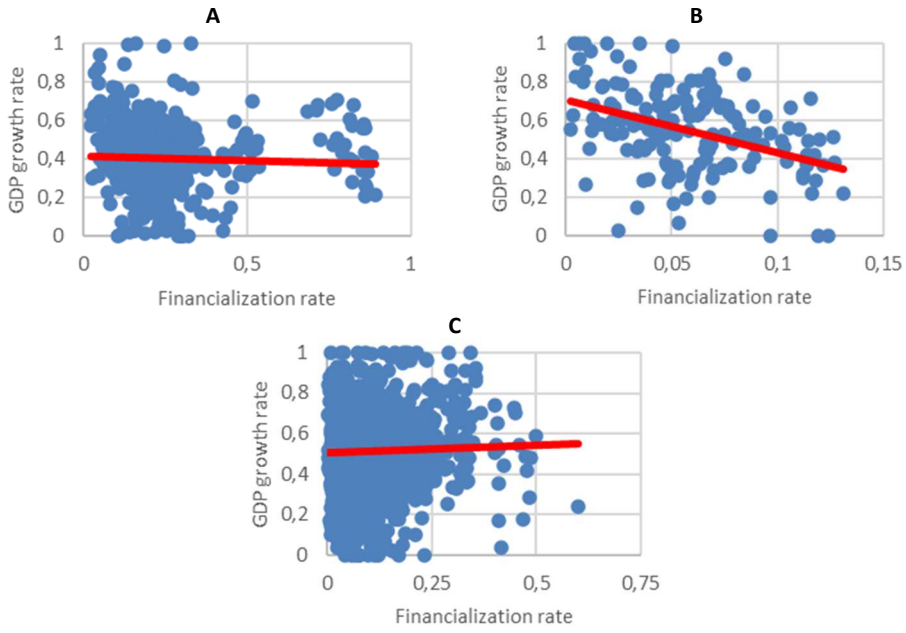

Figure 1. Relationship between the degree of financialisation of the economy and the rate of economic growth for developed (A), transition (B) and developing (C) countries in 2000-2017
Source: own calculations based on the data of World Bank (2020).

Table 2. Impact of the degree of internationalisation on the economic growth rate of developed, developing, and transition countries in the period 2000-2017

Variable	Developed countries	Transition countries	Developing countries
Const	0.424	0.681	0.522
	(0.0351)	(0.037)	(0.025)
Financialisation	-0.076	-2.266***	-0.074
indicator	(0.145)	(0.583)	(0.212)
LSDV R-squared	0.207	0.246	0.210
Within R-squared	0.001	0.091	0.000

Note: Estimated standard errors appear in parentheses. *** p < 0.01; ** p < 0.05; * p < 0.10.
Source: own calculations based on the data of World Bank (2020).

The adoption of an alternative division of countries, given their level of development, results, among other things, from the fact that the group of countries with the highest GDP per capita (x>Q3) includes countries classified in the developing group (e.g., South Korea), and the group of transition countries includes countries from as many as three groups distinguished based on quartiles (excluding countries with the highest GDP per capita).

In this perspective, the growing level of financing of the economy is accompanied by an increase in the rate of economic development in relation to countries with the

lowest (x<Q1) and highest (x>Q3) GDP per capita (Figure 2). It is despite the varying degree of financialisation of their economies. For the former group (x<Q1), the financialisation rate ranges from 0.003 to 0.332 (mean value: 0.078), and for the latter group (x>Q3) – from 0.065 to 0.891 (mean value: 0.274). An inverse relationship was observed for two groups of countries with a moderate level of GDP per capita, ranging from the first to the third quartile (Q1<x<Q2 and Q2<x<Q3). These groups of countries are also characterized by a moderate level of financialisation of their economies. For the first of these groups (Q1<x<Q2), the financialisation ratio is between 0.002 and 0.601 (mean value: 0.116), and for the second group (Q2<x<Q3) – between 0.008 and 0.446 (mean value: 0.123). For these two groups of countries, the slope of the trend line determined for the points binding the degree of financialisation and the rate of economic growth indicates a weak negative correlation. This means that the increasing level of the economy's financialisation is accompanied by a decrease in the economic growth rate. It can be assumed that these are representative groups (Q1<x<Q3), as they ignore the extreme values.

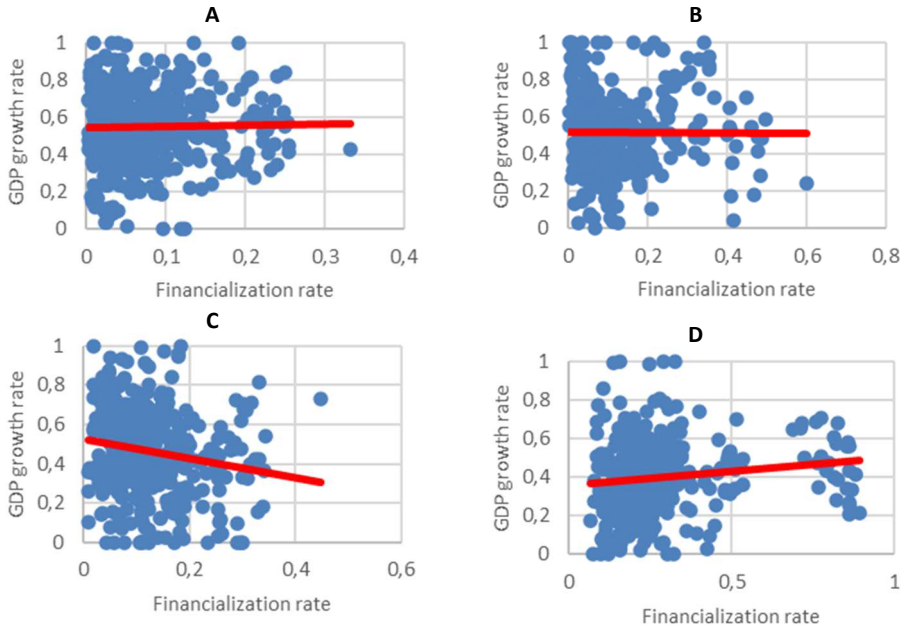

Figure 2. Relationship between the degree of financialisation of the economy and the rate of economic growth for groups of countries with different levels of GDP per capita in 2000-2017
Source: own calculations based on the data of World Bank (2020).

A simple panel regression for such data shows, moreover, that a statistically significant correlation between financialisation and economic growth concerns precisely those groups of countries (Q1<x<Q2; Q2<x<Q3), for which a negative correlation was shown (Table 3). In other cases, despite confirming the positive direction of the relationship, its statistical significance was not demonstrated.

Table 3. Impact of the degree of financialisation on the rate of economic growth for groups of countries with different levels of GDP per capita in 2000-2017

Variable	Groups of countries with different levels of GDP per capita			
	x<Q1	Q1<x<Q2	Q2<x<Q3	x>Q3
Const	0.532	0.606	0.601	0.349
	(0.0327)	(0.036)	(0.040)	(0.041)
Financialisation indicator	0.215	-0.774**	-1.103***	0.185
	(0.397)	(0.307)	(0.317)	(0.148)
LSDV R-squared	0.127	0.225	0.234	0.249
Within R-squared	0.001	0.015	0.029	0.004

Note: Estimated standard errors appear in parentheses. *** p < 0.01; ** p < 0.05; * p < 0.10.
Source: own calculations based on the data of World Bank (2020).

CONCLUSIONS

Previous research show that the direct or indirect effects of the industrial revolution 4.0 are felt in all socio-economic spheres. An excellent example of this is the financial market and its impact on the real economy, precisely due to the influence of 4IR. Empirical research has shown the different nature of the relationship between countries' financialisation and economic growth at different development levels. Both presented classification approaches of countries indicate a statistically significant negative impact of financialisation on selected groups of countries' economic growth rates. It applies to countries in transition and those whose economic development level is an average. In countries with the highest economic development level, there has been no statistically significant financialisation impact on the economic growth rate. The results obtained suggest a weak positive correlation between these variables.

Therefore, the analysis results did not confirm what Levine *et al.* (2000) postulated that more significant development of the financial sector increases the economy's growth potential. It has only shown that, for the countries with the highest levels of economic development, there is no reason to argue that too high level of financial sector development slows down economic growth, as Arcand *et al.* (2012) and Dabla-Norris and Srivisal (2013) wrote. The study has shown that countries with the highest economic development level have a high level of financialisation of their economies.

However, the research has shown that the development of the financial sector, which is detrimental to economic growth, occurs in transition countries and with an average economic development level. The level of financialisation of the economy there is lower too.

The analysis carried out is associated with some limitations, including a limited supply of comparable data and many simplifications, such as generalising the GDP growth rate for the economy as a whole. In subsequent studies, it would be worthwhile differentiating in this regard, at least for the productive and service sectors. One of the effects of financialisation may be a change in the structure of the GDP created.

Despite these limitations, the study should motivate some thoughts on connecting the financial market with the real economy. Thus, this study may have application values for policymakers and financial market participants. Based on the observations made, certain

conclusions can be drawn to shaping the rules for the financial market's functioning and its implication for the economy.

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IT outsourcing as a factor for innovation development in small and medium-sized enterprises

Maria Kocot, Damian Kocot

ABSTRACT

Objective: The aim of the article is to present the innovative face of IT outsourcing based on a survey. The article shows how it influences the creation of various types of innovation. The article tries to determine whether IT outsourcing affects the stimulation of innovation in the area of small and medium-sized enterprises in the Silesian Voivodeship.

Research Design & Methods: Primary information was collected using the survey technique and the questionnaire interview. The main research technique was the postal questionnaire. The obtained empirical data were analysed using selected statistical methods ($\chi 2$ independence test).

Findings: Firms should be made aware of the advantages of outsourcing partnership in the field of IT in terms of creating innovation. A good practice in this respect would be to create a zone of redistribution of experience in implementing IT innovations.

Contribution & Value Added: The subject of the impact of IT outsourcing on the creation of innovation has not been widely discussed in the subject literature so far. This article attempts to fill that gap.

Article type: research article

Keywords: IT outsourcing; innovation; cooperation; outsourcing partners, small and medium-sized enterprises (SMEs); business

JEL codes: F23, L20

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INTRODUCTION

The business innovation remains dependent on many issues, both exogenous and endogenous factors. Outsourcing of information technology (IT) plays a huge role among them, taking on a major role in improving the company's innovation. Innovation creation, achieved through outsourcing partnerships in the field of IT services, is a very important place. This

cooperation becomes a response to emerging challenges in the turbulent market environment of the company. In order to create innovation, access to unique resources and the potential needed to create new innovations is essential.

Setting up an outsourcing partnership can be beneficial at any stage of the innovation process, including innovation creation, implementation and commercialisation and diffusion.

The purpose of the article is to present an innovative face of IT outsourcing based on a survey. The following research questions were proposed:

RQ1: What is the most often outsourced area?

RQ2: What are the benefits of working with an IT outsourcing partner?

RQ3: Are there statistically confirmed relationships between the benefits achieved in connection with the implementation of innovations as a result of outsourcing cooperation and activities that are to ensure proper cooperation with an external company?

The article uses the empirical investigation conducted among small and medium-sized enterprises (SMEs) from the Silesian Voivodeship, highlighting the degree of cooperation between these firms and external actors, in the implementation of innovative activities in the field of IT.

LITERATURE REVIEW

The term "outsourcing" was based on the words "outside" (external), "resource" (measure), "using", which means shifting orders of production, services or generally business processes in whole or part of it to another firm (Szymaniak, 2008).

Definitions of external IT services emerged in the US in the 1980s Lacity and Hirschheim (1993) attempted to define outsourcing. To this end, they began to analyze the outsourcing decisions of American businesses. They described outsourcing as "the use of external companies to carry out one or more organizational activities" (Lacity & Hirschheim, 1993). Outsourcing in the field of IT services (IT outsourcing, outsourcing of information systems, information technology, information technology), is defined as the provision of comprehensive e-business solutions by external specialists (Hindle, 1998).

IT outsourcing can also be understood as a third-party acquisition of specific activities related to IT (all or only selected areas). Its investments and ongoing IT infrastructure expenses often account for a significant part of the company's budget. IT used for a long time affects the level and quality of execution of economic processes. The company must choose its information technologies on purpose, according to clearly defined priorities and on the basis of accurate cost-effectiveness analyses. A well-developed IT strategy ensures the proper functioning of the outsourcing model. Outsourcing is part of the company's strategic plan, has a long-term nature, and the service provider becomes a partner rather than a supplier.

IT outsourcing is also defined as a process undertaken by an organization aimed at signing an outsourcing agreement and modernizing IT assets using cooperation with other customers (Kern et al., 2002). In the framework of it services and services, this is work related to the day-to-day administration of hardware and software IT resources in order to increase the effectiveness and efficiency of the business (Kłos, 2009).

IT outsourcing consists in the fact that the organization instructs the suppliers to perform only some (partial outsourcing) or almost all functions (total/full outsourcing), but leaving its own employees the function of monitoring and controlling the whole project. Outsourcing of IT services is most often a contract outsourcing, for which the company abandons its functions in the field of IT systems and transmits their performance to an independent economic operator on the basis of a contract. IT outsourcing consists in transferring responsibility for the maintenance of the it system of the company (or part of it) to an external company in exchange for periodic (fixed) fees (Sobińska, 2008).

Any company that wants to survive in an unpredictable market environment should strive to innovate and strive to be innovative. These two terms are often identified (Chao & Pucik, 2005). In the scientific literature, innovation is treated as an important attribute of the company. Its rationale is its ability to innovate. In turn, innovation can be determined by the ability to create something new or make significant changes (Hilami et al., 2010). The term also refers to the launch of new goods and the opening of new markets, using combinations of strategic orientation along with innovative ups and processes (Danneels & Kleinschmidt, 2016). Innovation, on the other hand, refers to the changes made in terms of technology, organisation, economics, ecology, as well as changes in the social sphere of the organisation. These changes should be taken into practice (Klincewicz, 2014).

When defining the term "innovation", the treatment of this phenomenon as the ability of the organization to innovate (Nowacki, 2010) was emphasized. There are three levels of innovation in the organisation (Pichlak, 2012):

- the tendency to adapt innovation,
- the ability to generate innovation,
- the ability to take risks, inextricably linked to the implementation of innovation.

Innovation can be analysed both in a unit context (then determined by the unit's innovation competence) and can be considered at the organisational level (interpreted by the organisation's innovation potential) as well as at the macroeconomic level (determined at national or regional level by the ability of economic operators to seek adaptation, implementation and dissemination of innovation). The innovation of the company should be analysed through an organisational prism in which the entity's innovation potential is defined as the company's ability to implement and disseminate innovation. To a great extent, this process is conditioned by cooperation with an outsourcing partner.

When discussing the problem of business innovation, the sources of innovation need to be carefully analysed. In the past, innovation was created mainly through internal resources that were held by the company. This operating model is used to be referred to as closed innovation. However, the impact of the market environment, the ever-increasing competition and the growing needs of consumers have modified the concept of innovation in the company. In the early 21st century, the concept of "open-market innovation" emerged. The term was formulated by Rugby and Zouka from *Bain & Company* and meant the use of "ideas that companies can identify in their surroundings" (Sobińska, 2008).

Outsourcing is a multidimensional phenomenon. It adopts different overtones. An extremely important place in the analysis of this phenomenon is occupied by innovative. The innovative face of IT outsourcing affects almost every stage of the external cooperation process. It is certainly important to pay attention to the possibility of creating product

innovations that arise through the cooperation between the two sides of cooperation. Innovations are then created as a result of such cooperation (Figure 1). External experts contribute to innovation through their knowledge.

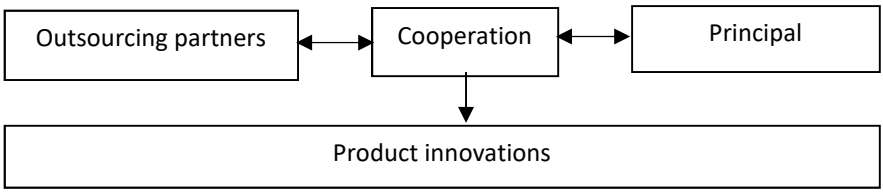

Figure 1. Product innovations as an effect of outsourcing cooperation
Source: own elaboration.

However, the outsourcing relationship is not limited to the above-mentioned innovations alone. It can also lead to marketing innovations that are associated with the creation of non-product marketing values. The innovative overtone of IT outsourcing can be applied to the results resulting from it. However, not every outsourcing union has to be crowned by innovation. However, it must be said that it is really a matter of interpretation to recognise the result of outsourcing cooperation as an innovation. An identical phenomenon can be interpreted differently by researchers.

Establishing an outsourcing relationship allows to make the most of the advantages of the free market. This, in turn, causes an influx of new ideas (Luecke & Katz 2005). Through open market innovation, it becomes possible to use unique external sources of knowledge, including from outsourcing partners, as a result to consolidate a strategic market advantage (Sankowska, 2009).

Therefore, the company's innovation should be built both through the use of the company's internal resources and through the use of external resources from m.in. outsourcing ratio. Given the intricacies of the innovation process, it is extremely valuable to use the knowledge of an external partner. To this end, companies should establish and maintain appropriate relationships with actors in the environment.

The process of building innovation in the company should be taken into hand in a comprehensive manner, i.e. in the context of the it should include both the use of internal resources in the company structures and the advantages of an 'open market', i.e. unique external sources, including those from the outsourcing partnership (Figure 2).

The invocation of research (Hakanson & Snehota, 2006) makes it possible to conclude that in the modern market environment and turbulent economic reality, the establishment of an outsourcing relationship takes on an important role. This cooperation brings numerous benefits to stakeholders that will contribute to stimulating their innovation (Zakrzewska-Bielawska, 2016).

Various research carried out so far has highlighted the huge impact of external relations (including IT outsourcing partnerships) on boosting business innovation. It was found that the education of the institutional network results in the development of product innovations, and participation in the market network translates into the creation of organisational innovations.

Therefore, It can be concluded that the establishment of an outsourcing partnership has an impact on the creation of both product and organisational innovations (Kim & Lui,

2015), and stating holistically the development of the innovation process. In turn, the effective implementation of these innovations is conditioned by the interoperability of the network as a whole (Dewick & Miozzo, 2004).

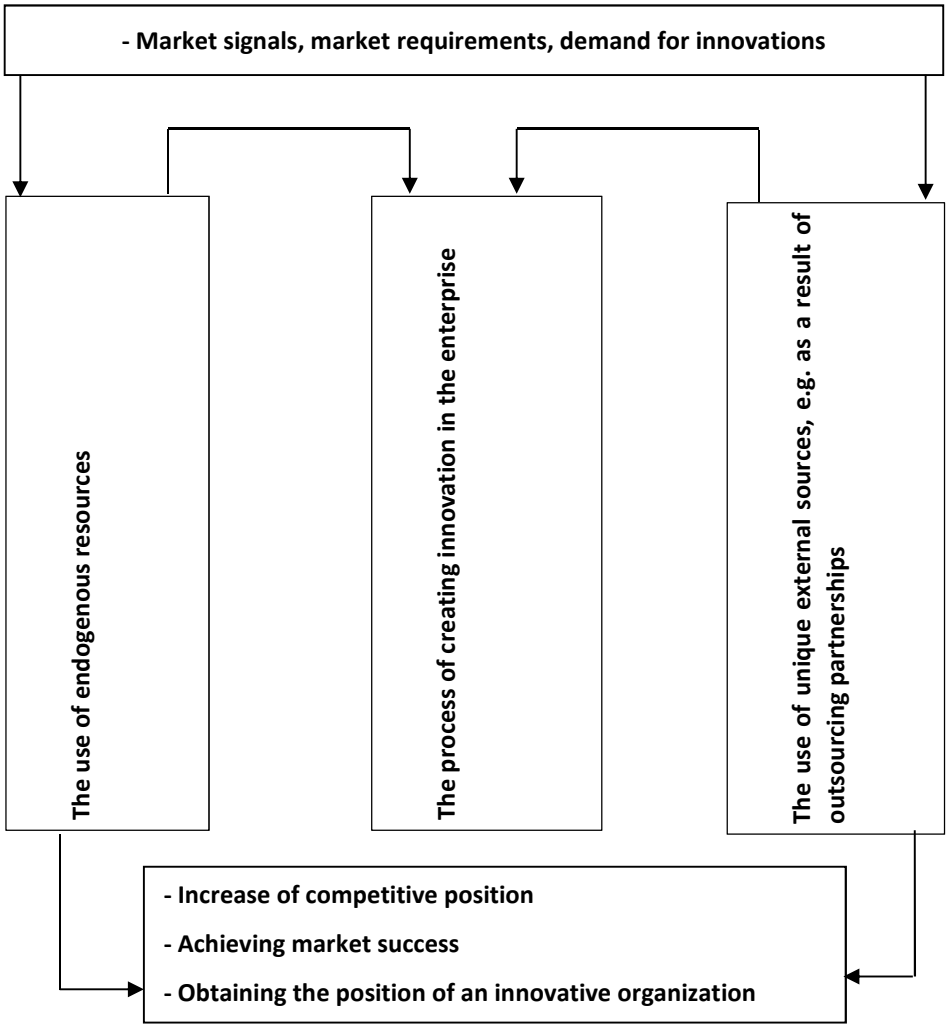

Figure 1. An integrated approach to the process of creating innovation in an enterprise
Source: own elaboration.

The study also clearly indicates that outsourcing partnership facilitates the organisation with which relations have been established, the process of commercialising innovation and diffusion (Aarikka-Stenroos et al., 2014). However, different types of innovation require specific outsourcing relationships (Partanen et.al., 2014).

The establishment of an outsourcing relationship affects the development of the capacity necessary for the company to create knowledge. Creating IT innovation requires the involvement of IT professionals. Therefore, it is not uncommon for IT professionals to use the knowledge of IT professionals (Kodama, 2007) in the process of creating innovation.

Outsourcing partnership therefore remains beneficial for the development of innovation. Especially since companies wishing to be innovative should use both internal and external ideas and the paths for their commercialisation. It is a good practice to establish cooperation with an external partner, as their innovative capabilities depend to a large extent on it. This issue remains very important in the IT industry (Sobińska & Jakubowska, 2013).

The impact of IT outsourcing on innovation is driven by increased access to complementary resources and specific network resources. Partners also profit through solidarity, joint, R&D costs and knowledge transfer (Klimas, 2014). The establishment of outsourcing cooperation contributes to the deepening of knowledge and also improves the absorption capacity of the company. The result is a higher level of innovation activity.

The IT area remains extremely important in the implementation of the management model in companies, based on the model of providing customers with the best experience in contact with the brand.

The it teams in the organization see that their priority is to create innovations in the digital age, necessary to stand out in the market and establish their position. Unfortunately, it is not uncommon in the field of IT to have competence gaps in the form of a shortage of professionals and skills of employees. The solution is to establish an outsourcing partnership in this area.

To improve results, low-code software development and rapid deployment (m.in cloud solutions) are in demand. A huge proportion of IT leaders want to provide business users with tools to build the applications (they want themselves, usually, due to the required level of security, to a limited extent.

IT professionals dealing with a single infrastructure often do not have the specific tools they need to solve a problem. IT outsourcing companies can fill this gap. They employ specialists from many fields. The scope of their services remains extremely wide, for example, they are engaged in the operation of all server systems, workstations, heterogeneous networks, IT security, backups or AV systems, based on various solutions and

THE GDPR. In each of these areas you can count on the expertise of an expert in a given field. Thanks to this, it becomes possible to provide services at the highest level and to propose innovative solutions.

MATERIAL AND METHODS

In the years 2018-2019, we conducted empirical research on the level of use of out-sourcing cooperation in the field of IT in the context of innovation creation. The survey was carried out among SMEs. The investigated businesses were active in the Silesian Voivodeship. The surveys took the form of the postal survey questionnaires and were con-ducted among 100 small businesses from the Silesian Voivodeship (n = 100 SMEs). A random sample selection was used.

The aim of the empirical study was to examine whether Silesian small and medium-sized enterprises are willing to cooperate with an IT outsourcing partner in the field of conducting innovative activities. The survey questionnaire was addressed to companies of

different legal characteristics, which are usually privately owned. The survey was completed by one hundred representatives of small and medium-sized enterprises. It is therefore impossible to consider a research sample of such a size to be representative and, consequently, to generalize the results of the following studies for the entire SME sector of the Silesian Voivodeship. Nevertheless, the research carried out for the purposes of this article can be considered as an attempt to assess the impact of IT outsourcing on the level of innovation of small and medium-sized enterprises in the Silesian Voivodeship.

More than half of the surveyed respondents were micro-enterprises (54% of the total sample), while 28% of respondents were small businesses, and 18% of respondents were medium-sized enterprises.

The largest number of surveyed businesses operated in the service sector (48%) and in the commercial sector (27%). Companies active in the processing industry, the transport industry and the construction industry accounted for a total of 15% of the sample. 10% of the surveyed companies were active in other sectors.

Among the 100 surveyed businesses, 40% have been in the market for less than 3 years. 32% of companies have been active for 4 to 7 years. over the last 12 to 15 years (28%) 20% of the companies surveyed benefited from the assistance of external IT experts once, the remainder benefited from this eventuality more than once.

RESULTS AND DISCUSSION

Results of the empirical research have shown that IT is the area of activity most often outsourced (35% of separated functions). 49% of the surveyed firms confirmed that cooperation with an external expert resulted in the creation of innovation. These included product innovation (30% of indications), organisational innovation (30% of indications) and organisational innovations (30% of indications). 60% of investigated firms remain satisfied with the cooperation, and a further 50% of firms are interested in implementing IT innovations over the next decade.

The firms examined exchanged the benefits of working with an IT outsourcing partner:

- guarantee of one-stop operation of the systems (25% of indications),
- the ability to focus on key activities (30% of indications),
- access to knowledge on the organisation of IT work (40% of indications),
- access to modern IT technologies (5% of indications),
- consulting included in the price of the service (30% of indications),
- financial benefits (m.in a constant level of service costs, a guarantee of the selection of optimal IT solutions tailored to the needs of business, a guarantee of cost reduction in IT service, reduction of costs associated with upgrading the qualifications of employees (30% of indications).

Using the $\chi 2$ independence test showed a relationship between the benefits achieved in connection with the implementation of innovations as a result of outsourcing cooperation and activities that are to ensure proper cooperation with an external company ($\chi^2 = 76.76$ at the significance level $p < 0.05$). The calculations proved that there is a relationship between benefits and actions.

Just 90% of investigated SMEs declared to have taken actions to ensure proper cooperation with an external company (while the number of SMEs that did not take such actions was 10). Just 80% of the investigated SMEs declared the level of benefits achieved in connection with the implementation of innovations as a result of outsourcing cooperation for the ordering company measured by reducing costs above 20% and increasing sales above 20%(while the number of SMEs not achieving benefits was 20).

The results of the empirical research confirmed that there is a relationship between the benefits achieved in connection with the implementation of innovations as a result of outsourcing cooperation and activities that are to ensure proper cooperation with an external firm. It also seems interesting to compare the obtained results for this article with other studies. The results of the research on the outsourcing of IT services are consistent with the results of Accenture's analyses. These studies, like this empirical research, indicated that IT is the area of activity most frequently outsourced. Accenture reports that this is 30% of outsourced functions. According to the responses of the surveyed respondents in this study, this number is 35%. The reason for the observed discrepancies in the research results may be the selection and size of the research sample - in the case of the research presented in this article, it was unfortunately not representative. The identified discrepancies justify further research in this area on a larger sample of companies.

CONCLUSIONS

IT outsourcing remains an important factor that largely influences the stimulation of innovation processes. This cooperation significantly influences the development of product innovations. Moreover, participation in the market network allows for the creation of organizational innovations.

The review of the scientific literature shows the positive impact of establishing outsourcing cooperation on the creation of innovation. This is the result of several issues:

- outsourcing cooperation in the field of IT facilitates the process of commercialization of innovations and their diffusion for the company with which the partnership was established,
- IT outsourcing has a huge impact on the development of IT knowledge,
- by establishing an outsourcing partnership in the IT area, it becomes possible to involve specialists from various scientific fields,
- outsourcing cooperation allows access to unique resources,
- the possibility of sharing the costs of R&D works has become a huge benefit,
- cooperation with other organizations allows to expand the amount of available knowledge and improves the absorption capacity of the firm.

It should be emphasized how important it is to make entrepreneurs aware of the advantages of outsourcing partnership in the IT area in terms of creating innovation. A good practice in this respect would be to create a zone of redistribution of experience in implementing IT innovations.

In addition, it is also necessary to make managers aware that it is people who determine the essence and raison d'être of an organization through their potential for creativity, abilities, skills, knowledge and motivation. Other elements of building a competitive advantage are easier to copy than the company's personnel system, which is based

on the uniqueness of people and organizational cultures. Properly shaped personnel policy may therefore decide about the success of introduced changes or innovations, and, consequently, about the high position of the company on the market. That is why an appropriate HR policy is so important for the employees of the parent company (who will have to work with the external team) and for the personnel of the external unit. One of the most important issues in implementing an outsourcing project is taking into account the views and opinions of both parties.

We realize that the conducted research was not representative. Due to the high cost of conducting the research. We included in the research sample only those entities that expressed their willingness to answer.

There is the need for further research. It would be interesting to determine statistical dependencies between the presence of a system of criteria and measures assessing the effectiveness of the implemented outsourcing process and the degree of satisfaction of this company with outsourcing cooperation, as well as the relationship between taking actions to ensure proper cooperation with an external company and the level of benefits achieved as a result of outsourcing cooperation for the company the ordering party.

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