Thematic Issue
International Trade and Global Business

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Editorial Announcements

Editorial

There is common conviction in the literature that international trade and business are crucial determinants of current internationalization, integration and globalization processes (Surugiu & Surugiu, 2015). The dynamic development of global trade as well as business are conditioned by a number of heterogeneous factors related to trade liberalization, technological progress as well as information and communication technologies (ICTs). It entails a number of new challenges, opportunities and threats, which in-depth analysis enable to make pertinent conclusions to evaluate the development potential of economies and businesses.

Taking the above into account in this issue, the aim of this issue of EBER is to present the latest research and studies related to broadly understood international trade including macro and micro levels. The articles included in the issue concern various aspects of international trade and business and are an excellent compilation of theory, empirical research, and economic practice. The issue is divided as usual into two sections: thematic articles and other articles.

The thematic section contains eight papers concerning the problems of international trade and global business.

Joanna Wolszczak-Derlacz and Aleksandra Parteka from Gdańsk University of Technology (Poland), attempt to empirically verify how the heterogeneity of workers, firms and tasks can be incorporated into empirical international trade analysis.

Małgorzata Chrupała-Pniak and Damian Grabowski from the University of Silesia in Katowice and Monika Sulimowska-Formowicz from the University of Economics in Katowice (Poland) investigate the relationships between relational competence and its components substantial for trust-building processes in inter-organizational relationships (IORs) with traits of individuals that the Authors consider psychological antecedents of IORs outcomes.

Łukasz Ambroziak from Warsaw School of Economics (Poland) analyses the differences in Poland's bilateral trade balances in gross terms and in value added terms in years 1995-2011. Furthermore, the Author tries to explain the reasons for the existing differences.

Honorata Nyga-Łukaszewska and Eliza Chilimoniuk-Przeździecka, also from Warsaw School of Economics (Poland), elaborate on the link between energy security and international competitiveness captured by export.

Andrzej Cieślik and Jan Jakub Michałek both from the University of Warsaw (Poland) study the relationship between different forms of innovations and export performance of Central and East European (CEE) countries. They compare the performance of firms from the European Union (EU) members to the population of firms from all CEE countries.

Tomasz Dorożyński, Anetta Kuna-Marszałek and Janusz Świerkocki from the University of Łódz (Poland) identify motivation behind Foreign Direct Investment (FDI) followed by enterprises from the Lodz Region and try to answer the question if these motives are similar in companies that differ in size, share of foreign capital and internationalization path.

Joanna Bednarz, Tomasz Bieliński, Anna Maria Nikodemska-Wołowik from the University of Gdansk and Ade Otukoya from the University of Northampton (UK) analyse the crucial factors influencing family business in China, Nigeria and Poland through a prism of the competitive advantage theory as well as company values.

Madalena Rosińska-Bukowska from the University of Łódz (Poland) discuss the direction of changes in the strategies of the most powerful transnational corporations (TNCs) as a result of adjustments to the new challenges created by the evolving global economy.

In the nonthematic section there are four articles concentrating on migration, social network, human capital and enterprises problems.

Jan Brzozowski from Cracow University of Economics (Poland) presents comprehensive review of the theoretical and empirical literature on immigrant entrepreneurship and economic adaptation of immigrants in the host country.

Małgorzata Bartosik-Purgat and Barbara Jankowska from Poznań University of Economics and Business (Poland) evaluate the use of Social Networking Sites (SNSs) in job-related activities. They try to indicate the interdependencies between these activities and age, gender as well as education in culturally diversified markets taking into account China, Poland, Turkey and the United States.

Łukasz Bryl and Szymon Truskolaski from Poznan University of Economics and Business (Poland) compare the quality, extent and determinants of human capital disclosure in Polish and German companies.

Magdalena Śliwińska and Rafał Śliwiński also from Poznan University of Economics and Business (Poland) investigate the development of German enterprises in Wielkopolska Region in Poland. They address the question of sales volume, growth drivers on the foreign market and potential barriers of German enterprises in Poland on the example of Wielkopolska.

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Thematic Issue Editors

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Workers, Firms and Task Heterogeneity in International Trade Analysis: An Example of Wage Effects of Trade Within GVC

Aleksandra Parteka, Joanna Wolszczak-Derlacz

A B S T R A C T
Objective: The main aim of this article is to present how the heterogeneity of workers, firms, and tasks can be incorporated into empirical international trade analysis. In particular, we provide an empirical example in which we aim to quantify the reliance on foreign value added (FVA) within Global Value Chains (GVC) on wages.
Research Design & Methods: We estimate a Mincerian wage model augmented with a measure of foreign value added drawn from international input-output data. We employ econometric modeling with instrumental variable (addressing the endogeneity between trade and wages) and estimated through weighted regression with cluster-robust standard errors.
Findings: Controlling for individual workers and job characteristics, we find the negative correlation between FVA and wages. The effect is conditional on the skill and task typology (affecting mostly workers performing routine tasks).
Implications & Recommendations: In empirical international trade analysis it is necessary to capture many dimensions of complexity observed in the real world. We argue that country-level or industry-level analysis on the international trade-wage nexus is not sufficient.
Contribution & Value Added: The originality of this work lies in studying wage-international trade interactions in a multicounty setting (which allows for some generality in the conclusions drawn), with the use of microdata which allows us to account for several aspects of heterogeneity. We contribute by providing an example of international trade-labour markets analysis which captures many dimensions of complexity observed in the real world: differences between workers, tasks they perform and firms in which they are employed.
Article type: research paper
Keywords: wage; worker heterogeneity; international trade; foreign value added; tasks
JEL codes: F14, F16, J31
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INTRODUCTION

Among the key topics present in the recent international trade literature we can notice a general shift towards an analysis which tries to be as close as possible to the real life situations. Following the seminal contribution of Melitz (2003), the so-called 'new-new trade theory' which takes into account firm heterogeneity has become a new reference point in international trade analysis[1]. The heterogeneity of workers and tasks they perform (Autor, 2013) is also present in several streams of international trade analysis, and especially in contributions dealing with labour market effects of increasing trade integration. As noted by Grossman (2013), the heterogeneity of labour has to be taken into consideration when analysing such topics such as skill dispersion as a source of comparative advantage or how globalisation affects the distribution of wages and unemployment across different types of workers.

The main objective of this article is to show how the heterogeneity of workers, firms, and tasks can be incorporated into empirical international trade analysis. In particular, we provide an empirical example in which we focus on quantifying the effects of trade within the so-called Global Value Chains (from now on GVC[2] – Los, Timmer & Vries, 2015) on wages. We consider the effect of trade within GVC on workers differing in terms of personal characteristics, skills, performed tasks or firms in which they are employed. This topic is important not only from scientific perspective *per se*, but the examination of labour effects of GVC's expansion is of high policy relevance (i.e. potential uneven distribution of gains from international production fragmentation).

The originality of this work lies in studying wage-international trade interactions in a multicounty setting, with the use of microdata which allows us to account for several aspects of heterogeneity. We contribute by providing an example of international trade-labour markets analysis which captures many dimensions of complexity observed in the real world: differences between workers, tasks they perform and firms in which they are employed. As main method of analysis, we employ an econometric model with an instrumental variable (addressing the endogeneity between trade and wages) and estimated through weighted regression with cluster-robust standard errors.

The paper is structured as follows. In Section 2 we describe the related literature on international trade-labor market interactions which takes into account heterogeneity of firms, workers and tasks they perform. Section 3 is dedicated to the data and methods used in our empirical analysis. Section 4 presents the results of econometric estimation and, finally, Section 5 concludes and presents the main direction for further research.

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[1] Melitz and Redding (2014) provide an excellent review of the related literature on hetereogenous firms and trade. Wagner (2012) surveys empirical studies on international trade and firm performance which have built upon the Melitz approach. Theory of international trade is thoroughly presented in Feenstra (2016), also with respect to the role of heterogenous firms in shaping trade patterns and the gains from trade.

[2] GVC and corresponding international input-output matrices are useful in describing the process of fragmentation of production chains across borders. In international trade data this process is visible though the networks of intermediate input flows between countries. For a recent survey on GVC drivers and measures see Amador and Cabral (2016).

LITERATURE REVIEW

International Trade Literature Allowing for Heterogeneity of Firms, Tasks, and Workers

Heterogeneity of workers is discussed in many influential papers dealing with international trade modeling. Melitz (2003) was the first to address theoretically across firms differences in productivity which help to explain their varying involvement in the export activity. His theoretical approach (the so-called 'Melitz model') contributed to explaining a variety of features observed in disaggregated trade data, including the higher productivity of exporters relative to non-exporters, within-industry reallocations of resources following trade liberalization, and patterns of trade participation across firms and destination markets. Yeaple (2005) introduced a general equilibrium trade model in which homogeneous firms choose a technology from a set of competing technologies and choose employees from a set of workers of heterogeneous skills. He provides a theoretical explanation for the effect of international trade on the skill premium and observed industry-level productivity. The model of international trade with heterogeneous firms by Helpman, Melitz and Rubinstein (2008) predicts positive as well as zero trade flows across pairs of countries, and allows the number of exporting firms to vary across destination countries. Grossman and Rossi-Hansberg (2008) develop a very influential theoretical framework in which the effects of offshoring on wages, employment, and productivity heavily depend on the nature of performed tasks[3]. Only some of the tasks can be offshored. Amiti and Davis (2012) provide a model to explain how the impact of final and intermediate input tariff cuts on workers' wages varies with the global engagement of their firm. Their model predicts that a fall in output tariffs lowers wages at import-competing firms but increases wages at exporting firms. Overall, all of these contributions (and many others) attempted to bring the theory of international trade and its effects as close to the reality as possible.

Given the empirical nature of our paper, we shall focus on recent empirical contributions in the field. In general, our study can be positioned within the literature on trade – labour markets nexus. Since the 1990s it has been a widely studied topic, especially from a potential threat that trade liberalisation with less developed (and thus lower wage) countries can pose a threat to workers in developed countries (early contributions include, among others: Wood, 1995; Freeman, 1995). Recent literature based on microdata seems to focus on estimating the effects of increasing trade in parts and components and offshoring on workers (the term 'offshoring jobs' has been coined by Harrison and McMillan, 2011). The case of increasing import competition from China or other developing countries on American workers has been widely studied (e.g. Hanson *et al.*, 2013; Ebenstein, Harrison, McMillan & Phillips, 2014; Autor *et al.*, 2014). Similar analysis was performed with respect to the effects exhibited on workers from other well-developed countries such as Denmark (Hummels, Jorgensen, Munch & Xiang, 2014), Germany (Baumgarten, Geishecker & Gorg, 2013; Dauth *et al.*, 2014) or the UK (Geishecker & Görg, 2013).

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[3] This approach has been developed by Baldwin and Robert-Nicoud (2014) who integrated trade-in-goods and trade-in-tasks within one theoretical framework.

Related empirical analysis adopting micro level data and multicountry perspective (and thus allowing for a broader cross-country view) is much more scarce. Our paper can be viewed as an attempt to contribute to this stream of literature. The exceptions include Geishecker, Görg and Munch (2010) on wage effects of outsourcing in Germany, UK, and Denmark or Goos, Manning and Salomons (2014) who use the microdata to classify workers according to the tasks they perform and to describe the process of job polarization[4] in 16 European countries.

The Development of Literature on Methods of Firms', Workers' and Tasks' Heterogeneity Measurement

The measurement of firm heterogeneity is relatively simple – as surveyed in Wagner (2012) most of the empirical papers have focused on differentials in terms of firms' productivity, size or industry of activity (public versus private). In their review paper, Bernard, Jensen, Redding and Schott (2012) individuate that covering these aspects of firm's heterogeneity in empirical international trade analysis allows to explore such dimensions as: multiproduct firms, offshoring, intrafirm trade and firms' export market dynamics.

Workers heterogeneity means primarily the need to use microlevel (i.e. worker specific) data on wages or employment in a setting in which additional information on personal characteristics of workers is also available. For instance, by doing so, wage pattern can be explained as a function of worker's age, sex, experience, education or family status (such a Mincer equation is comprehensively described in Heckman, Lochner and Todd 2006). In an analysis on wage effects of trade the augmented Mincerian model is often used. Personal characteristics of workers are matched with industry-level data on the characteristics of industries in which these workers are employed. This is the approach we follow in our study, but we also incorporate newer methods of task content measurement plus the decomposition of trade according to the source of the employed value added.

Traditionally, workers were classified as skilled or unskilled, and such information was based upon the data on their education (see e.g. Wolszczak-Derlacz & Parteka, 2016). However, recent literature underlines the importance of a proper distinction between skills and tasks (Autor, 2013). As Grossman and Rossi-Hansberg (2008) suggested in their theoretical framework of 'trade-in-tasks,' the effects of offshoring depend on the cost of trading, which may differ across different types of tasks. Hence, the literature seems to go into the direction of even deeper classification of workers by taking into account precise information on the tasks they perform within their occupations. The information on the occupation of single workers is typically available in micro datasets, hence the aim is to map the occupation with a particular type of tasks. Such an exercise has been performed by Autor and Dorn (2013), Autor, Dorn and Hanson (2015) or Goos, Manning and Salomons (2014) who computed Routine Task Intensity index for occupations at the ISCO 2-digit level. Using this index's occupations (and, hence, workers) can be classified into groups which differ in terms of routine, abstractness and service task importance. On the basis of this information, it is possible to individuate tasks which are 'offshorable.' Originally, Autor and Dorn (2013) drew on the US information on abstract,

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[4] They attribute it to so-called routine biased technological change (RBTC). According to RBTC hypothesis the technology can replace human labour in routine tasks.

routine and manual tasks based on data from the Dictionary of Occupational Titles while their measure of offshore ability was based on task values from O*Net[5].

Such methods of task content measurement allow for a very precise analysis of the changing labor markets' structure and their interaction with trade integration and offshoring. Recently, task measures from O*Net were employed for instance by Fortin and Lemieux (2016). They document substantial changes in both the within and between dimensions of occupational wages over time and find that these changes are well described by changes in task prices induced by technological change and offshoring. Becker and Muendler (2015) provided an interesting study in which they combined German worker-level data that cover time-varying job-level task characteristics of an economy over several decades (1979-2006) with industry-level bilateral trade data for merchandise and services. Their approach allows them to uncover that the German workforce increasingly specializes in workplace activities and job requirements that are typically considered non-offshorable; while the imputed activity and job requirement content of German imports grows relatively more intensive in work characteristics typically considered offshorable. Cortes (2016) uses a similar method to document wage polarization and routine-biased technical change.

We shall rely on Goos *et al.* (2014) method of task classification in our work.

MATERIAL AND METHODS

The Data

In our study, we match microlevel and industry level data. Luxembourg Income Study (LIS) is our most important source of microlevel data on workers – their wage, personal characteristics or family status. Information on firms in which these workers are employed (industry of activity, status: public versus private, size[6]) also comes from LIS[7]. Industry level data comes from WIOD (World Input-Output Database described in Timmer, Dietzenbacher, Los, Stehrer & Vries, 2015). In particular, as an indicator of reliance on imported inputs, we will use the information on foreign value added employed in the domestic industry. It is obtained through Wang, Wei and Zhu, (2013)'s decomposition performed on WIOD's data with the use of Quast and Kummritz (2015) *decompr* package in R[8].

In our dataset, we have the data for workers from 14 countries (listed in Table 2) and employed in 34 industries. The list of variables used in our analysis, along with their description and sources, is provided in Table 1.

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[5] O*Net (Occupational Information Network) dataset is provided by the United States Department of Labour and is a source of occupational task-intensity data. O*NET measures the importance of various physical (dexterity, coordination, strength) and language (oral and written comprehension and expression) abilities within each occupation code. Data values are based upon experts' assessments and reflect the use of skills across occupations.

[6] Original datasets from LIS for some of the countries do not provide more specific information on the number of employees in a firm. Hence, in controlling for firm size in our multicountry setting we are constrained to adopt small/big firms classification – is it not possible to account for traditional 10, 50, 250, 500 – workers thresholds.

[7] The data was accessed during an onsite visit to LIS premises in Luxembourg. We used wave 8 data corresponding to the year 2010.

[8] The decomposition was used among others by Olczyk and Kordalska (2016).

In Table 2 we show the differences in our dependent variable – gross hourly wage – across countries and workers. Mean wage is the lowest in Mexico (only 2.8 USD per hour) while the highest in Luxembourg (33.4 USD), so cross-country differences are enormous (the data refers to 2010). Unsurprisingly, in all of the countries workers with the highest educational level completed (university education) are paid better than those with secondary or primary education (medium and low category). Employees performing routine tasks have lower wages.

Table 1. List of variables used in the analysis

Variables	Definition	Source (the code of variable in the dataset)
gross hourly wage* =annual earnings/ (annual weeks worked ×weekly hours worked)	earnings – monetary payments and the value of non-monetary goods and services received from regular and irregular dependent employment	LIS (pile)
	annual weeks worked – the number of weeks worked during the year in any job	LIS (weeks)
	weekly hours worked – regular hours worked at all jobs currently held	LIS (hours)
Personal characteristics	sex	LIS (Sex)
	age in years	LIS (Age)
	education level (highest completed). According to ISCED levels: high education – ISCED 5 or 6, medium – ISCED 3 or 4, low – ISCED 0, 1 or 2	LIS (Educ)
	marital status – married or in union	LIS (marital)
	partner – living with a partner	LIS (partner)
	children – living with children (biological, adoptive or step)	LIS (children)
Firm/job characteristic	part time – working part-time or less than 30 hours per week	LIS (ptime)
	the size of the company – the number of individuals employed in the local unit*	LIS (NEMP)
	private or public industry of employment*	LIS (SECT)
	multiple jobs holder – an indicator of multiple simultaneous jobs for employed individuals	LIS (SECJOB)
	occupational classification of the first job, based on the ten major groups of ISCO classification	LIS (OCCB)
Task characteristics	task typology according to the type of tasks mainly used in the given occupation	Goos *et al.* (2014)
Industry characteristics	industry – manufacturing, services, agriculture, construction, mining	WIOD (code)
	industry size – value added	WIOD (VA)
	dependence on foreign value added – obtained from the export decomposition	WIOD (FVA) + Wang *et al.* (2013)

Note:* available for the limited number of countries, the missing values were assigned using the Gaussian normal regression imputation method.
Source: own elaboration based on LIS and WIOD.

Table 2. Variability of hourly wage across countries in our sample – heterogeneity in workers' education and performed tasks

country	mean	Education level of workers			Tasks performed by workers	
		high	medium	low	non-routine	routine
CZE	6.9	9.7	6.3	4.6	8.6	6.1
EST	6.3	8.3	5.3	5.4	7.9	5.8
FIN	25.5	29.7	21.8	21.2	30.3	21.6
FRA	23.0	31.9	19.1	15.5	31.4	18.2
DEU	23.8	32.0	20.4	17.2	29.3	20.0
GRC	13.9	17.3	11.9	10.5	17.9	11.8
IRL	29.1	34.6	23.3	22.9	36.3	23.8
LUX	33.4	47.8	31.7	22.1	44.5	24.1
MEX	2.8	5.7	2.9	1.7	4.6	2.1
SVK	5.6	7.0	5.1	3.8	6.5	5.2
SVN	9.4	12.2	8.1	6.5	11.9	7.6
ESP	14.7	19.6	13.6	11.3	19.7	12.7
UK	27.2	38.3	23.2	16.2	37.7	18.0
USA	24.5	30.9	19.1	13.8	30.7	20.0

Wage expressed in USD, 2010. Normalised weights used. Missing values imputed using the Gaussian normal regression imputation method.
Source: own calculations based on data from LIS (wave 8).

Table 3. Variability of hourly wage across countries in our sample – heterogeneity in firm characteristics (industry, size) and type of employment (full-time/part-time)

country	Industry		Part/Full time		Firm size (no of emp.)		Industry: Private/Public	
	manuf	services	Part	Full	<50	>50	Private	Public
CZE	6.7	7.1	6.1	6.9	6.4	7.5	.	.
EST	5.8	6.4	6.4	6.3	5.1	6.4	6.3	6.3
FIN	27.4	25.3	23.7	25.7	.	.	25.7	25.1
FRA	23.8	23.5	24.2	26.5	.	.	22.5	25.1
DEU	26.9	22.9	19.0	25.7	14.2	24.6	23.0	25.9
GRC	12.7	14.3	14.2	13.9	9.7	14.3	12.4	17.2
IRL	28.8	29.5	22.6	31.4	22.9	29.7	26.0	35.3
LUX	33.9	34.9	33.5	33.4	27.1	34.0	30.7	51.1
MEX	2.4	3.2	2.2	2.9	1.7	3.4	2.4	4.5
SVK	5.5	5.6	5.6	5.6	4.9	5.6	.	.
SVN	8.6	9.9	6.0	9.7	.	.	8.8	10.2
ESP	14.2	15.2	15.0	14.7	10.3	15.1	.	.
UK	29.7	26.5	11.0	31.8	21.6	30.1	.	.
USA	25.2	24.4	23.2	24.7	22.1	25.5	24.4	24.8

Wage expressed in USD, 2010. Normalised weights used. Missing values imputed using the Gaussian normal regression imputation method. [.] – the data is unavailable.
Source: own calculations based on data from LIS (wave 8).

The data reported in Table 3 shows the variability of hourly wage across countries with respect to firm characteristics (industry, size) and type of employment

(full-time/part-time). Also, these features are essential (e.g. wages in big firms are typically higher) which proves that a proper analysis focusing on wages must also take this heterogeneity into account.

Methods of Empirical Analysis

Our analysis is quantitative, and we rely on econometric methods of estimation to uncover the relationship between our dependent and independent variables. The strategy is similar to that adopted by Baumgarten *et al.* (2010) and Geishecker, Görg & Munch (2010): as these authors, we merge micro level data on labour market out-comes with industry-level trade data on production sharing. The first estimated model is based on the specification of Baumgarten *et al.* (2010) and is as follows (1):

$$\ln w_{ijct} = \beta_0 + \beta X_{it} + \chi \ln VA_{jct} + \sum_e \theta_e \ln FVA_{jct-1} Educ_{eit} +$$
$$+ \sum_e \delta_e \ln FVA_{jct-1} Educ_{eit} Task_{it} + D_j + D_c + D_{jc} + u_{ijct}$$

(1)

where:

$Task_{it}$ - task index (0 – highly routine, low in abstractness and service task importance, 0.5 – low in rou-tine and abstractness, high in service task importance, 1 – low in routine, high in abstractness and service task importance);

$\ln w_{ijct}$ - log of the hourly wage of worker *i* employed in industry *j* in country *c* at time *t*;

X_{it} - set of worker's individual characteristic;

$\ln VA_{jct}$ - log of value added of an industry *j*;

FVA_{jct-1} - lagged log of foreign value added used in industry *j* and in country *c*;

$Educ_{eit}$ - education level {high, medium, low};

D_j - individual industry effect;

D_c - individual country effect;

D_{jc} - industry-country effect;

u_{ijct} - error term.

   Wage (*w*) is calculated as described in Table 1.The set of worker's individual characteristic (X_{it}) refers to his/her: sex, age (age and age[2])[9], marital status, living with a partner, having children, education level (low, medium and high, with low education being a reference one – omitted in the regression) and job characteristic (e.g. part time or full time job). These characteristics are present in a standard Mincerian wage model and serve as basic controls of wage determination mecha-nism. Our crucial variable is called *FVA*. We include the interaction term between this variable and education (*FVA$_{jct-1}$Educ$_{eit}$*) to take into account the heterogeneity between the reliance of industries on foreign inputs and wages of workers with different education levels. Finally, the triple interaction term between *FVA*, educa-tion and task measure (*FVA$_{jct-1}$Educ$_{eit}$Task$_{it}$*) is included. It allows to capture different reaction of wages within education levels, depending on the task charac-teristic of worker's occupation.

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[9] In classical Mincerian approach, the wage depends on education level attained (years of education) and years of on-the-job experience with potentially non-linear impact. We treat age and age squared as the proxy for experience. Unfortunately, given a wide country sample in our analysis, the original microdata from LIS does not provide necessary information on on-the-job experience for individuals from all of the countries.

The marginal effect of *FVA* depending on the education level *e* equals to:

$$\frac{\partial \ln w_{ijct}}{\partial \ln FVA_{jct-1}} = \theta_e + \delta_e Task_{it} \tag{2}$$

The main aim of the estimation (1) is to verify if there is any statistically significant impact of reliance on foreign inputs on wages 'at home'. Our main research hypothesis is that the negative wage effects of international jobs relocation concerns workers who are low educated and/or perform routine tasks. Following Goos *et al.* (2014), the task index (*Task*) is derived from the classification of occupations into three categories: *NR* (low in routine, high in abstractness and service task importance), *LR* (low in routine and abstractness, high in service task importance) and *HR* (highly routine, low in abstractness and service task importance). We express $Task_{it}$ in a numeric format, and it can take one of the three values: 0 for highly routine tasks (*HR*), 0.5 for low in routine and abstractness (LR), high in service task importance and 1 for non-routine tasks (*NR*). For example, for highly routine tasks the marginal effect of *FVA* equals simply the coefficient θ_e while for the non-routine task is the sum of θ_e and δ_e.

The inclusion of industry size (VA) in the model (1) is needed to eliminate the effect of a greater FVA simply due to the higher production. With a view to take into account any other unobserved industrial, country or industry-country heterogeneity (e.g. different wage setting mechanisms in various countries due to different role of labour market institutions) we include three dummies, at the level of industry: D_j, at the level of country: D_c and simultaneous industry-country specific effect: D_{jc}.

One potential problem in the model specification (1), is that FVA is likely to be endogenous. Firms are making the strategic choice in which country to locate their activity, what materials to import and from where, and they set wage levels accordingly. However, as pointed out by Baumgarten *et al.* (2010), in case of a model specification in which we have individual wages and additional information on industry – the endogeneity should not be a problem (individual wages do not affect industry aggregates such as *FVA*). Nevertheless, we try to eliminate the possibility of endogeneity bias in the estimated model. First, we employ the lag of ln*FVA* – when the information on the use of foreign inputs is included with a time lag, we allow for the wage adjustment to emerge – the similar approach is presented in Ebenstein *et al.* (2014).

Secondly, we employ instrumental variables (IV) estimation technique in which *FVA* is treated as endogenous and instrumented by the gravity equation. Such a strategy is used to obtain a precise instrument for FVA trade flow, based on the information on bilateral industry-level trade and a set of industry and country level characteristcs. Such an instrument is more accurate than the one based on simple lag of the dependent variable. Specifically, to obtain the instrument for *FVA*, in the first stage we estimate the following bilateral trade regression (in line with Parteka and Wolszczak-Derlacz, 2015):

$$FVA_{cjpt} = \beta_0 + \beta_1 \ln VA_{cjt} + \beta_2 \ln VA_{pjt} + \beta_3 \ln DIST_{cp} + \beta_4 Contig_{cp} + $$
$$+\beta_5 RTA_{cpt} + \beta_6 Comcur_{cp} + \beta_7 Comlang_{cp} + \beta_8 Colony_{cp} + u_{cjpt} \tag{3}$$

where:

FVA_{cjpt} - foreign value added in industry j, from origin country c (reporter) to partner country p;

$\ln VA_{cjt}$ - log of value added of industry j in reporter country c;

$\ln VA_{pjt}$ - log of value added of industry j in partner country p;

$\ln DIST_{cp}$ - log of the distance between reporter and partner, defined as distance between the major cities in the two countries;

$Comcur_{cp}$ - equals 1 if the two countries have a common land border;

RTA_{cpt} - equals 1 if both countries participate in a common regional trade agreement;

$Comcur_{cp}$ - indicates a dummy variable =1 if reporter and partner have a common currency;

$Comlang_{cp}$ - indicates a dummy variable =1 if reporter and partner have a common official language;

$Colony_{cp}$ - indicates a dummy variable =1 if reporter and partner have a common colonial past.

The gravity equation is estimated for each industry, using the Poisson Pseudo Maximum Likelihood method – PPML (Silva & Tenreyro, 2006). The predicted *FVA* values are summed across all the partner countries (we consider 39 principal partners present in WIOD database and accounting for the majority of world trade), obtaining an overall foreign value export for each industry for a given reporter country. The exercise is repeated for each country from our sample (so *c*=1,..,14).

Our strategy of model (1) estimation is to use weighted regression with cluster-robust standard errors, where the clusters refer to country-industry pairs. We use normalized personal weights based on the individual-level cross-sectional weights (provided by LIS), which make the sample representative of the total national population or the total population covered[10]. Furthermore, the individual weights are normalized to 10,000 by country. As a result, in our multi-country analysis workers from each country are intended to have the same weight, and the results are not driven by countries with large numbers of observations.

RESULTS AND DISCUSSION

The result of the regression (1) is presented in Table 4. The first column refers to basic Mincerian wage model only with individual workers' characteristics. All the covariates referring to personal characteristics have the expected signs. Both coefficients referring to age (age in levels and age squared) are statistically significant and with opposite signs: the first one is higher than zero while the age squared is negative which indicates a concave relationship between hourly wages and age. Moreover, males typically earn more than females (on average by 20%). While the marital status is not important, workers living with a partner and possessing children have higher wages (respectively by 7% and by 2.5 %). Those working part-time on average earn less.

Finally, better-educated workers are characterised by higher wages. The default category is composed of low-educated workers to whom we compare the situation of workers with high and medium education. According to the obtained results, on average workers with medium education earn 20% more than workers with low education while those with tertiary education by more than 50%. We show that worker' characteristic are important factors in explaining the individual wage differentials.

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[10] For more about the rules, practices and definitions applied during the harmonization process to ensure consistency over the LIS datasets together with sample-selection and weighting procedures, see: LIS guidelines at: http://www.lisdatacenter.org/wp-content/uploads/our-lis-documentation-harmonisation-guidelines.pdf

Now, when wage differentials between workers are cleaned out of their personal characteristics, we add additional variables. In column (2) of Table 4, we report the results

Table 4. The results of estimation (1)

Variable / Measure	Dep.var: $\ln w_{ijct}$			
	(1)	(2)	(3)	(4)
age_i	0.042***	0.043***	0.042***	0.040***
	[0.003]	[0.003]	[0.003]	[0.003]
age_i^2	-0.000***	-0.000***	-0.000***	-0.000***
	[0.000]	[0.000]	[0.000]	[0.000]
sex_i	0.208***	0.207***	0.207***	0.219***
	[0.008]	[0.008]	[0.008]	[0.008]
$marital\ status_i$	0.000	0.000	0.001	0.004
	[0.010]	[0.010]	[0.010]	[0.010]
$partner_i$	0.073***	0.074***	0.074***	0.065***
	[0.009]	[0.009]	[0.009]	[0.009]
$children_i$	0.025***	0.026***	0.026***	0.029***
	[0.007]	[0.007]	[0.007]	[0.007]
$part\text{-}time_i$	-0.207***	-0.209***	-0.207***	-0.184***
	[0.037]	[0.037]	[0.037]	[0.033]
$mededuc_i$	0.222***	0.215***	0.170***	0.168***
	[0.017]	[0.016]	[0.035]	[0.034]
$hieduc_i$	0.576***	0.566***	0.520***	0.514***
	[0.023]	[0.022]	[0.044]	[0.042]
$\ln VA_{jct}$		0.034**	0.032**	0.024*
		[0.015]	[0.014]	[0.014]
$\ln FVA_{jct-1}$		-0.019		
		[0.012]		
$\ln FVA_{jct-1}Hieduc_i$			-0.017	-0.094***
			[0.012]	[0.013]
$\ln FVA_{jct-1}Mededuc_i$			-0.017	-0.038***
			[0.012]	[0.013]
$\ln FVA_{jct-1}Loweduc_i$			-0.028**	-0.038***
			[0.013]	[0.013]
$\ln FVA_{itc-1}Hieduc_iTask_i$				0.094***
				[0.006]
$\ln FVA_{jct-1}Mededuc_iTask_i$				0.050***
				[0.003]
$\ln FVA_{jct-1}Loweduc_iTask_i$				0.033***
				[0.007]
Under-identification		0.000	0.000	0.000
Weak identification		45.293	15.990	7.851
N	165383	160944	160944	156835

Significant codes: 0.01 '***' 0.05 '**' 0.1 '*'; sex_i – dummy variable: 1 if male;
$marital\ status_i$ – dummy variable: 1 if married, 0 – others; $partner_i$ – dummy variable: 1 if living with a partner, 0 – others; $children_i$ – dummy variable: 1 if living with children, 0 – others; $part\text{-}time_i$ – dummy variable: 1 if working part-time, 0 – others; $mededuc_i$ – dummy variable: 1 if having medium education, 0 – others;
$hieduc_i$ – dummy variable: 1 if having high education, 0 – others.
Regression with cluster-robust standard errors; all specifications include industry and country fixed effects, as well as country-industry panel. The figures reported for the under-identification test are the p-values and refer to the Kleibergen-Paap rk LM test statistic. The weak identification test refers to the Kleibergen-Paap Wald rk F statistic test for the presence of weak instruments.
Source: own calculations with data from LIS and WIOD.

of estimation in which we add the information on the industry size of employment measured by the log of its value added ($\ln VA_{jct}$) and lagged log of its dependence on foreign value added ($\ln FVA_{jct-1}$).

When *FVA* is included without any interaction (with the assumption that it has the same impact on wages of all workers) – the coefficient is not statistically significant. In the third column of Table 4, we include the interaction term between *FVA* and education levels. It turns out that there is a negative correlation between *FVA* and wages in case of workers with the lowest educational attainment (the negative and a statistically significant parameter of $\ln FVA_{jct-1}Loweduc_i$).

However, the results of the last regression (Column 4) indicate that apart from taking into account the heterogeneity of workers due to their education level, it is also important to check for the characteristics of tasks their perform. We find that there is a negative correlation between *FVA* and wages of workers conducting routine tasks (for all the three educational groups: negative parameters of $\ln FVA_{jct-1}Hieduc_i$, $\ln FVA_{jct-1}Mededuc_i$ and $\ln FVA_{jct-1}Loweduc_i$). This effect depends on the task index. For the extreme case of non-routine tasks (i.e. when the task index equals to 1), the adverse effect is sustained only in the case of low educated workers (-0.038 +0.033<0), while for highly educated and medium educated labour the marginal effect of *FVA* is either approaching to zero or slightly positive (respectively: -0.094+0.094 and -0.038 + 0.050).

The final step is to repeat the above process, adding more characteristics on jobs and firms in which workers are employed. In particular, we add information on the firm size. Due to data constraints we divide firms into small (when the number of employees is lower than 50) and big (with number of employees exceeding 50). For some countries we have also information in what kind of a firm given a person is working – private or public. Finally, we augment the model with the information whether a worker has more than one job.

The results of the regression (1) with all the worker's characteristic as in Table 4 (not shown here for the brevity) and additional job characteristic are presented in Table 5. Due to the data constraints, adding job characteristics limits our sample to 7 countries (see Table 3). Analogously, we start with the basic regression without industrial variables and then add the measure of reliance on foreign value added. Similarly to the previous estimation, the coefficient associated with *FVA* is not statistically significant when the education heterogeneity and task heterogeneity are not taken into account (Column 2). It is negatively correlated with wages of low-educated workers (Column 3) performing different tasks (Column 4). For high- and medium-educated workers the effect of *FVA* is materialised only for a given set of tasks: routine but not non-routine. As we can see, the main conclusions are confirmed.

Our main results (i.e. the effect of GVC on wages is conditional upon the skill and task typology, affecting mostly workers performing routine tasks) are in line with other papers using microdata and addressing similar issues (it shall however be noted that they differ from ours due to limited country coverage and traditional measures of offshoring they employ). For example Baumgarten *et al.* (2013) for the German economy found that the negative wage impact of offshoring is reduced in the case of tasks with high degree of interactivity and non-routines. Similarly, Becker, Ekholm and Muendler (2013) in the analysis of German MNEs shown that onshore workers perform more non-routine and more interactive tasks. Finally, Ebenstein *et al.* (2014) confirmed that the negative wage effect is

most pronounced for American workers who perform routine tasks. In general, our results can be placed within the literature underlying negative effects of trade integration on workers performing routine tasks (see Ebenstein, Harrison & McMillan, 2015 for a recent review). However, the research theme is still disputable, e.g. Blinder and Krueger (2013) argued that more offshorable jobs in the US are typical for educated workers and offshorability does have effects neither on wages nor on the level of employment. Marcolin, Miroudot and Squicciarini (2016) elaborate on the problematic identification of "winners" and "losers" in a GVC context.

Table 5. The results of estimation (1) with additional job and firm characteristics

Variable / Measure	Dep.var: lnw_{ijct}			
	(1)	**(2)**	**(3)**	**(4)**
$SmallSize_i$	-0.269***	-0.262***	-0.261***	-0.261***
	[0.026]	[0.025]	[0.025]	[0.026]
$PrivateIndustry_i$	-0.094***	-0.103***	-0.105***	-0.095***
	[0.028]	[0.028]	[0.029]	[0.028]
$SecondJob_i$	-0.156***	-0.153***	-0.151***	-0.152***
	[0.024]	[0.025]	[0.025]	[0.025]
lnVA_{jct}		0.057**	0.057***	0.042*
		[0.023]	[0.021]	[0.024]
lnFVA_{jct-1}		-0.030		
		[0.028]		
ln$FVA_{jct-1}Hieduc_i$			-0.03	-0.107***
			[0.019]	[0.022]
ln$FVA_{jct-1}Mededuc_i$			-0.028	-0.051**
			[0.019]	[0.021]
ln$FVA_{jct-1}Loweduc_i$			-0.052**	-0.065***
			[0.022]	[0.022]
ln$FVA_{jct-1}Hieduc_iTask_i$				0.092***
				[0.008]
ln$FVA_{jct-1}Mededuc_iTask_i$				0.053***
				[0.004]
ln$FVA_{jct-1}Loweduc_iTask_i$				0.040***
				[0.012]
Under-identification		0.000	0.000	0.000
Weak identification		19.554	11.394	11.389
N	106820	102768	102768	100990

Significant codes: 0.01 '***' 0.05 '**' 0.1 '*'
$SmallSize_i$ – dummy variable: 1 for firms with the number of employees<50, 0 – others,
$PrivateIndustry_i$ – dummy variable: 1 if working in private industry, 0 – others,
$SecondJob_i$ – dummy variable: 1 if having more than 1 job, 0 – others.
All other individual characteristics as in Table 4 included and not shown for the clarity.
Source: own calculations with data from LIS and WIOD.

CONCLUSIONS

The main aim of this paper was to present how the heterogeneity of workers, firms, and tasks can be incorporated into empirical international trade analysis. In particular, we provided an empirical example in which we aimed to quantify the effects of trade within GVC and reliance on foreign value added on wages.

Acknowledging a general lack of this type of studies performed with micro level data and for many countries, we performed an analysis using the rich dataset on workers from 14 countries. The use of microlevel data for workers from many countries is exceptional in the literature on labour market consequences of trade integration. In our study, we have attempted to provide an example of international trade analysis which captures many dimensions of complexity observed in the real world: differences between workers, tasks they perform and firms in which they are employed. We argue that country level or industry level analysis on the international trade-wage nexus is not sufficient.

The first step involved merging microdata on individual workers' characteristic from LIS with industry level information coming from WIOD. Then, we estimated various versions of an augmented Mincerian wage regression. To allow for heterogeneous effects the model has been augmented by inclusion of the measure of foreign value added and its interaction with worker's education level and task typology. Additionally, we instrumented *FVA* using the gravity approach.

The results indicate that when controlling for individual workers' and job characteristics, there is a negative correlation between *FVA* and wages. However, the effect is conditional upon the skill and task typology (affecting mostly workers performing routine tasks). For the non-routine tasks, the negative wage effect of *FVA* is sustained only in the case of low educated workers.

These results have important policy and societal implications: we can interpret them in the light of uneven gains from GVC expansion – some of the workers can indeed be worse off. We have provided quantitative arguments for the debate on the consequences of global production sharing on the labour markets for several economies and going beyond country-specific studies. We have verified our main research hypothesis that the negative wage effects of international jobs relocation concern workers who are low educated and/or perform routine tasks.

We are aware of some limitations of our study. First of all, we took into account total foreign value added from all partner countries, e.g. without a distinction between low and high wage countries. Secondly, our analysis was based only on one wave of LIS microdata. Hence, the suggestions for further research refer mainly to the inclusion of direction of FVA (e.g. by source country) and adding time series approach.

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Trust in Effective International Business Cooperation: Mediating Effect of Work Engagement

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A B S T R A C T
Objective: This study aims to analyse the relationships between relational competence and its trust-building processes with individuals' traits considered as psychological antecedents of inter-organizational relationships (IORs), outcomes. We hypothesize that organizational trust-building competence, situational trust, trust propensity, and autonomous motivation of cooperating teams and their managers influence IORs outcomes through work engagement of cooperating people.
Research Design & Methods: We addressed 210 managers and 982 employees responsible for inter-organizational cooperation from medium and big companies. As explanatory model we adopted the job resources-demands (JR-D) model. Correlation, regression, mediation analyses with bootstrapping, and structural equations modelling (SEM) were used.
Findings: Our analyses confirmed positive role of both organizational competences and psychological states of individuals, as valuable mediators in translating the potential of personal traits of teams and managers into IORs outcomes.
Implications & Recommendations: As both psychological variables of people responsible for the course of IORs and relational competences of organizations play a vital role in reaching outcomes in IORs attention should be paid simultaneously to both aspects. Our findings highlight the necessity for interdisciplinary research in the field of IORs.
Contribution & Value Added: We expose the multilevel and multifactor character of relationships between the antecedents of firms success in IORs, with the use of relationships theory in organization science, and theories proposed by psychology of work and organization.

INTRODUCTION

The international context of inter-firm cooperation with its additional features, such as geographical distance and cultural differences determining the scale of psychical distance between partners requires a special effort to ensure the relationship with favorable context. It is necessary to build a transparent, mutually acceptable framework for the relationship. This requires the ability to create an atmosphere of trust and credibility of partners, based on an optimal mix of contractual safeguards and relational mechanisms, as well as on a set of competences necessary to manage the relationship.

Effective participation in international IORs (*inter-organizational relationships*), requires the company to have specific core competences. Relational competence (RC) consists of abilities to choose a partner, plan the relationship, coordinate its course and execute effective control, as well as: communicate effectively and integrate partnering companies, solve arising problems and learn from one another. All those competences stem from organizational procedures, capabilities and resources and as systemic, dynamic relational competence are, at least to some extent, responsible for creating an organizational environment for effective IORs. It is also widely believed that among other conditions shaping the atmosphere of IOR and mutual behavior of partners, trust is a *sine qua non condition* for effective cooperation, so those components of RC that affect trust-building may also be of value.

Apart from organizational competences of building trust and managing IORs, it is also crucial to possess valuable HR (human resources) potential. Human resources in IOR are treated both as relational capital of collaborating members of the partnering companies, and as social capital of a company – its managers, teams and individuals affecting IORs' outcomes by their individual traits, attitudes and resources. Most of the research on IORs concentrate on especially valuable personal networks of employees and their social or interaction skills (Walter, 1999; Ritter, 1999; Speakman & MacAvoy, 2000; Phan, Styles & Patterson, 2005; Äyväri & Jyrämä, 2007). There is a lack of analyses searching for relationships between organizational competences and personal characteristics of individuals. Psychological resources of teams and individuals responsible for execution of all collaborative processes might affect IORs outcomes, the use and development of relational competence and people's propensity to develop their social resources.

In order to fill the gap in IOR literature on joined research of organizational features and personal characteristics, potentially valuable for successful IOR, we aim at analyzing the relationships between relational competence and its components substantial for trust-building processes, with individuals' traits that we consider psychological antecedents of IORs outcomes. So far management science is lacking a universal theoretical model allowing to analyze both psychological traits of individuals and organizational variables as potential determinants of effective economic cooperation. In our opinion, a useful tool may be transferred from the organizational psychology to the ground of management science. We decided to use the job demands – resources (JD-R) and evidence-based work engagement models, because they highlight personal, organizational and contextual factors conducive to work engagement of individuals and thus determining their job performance, in our case – effective cooperation. As psychological characteristics describing individuals involved in the cooperation we chose their propensity to trust, situational trust in teams, motivation and work engagement. Organizations have

been characterized by their trust-building competence, which affects the process of creating favorable context for IORs. Speaking about the outcomes that companies gain from IORs, we think primarily about their multidimensional effectiveness.

To verify our hypotheses we use correlation and mediation analyses with bootstrapping, and structural equations modeling with RML (Robust Maximum Likelihood).

The remaining of the paper is divided as follows. First we present results of literature review and offer conceptual framework for the analyses, we define the constructs of organizational trust-building competence and interpersonal trust in IORs and describe their connections with the construct of work engagement, which is said to be an important antecedent of any result of people's work, which is in our case the success of inter-organizational relationship. We then describe methods used to test our hypotheses and present the results. We conclude with discussion on the results and limitations of the study.

LITERATURE REVIEW

Conceptual Framework and Hypotheses Development

Trust in Inter-Organizational Relationships

A number of studies highlight the relationship between trust and the economic results of IORs and partnering companies (Seppanen, Blomqvist & Sundqvist, 2007; Delbufalo, 2012; Delbufalo, 2014; Ashnai, Henneberg, Naude & Francescucci, 2015; Leszczyński, Takemura & Zieliński, 2015; Chrupała-Pniak, Grabowski & Sulimowska-Formowicz, 2016a, 2016b).

Trust, when understood as a form of company self-constraint in reaching own goals (and behaving opportunistically), together with the expectation that partner will reciprocate this behavior, is seen as a base for effective coordination strategy of inter-organizational relations between independent market subjects. Coordination by trust is possible because trust between partners reduces uncertainty by higher predictability of partner's behavior (Sako, 1998), which in turn contributes to constructing an effective interaction on organizational and individual level (Ford, Gadde, Håkansson & Snehota, 2011). In IORs trust is seen as a cyclic process based on negotiations, partner engagement, and execution of negotiated arrangements (Ring & Van De Ven, 1994). Trust creates an atmosphere of open communication, information exchange and dealing with conflicts (Creed & Miles, 1996) also critical for inter-organizational learning, which enables transformation of relational experience into RC and other core competences that determine competitive advantage of a company (Foss, 1996; Mowerym, Oxley & Silverman, 1996; Dyer & Singh, 1998; Zollo & Winter, 2002; Grant, Heimeriks & Duysters, 2007).

Dynamics of inter-organizational relationships confirms that the higher interdependence of partnering organizations, the higher the need for organizational trust. In international IORs the need for trust on organizational and individual level is especially high due to the complexity and dynamics of the environment.

Trust-building Competence

Trust is most frequently defined as trustful attitude. The researchers often focus on the declarations of trust in partner and explore the reasons for such an attitude or state of a respondent. In our approach, we focus on the sources of trust – the grounds on which a company builds both its trust and credibility in a role of business partner. The ability of

building inter-organizational trust should support partners in eliminating cooperation risk and in effective use of opportunities and disturbances that accompany the relationship (Zaheer, Lofstrom & George, 2003; Hakansson *et al.*, 2009;).

According to the literature (for a review see: Nieminen, 2005a, p. 109) trust stems from three groups of determinants: process-based, characteristics-based and institutional. Process-based trust is associated with a shared history of partners and processes realized together – shared memories confirm their credibility both at the level of declarations, and according to the capacity to fulfill them. Characteristics-based trust refers to the cultural proximity of partners, shared values and established social relationships that foster shared understanding and identity between the partners. Institutional trust stems from formal confirmations that legitimize it as a partner and from its ability to build a relationship framework and create safeguards stemming from contractual and relational mechanisms. Thus to develop trust in IORS a company needs to possess specific intra- and inter-organizational capabilities and routines – its trust-building competence.

Trust-building competence is a significant part of relational competence of an organization, which we define as a bundle of attitudes, organizational routines and capabilities necessary to: establish partnership and prepare the frame for it; lead common activities and control their effects; manage knowledge creation and exchange between partners, communicate effectively, solve problems and integrate partnering firms on inter-organizational, interpersonal and inter-team level (Sulimowska-Formowicz, 2015). All these competences build the ability of a firm to create and pursue effective business relationships and gain relational advantage. Some of attitudes, organizational behaviors and realized procedures that build relational competence are at the same time tools for trust building of decisive meaning to organization's credibility in the eyes of its partners. They form a basis for trusting in partner and for partners' trust. In this research we refer to inter-firm trust understood as a result of firm's semi-rational calculation of chances that the partner will behave kindly (Gambetta, 1988), not as a dispositional trait of a partner (Dasgupta, 1988). We assume that being an artifact, the organization itself cannot possess dispositional traits, which are typical only to people. We define organizational trust-building competence as equivalent of cognitive trust (Young & Daniel, 2003; Möllering, 2006), which is formed by that set of relational competence components that: are procedural source of calculative trust, develop actor bonds and strengthen reciprocity norms on an organizational level, and support organization's credibility (Chrupała-Pniak *et al.*, 2016a, 2016b; Chrupała-Pniak & Sulimowska-Formowicz, 2016). Organizational trust-building competence is the effect of company's experience in cooperation and its deliberate actions. It influences the result of IORs, i.e. relation efficiency and effectiveness. By stimulating the processes of relational learning it helps to develop company's competitive potential and relational competence as its part.

Thus we hypothesize that:

H1: Organizational trust-building competence predicts firms outcomes in IORs (efficiency and effectiveness).

Interpersonal Trust as Antecedents of Engagement

Although important, organizational trust-building competence is not the only possible predictor of IORs outcomes. Another crucial factor is interpersonal trust, which influences the shaping of a favorable climate for cooperation. Interpersonal trust affects the nature of social relations both within the own, as well as partnering organizations. Research shows that interpersonal trust contributes to the strengthening of interactions in cooperation (Simpson, 2007). Organizational trust-building competence and interpersonal trust enhance creating relationships on an individual level, support effective interaction, work engagement (Hakansson *et al.*, 2009; Ford, Gadde, Håkansson & Snehota, 2011) and knowledge sharing inside the organization (Wu, Lin, Hsu, Yeh, 2009; Hsu & Chang, 2014). All those features influence the quality of work in teams engaged in cooperation (Paul & McDaniel Jr., 2004; Muethel, Siebdrat & Hoegl, 2012). Interpersonal trust, as a part of organization's social capital, may influence its outcomes through processes of identification and organizational commitment (Bakiev, 2013). Thus it plays a key role in establishing contracts (Malhotra & Murnighan, 2002), or even contributes to individuals' health (Schneider, Konijn, Righetti & Rusbult, 2011).

Interpersonal trust is defined as the act of vulnerability and expectation of positive intentions in the behavior of other people with whom an individual interacts (Rotter 1980; Scott 1980; Butler 1991; Gurtman 1992; Rousseau, Sitkin, Burt & Camerer, 1998; Kiffin-Petersen & Cordery 2003). It may come from both dispositional trait of a person – trust propensity, and mechanisms of interpersonal perception (situational trust). Trust propensity is a relatively stable dispositional variable shaped whit growth and with gathered experience. Interpersonal trust is also a situational variable based on calculations and affective-cognitive mechanisms, related to one's estimation of the degree of control, uncertainty and risk in social relationships and making decisions concerning interaction on this base (Simpson, 2007; Kahneman, 2011). The recent body of literature contains a lot of research reports on the role of organizational and interpersonal trust in IORs (Ashnai *et al.* 2013; Huang & Wilkinson, 2013; Ashnai et. al., 2015; Delbufalo, 2014). However, the psychology of trust has not been considered much in recent conceptualizations of work engagement (Schneider, Macey, Barbera & Young, 2010, p. 168) neither in general, nor in IOR context. There is a lack of analyses concerning relations of trust with motivation and work engagement.

One exception is the conceptualization presented by Schneider *et al.* (2010, p. 160), linking engagement and interpersonal trust. The level of trust that employees experience at work is seen as a psychological antecedent of employees engagement. Employees' experiences of organizational trust lead them to trust their co-workers and supervisors and the system, so they feel safe enough to engage in their work. Trust is conceptualized as the core mediating variable (Mayer, Davis & Schoorman, 1995; Schoorman, Mayer & Davis, 2007) in understanding employee engagement based on the model of Kahn (1990).

We suggest a new look at the job demands-resources JD-R theoretical model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). The model integrates many dispersed studies and explains the relations between employees' psychological variables and organizational outcomes (Bakker & Demerouti, 2007). Bakker and colleagues (2003) assumed that every occupation and organizational role may have its own specific risk factors associated with job stress and job strain which diminish the outcomes. These factors can be classified in

two general categories: job demands and job resources. Job demands (e.g. high work pressure, emotional demands, role ambiguity etc.) may lead to several consequences that decrease effectiveness and performance. Job resources (social support, performance feedback, autonomy etc.) may foster motivational processes, engagement and organizational commitment. Reference to job characteristic model authors emphasize that job resources have a motivational potential, including autonomy, task significance, and feedback. Job resources may be located at the organizational level (pay, career opportunity, job security etc.), the interpersonal and social relations (supervisor and co-worker support, team climate), the organization of work (role clarity, participation), the level of the task (skill variety, task identity, task significance, autonomy and performance feedback). So far, trust has not been studied in this model as job or personal resources. Yet existing research suggests that individual level of interpersonal trust supports engagement and motivational processes and influences job performance (Gorgievski, Bakker & Schaufeli, 2010; Schneider, Macey, Barbera & Young, 2010) and organizational effectiveness (Schneider *et al.*, 2009).

JD-R model contains two psychological processes which play role in this context. When job demands are high, individuals use performance – protection strategy. This strategy is related to physiological reaction to stress and to increasing effects of psychological and physiological costs, stemming from work overload. Individuals working under high job demands use performance – protection strategy and narrow their attention, increase selectivity, redefine task requirements and risky choices and experience subjective fatigue that in the end may influence organizational outcomes. On the other hand job resources have motivational potential and lead to boost work engagement, lower cynicism and upkeep excellent performance (Bakker & Demerouti, 2007).

We assume that job demands in international IORs are relatively higher than present activities held independently, due to the greater complexity of possible joint activities, the need to adapt to partners, to reduce the psychic distance, deal with problems in the context of cultural differences and economic risks associated with both foreign market and the partner. Thus, trust propensity and autonomous motivation as personal resources and situational trust and trust building competence as job resources will affect work engagement, which predicts firms' outcomes in IORs, so we expect the following:

H2:   Interpersonal trust (trust propensity and situational trust) affects work engagement in IORs.

H2a: Trust propensity as personal resource predicts work engagement in IORs.

H2b: Situational trust as job resources predicts work engagement in IORs.

H3:   Organizational Trust-building competence as job resource predicts work engagement in IORs.

Engagement as Psychological antecedent of Firms' Success in IORs

In IORs actors are not only cooperating firms, but most of all people who build these social organizations. People possess social capital and capabilities potential, which may be offered at the service of companies. It is important to create favourable organizational context for the usage of personal potential, through inter- and intra-organizational mechanisms. When the potential of individuals is used accord-

ing to the purpose of the organization, then we can talk about its effectiveness achieved thanks to controlled human resources.

In the analysis of IORs a lot of attention is paid to relations between organizational behaviors and individuals' traits and work attitudes. Relational resources most mentioned as specifically valuable in cooperation are interpersonal networks of individuals and their potential of relational skills, social or interaction skills (Walter, 1999; Ritter, 1999; Speakman *et al.*, 2000; Phan *et al.*, 2005; Äyväri & Jyrämä, 2007). There is a lack of research on relationships between organizational competences and traits and attitudes of individuals, who create and use them. Thus, we decided to test the role of work engagement in this context. Work engagement is a psychological construct well-grounded both in the JD-R theory and in the evidence-based theory of work engagement and widely used in research concerning effectiveness of organizations. Many scholars present a conceptualization of work engagement as a high level of personal involvement in the job tasks performance (e.g., Kahn, 1990; Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002; May, Gilson & Harter, 2004; Macey & Schneider, 2008; Rich, LePine & Crawford, 2010). It has been praised for exploring the positive psychological resources of employees in a workplace directed towards organizational goals (Macey, Schneider, Barbera & Young, 2009).

Among several definitions of work engagement (Albrecht, 2010; Bakker & Leiter, 2010) the most popular is one by Schaufeli and Bakker (2004). They described work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 295). Vigor implies being energetic and mentally resilient at work and being willing to invest effort and to persist when difficulties arise. Dedication means being enthusiastic and inspired at work and experiencing significance, pride, and challenge. Absorption can be described as full concentration at work and as the experience of being happy engrossed in one's work. Bakker (2011) states after Kahn (1990) that employees engaged in their work are fully connected with their work roles. Work engagement described this way is a state linked to autonomous motivation (Gagne & Deci, 2005), which is seen as antecedent of work engagement. According to self-determination theory (SDT) autonomous motivation leads to work engagement (Ryan & Deci, 2000). *Autonomous regulation* comprises both intrinsic motivation and the types of extrinsic motivation in which people get identified with an activity's value and ideally will integrate it into their sense of self. Thus autonomously motivated persons are really enthusiastic and interested in doing actions and behaviors. In opposite way, when people are controlled, they experience pressure to think, feel, or behave in particular ways and they experience less positive engagement and proactive behaviors. The mentioned above patterns are especially important for IORs coordinators and boundary spanners.

Saks and Gruman (2014, p. 155) state that work engagement is a key factor on organization's success and competitive advantage (Macey, Schneider, Barbera & Young, 2009; Rich, LePine & Crawford, 2010). Macey and colleagues (2009) found that the top of 25% on an engagement index had greater return on assets (ROA), profitability and more than double the shareholders' value compared to the engagement's bottom 25%. Unfortunately, recent psychological studies on factors enhancing people's efficiency and productivity did not refer directly to the inter-organizational cooperation and its results. Engaged workers are more innovative (Gorgievski *et al.*, 2010), spread their positive attitude toward work (Xanthopoulou, Bakker, Demerouti & Schaufeli,

2009) and contribute to efficiency of organization. The scholars focused mainly on selected aspects of performance measured with HRM indicators, e.g. turnover intention (Schaufeli & Bakker, 2004; Saks, 2006; Halbesleben, 2010), task performance and contextual performance (Christian *et al.*, 2011), and customer satisfaction, productivity, profitability, turnover and safety (Harter et. al., 2002), job performance and organizational citizenship behaviors (Saks, 2006; Rich et. al., 2010; Bakker & Bal, 2012). Therefore, in our research we decided to look at the antecedents and consequences of engagement with the use of theoretical concepts well-grounded in psychology, i.e. the theory of evidence-based work engagement and job demands – resources theory.

Following the above reasoning we hypothesize that:

H4:   Autonomous motivation as personal resource predicts work engagement in IORs.

H5:   Work engagement predicts IORs results.

H6:   Organizational trust-building competence, situational trust, trust propensity, and autonomous motivation influence IORs outcomes through work engagement.

RESEARCH METHOD

The research was performed on a nationwide purposive sample of 210 Polish medium and large manufacturing companies of different industries. We assumed that the larger the company, the greater the likelihood that it had developed organizational procedures. The other criterion was possessed experience in non-capital IORs and we assumed that manufacturing companies might possibly have the most diverse cooperative experience. 93% of the sample companies cooperate constantly with foreign partners. It was impossible to obtain the number of Polish companies meeting both criteria of size and relational experience, so we aimed at obtaining a sample of structure resembling the structure of industries present in population of Polish medium and large manufacturing companies. The sample is not purely representative in statistical terms, but similar in structure to the one presented in data of Central Statistical Office of Poland (GUS, 2015), which allows us to treat the sample as some representation of Polish medium and large manufacturing companies.

The study is cross-sectional, self-descriptive and unilateral – analysis concerned characteristics of sample companies, not their partners. Within the sample we questioned 210 managers (one per company) and 982 employees in their subordinate team members (of 4-5 people each).

The applied tools were based on authors' own operationalizations of relational competence (RC) and organizational trust-building competence (O_TRUST).

RC is a composite variable, second order competence that consists of seven components – groups of specific competences critical on subsequent stages of IOR management: partner selection, relation planning, common activities management, integrating, problem solving, knowledge management, efficiency management. Each of these components was measured with the use of an index of routines used by companies in their IOR management processes. We used 67 items – routines grouped into seven sets corresponding to individual RC components, respondents were asked to mark those that were used regularly and then asses their quality on 5 point Likert scale. The index was calculated as a percentage of the routines used multiplied by self-assessment. Company RC

global measure is an average of its components. Our measures of RC are indexes expressed on interval scale (1-5) (King & Minium, 2009; Stevens, 1946).

Organizational trust-building competence (O_TRUST) is a set of 35 statements taken from RC measure that concern only procedures and behaviors connected to building inter-organizational trust before and during relation. Reliability analysis of this nominal scale showed satisfactory Cronbach's alpha coefficient of 0.78.

RC and O_TRUST measures were based on literature and already tested operationalizations of trust and relational capabilities of organizations (Lambe, Spekman & Hunt, 2002; Ritter, Wilkinson & Johnston, 2002; Walter, Auer & Ritter, 2006; Reina & Reina, 2006; Kale & Singh, 2007; Human & Naude, 2009; Human, 2009; Schreiner, Kale & Corsten, 2009; Mitrega, Ramos, Forkmann & Henneberg, 2011). For full description of the research methods used see: (Sulimowska-Formowicz, 2015, 2016; Chrupała-Pniak *et al.*, 2016).

Interpersonal trust (trust propensity TP) was analyzed in the context of inter-organizational relationships and separately for managers (M_TP) and team members (T_TP), due to different roles the two groups play in IORs. We used two-item scale based on the concepts of Rousseau *et al.* (1998) and Mayer *et al.* (1995), similar to the items of trust used in The European Values Study EVS project. Obtained Cronbach's alpha coefficients of 0.55 (for managers' trust) and 0.63 (for teams' trust) were satisfactory for two-item scale. Interpersonal situational trust (M_ST and T_ST) was measured using the Polish adaptation of Partner Trust Questionnaire by Chang & Lee (2013), which showed reliable with Cronbach's alpha of 0.91.

Work engagement was analyzed with the UWES_9 – Utrecht Work Engagement Scale short version (Schaufeli *et al.*, 2006). Motivation was tested with WEIMS_PL – Work Extrinsic and Intrinsic Motivation Scale – Polish version (Chrupała-Pniak & Grabowski, 2016a). Variables are named respectively M_UWES and M_motiv for managers and T_UWES and T_motiv for teams.

Dependent variables were cooperative relationships' results, measured with two perceptive scales of firm's effectiveness and efficiency in IORs. Effectiveness (EFFECT) was measured with 11 submeasures referring to the level of relationships' goals reaching (Zollo, Reuer & Singh, 2002; Holtbrugge, 2004). Efficiency (EFFICIENT) was measured with 4 submeasures referring to cost, work and time efficiency and tacit resources obtaining in relations. Both scales used 5-point Likert scale. Their reliability was confirmed with Cronbach's alpha of respectively: 0.89 and 0.83.

To test the set of hypotheses we used Statistica, SPSS.23 and LISREL software.

RESULTS

To verify the hypotheses, and answer the question about the strength of relationships between firms effectiveness and efficiency in IORs, relational competence and work engagement with motivation and trust at both individual and team level we calculated Pearson correlation coefficients (Table 1). Given the asymmetry of the distribution of variables (e.g. SKUT – EFFECT), the analysis was enriched with bootstrap analysis (Konarski, 2009). Obtained confidence intervals that do not contain zero allows us to accept the relationship as statistically significant.

As Table 1 shows, teams' work engagement (T_UWES) correlates moderately positively with their situational trust (T_ST), and intrinsic motivation (T_motiv) but moderate-

ly negatively with intrinsic motivation of managers (M_motiv) and their commitment to work (M_UWES). Surprisingly, teams' trust and work engagement is negatively associated with work engagement of managers. Relational competence is positively but weakly related to teams' work engagement and trust propensity (T_TP), the correlation is stronger with firm's effectiveness and efficiency in IORs. A similar pattern was observed in the case of a trust-building competence: weak and positive correlation with managers' trust propensity (M_TP). The correlations of trust propensities of teams and managers are positive, but moderate and weak, with effectiveness, and only weak with efficiency.

Table 1. Correlations between variables in the research model

	EFFECT	EFFICIENT	RC	T_UWES	M_UWES	O_TRUST
EFFECT						0.320*** B
EFFICIENT	0.561*** B					0.226** B
RC	0.402*** B	0.345*** B				0.846*** B
T_TP	0.281*** B	0.212** B	0.186** B	0.146*	-0.172* B	0.231** B
T_ST	0.107	0.074	0.036	0.515*** B	-0.226** B	0.023
T_UWES	0.090	0.037	0.208** B		-0.353*** B	0.201** B
T_motiv	-0.023	-0.139* B	-0.066	0.358*** B	0.128	-0.096
M_TP	0.162* B	0.104	0.016	-0.065	0.102	0.171* B
M_ST	0.070	0.039	-0.002	-0.008	0.890*** B	-0.027
M_motiv	-0.022	-0.049	-0.107	-0.435*** B	0.992*** B	-0.123
M_UWES	0.002	-0.029	-0.086	-0.353*** B		-0.102

*** - $p<0.001$; ** - $p<0.01$; * - $p<0.05$; B - bootstrap analysis for 5000 samples - 95% confidence interval did not include zero.
Source: own study.

The results presented here show slightly different relationships according to managers and team members, which probably confirms different roles of those groups in executing tasks connected to IORs. Teams' trust propensity correlates weakly both with firms' effectiveness and efficiency in IORS, and also weakly with organizational variables – RC as a whole and its part – O_TRUST. Managers' trust propensity is weakly related to effectiveness and O_TRUST, without correlation neither to RC nor to firms' efficiency. Situational trust in teams weakly correlates with their trust propensity, and in case of managers we found no correlation here.

Strong correlations of situational trust with engagement proved to be in line with our expectations. This relationship seems natural and logical, because if we see colleagues as reliable, and in teams we experience trustful climate, it is more probable for us to have stronger feeling of work engagement (and it is more visible in case of managers), see: table 2 i 3.

Table 2. Correlations between trust, autonomous motivation and work engagement of teams

	T_TP	T_ST	T_UWES
T_ST	0.193** B		
T_UWES	0.146*	0.515*** B	
T_motiv	0.184** B	0.395*** B	0.358*** B

*** - $p<0.001$; ** - $p<0.01$; * - $p<0.05$; B - bootstrap analysis for 5000 samples - 95% confidence interval did not include zero.
Source: own study.

As presented in Table 3, situational trust, autonomous motivation and work engagement of managers are strongly correlated, and an exception here is managers' trust propensity (M_TP) not correlated to other variables of this level.

Table 3. Correlations between trust, autonomous motivation and work engagement of managers

	M_TP	M_ST	M_motiv
M_ST	0.029		
M_motiv	0.085	0.734[***][B]	
M_UWES	0.096	0.826[***][B]	0.989[***][B]

*** - $p<0.001$; ** - $p<0.01$; * - $p<0.05$; B - bootstrap analysis for 5000 samples - 95% confidence interval did not include zero.
Source: own study.

Strong correlations between M_ST, M_motiv and M_UWES (table 3) made us decide to combine those variables into one called the role of managers (MANROLE).

In the next step of analysis we built regression models (table 4), with work engagement of teams as dependent variable and as independent variables: organizational trust and individual dimensions of teams' trust, autonomous motivation of teams, trust propensity of managers and role of managers (MANROLE).

Table 4. Work engagement predictors

Models: (dependent variable)	Teams' work engagement (T_UWES)			
modules: (independent variables)	1. [a] (β)	2.(β)	3.(β)	4.(β)
O_TRUST	0.17[*][B]	0.22[***][B]	0.22[***][B]	0.21[***][B]
T_TP	0.12	-0.02	0.00	-0.05
T_ST		0.43[***][B]	0.42[***][B]	0.38[***][B]
T_motiv		0.22[***][B]	0.22[***][B]	0.27[***][B]
M_TP			-0.06	-0.02
MANROLE				-0.24[***][B]
F	5.58[**]	25.39[***]	20.46[***]	21.10[***]
R^2	0.05	0.34	0.34	0.39
SR^2	0.04	0.33	0.33	0.38
ΔR^2	0.05	0.29	0.00	0.05
$F\Delta R^2$	5.58[**]	42.84[***]	0.83	16.27[***]

Modules of independent variables: 1. O_TRUST and T_TP.; 2. O_TRUST, T_TP, T_ST and T_motiv; 3. O_TRUST, T_TP, T_ST, T_motiv and M_TP; 4. O_TRUST, T_TP, T_ST, T_motiv, M_TP and MANROLE.
SR2 – adjusted R2; ΔR2 – change in R2; FΔR2 – F of change. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Source: own study.

Table 4 shows that predictors of teams' work engagement are: organizational trust-building competence, situational trust and autonomous motivation. Also managers' traits, that build MANROLE variable predict teams work engagement. All those variables explain c.a. 38% variance of teams' work engagement, and team traits alone (MANROLE excluded) explain 33% variance of the variable.

Then we held mediation analyses (see Preacher & Hayes, 2004) with teams' work engagement as dependent variable and all dimensions of trust as independent variables mediated by autonomous motivation. In relationship of teams engagement with their trust propensity, mediation is complete, but in relationship with situational trust mediation is

partial. We also analyzed relationships between teams' work engagement and firms' effectiveness and efficiency in IORs, where relational competence mediates completely.

Next step in the mediation analysis was SEM analysis. Estimation of models' fit was based on RMSEA (Root Mean Square Error of Approximation), CFI (Comparative Fit Index), SRMR (Standardized Root Mean Square Residual) and NFI (Normed Fit Index) coefficients (Schermelleh-Engel, Moosbrugger, Müller, 2003; Lim *et al.*, 2007). Because of far from normal distribution of some of variables we used ML (Maximum Likelihood) and RML (Robust Maximum Likelihood) estimators. Result of SEM modeling are shown in Figures 1, 2, 3. We analyzed several models and only those with the best fit are presented here.

The best fitting model (Table 1) shows path in which teams' traits: T_ST and T_motiv together with managers' traits: MANROLE predict teams' work engagement T_UWES, which in turn predicts firms' effectiveness (EFFECT) in IORs but fully mediated by relational competence RC. In this model teams' trust propensity predicts effectiveness directly. Explained variance: effectiveness – 19%, RC- 5% and T_UWES – 35%.
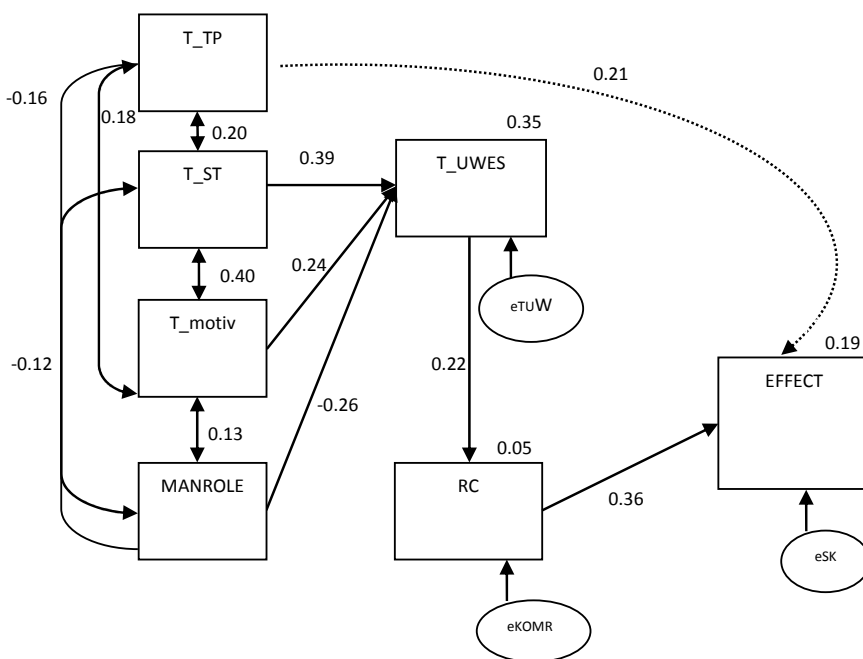
**Figure 1. The best fitting model – path explaining effectiveness
with T_UWES and RC as mediators**
$\chi^2(df)$ = 17,04(9) (p<0,05), χ^2/df = 1,89; RMSEA = 0,068; CFI = 0,96; NFI = 0,93; SRMR = 0,049; GFI = 0,98.
All correlation and path coefficients above 0.13 relevant with 0,05.
Source: own studies.

According to our aim to verify the role of trust-building competence in firms' outcomes in IORs we built other models. Analyses made us decide about excluding O_TRUST from the other job resources and we treated this variable as an outcome of work engagement. One of them showed to be on the border of a satisfactory fit. In that model teams' traits: situational trust T_ST and motivation T_motiv together

with managers' traits grouped in MANROLE variable predict teams' work engage-
ment, which then predicts effectiveness, but fully mediated by organizational trust-
building competence O_TRUST. Teams' trust propensity T_TP also predict effective-
ness mediated by O_TRUST, which confirms role of both those variables. Explained
variance: effectiveness – 10%, O_TRUST – 8% and T_UWES – 35%.
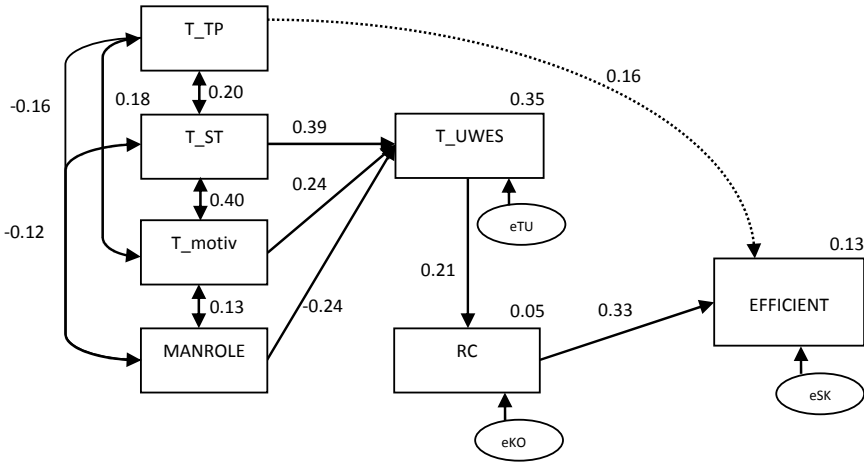
Figure 2. Model of satisfactory fit – path explaining efficiency with T_UWES and RC as mediators
$\chi^2(df)$ = 21,01(9) (p<0,05), χ^2/df = 2,33; RMSEA = 0,082; CFI = 0,94; NFI = 0,90; SRMR = 0,058; GFI = 0,97.
All correlation and path coefficients above 0,13 relevant with 0,05.
Source: own studies.

Model testing similar path but with efficiency as dependent variable showed poor fit to data.
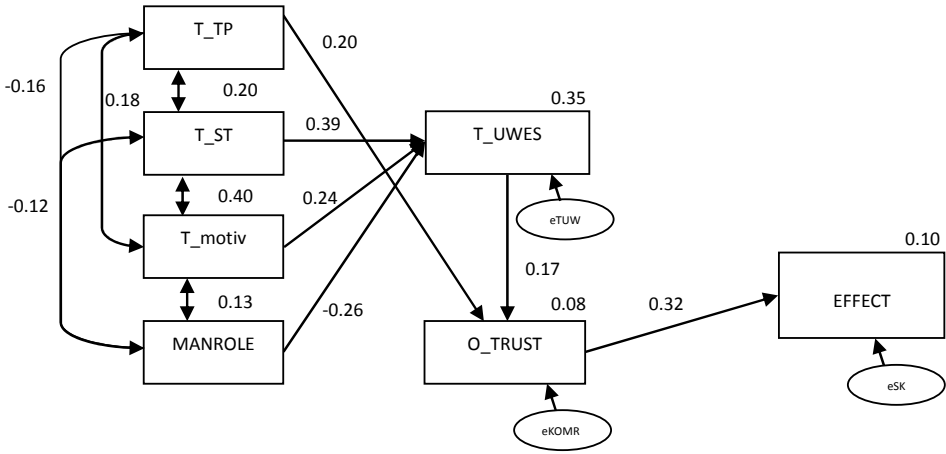
**Figure 3. . Model on the border of satisfactory fit – teams' traits with managers' traits predict
work engagement, which predicts effectiveness fully mediated by O-TRUST**
$\chi^2(df)$ = 26,22(9) (p<0,05), χ^2/df = 2,91; RMSEA = 0,099; CFI = 0,91; NFI = 0,88; SRMR = 0,061; GFI = 0,97.
All correlation and path coefficients above 13 relevant with 0,05.
Source: own studies.

DISCUSSION

The results partially confirmed all our theoretical assumptions and hypotheses and we contribute to the analyses of relations of trust with individuals' motivation and work engagement that affects firms' success in inter-organizational relations'. Assumptions made on the basis of JD-R model were mostly confirmed according to teams' work engagement. In case of managers three variables: situational trust, autonomous motivation and work engagement are strongly correlated, which suggests them to be one aggregated variable – important job resource, which, although not present in our theoretical model in that form, finally showed to be an important predictor of teams' work engagement.

The issue of relationships between psychological characteristics and firms outcomes in IORs still remains uncovered. Our analyses confirmed effect of work engagement on IORs results, although not direct (as we assumed in theoretical model), but mediated by relational competence or trust building competence as its component. This suggests that for the sake of interdisciplinary research on organizational and personal variables in the evidence based model of work engagement, it is necessary to make a distinction between proximal and distal consequences or outcomes. We propose that the proximal outcome of work engagement in IORs may be development of organizational competences, which when used affect distal outcome of reaching goals efficiently.

Regression and mediation analyses that we held confirmed almost all hypotheses: H1, H2a; H2b; H3; H4, but on team level. Mediation analysis confirmed also H5. H6 was not confirmed. We found other path explaining dependent variables. Our study shows that job and personal resources, i.e. interpersonal trust, organizational trust-building competence and motivation influence work engagement of IORs' tasks executors. The role of manager (MANROLE) appeared as a new job resource predicting teams engagement. According to the results of regression analysis the variance of explained work engagement rises from 33% without MANROLE, to 39% when added to the model. What should be stressed here, we did not control other job resources as e.g. managers' support, work climate or job demands.

Because we combined variables associated with managers into a new complex one, and included it into the model testing hypotheses on team level, we gave up testing another model for managers. We assume that this situation stems from the specifics of organizational roles that task executors play in IORs. Managers work as both inter-organizational boundary spanners, and also as supervisors of teams controlling their work results. It is probably the reason why we confirmed negative relationship between motivation and work engagement of managers and their subordinates in teams. The more manager is involved in his role as supervisor using available modes of influence / pressure on team members, the less autonomously motivated, and so engaged are the teams members. According to the paradigm of positive psychology we decided to measure personal traits through the lenses of autonomous regulation, which is most sensitive to external regulation (Ryan & Deci, 2000), so our approach partially explains obtained results.

The relation of people's self-regulation with trust can be explained by fulfilling the need of relatedness with other people that in turn increases both dimensions of trust (Deci & Ryan, 2008). Simultaneously, this regulation directly, and indirectly increases all the dimensions of work engagement (dedication, absorption and vigor). On the

other hand, situational trust then enhances people's faith in own competences and gives them autonomy supporting work engagement.

We assume that research on management styles would bring additional valuable results to our approach. If we presume, on the basis of available research on managing styles, that in Polish companies still directive and autocratic styles dominate over the consultative and participative ones, we may think that this gives an explanation to our observations. Differences in the strength of relationships between motivation and work engagement and situational trust of managers and teams confirm earlier studies (Chrupała-Pniak *et al.*, 2016).

We find the observed negative and weak relationship of autonomous motivation with firm's efficiency in IORs interesting and worth deeper analyses. We suppose that autonomous motivation will always be negatively connected with such a work results criterion. By definition, efficiency reaching is seen as one of different restrictions of intrinsic motivation, among e.g. time pressure, norms, costs and as such will always be positively related to extrinsic motivation (e.g. financial). We think that our observation is an important contribution to the body of knowledge on autonomous motivation.

Additionally, we may presume that cooperation will be productive, with long-lasting positive outcomes when they are induced by mechanisms of autonomous motivation, commonly considered as more valuable than controlled motivation. As so this is also of meaning for managerial purposes. Organizational motivation systems related to results of workers' efforts, enhance their sense of own competences, autonomy and increase their work engagement. Motivation system, when used improperly may also weaken autonomous motivation and turn it into controlled, so managers should more openly use non material motivation instruments, respect workers for their efforts, create tasks in order to fulfill the needs that build their self-determination. These practices affect work climate, situational trust and in broader sense the atmosphere of IOR. In the context of IORs' these practices are also building blocks of organizational trust-building and relational competence and should fit the requirements of successful relation management process. In international IORs one should also pay attention to cross-cultural determinants of both inter-organizational competences and successful motivational systems.

According to the trust-building competence this research shows that the idea of this variable we used does not fit to our assumptions of its role in JD-R model. Organizational trust with situational trust are weak predictors of work engagement (only 5% explained variance). SEM analysis confirmed that organizational trust is more the outcome than the antecedent of work engagement. As we could not include it into the models of good or satisfactory fit, we are unable to clearly state that it is a job resource predicting work engagement. Although we know that this variable correlates weakly with teams engagement and trust propensity of both managers and teams, probably because of the measurement procedure that we used according to this variable, it may not be seen as job resource in JD-R model. Satisfactory fit was confirmed for the models in which O-TRUST and RC predict firms' outcomes in IORs and serve more as outcomes of work engagement, than its antecedents. Nevertheless our results does not undervalue the meaning of the variable itself.

Our approach to RC and trust-building competence measurement gives us an insight into organizational procedures and capabilities usage and self-assessment. The results show that firms' outcomes in IORs depend on how employees' motivation and work engagement influence the usage of organizational competences, e.g. those necessary for

effective inter-partner communication and integration or learning in IORs. People with low work engagement may not be willing to use organizational potential properly, e.g. omit some inconvenient procedures, so we may assume that it is not the quality of RC or trust-building competence that predicts outcomes in IOrs, but personal work engagement is decisive to the way those resources are used and developed.

Our observation of the preceding role of work engagement in turning organizational competences into positive outcomes in IORs develops the results of other research offering rationalizations for the necessary level of development of relational competences. Research on absorptive capacity or trust instruments reveal that above some critical level this investment may be counterproductive due to growing costs of coordination of those instruments exceeding possible gains (Luo, 2008; Wales, Parida & Patel, 2013). Although our research does not explain this situation, it points at other aspect of the case. As interpersonal trust, motivation and work engagement predict firms outcomes in IORs but mediated by RC or trust building competence, companies should think about the balance between investments in organizational competences and developing desirable traits and states of their employees. It also may be advisable to managers of companies, especially those less experienced in IORs or less developed, or small, to fill this gap in resources by supporting people and their interpersonal talents and professionalism and boost their work engagement by trust-building and motivational tools.

Although situational trust, seen as job resource according to JD-R model, is not connected to firms' outcomes in IORs and to RC, it is strongly related to teams' and managers' work engagement. It is thus visible that interpersonal trust among IORs' goals executors is an important asset, shaping work engagement of cooperators. We find interesting the strong negative correlation of situational trust of teams with work engagement of their managers, and similarly strong negative correlation of UWES of the two groups. According to the theorizing of positive psychology, positive states should disperse among individuals in work environment and in our case we have a contradictory observation. Our research does not give us the possibility to explain this phenomenon, but we may assume that it could be situationally and culturally grounded. As mentioned above, dominance of authoritarian management style may be visible in manager's attitude – less engaged, more supervising, delegating responsibilities on direct executors. Sometimes this situation may be also be an effect of work overload of managers who concentrate their actions on building effective teams, which enables them to withdraw direct involvement and turn attention to other responsibilities.

Finally we shall mention about some limitations of our approach and directions for further research.

Our research is cross-sectional and based on self-assessment, so it would be of value to supplement them with other measures of the variables, e.g. behavioral and use longitudinal study with repeated measurements. Longitudinal study would also help to understand better possible changes in observed phenomena at subsequent stages of IORs. We also did not control broader context of work engagement, which may be affected by more factors and change over time. Among other influencing contextual variables worth further research in context of building trust and work engagement in IORs is managerial style. As our results show important role of managerial traits' influence, it would be of

value to deepen the analysis by combining them with research of managerial style context also in IORs. There is a lack of research in this topic.

Researchers highlight the importance of other psychological traits like individual entrepreneurial orientation so there is an open valley to multivariable analyses with richer sets of psychological factors determining firm results In IORs and the context of IORs.

We also suggest the need for further research according to relationships between work engagement and personal traits and different components of trust-building competence and relational competence of organization, as we assume that they may differ in strength and direction, as well as their explanatory power for IORs results. Deeper knowledge on these phenomena might be of practical value for firms and their efforts in developing relational competences and work environment for employees.

As our research confirms important interconnections between IORs success determinants on organizational, team and individual levels, we suggest the need for further multilevel analyses.

CONCLUSIONS

This study contributes to inter-organizational relations literature in management by showing the multilevel and multifactor character of relationships between the antecedents of firms success in IORs. Our analyses confirmed positive role of both organizational competences (trust-building and relational competence) and psychological states of individuals (work engagement), as valuable mediators in translating the potential of personal traits (interpersonal trust, autonomous motivation) of teams and managers into IORs outcomes (effectiveness and efficiency). This indicates the need for more interdisciplinary studies, especially combining the lenses of organization science, and sociology with psychology, which is rather rare.

Our findings give also some managerial implications. More attention paid to psychological aspects and joint analyses of their managerial consequences may help to develop more effective HR tools in shaping IORs (Pucik, 2009). When constructing motivational systems companies should remember about necessary balance between tools affecting efficiency aspects and those determining intrinsic motivation and work engagement, especially in the long run. Tools connected with efficiency negatively affect work engagement and its personal antecedents, which may diminish people's effectiveness as IOR coordinators and boundary spanners and push them to behave opportunistically. HRM tools and managerial practices should also be shaped taking into account differences in in-role characteristics and effectiveness of managers and cooperating team members. For people training and development purpose, our results suggest that companies should search for balance between developing necessary relational skills and creating work atmosphere and (inter-)organizational culture enhancing work engagement, interpersonal trust and autonomous motivation.

By developing strong organizational trust-building competence and relational competence as a whole, companies equip workers with safeguards helpful in effective usage of their own potential of work engagement. On the other hand for firms with less competent in managing IORs, social capital of workers may be used to cover those deficits (for more see: Chrupała-Pniak *et. al.*, 2016).

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Decomposition of Poland's Bilateral Trade Imbalances by Value Added Content

Łukasz Ambroziak

A B S T R A C T
Objective: The objective of this paper is to present differences in Poland's bilateral trade balances in gross terms and in value added terms in 1995-2011, as well as an explanation of such differences.
Research Design & Methods: It was decided to explain why Poland's bilateral trade balances in gross terms and value added terms differ. The calculations were made using the World Input-Output Database (WIOD), based on the input-output approach.
Findings: In the years 1995-2011, Poland's trade with the majority of the countries was characterised by widening gaps between balances in gross terms and those in VA terms. The decomposition of bilateral trade balances by VA content demonstrated that the differences in the value of trade balances in gross terms and in VA terms had been mostly determined by two components: 'multilateral VA net exports to third countries via partner' and 'foreign VA in net exports from other countries than partner'.
Implications & Recommendations: To appraise benefits from Poland's bilateral trade better it is recommended to use the decomposition of trade balances by value added content.
Contribution & Value Added: The originality of this work lies in the decomposition of Poland's bilateral trade balances by value added content. Such a decomposition allows to identify factors driving Poland's bilateral net exports.
Article type: research paper
Keywords: gross trade balance; value added trade balance; Poland; input-output tables
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INTRODUCTION

The international fragmentation of production processes, i.e. countries' specialisation in specific stages of production, and the related growth in trade in intermediate goods have become an increasingly important phenomenon since the 1980s. The development has drawn the attention of economists engaged in trade research concerning both theoretical aspects (see e.g. Grossman & Rossi-Hansberg, 2008; Feenstra, 2010) and empirical considerations (e.g. Johnson & Noguera, 2012; Koopman, Powers, Wang & Wei, 2011, 2014; Stehrer & Foster-McGragor, 2013; Timmer, Dietzenbacher, Los, Stehrer & de Vries, 2015; Negengast & Stehrer, 2016; Ambroziak, 2016a, 2016b). The breakthrough in the studies of the international fragmentation of production was the preparation of the world input-output tables (discussed in more detail below) and making them available. It allowed better understanding of the flows of value added (VA) content of trade between countries. Based on the world input-output tables (WIOD), it is possible to compute various indicators of individual countries' involvement in the processes of production fragmentation.

Trade statistics in VA terms take account of the contribution of particular countries to the creation of VA and eliminate the multiple calculation in the trade of components, first separately (as intermediate goods) and then as parts of final goods. Therefore, bilateral balances in gross terms (computed on the basis of traditional statistics) can markedly differ from those in VA terms (calculated on the basis of VA statistics) (Johnson & Noguera, 2012). Thus, differences between trade balances computed in accordance with the two approaches will widen with the trading countries' engagement in global value chains. The decomposition of bilateral trade balances by value added content allows to understand better the dependence of the Polish economy on the world economy.

This paper aims (1) to present differences in Poland's bilateral trade balances in gross terms and in VA terms in 1995-2011 and (2) to explain such differences.

The analysis is based on data from the *World Input-Output Database* (WIOD), with the use of the input-output model. The study covered 39 trading partners of Poland and an aggregate constituting a group of countries not further specified in the WIOD.

The paper starts with the presentation of selected aspects relating to trade statistics in value added terms and the review of research studies. Next, the research method is described in detail. Further, the paper discusses the analysis results, in particular: the differences in Poland's bilateral trade balances in gross terms and in VA terms, as well as determinants explaining such differences. The paper concludes in the recapitulation of the main findings from the study conducted.

LITERATURE REVIEW

The literature distinguishes between two main concepts connected with the flow of VA between countries (Stehrer, 2013; Stehrer, 2012; Nagengast & Stehrer, 2014). One of them, 'trade in value added', allows to determine how much of the value added created in a country is directly and indirectly embodied in the final consumption of another country. Value added may flow to the destination country directly in the form of the final product or indirectly in the form of a semi-finished product through other coun-

tries. It means that the country concerned exports an intermediate product to a country in which it is used for the manufacture of the final product, subsequently exported to the country of destination where it is consumed or absorbed (Johnson & Noguera, 2012). In addition to VA exports, there are also VA imports. Those allow to specify the origin of the value added absorbed in the importing country.

The concept related to VA flows between countries also enables the calculation of the value of trade balance in VA terms. Although with regard to the overall trade of a country the trade balances in gross terms and in VA terms are the same, they differ in bilateral trade. The differences arise from the exclusion from trade in value added the parts of trade flows included in traditional statistics more than once (Koopman, Wang & Wei, 2014). Therefore, trade in intermediate goods contributes to divergent statistics according to the two concepts.

In order to demonstrate the difference between VA and gross trade balances, Figure 1 presents an example of trade between three countries. The differences between net trade in gross and VA terms result from the possibility that a country may trade with another country only indirectly via a third partner. In the example below, country A exports an intermediate worth 2 to country B, which then after adding some value of its own – ships the final product worth 3 to C, where it is consumed. Thus, no physical shipment of good between A and C is observed, although there is value added created in country A, which is finally absorbed in country C. In this case, country A runs a trade surplus with B of 2, whereas the trade between A and C is zero. Country B runs a trade surplus with C of 3. Although country A does not trade with C directly, in VA terms country A has a trade surplus with C of 2. In gross terms, country A reports a trade surplus with B, whereas the trade balance in VA terms between A and B is zero. In VA terms country B has a trade surplus with C of 1. Note that in both concepts the overall trade balances of the countries in question are the same. Country A has a surplus of 2, B of 1 and C a trade deficit of 3.

	gross terms	value added terms
trade between A and B	2	0
trade between A and C	0	2
trade between B and C	3	1
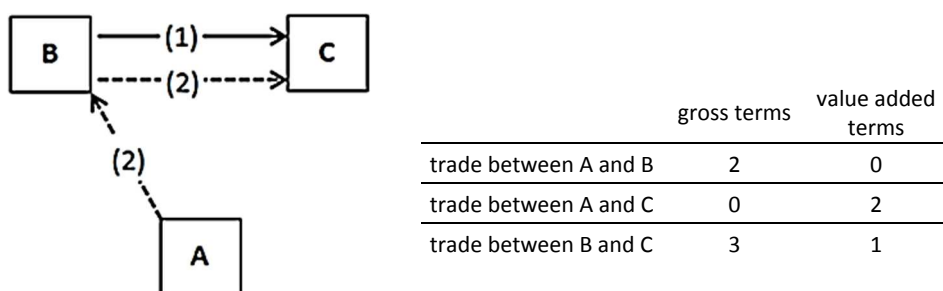
Figure 1. Illustration of the difference between VA and gross trade balances
Source: own elaboration (based on Nagengast & Stehrer, 2014; Stehrer & Stöllinger, 2013).

The other concept connected with value added flows between countries is 'value added in trade'. It allows to identify the origin of the value added contained in the total foreign trade of a country or in bilateral trade – between two countries. It enables the decomposition of exports of one country to another (or of the total exports of a country) by origin of the value added embodied in those exports. In this paper, the concept of 'value added in trade' is used to explain the differences in Poland's bilateral trade in

gross and VA trade. Using a 2-country and 1-sector model Koopman *et al.* were the first to develop the decomposition of a country's gross exports by VA content at the bilateral level. They distinguished between the following components of bilateral exports: 1) domestic VA content of exports in the form of final goods absorbed or consumed by the direct importer, 2) domestic VA content of exports of intermediates used by the direct importer to produce final goods for the domestic market, 3) domestic VA content of exports of intermediates used by the direct importer to produce goods for export – indirect VA exports; 4) domestic VA content of exports of intermediates used by the direct importer to produce goods returned to the country of the origin of intermediate goods (reflected domestic VA); 5) foreign VA content of exports. At the same time, imports from one country to another can be decomposed into the following: 1) value added created in the country of the importer contained in both final and intermediate goods (direct VA imports), 2) re-imports – VA created in the importing country and exported to the country of the importer for its production needs, subsequently brought to the importing country, 3) VA content of the imports of a given country created in a country other than the country of the importer (Stehrer, Foster & de Vries, 2012).

To decompose a country's bilateral gross exports, Stehrer (2013) used a method similar to that of Koopman *et al.* (2011). This method led to insights into the role of double counting in VA trade. However, contrary to Koopman *et al.* (2011), in order to develop such a decomposition of bilateral exports, Stehrer used a 3-country and 1-sector model. Johnson and Noguera (2012) related VA balances to gross trade balances in terms of differences in bilateral VA to exports. However, their analysis leaves the question why these ratios differ between countries in the first place unexplained. Nagengast and Stehrer (2014) discussed two methods of the intersection between VA and gross trade flows at the bilateral level. The two methods anchor VA flows either to the country of production or to the country of final consumption, which they called the source-based and the sink-based approach, respectively. The decomposition that is most similar to the contribution of Nagengast and Stehrer (2014) is the work by Koopman *et al.* (2014). They 'implicitly use a variation of the source-based view when identifying VA exports in gross trade flows, but that their subdivision of VA exports is to some extent arbitrary and not based on the number of international border crossings'.

The concept of value added in trade has been rarely studied in the Polish literature. There is no publication which includes a detailed analysis of Poland's bilateral trade by value added concept. Kaliszu, Piotrowski, Błaszczuk-Zawiła and Ambroziak (2013) described the concept of value added in trade and gave some examples of it concerning both the individual products and the selected economies. Folfas (2016) compared the world and Poland's gross trade and trade in value added. Using trade statistics in value added terms Białowąs (2013) analysed the impact of the international fragmentation of production on structural changes and comparative advantage of Central European countries in international trade in various industries. In turn, Ambroziak (2015) analysed value added in trade of the four Visegrad Countries with Germany. Ambroziak (2016a) also studied Poland's bilateral trade in value added, however, the bilateral trade balances were not discussed in detail.

MATERIAL AND METHODS

This study was carried out with the use of data from the *World Input-Output Database* (WIOD) containing the world input-output tables for the years 1995-2011. On the basis of the above-mentioned tables, using the input-output (IO) model, appropriate calculations were made. The basic equation is as follows (1):

$$\mathbf{x} = \mathbf{Ax} + \mathbf{f} = \mathbf{Lf} \qquad (1)$$

where:

$\mathbf{x}$ - denotes the vector of gross output;

$\mathbf{A}$ - denotes the matrix of technical input-output coefficients (costs);

$\mathbf{f}$ - denotes the vector of final output;

$\mathbf{L} = (\mathbf{I} - \mathbf{A})^{-1}$ - denotes the matrix of material-intensity (or additional demand) coefficients, also referred to as the Leontief inverse (and $\mathbf{I}$ is a unit matrix).

For the sake of a clear presentation of the essence of the calculations, the international input-output table only concerns 3 countries and one sector. The matrix notation of the equation $\mathbf{x} = \mathbf{Ax} + \mathbf{f} = \mathbf{Lf}$ is as follows (2):

$$\begin{bmatrix} x^1 \\ x^2 \\ x^3 \end{bmatrix} = \begin{bmatrix} a^{11} & a^{12} & a^{13} \\ a^{21} & a^{22} & a^{23} \\ a^{31} & a^{32} & a^{33} \end{bmatrix} \begin{bmatrix} x^1 \\ x^2 \\ x^3 \end{bmatrix} + \begin{bmatrix} f^1 \\ f^2 \\ f^3 \end{bmatrix} = \begin{bmatrix} l^{11} & l^{12} & l^{13} \\ l^{21} & l^{22} & l^{23} \\ l^{31} & l^{32} & l^{33} \end{bmatrix} \begin{bmatrix} f^{11} & + & f^{12} & + & f^{13} \\ f^{21} & + & f^{22} & + & f^{23} \\ f^{31} & + & f^{32} & + & f^{33} \end{bmatrix} \qquad (2)$$

Bilateral Balance in Gross and Value Added Terms

The VA exports between country 1 and country 2 (VAX^{12}) are defined as the value added of country 1, which is ultimately absorbed in final demand by country 2. VAX^{12} are computed in the following way (3):

$$VAX^{12} = [v^1 \quad 0 \quad 0] \begin{bmatrix} l^{11} & l^{12} & l^{13} \\ l^{21} & l^{22} & l^{23} \\ l^{31} & l^{32} & l^{33} \end{bmatrix} \begin{bmatrix} f^{12} \\ f^{22} \\ f^{32} \end{bmatrix} = v^1 l^{11} f^{12} + v^1 l^{12} f^{22} + v^1 l^{13} f^{32} \qquad (3)$$

where:

v^i - is the value added coefficient of country i of the value added vector $\mathbf{v}$;

l^{ij} - refers to the i-th row, j-th column element of the Leontief inverse $\mathbf{L}$;

f^{ij} - denotes final goods flows from country i to country j.

VA exports from country 1 to 2 are decomposed into three components. The first element of the last equation ($v^1 l^{11} f^{12}$) captures the value added directly absorbed in the partner country (final goods), which is referred to as the 'domestic VA in direct final goods exports'. The second element ($v^1 l^{12} f^{22}$) means the value added shipped to country 2 in intermediates which are then, after further reprocessing, consumed in country 2, which is referred to as 'domestic VA absorbed by the direct partner'. The third element ($v^1 l^{13} f^{32}$) is value added which is embodied in intermediates shipped from 1 to 3 and then after further processing sent to country 2 in the form of final goods referred to as 'domestic VA

indirectly absorbed by the direct partner'[1]. Stehrer (2013, p. 9) highlights that the route in the bilateral consideration here is from country 1 to 3 and then to country 2.

In contrast to traditional trade statistics, trade data on the flows of goods and services from the world input-output table are characterised by the lack of differences in mirror statistics. For example, it means that the imports of country 1 from country 2 are equal to the exports of country 2 to country 1.

The calculation of the VA imports of country 1 from country 2 is based on the equation allowing to estimate the VA exports of country 2 to country 1 (4):

$$VAM^{12} = VAX^{21} = \begin{bmatrix} 0 & v^2 & 0 \end{bmatrix} \begin{bmatrix} l^{11} & l^{12} & l^{13} \\ l^{21} & l^{22} & l^{23} \\ l^{31} & l^{32} & l^{33} \end{bmatrix} \begin{bmatrix} f^{11} \\ f^{21} \\ f^{31} \end{bmatrix} = \qquad (4)$$

$$= v^2 l^{21} f^{11} + v^2 l^{22} f^{21} + v^2 l^{23} f^{31}$$

The first element of the last equation is the value added created in country 2 and exported as intermediate goods to country 1 where it is absorbed or consumed after further processing. The second element denotes the value added created in country 2 and shipped as final goods to country 1. The third element is the value added created in country 2 and shipped in the form of intermediates to country 3 for its processing, subsequently sent as the final product to country 1.

Therefore, trade balance between country 1 and country 2 in VA terms can be computed according to the following formula (5):

$$NVAX^{12} = (v^1 l^{11} f^{12} + v^1 l^{12} f^{22} + v^1 l^{13} f^{32}) - $$
$$- (v^2 l^{21} f^{11} + v^2 l^{22} f^{21} + v^2 l^{23} f^{31}) \qquad (5)$$

Similarly, the gross trade balance between country 1 and 2 (NX^{12}) can be expressed as the difference between their respective bilateral gross exports (6):

$$NX^{12} = e^{12} - e^{21} = f^{12} + z^{12} - f^{21} - z^{21} = f^{12} + a^{12} x^2 - f^{21} - a^{21} x^1 \qquad (6)$$

where:

e^{ij} - denotes gross exports from country i to j;

z^{ij} - is the flow of intermediates between i and j, which equals the share of intermediates of country i in production of country j (a^{ij} of the global input-output matrix **A**) multiplied by the level of gross output in country j (x^j).

Decomposition of Bilateral Trade Into Value Added Components

For the purpose of this paper, the decomposition method proposed by Stehrer (2013) was used.

Bilateral gross exports from country 1 to country 2 are a function of both demand in country 2 for final goods of country 1 and gross output of country 2, x^2 (7):

$$e^{12} = f^{12} + z^{12} = f^{12} + a^{12} x^2 \qquad (7)$$

Using the fact that the gross output of country 2, x^2, is endogenous in a demand-driven Leontief system[2], gross exports from country 1 to country 2 can be split into their

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[1] The sum of this component over all trading partners (in this case $v^1 l^{13} f^{32} + v^1 l^{12} f^{32}$) is referred to in Koopman *et al.* (2014) as 'indirect value added exports to third countries'.

[2] It means that gross output can be expressed as a function of final demand in all countries in the world, $x^2 = l^{21}(f^{11} + f^{12} + f^{13}) + l^{22}(f^{21} + f^{22} + f^{23}) + l^{23}(f^{31} + f^{32} + f^{33})$.

domestic and foreign value added part. When splitting further a country's exports into final goods and intermediate exports, this can be expressed as (8):

$$e^{12} = \sum_{i=1}^{3} v^i l^{i1} f^{12} + \sum_{i=1}^{3} v^i l^{i1} z^{12} = \sum_{i=1}^{3} v^i l^{i1} f^{12} + \sum_{i=1}^{3} v^i l^{i1} a^{12} x^2 \qquad (8)$$

Applying the property of inverse matrices (see more Koopman *et al.*, 2014) and making some transformations (see more Stehrer, 2013 and Nagengast & Stehrer, 2014) allow to decompose bilateral gross exports of country 1 to 2 into its VA components (9):

$$e^{12} = \underbrace{v^1 l^{11} f^{12} + v^1 l^{12} f^{22} + v^1 l^{13} f^{32}}_{VAX^{12}} + \underbrace{v^1 l^{12} f^{21} + v^1 l^{12} a^{21} x^1}_{DVAiM^{12} = FVAiX^{21(1)}} +$$

$$+ \underbrace{v^2 l^{21} f^{12} + v^2 l^{21} a^{12} x^2}_{FVAiX^{12(2)}} + \underbrace{v^3 l^{31} f^{12} + v^3 l^{31} a^{12} x^2}_{FVAiX^{12(3)}} +$$

$$+ \underbrace{v^1 l^{12} f^{23} + v^1 l^{12} a^{23} x^3}_{FVAiX^{23(1)}} - \underbrace{v^1 l^{13} f^{32} + v^1 l^{13} a^{32} x^2}_{FVAiX^{32(1)}} \qquad (9)$$

Using $e^{12} = f^{12} + a^{12} x^2$ the above equation can be also written in terms of gross exports flows as (10):

$$e^{12} = \underbrace{v^1 l^{11} f^{12} + v^1 l^{12} f^{22} + v^1 l^{13} f^{32}}_{(1)-(3)VAX^{12}} + \underbrace{v^1 l^{12} e^{21}}_{(4)DVAiM^{12} = FVAiX^{21(1)}} + \underbrace{v^2 l^{21} e^{12}}_{(5)FVAiX^{12(2)}} +$$

$$+ \underbrace{v^3 l^{31} e^{12}}_{(6)FVAiX^{12(3)}} + \underbrace{v^1 l^{12} e^{23}}_{(7)FVAiX^{23(1)}} - \underbrace{v^1 l^{13} e^{32}}_{(8)FVAiX^{32(1)}} \qquad (10)$$

The first three terms, VAX^{12}, comprise VA exports from country 1 to 2, as in the equation (3).

The fourth term ($v^1 l^{12} e^{21}$) captures domestic VA imported by country 1 from country 2 either in the form of final goods or in the form of intermediates. These are goods produced in country 2 by already using some intermediates from country 1; therefore, exports of 1 to 2 contain value added which flows back to itself. These are referred to as 're-imports of domestic VA' or 'returned domestic VA' and denoted by $DVAiM^{12}$. In the bilateral consideration this can also be interpreted as country 1's value added embodied in country 2's exports to country 1 denoted by $FVAiX^{21(1)}$, therefore $DVAiM^{12} = FVAiX^{21(1)}$.

The next two terms ($v^2 l^{21} e^{12}$ and $v^3 l^{31} e^{12}$) capture the foreign content of country 1's exports to country 2, which stem from country 2 itself and other countries like country 3. Stehrer (2013, p. 9) notes that that VA content of country 1 exports to 2, i.e. $FVAiX^{12(2)}$ will again pop up as country 2 re-imports of value added from country 1 when considering gross export flows from 2 to 1.

The last but one term ($v^1 l^{12} e^{23}$) means that country 3 imports from country 2 either final goods or intermediates which embody value added from country 1. These were shipped in the form of intermediates to country 2 which are taken into account by $FVAiX^{23(1)}$. Therefore, this is value added embodied in gross exports from country 1 to 2 which is not absorbed there but shipped further to third countries. This is domestic VA content in exports of 1 to 2 which is however not part of country 1's value added exports to country 2.

The last term $\left(v^1 l^{13} e^{32}, FVAiX^{32(1)} \right)$ results from exports of country 3 to 2 containing value added from country 1. 'However, as the appearance of l^{13} in these terms indicates, this results from intermediates' flows of country 1 to 3 which are not part of gross exports, i.e. physical shipment, of country 1 to 2, which are considered in this bilateral decomposition. These should already be captured by the other components discussed before and capture 'virtual VA flows' in a sense as value added is

embodied in the consumption of country 2 which does not correspond to a physical flow of goods between these countries' (Stehrer, 2013, pp. 9-10)[3].

Using the above presented method of decomposition of gross exports from country 1 to 2, the gross exports from country 2 to 1 (gross imports of country 1 from 2) can be decomposed as (11):

$$e^{21} = \underbrace{v^2 l^{22} f^{21} + v^2 l^{21} f^{11} + v^2 l^{23} f^{31}}_{(1)-(3)VAX^{21}} + \underbrace{v^2 l^{21} e^{12}}_{(4)DVAiM^{21}=FVAiX^{12(2)}} + \underbrace{v^1 l^{12} e^{21}}_{(5)FVAiX^{21(1)}} + $$
$$+ \underbrace{v^3 l^{32} e^{21}}_{(6)FVAiX^{21(3)}} + \underbrace{v^2 l^{21} e^{13}}_{(7)FVAiX^{13(2)}} - \underbrace{v^2 l^{23} e^{31}}_{(8)FVAiX^{31(2)}} \tag{11}$$

Thus, the gross term balance in trade between country 1 and country 2 is as follows (12):

$$NX^{12} = e^{12} - e^{21} = $$
$$= \underbrace{(v^1 l^{11} f^{12} - v^2 l^{22} f^{21}) + (v^1 l^{12} f^{22} - v^2 l^{21} f^{11}) + (v^1 l^{13} f^{32} - v^2 l^{23} f^{31})}_{(1)-(3)} + $$
$$+ \underbrace{(v^1 l^{12} e^{21} - v^2 l^{21} e^{12})}_{(4)} + \underbrace{(v^2 l^{21} e^{12} - v^1 l^{12} e^{21})}_{(5)} + \underbrace{(v^3 l^{31} e^{12} - v^3 l^{32} e^{21})}_{(6)} + \tag{12}$$
$$+ \underbrace{(v^1 l^{12} e^{23} - v^2 l^{21} e^{13})}_{(7)} + \underbrace{(-v^1 l^{13} e^{32} + v^2 l^{23} e^{31})}_{(8)}$$

The first three terms correspond to net VA exports with respect to final goods, intermediates, and indirect trade. The term (4) is the difference between the returned VA, whereas the term (5) reports the partner country's VA embodied in exports in net terms. It should be noted that these two terms exactly cancel out. The term (6) is the difference between VA contents from other countries in bilateral trade. Finally, the term (7) is VA exports of a country to other third countries via a direct partner, whereas the term (8) provides information on net exports which are transferred to the partner via third countries.

Poland's bilateral trade statistics in VA terms were calculated on the basis of data from the *World Input-Output Database* (WIOD). The database contains a set of international supply and use tables, as well as the world input-output tables by industry. The WIOD covers 40 countries, including 27 EU Member States and 13 other major economies, such as: the USA, Canada, Brazil, Mexico, China, India, Japan, South Korea, Australia, Taiwan, Turkey, Indonesia and Russia. The database includes input-output tables for the period from 1995 to 2011 (17 years), or 35 industries by 35 industries (Timmer *et al.*, 2015).

RESULTS AND DISCUSSION

Gross Versus Value Added Balances in Poland's Bilateral Trade

For most of the period covered (1995-2011), Poland had a negative balance in total trade in goods and services (it was the same in gross terms and in VA terms). At the turn of the 1990s and 2000s the deficit value was nearly 5% of Poland's GDP, at the same time accounting for over 8% of the Polish trade turnover. In the following years, as a rule, the deficit was below 2% of GDP (Figure 1). Poland enjoyed a total trade surplus in 1995, 2005 and from 2009 to 2011.

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[3] Note that mathematically the first component of the last term in equation (9) ($v^1 l^{13} e^{32}$) cancels out with the respective term in country 1's value added exports to 2 via country 3, i.e. $v^1 l^{13} e^{32}$. This is clear as no direct flow of goods are involved in this relation, i.e. not counted in the gross flows e^{12}.

In 1995-2011 Poland recorded permanent deficits in gross terms in trade with countries such as Russia, China, Italy, the Netherlands, Belgium, Slovakia, Japan, South Korea and Taiwan. In the period in question there was a marked increase in the value of trade deficits with China and South Korea, and after 2004 with the United States as well. Prior to the accession to the European Union, Poland also noted negative balances in trade with the United Kingdom, France, Sweden, Spain, Turkey and the Czech Republic. However, after the accession Poland managed to develop fast-growing surpluses in trade with those countries. In the period covered surpluses were recorded in trade with Germany, Denmark, Hungary, Lithuania, Romania and Latvia.
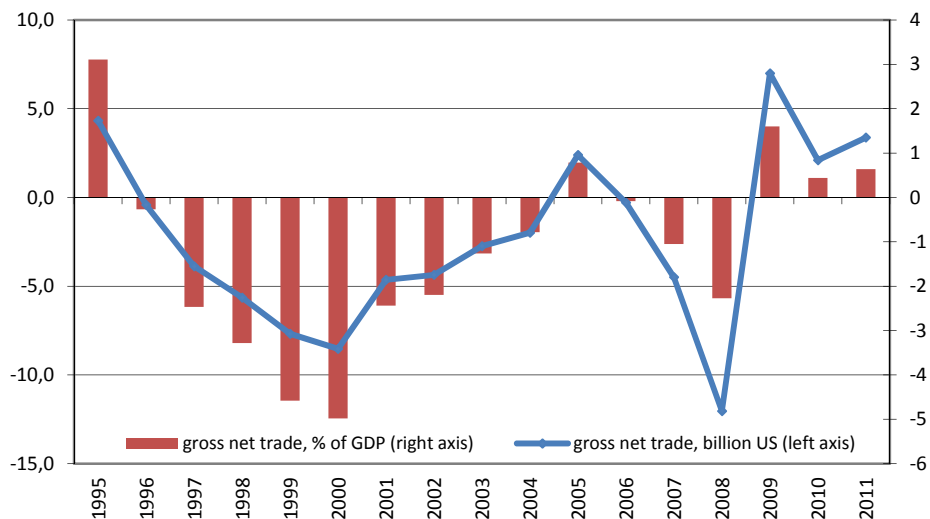
Figure 1. Net balance in Poland's trade in goods and services in 1995-2011
Source: own calculations based on WIOD.

Poland's bilateral trade balances in gross terms and in VA terms showed differences, quite significant at times (Table 1). In general, if Poland enjoyed trade surpluses with certain countries in gross terms, it also recorded surpluses in VA terms, but they were markedly lower. In the period under analysis it concerned trade with countries such as Germany, Denmark, Hungary, Lithuania, Latvia, Romania, and in the period of Poland's EU membership also with the United Kingdom, France, Sweden and Turkey. At times Poland recorded higher surpluses in VA terms than in gross terms in trade with Austria, Greece and Portugal. In some years the balance in gross terms was positive, whereas in VA terms – negative in Poland's trade with Ireland, Germany, Canada and the Czech Republic.

With regard to the countries with which Poland had trade deficits in gross terms, deficits tended to be recorded also in VA terms, but they were lower. In the period covered it was true of trade with partners such as China, Russia, South Korea, Taiwan, Finland and Slovenia. At times deficit in VA terms was higher than in gross terms, e.g. in trade with Japan in the late 1990s. As regards trade with the United States, Turkey and Italy, some of the years witnessed Poland's trade surpluses in VA terms, whereas balances in gross terms were negative.

Table 1. Bilateral trade balances in gross and value added terms in Poland, in % of GDP

Partner	Gross trade					Trade in value added					Difference (gross trade – trade in VA)				
	1995	2000	2007	2009	2011	1995	2000	2007	2009	2011	1995	2000	2007	2009	2011
AUS	0.00	-0.01	-0.04	0.04	0.05	0.01	-0.02	-0.02	0.03	0.03	-0.01	0.01	-0.02	0.01	0.02
AUT	0.06	-0.31	0.06	0.02	0.01	0.09	-0.21	0.01	0.04	0.06	-0.03	-0.10	0.05	-0.02	-0.05
BEL	-0.07	-0.29	-0.07	0.11	-0.13	-0.10	-0.22	-0.05	0.04	-0.05	0.03	-0.07	-0.02	0.07	-0.08
BGR	0.01	0.04	0.16	0.12	0.05	0.00	0.02	0.11	0.09	0.05	0.01	0.02	0.05	0.03	0.00
BRA	0.08	-0.15	-0.10	-0.10	-0.11	0.04	-0.13	-0.10	-0.08	-0.10	0.04	-0.02	0.00	-0.02	-0.01
CAN	-0.02	0.08	-0.04	0.16	0.20	-0.01	0.00	-0.05	0.09	0.06	-0.01	0.08	0.01	0.07	0.14
CHN	-0.13	-0.40	-1.99	-2.02	-2.55	-0.08	-0.32	-1.18	-1.22	-1.40	-0.05	-0.08	-0.81	-0.80	-1.15
CYP	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-0.01
CZE	0.12	-0.19	0.13	0.50	0.65	0.10	-0.08	-0.06	0.15	0.14	0.02	-0.11	0.19	0.35	0.51
DEU	3.44	3.09	-0.56	0.76	0.93	2.30	1.01	-1.09	0.09	-0.04	1.14	2.08	0.53	0.67	0.97
DNK	0.22	0.20	0.21	0.06	0.11	0.12	-0.02	0.07	0.01	0.02	0.10	0.22	0.14	0.05	0.09
ESP	-0.04	-0.38	0.16	0.11	0.00	0.01	-0.20	0.18	0.10	-0.03	-0.05	-0.18	-0.02	0.01	0.03
EST	-0.01	0.01	0.09	0.06	0.07	0.00	0.01	0.05	0.04	0.03	-0.01	0.00	0.04	0.02	0.04
FIN	-0.04	-0.31	-0.21	-0.13	-0.06	-0.04	-0.24	-0.10	-0.03	0.01	0.00	-0.07	-0.11	-0.10	-0.07
FRA	-0.12	-0.88	0.06	0.52	0.58	-0.09	-0.67	0.05	0.43	0.44	-0.03	-0.21	0.01	0.09	0.14
GBR	-0.14	-0.73	0.73	0.49	1.22	-0.13	-0.59	0.39	0.27	0.66	-0.01	-0.14	0.34	0.22	0.56
GRC	0.02	0.09	0.15	0.14	0.06	0.04	0.08	0.16	0.14	0.08	-0.02	0.01	-0.01	0.00	-0.02
HUN	0.15	0.07	0.18	0.11	0.22	0.11	0.06	0.11	0.09	0.08	0.04	0.01	0.07	0.02	0.14
IDN	0.00	-0.06	0.10	-0.07	-0.11	0.01	-0.06	0.06	-0.06	-0.08	-0.01	0.00	0.04	-0.01	-0.03
IND	-0.01	-0.06	-0.12	-0.17	-0.32	0.00	-0.06	-0.06	-0.09	-0.18	-0.01	0.00	-0.06	-0.08	-0.14
IRL	0.03	-0.07	0.21	0.09	0.02	0.01	-0.09	0.03	-0.05	-0.03	0.02	0.02	0.18	0.14	0.05
ITA	-0.70	-1.11	-0.20	0.04	-0.04	-0.41	-0.72	-0.04	0.19	0.10	-0.29	-0.39	-0.16	-0.15	-0.14
JPN	-0.19	-0.43	-0.46	-0.41	-0.44	-0.16	-0.48	-0.46	-0.37	-0.36	-0.03	0.05	0.00	-0.04	-0.08
KOR	-0.03	-0.34	-0.62	-0.69	-0.78	-0.03	-0.22	-0.36	-0.35	-0.38	0.00	-0.12	-0.26	-0.34	-0.40
LTU	0.08	0.04	0.39	0.29	0.33	0.06	0.05	0.22	0.20	0.19	0.02	-0.01	0.17	0.09	0.14
LUX	-0.09	-0.24	-0.02	0.02	-0.06	-0.04	-0.08	-0.02	-0.01	-0.03	-0.05	-0.16	0.00	0.03	-0.03
LVA	0.03	0.08	0.21	0.16	0.15	0.02	0.05	0.15	0.10	0.09	0.01	0.03	0.06	0.06	0.06
MEX	0.06	0.02	-0.04	0.01	0.00	0.04	0.01	-0.03	0.02	0.00	0.02	0.01	-0.01	-0.01	0.00
MLT	-0.01	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01
NLD	-0.21	-0.40	-0.49	-0.29	-0.35	-0.14	-0.31	-0.34	-0.16	-0.23	-0.07	-0.09	-0.15	-0.13	-0.12
POL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRT	0.01	0.04	0.00	0.01	0.01	0.02	0.04	0.03	0.04	0.04	-0.01	0.00	-0.03	-0.03	-0.03
ROM	0.05	0.08	0.39	0.29	0.34	0.04	0.06	0.28	0.21	0.22	0.01	0.02	0.11	0.08	0.12
RUS	-0.33	-1.21	-1.21	-0.03	-0.82	0.08	-0.97	-0.82	-0.04	-0.30	-0.41	-0.24	-0.39	0.01	-0.52
SVK	-0.02	-0.12	-0.22	-0.23	-0.16	-0.01	-0.03	-0.05	-0.05	-0.03	-0.01	-0.09	-0.17	-0.18	-0.13
SVN	-0.03	-0.07	-0.07	-0.03	0.00	-0.01	-0.04	-0.03	-0.02	0.00	-0.02	-0.03	-0.04	-0.01	0.00
SWE	-0.06	0.00	0.56	0.57	0.29	-0.06	-0.05	0.20	0.27	0.15	0.00	0.05	0.36	0.30	0.14
TUR	0.01	-0.03	-0.09	0.13	0.21	0.03	0.00	0.01	0.11	0.18	-0.02	-0.03	-0.10	0.02	0.03
TWN	0.00	-0.15	-0.23	-0.11	-0.08	-0.01	-0.11	-0.16	-0.10	-0.06	0.01	-0.04	-0.07	-0.01	-0.02
USA	0.19	-0.17	-0.16	-0.53	-0.70	0.23	-0.12	0.12	-0.24	-0.33	-0.04	-0.05	-0.28	-0.29	-0.37
RoW	0.81	-0.71	2.07	1.61	1.83	1.05	-0.35	1.72	1.74	1.63	-0.24	-0.36	0.35	-0.13	0.20
Total	3.11	-4.98	-1.05	1.60	0.64	3.11	-4.98	-1.05	1.60	0.64	0.00	0.00	0.00	0.00	0.00

Source: own elaboration based on WIOD database.

In the years 1995-2011, Poland's trade with the majority of the countries (with the exception of Germany and Italy, among others) was characterised by widening gaps between balances in gross terms and those in VA terms, as measured by the ratio of those balances to Poland's gross domestic product (Figure 2). It stemmed from Poland's participation in the processes of production fragmentation, which resulted in the increased importance of intermediate goods in the Polish trade. Such goods were excluded from VA statistics.
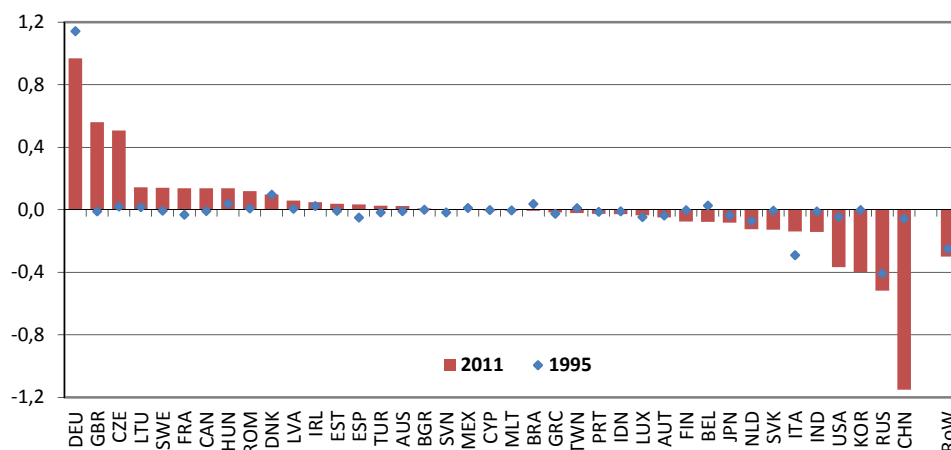
Figure 2. Differences between gross and value added trade in Poland's bilateral trade in 1995 and 2011, in % of GDP
Source: own calculations based on WIOD.

In 2011, in gross terms, Poland enjoyed the highest surpluses in trade with the United Kingdom (USD 6.4 billion), Germany (USD 4.9 billion), the Czech Republic (USD 3.4 billion), France (USD 3.0 billion) and Romania (USD 1.8 billion). In VA terms, surpluses were only noted with four of the above-mentioned countries (Figure 3). Furthermore, those were markedly lower than the figures computed on the basis of traditional statistics – nearly by half in trade with the United Kingdom and almost 80%, 24% and 35% lower in trade with the Czech Republic, France and Romania, respectively. At the same time, the balance of Poland's trade with Germany in VA terms was negative (USD -0.2 billion).

In 2011 the greatest deficits in gross terms were noted in Poland's trade with China (USD 13.5 billion), Russia (USD 4.3 billion), South Korea (USD 4.1 billion), the United States (USD 3.7 billion) and Japan (USD 2.3 billion). In VA terms deficits in trade with the aforementioned countries were markedly lower. The highest deficit in VA terms still characterised Poland's trade with China, although it was nearly by 50% lower than in gross terms. Negative balances in VA terms were less than half of those in gross terms in the Polish trade with South Korea and the United States, and nearly 65% lower in trade with Russia. Poland's trade deficit with Japan in VA statistics was only 18% lower than the figure calculated using traditional statistics.
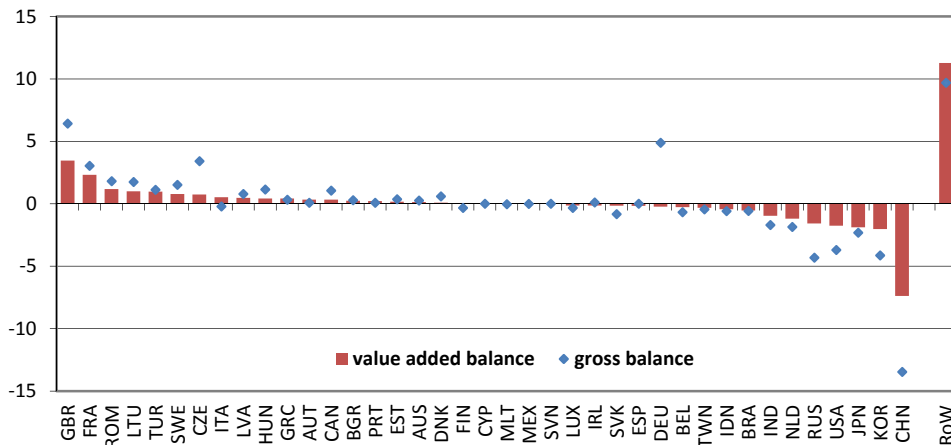
Figure 3. Poland's bilateral net trade in gross and value added terms in 2011, in US billion
Source: own calculations based on WIOD.

Decomposition of Poland's Bilateral Imbalances by Value Added Content

The decomposition of Poland's bilateral trade, i.e. exports and imports, by VA content made it possible to decompose bilateral trade balances. It allowed to explain differences between balances in gross terms and those in VA terms in Poland's bilateral trade. The analysis covered all the trading partners of Poland, but this paper only discusses the group of countries in trade with which gaps between the values of balances computed with the use of the two methods were the widest.

The decomposition of trade balances by VA content demonstrated that the differences in the value of trade balances in gross terms and in VA terms had been mostly determined by two components: (1) 'multilateral VA net exports to third countries via partner' and (2) 'foreign VA in exports from other countries than partner' (Table 2).

Among the countries with which Poland enjoyed surpluses in gross terms, in 2011 the highest differences in trade balances in gross terms and in VA terms characterised the Polish trade with Germany (balance in gross terms higher than that in VA terms by 0.97% of GDP), the United Kingdom (by 0.56% of GDP) and the Czech Republic (by 0.51% of GDP) and, to a lesser extent, also with Lithuania, Sweden, France, Canada, Hungary and Romania (by approximately 0.15% of GDP).

In trade with Germany, the Czech Republic and Hungary differences in the values of balances in gross terms and VA terms were mainly attributable to a positive component 'multilateral value added (MVA) net exports to third countries via partner'. It means that Poland exported more of its value added to the third countries via the three abovementioned countries than these countries exported their VA via Poland to third countries. A major share of Polish exports to Germany, the Czech Republic and Hungary were parts and components absorbed by those countries in export-oriented production. Thus, the most important factor explaining differences in Poland's trade with the three abovementioned trade partners was demand in countries other than these trade partners. An

example of this phenomenon is the export of Polish engines from the Volkswagen plant near Poznań to German factories manufacturing cars exported to China.

Table 2. Decomposition of Poland's bilateral gross trade balance by VA content in 2011, in US million

Country	Net gross exports	Net value added exports				Re-turned domes-tic VA	Foreign VA in net exports			Multilateral VA net exports	
		Total	Final goods	In-terme-diates	Indirect		Total	from part-ner	from others	to 3rd coun-tries via partner	via 3rd coun-tries to partner
AUS	269.0	144.0	187.1	-46.6	3.5	-1.4	158.1	1.4	156.7	-410.2	378.5
AUT	76.9	336.6	262.1	-109.8	184.2	11.0	-145.7	-11.0	-134.6	155.1	-280.3
BEL	-670.3	-263.3	150.3	-440.3	26.6	1.1	-929.3	-1.1	-928.1	442.9	78.2
BGR	287.4	240.0	137.3	73.7	29.0	2.2	77.9	-2.2	80.1	5.9	-38.6
BRA	-569.1	-533.0	-292.3	-86.4	-154.3	-1.2	47.3	1.2	46.1	-642.2	560.0
CAN	1,060.8	332.0	110.9	136.7	84.4	-6.8	589.6	6.8	582.8	-138.4	284.5
CHN	-13,458.3	-7,375.3	-5,205.3	-1,598.5	-571.5	-80.5	-2,692.3	80.5	-2,772.7	-4,209.1	898.9
CYP	9.8	35.3	6.2	15.5	13.6	0.4	-1.9	-0.4	-1.5	-4.2	-19.8
CZE	3,416.3	738.1	572.1	203.1	-37.2	109.2	522.3	-109.2	631.5	2,055.3	-8.6
DEU	4,893.8	-224.5	2,113.2	-2,493.5	155.8	-3,462.9	5,313.6	3,462.9	1,850.7	3,319.2	-51.6
DNK	598.1	83.4	-10.7	37.0	57.1	14.8	155.3	-14.8	170.1	415.0	-70.4
ESP	11.0	-168.8	-357.0	44.6	143.5	-35.1	808.0	35.1	773.0	-403.8	-189.3
EST	370.9	166.2	115.1	46.0	5.1	2.8	131.7	-2.8	134.5	71.5	-1.3
FIN	-328.4	68.2	146.3	-115.5	37.3	4.6	-183.2	-4.6	-178.6	-236.4	18.4
FRA	3,047.2	2,318.1	1,006.1	688.1	623.9	-150.0	1,731.7	150.0	1,581.7	-0.6	-852.0
GBR	6,426.5	3,464.0	2,495.4	455.3	513.3	-147.3	3,370.9	147.3	3,223.5	-221.4	-39.7
GRC	331.3	420.7	129.9	169.4	121.4	0.3	145.6	-0.3	145.9	-51.3	-184.0
HUN	1,150.0	424.8	498.7	-120.1	46.3	40.6	-38.8	-40.6	1.8	913.3	-190.0
IDN	-585.2	-435.0	-175.1	-141.9	-118.1	0.1	-110.3	-0.1	-110.2	-352.7	312.7
IND	-1,704.3	-955.5	-692.3	-208.3	-54.9	-0.1	-251.2	0.1	-251.3	-563.5	66.1
IRL	109.6	-146.9	-107.8	-11.4	-27.7	2.9	-280.9	-2.9	-278.1	441.6	92.9
ITA	-205.9	526.7	467.4	-214.5	273.8	-223.4	1,326.9	223.4	1,103.5	-1,600.2	-235.9
JPN	-2,317.1	-1,881.7	-839.4	-644.9	-397.4	-4.4	-259.9	4.4	-264.3	-1,281.0	1,109.8
KOR	-4,131.6	-2,024.0	-761.8	-1,043.2	-219.0	-0.6	-1,512.8	0.6	-1,513.5	-1,068.6	474.5
LTU	1,754.8	994.4	743.5	229.3	21.6	18.4	594.8	-18.4	613.2	171.4	-24.3
LUX	-327.5	-143.0	-0.3	-140.9	-1.7	4.0	-287.7	-4.0	-283.6	81.5	17.6
LVA	784.8	472.2	281.3	165.5	25.3	3.2	261.2	-3.2	264.4	83.3	-35.0
MEX	-5.2	-9.3	-36.2	-25.9	52.7	-0.6	106.7	0.6	106.1	-37.1	-64.8
MLT	-30.4	-2.0	-1.0	-6.2	5.2	0.3	-20.8	-0.3	-20.5	0.5	-8.5
NLD	-1,849.6	-1,189.8	-132.4	-946.5	-110.8	-15.3	-1,171.1	15.3	-1,186.4	-121.1	647.6
PRT	78.8	218.5	115.3	-4.9	108.0	0.6	53.9	-0.6	54.5	-83.1	-111.0
ROM	1,809.8	1,180.3	566.4	547.1	66.7	4.8	721.3	-4.8	726.1	16.2	-112.7
RUS	-4,313.6	-1,580.2	4,182.8	-5,679.6	-83.4	-353.1	3,010.3	353.1	2,657.2	-7,469.2	2,078.6
SVK	-829.1	-156.0	240.3	-401.9	5.7	37.3	-515.7	-37.3	-478.4	-146.4	-48.4
SVN	7.5	-10.7	6.1	-30.4	13.7	4.7	-12.0	-4.7	-7.3	37.5	-12.0
SWE	1,524.7	780.9	627.1	62.8	90.9	-8.1	615.2	8.1	607.2	110.7	25.9
TUR	1,117.0	871.0	807.8	-152.4	215.6	-14.3	964.2	14.3	950.0	-507.9	-196.0
TWN	-436.4	-324.4	-66.9	-113.9	-143.7	0.5	-348.8	-0.5	-348.3	-55.2	291.5
USA	-3,694.2	-1,756.2	-1,344.0	-832.8	420.6	-134.3	918.8	134.3	784.5	-3,252.9	530.4
RoW	9,693.6	8,737.8	4,396.9	4,067.9	272.9	-1,550.0	5,678.4	1,550.0	4,128.4	-3,343.1	170.5

Source: own elaboration based on WIOD database.

A further breakdown of 'MVA net exports to third countries via partner' showed which countries mattered to the third-country demand effect in the gross balances in Poland's trade with Germany, the Czech Republic and Hungary (Table 3). In 2011 demand from China, the United States, France and Austria explained over 53% of the gross trade surplus between Poland and Germany. It means that Poland benefited from the trade cooperation with Germany which exports Polish value added to these four countries. In turn, demand from some countries, mainly from the Czech Republic, Russia, Italy and Turkey, led to a reduction in the Polish-German trade surplus. It means that Poland exported to those countries less value added via Germany than Germany exported to those countries its value added via Poland.

Table 3. Decomposition of 'multilateral VA net exports to 3rd countries via partner' (by demand country) in Poland's net trade with selected trade partners, in US million

	Poland's trade partners							
	Germany	Czech Rep.	Hungary	China	Russia	South Korea	USA	Italy
Gross net trade	4893.8	3416.3	1150.0	-13458.3	-4313.6	-4131.6	-3694.2	-205.9
Multilateral VA net exports to 3rd countries via partner	3319.2	2055.3	892.3	-4209.1	-7469.2	-1072.6	-3252.9	-1600.2
including:								
Austria	463.8	191.5	63.5	-80.6	-263.8	-23.4	-77.8	-12.5
China	971.5	36.2	50.7	-	-27.4	91.7	47.0	38.2
Czech Rep.	-365.4	-	12.4	-241.1	-550.7	-68.8	-216.5	-163.6
Germany	-	795.0	294.4	-1,322.6	-2,077.4	-358.5	-1,047.9	-719.5
France	506.0	107.6	45.1	-330.6	-426.2	-96.6	-245.2	-28.5
United Kingdom	-62.8	57.0	62.9	-334.2	-469.4	-100.5	-240.9	-161.7
Hungary	-113.9	42.9	-	-143.5	-151.1	-40.5	-104.7	-73.6
Italy	-128.6	45.5	27.9	-327.9	-237.8	-95.6	-252.0	-
Russia	-261.3	66.2	4.9	-310.2	-	-56.6	-219.6	-144.7
USA	671.8	52.7	30.5	111.5	-126.3	-2.6	-	26.4
Others	1,638.1	660.7	300.1	-1,229.8	-3,139.2	-321.1	-895.4	-360.6

Source: own elaboration based on WIOD database.

At the same time, German demand accounted for ca. ¼ of gross surpluses in Poland's trade with the Czech Republic and Hungary. The other countries contributing to the surplus in the Polish-Czech trade included Austria (6% of the gross surplus in Poland's trade with the Czech Republic), Slovakia (5%), France (3%), Russia (2%) and the United Kingdom (2%). The surplus in Poland's trade with Hungary was – in addition to Germany – also generated by: Austria and the United Kingdom (6% of the gross surplus in Poland's trade with Hungary each), Romania (5%), as well as France and China (4% each).

As regards other countries characterised by the greatest differences between surpluses in gross terms and in VA terms, the gaps were explained mainly by the component 'foreign VA in net exports from other countries than partner' (Table 4). In 2011 that component had the highest value in Poland's trade with the United Kingdom – USD 3.2 billion. It accounted for more than half of the gross surplus in trade between Poland and the United Kingdom. The high importance of that component resulted from the fact that Polish exports to the United King-

dom of German, Chinese, Russian and US value added were higher than Polish imports from the United Kingdom of the value added created in those countries. The positive balance in trade in German value added between Poland and the United Kingdom accounted for 12% of the surplus in Polish-British trade and the positive balance in trade in Russian value added – for 7% of that surplus. The positive component 'FVA in net exports from other countries than partner' in Poland's trade with the above-mentioned countries depended on the demand of these trade partners for products brought from Poland and containing foreign value added.

At the same time, Poland imported from Canada more US value added than it exported US value added to Canada. In Poland's trade with Lithuania, Romania and Sweden the positive component 'FVA net trade' did not exceed 40% of the value of gross surplus.

Table 4. Decomposition of 'FVA in net exports' (by country of VA origin) in Poland's net trade with selected trade partners in 2011, in US million

	Canada	China	Germany	France	UK	Italy	South Korea	Lithuania	Netherlands	Russia	USA
Gross net trade	1060.8	-13458.3	4893.8	3047.2	6426.5	-205.9	-4131.6	1754.8	-1849.6	-4313.6	-3694.2
Foreign VA in exports from:	582.8	-2772.7	1850.7	1581.7	3223.5	1103.5	-1513.5	613.2	-1186.4	2657.2	784.5
China	35.4	-	240.1	172.7	239.0	113.7	-377.1	41.7	-78.4	228.2	10.1
Czech Rep.	19.0	23.3	143.9	88.3	107.5	81.7	1.8	16.4	20.6	78.7	47.7
Germany	157.9	35.8	-	436.7	797.6	542.4	-28.4	111.5	-84.0	653.8	366.3
France	28.4	-15.9	-137.1	-	106.4	-23.1	-18.2	23.9	-63.7	123.4	60.3
UK	19.2	-12.9	-124.5	-0.8	-	37.7	-14.9	26.9	-199.5	110.8	32.5
Italy	42.5	-1.3	209.1	57.5	194.5	-	-5.5	25.0	16.3	172.0	92.9
Japan	11.1	-378.7	-1.7	34.3	61.2	52.7	-183.0	10.6	-46.8	14.7	-16.6
South Korea	12.9	-240.0	153.5	58.2	83.1	36.9	-	10.8	-2.4	15.4	20.7
Netherlands	18.2	-7.1	-278.0	8.9	51.4	8.8	-4.3	16.8	-	88.4	40.8
Russia	62.1	-23.6	1542.0	318.4	436.3	90.6	-29.4	33.8	132.6	-	142.4
USA	-33.5	-364.5	66.3	30.7	68.7	77.2	-180.5	42.6	-211.5	177.7	-
Others	209.6	-1787.8	37.1	376.8	1077.7	84.8	-673.9	253.3	-669.6	994.1	-12.7

Source: own elaboration based on WIOD database.

Another, equally numerous group of Poland's trading partners were countries with which Poland had trade deficits both in gross terms and in VA terms, with the value of that deficit being higher in gross terms. The greatest differences characterised deficits in both approaches in Poland's trade with China (the difference represented 1.15% of Poland's GDP), Russia (0.52% of GDP), South Korea (0.40% of GDP), the United States (0.37% of GDP), as well as with Indonesia, Italy, Slovakia, the Netherlands and Japan (below 0.15% of GDP).

Lower balances in gross terms than in VA terms in Poland's trade with the aforementioned countries mostly stemmed from the negative value of the component 'MVA net exports to third countries via partner'. It means that Poland's trading partners exported more to third countries via Poland than Poland exported to third countries via its trading partners. In the Polish trade with China the component 'MVA net exports to third countries via partner' accounted for over 31% of the deficit between the partners.

The greatest contribution was that of German demand for Chinese value added. It represented nearly 10% of the Polish-Chinese trade deficit in gross terms. An important role was also played by demand from Russia, France, the United Kingdom and Italy which explained another 10% of the gross deficit between Poland and China. Poland imported from China parts and components for the production of radio and television equipment and household appliances to be exported to the European Union.

In Poland's trade with Russia the negative value of the component 'MVA net exports to third countries via partner' was USD minus 7.5 billion, higher than the deficit in gross terms (other components had a positive effect on the deficit). It was mostly contributed to by Germany's demand for Russian value added contained in products originating from Poland. The demand explained nearly half of the deficit in the Polish trade with Russia.

The component 'MVA net exports to third countries via partner' was also important to the generation of gross deficit in Poland's trade with the USA. The value of that component represented 88% of the gross deficit between the two countries. First and foremost, Poland exported to Germany via the United States markedly less Polish value added than the US exported US value added to Germany via Poland. The negative value of the component 'MVA net exports to third countries via partner' also resulted from demand for US value added contained in Polish exports to Italy, France, the Czech Republic and Russia. At the same time, demand from Canada and Mexico had a downward effect on the gross balance in Poland's trade with the United States. It means that Poland exported to Mexico and Canada via the US more Polish value added than the US exported to the two countries US value added via Poland.

As regards Poland's trade with South Korea, the component 'MVA net exports' played a lesser role in generating gross deficit between the countries in question. The value of that component represented 26% of the gross deficit between the two countries. The negative value of the component was mostly caused by demand from Germany, Italy, the United Kingdom and France for Korean value added contained in Polish exports.

In Poland's trade with China, the Netherlands and South Korea some of the differences in gross balances and balances in VA terms were attributable to the negative component 'FVA in net exports'. At the same time, in trade with Russia, Italy, the United States the component concerned was positive. The negative value of the component in the Polish trade with China means that Poland's imports from China contained more foreign VA than Poland's exports to China. As regards foreign VA in imports from China, it was mostly value added created in other South Asian countries (in Japan, South Korea, Taiwan), as well as in the United States and Australia. Similar countries contributed the most to foreign VA content of Polish imports from South Korea. The negative component 'FVA in net exports' in the Polish trade with the Netherlands primarily resulted from the fact that Poland's imports from the Netherlands contained relatively much British, Belgian and US value added.

The positive value of the component in Poland's trade with Russia and Italy indicates that Poland exported more foreign VA to the countries concerned than it imported from them. Poland exported to Russia products containing value added created mostly in Germany, China and Italy, whereas to Italy – products containing value added originating in Germany, China, the United States and Russia.

Thus, the study confirmed that Poland traded with its trading partners not only directly but also more and more often indirectly via other trading partners. The indirect trade was

especially important in Poland's trade with the USA, China, Germany, Italy, Japan, the Czech Republic and Russia. To access benefits derived by Poland from the international trade it is recommended to use trade statistics in value added terms. Only these statistics allow to determine how much of the value added created in a country is not only directly but also indirectly embodied in the final consumption of another country. No physical shipment of good between two countries may mean that trade in value added occurs.

CONCLUSIONS

According to the study carried out, if Poland enjoyed trade surpluses with certain countries in gross terms, it also recorded surpluses in VA terms, but they were markedly lower. In the period under analysis it concerned trade with countries such as Germany, Denmark, Hungary, Lithuania, Latvia, Romania, and in the period of Poland's EU membership also with the United Kingdom, France, Sweden and Turkey. With regard to the countries with which Poland had trade deficits in gross terms, deficits tended to be recorded also in VA terms, but they were lower. In the period covered it was true of trade with partners such as China, Russia, South Korea, Taiwan, Finland and Slovenia.

The decomposition of bilateral trade balances by VA content demonstrated that the differences in the value of trade balances in gross terms and in VA terms had been mostly determined by two components: (1) 'multilateral VA net exports to third countries via partner' and (2) 'foreign VA in net exports from other countries than partner'. The value of the former in the Polish trade with the country concerned depended, on the one hand, on the demand of third countries (other than the trading partner) for products containing Polish value added and, on the other hand, on the demand of third countries (other than the trading partner) for products containing VA content from partner country. At the same time, the value of the latter component in the Polish trade with the country concerned depended, on the one hand, on the Polish demand for products imported from the trading partner and containing foreign VA and, on the other hand, on the demand of the trading partner for products brought from Poland and containing foreign VA.

The study confirmed that Poland's participation in global value chains had increased the dependence of the Polish economy on the world economy. For instance, China's shrinking demand for cars produced in Germany from parts supplied by Polish plants will have a downward effect on the trade surplus with Germany in gross terms. Thus, to access benefits derived by Poland from international trade it is recommended to use trade statistics in value added terms.

Although the world input-output tables have many merits, they also involve a number of shortcomings. Firstly, despite the ongoing work on updating the database, the most recent data available are those for 2011. Secondly, it covers 35 economic sectors, including 14 manufacturing industries. It limits the level of detail in trade analyses conducted. Thirdly, the construction of a world input-output table required the adoption of a number of assumptions and the application of many additional estimates, e.g. of differences between the values of exports expressed in FOB prices and those of imports at CIF prices. Further research should include more current trade data. It seems to be especially important to analyse determinants driving Poland's bilateral trade imbalances by sectors, i.e. in the automotive industry.

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Modelling Energy Security and International Competitiveness: The Export Perspective

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A B S T R A C T
Objective: The objective of this paper is to investigate the link between energy security and international competitiveness captured by export.
Research Design & Methods: To fulfil the goal, we employed the panel data linear regression model with fixed effects. The study includes 23 countries denoted by one of the world's biggest energy consumption levels between 1995 and 2014.
Findings: The study confirms the existence of the relationship between energy security and export in the defined and examined groups of goods. Energy security influences exports of capital goods most. While the environmental and economic aspects of energy security gain importance in all tested categories of goods, energy imports lose it.
Implications & Recommendations: The research results suggest that the energy security concept is not a coherent phenomenon as the environmental aspect had the greatest influence on international competitiveness. Such a result calls for a broader empirical investigation with a greater sample size divided upon GDP performance.
Contribution & Value Added: The originality of this work lies in studying the link between energy security and international competitiveness from the export perspective. The identified research gap in this area shows a relative lack of theoretical and empirical studies.

Article type:	research paper
Keywords:	international competitiveness; energy security; supply capacity; regression; panel data
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INTRODUCTION

Energy has always been a significant production factor, but nowadays its importance is increasing. It is true for both developing and developed countries. However, the role of energy for these groups of countries is different. While continuous economic growth in developing regions surges global energy demand, energy conservation efforts in advanced economies aim at a decrease in energy consumption. Adding to this global strives for climate protection with stringent GHG emission allowances, volatile energy prices and concerns about the security of energy supply, we arrive at the world energy landscape of the 21st century.

Due to the fact that energy security constitutes the scenery foreground since energy consumption centres are located far from energy production centres energy imports and consumption arouses a number of concerns. Initially, these doubts referred to fuel availability and its volatile prices. It reminds oil crises in the 1970's when due to energy shortages and its volatile prices, the world community was driven into the recession path. The mixture of energy concerns changed over time. Because of rising environmental awareness, the world community took efforts aimed at reducing energy consumption. However, it is a difficult task to bring the hunger for energy growth from developing/emerging economies together with the climate protection goals. Reconciling these goals is even harder in the environment of expanding globalisation and trade liberalisation.

In the world of open economies and free trade, countries are strongly focused on gaining and maintaining the ability to compete with their products/services successfully on the international market. Therefore, the goal of the article is an attempt to answer the question whether energy security influences the ability of a country to compete with export in the international market. It is important to understand this relationship because it can enhance our understanding of the energy security phenomenon. It enables us to verify whether energy security is only a goal in itself or it can be a factor determining economic performance more broadly than only GDP. Initially, energy security research focused only on macroeconomic activity depicted by GDP performance (e.g. Leiby, Jones & Curlee, 1997). The identified research gap, considering energy security linked to international competitiveness, strengthens the research need.

The study is based on the panel regression model including 23 countries denoted by one of the world's biggest energy consumption levels between 1995 and 2014. Secondary data were derived from international databases. The paper starts with a theoretical overview of the energy security concept and its linkages with international competitiveness. Such a structure allows us to briefly depict the discussion on the essence of energy security, which is a "blurred" concept (Loeschel, Moslener & Ruebbelke, 2010, p. 1665). Then, we turn to the description of the method used in the paper, which is followed by the discussion on the results. The paper finishes with a conclusion section containing research limitations and suggestions for further studies.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Energy Security

Energy security is one of interdisciplinary concepts. There are a number of research describing energy security stemming from engineering as well as social sciences. The main focus in our case is its economic perception. Therefore, we concentrate on the literature with economic background.

There are a number of works explaining "energy security" and discussing numerous definitions (Winzer, 2012; Ang, Choong & Ng, 2015). Since there is no common understanding what energy security really is, scientists agree that "energy security" or its extension, namely "security of energy supply" is a "blurred concept" whose vagueness does not enable a coherent theoretical analysis (Loeschel *et al.*, 2010, p. 1665). One of the most popular literature strings on energy security refers to external costs. This way of handling the phenomenon dates back to the oil crises. The majority of works in this stream focus on the macroeconomic dimension of energy security, usually visible in the form of the vulnerability of economy to supply disruptions (Barsky & Kilian, 2004; Beccue & Huntington, 2005; Leiby *et al.*, 1997; Arnold & Hunt, 2009; Gupta, 2008; Constantini, Gracceva, Markandya & Vicini, 2007). Some works, if not directly referring to the vulnerability to supply disruptions, use indicators which show this perspective, such as oil or gas vulnerability index (Roupas, Flamos & Psarras, 2011, p. 353). Such perception of the phenomenon has been also adopted by international organisations, such as the World Bank, in assessing the impact of higher natural gas and oil prices for the Ukrainian economy (Davis, Piontkivsky, Pindyyuk & Ostojic, 2005). The central idea in this approach reflects externalities associated with energy security which include (Hunt & Markandaya, 2004, p. 3; Arnold & Hunt, 2009, pp. 1-2):

− monopsony wedge externality – when additional imports of a fuel cause price to rise. The importing country ignores that additional cost and in turn it makes an external cost,
− incomplete rent capture – when a supplier is not able to capture full rent from the consumers through differentiated pricing. That is why any change in the country's fuel mix (like importing more fuels) leads to a change in the level of the supplier's rent and in consequence it constitutes an externality,
− macroeconomic externalities – when the international energy market changes influence macroeconomic performance. That excludes externalities stemming from individual decisions. Examples of global energy market changes include: increased fuel prices or any changes on different markets which spill over the energy market.

The last externality constitutes the most popular method of the empirical investigation of energy security externalities. It results from the methodological reasons, since there are limitations to measuring quantitatively monopsony wedge externality and incomplete rent capture phenomenon (Arnold & Hunt, 2009, p. 2). Moreover, the most popular fuel subjected to the analysis of externalities is crude oil (Barsky & Kilian, 2004; Beccue & Huntington, 2005; Leiby *et al.*, 1997). Here again, it echoes the crude oil market specificity, as there is unlimited access to the global oil prices. However, that is not true for natural gas markets, which are priced regionally. Empirical modelling on the oil

market shows an influence of prices on GDP (Arnold & Hunt, 2009; Davis e*t al.*, 2005; Roupas *et al.*, 2011; Leiby *et al.*, 1997; Sauter & Awerbuch, 2003; Huntington, 2004).

The International Energy Agency (IEA) and the European Commission (EC) provide a different understanding of energy security. Both of the institutions focus more on the practical approach to the problem. The IEA and the EC show the multidimensional energy security perspective which includes:

− availability (physical) – which refers to having uninterrupted energy supply at disposal,
− prices – which refer to the affordability of energy to consumers, and
− environmental aspects – which refer to external costs connected with the energy use.

The last dimension is particularly highlighted by the European Commission that sets the European Union at the front of the global climate-energy discussion and action. Prices and supply availability are equally important. The former are often discussed with reference to price volatility, which in 1970s laid foundations for the creation of the IEA. The latter gained on importance at the turn of the twentieth and twenty-first century with various physical energy supply disruptions. The usefulness of such a triangular approach consists in its easy translation into the policy actions. To distinguish between immediate and prospective measures, both institutions stipulate short- and long-term policy actions. Short-term energy security focuses on the ability of the energy system to include supply interruptions. On the other hand, long-term energy security pertains to the adequate level of investments which guarantee energy supply and comply with sustainable development rules (IEA, EC). In our view, the long-term measures offset the market power of energy suppliers and bring balance to the energy market, while the temporary security helps a community resume energy supplies immediately.
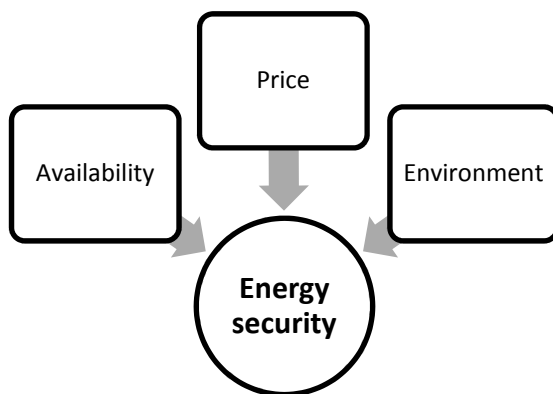
Figure 1. Energy security in the triangular approach
Source: own elaboration based on the IEA and the EC.

Time-dependent energy security perspective is also visible in the selection of measures used to assess the phenomenon. Short-term measures of energy security focus on the risk of supply disruption (like REES Indicator – Risky External Energy Supply, Coq, 2009, pp. 37-38), while long-term measures – on import's diversification (Vivoda, 2009, p. 4616). Just like in the case of the problem of defining energy security, it is also difficult to highlight one method of its measurement. It is an effect of the missing con-

ceptual agreement on what energy security really is. There have been numerous research efforts summarising the existing measuring methods (Sovacool, 2011; Mansson, Johansson & Nilsson, 2014), however, no single methodology has been developed so far. Clearly, scientists focused on research into energy security favour a mixed approach aimed at using different simple or complex measures (Sovacool, 2011). Indicators can be categorised into a few groups (Kisel, Hamburg, Haerm, Leppiman & Ots, 2016):

− technical – including, for example, the ability of the energy system to transport and distribute energy, the availability of energy resources,
− economic – including, for example, prices volatility or dependency on energy imports,
− environmental – including, for example, energy efficiency or intensity and CO_2 emission levels,
− political – including, for example, political stability of an exporter or its relations with importing countries.

We took into account all the above limitations of the energy security definition, and we decided to follow internationally recognised perception of the phenomenon. Therefore, in our work we apply the triangular approach described by the IEA and the EC. We believe that the same importance has to be attached to energy availability, prices and its environmental effects. Firstly, we link energy availability to energy imports as, according to the literature, it poses greater threats to energy security than domestic production. Secondly, we refer to energy prices as a cost for individual customers. And thirdly, we describe the environmental aspect by energy intensity and energy consumption.

Energy Security and International Competitiveness

Energy security and the ability to compete on international markets are often treated as parallel goals in the energy policy (IEA, 2014, p. 5; Keppler, 2009, p. 2). However, there are scientific works indicating a different direction of this relation. According to researchers (Lieber, 1980; Klein, 1988), energy influences the ability to compete at the international level.

The literature review revealed a research gap within the topic of the relationship between energy security and international competitiveness with reference to exports. Energy is usually treated as an input determining industrial costs in these studies (Lieber, 1980). Its negative influence was observed mainly in 1970s as a consequence of oil crises. Western communities, such as France, were concerned about their export competitiveness which had been affected by higher industrial costs (Lieber, 1980). A similar line of reasoning is provided by Klein (1988) who convinces that after the first oil shock in 1970s, the American competitiveness, measured by export unit values, declined (except for the periods when the US dollar depreciated) (Lieber, 1980 p. 311).

There are also scientific investigations and the practical assessment of German competitiveness provided by McKinsey company (McKinsey, 2009). This report follows Lieber's and Klein's argumentation, and proves that energy is a key factor in industries which are strategic for the German economy because of their role in export. The considered group of industries includes not only energy and energy-intensive industries but also transportation and logistics, building technologies and construction, mechanical and plant engineering or IT and IT services (McKinsey, 2009, p. 17). Energy efficiency plays the key role in these industries. Additionally, energy efficient products help to maintain company

competitiveness (McKinsey, 2009, p. 13). McKinsey study shows that industries or economy sectors can use energy to create their competitive advantage (McKinsey, 2009, p. 7).

Similarly to McKinsey, Głowacka (1996, p.28) stresses the role of energy efficiency as a demand condition which shapes competitive industries and in consequence national competitive advantage. She refers to the Porter's idea of the competitive advantage of nations by describing Central/Eastern European economies in transition.

Following that logic, we shall consider energy as a determinant shaping the ability of a country to compete successfully in international markets. Zachmann and Cipollone (2013, pp. 139-168) refer to this phenomenon as "energy competitiveness". Energy is included in the analysis of sectoral competitiveness as an input on the supply side. The supply side determinants of sectoral competitiveness include: cost, quality and the availability of sector-specific production factors (Zachmann & Cipollone, 2013, p. 145). Zachmann and Cipollone investigated the impact of electricity prices on the competitiveness of the manufacturing industry in Europe. Their quantitative study was based on data from 27 OECD countries and ranges from 1996 to 2011. According to their findings, energy prices do not determine whether a country becomes a competitive exporter of manufactured products, but they do have an influence on which sectors the country becomes a competitive exporter in (Zachmann & Cipollone, 2013, p. 158).

MATERIAL AND METHODS

The theoretical framework of the investigation of the problem how energy security influences the ability of a country to compete with export on the international market was identified in the standard new trade theory model which formed the basis for the export performance analysis in the UNCTAD report (UNCTAD, 2005). The model refers to differentiated product supplied by producers[1] which operate under increasing returns to scale and manufacture goods derived from the constant elasticity of substitution demand structure.

Moreover, three elements make up exports from country i to country j – product supply capacity, trans-border transport costs and the market capacity of country j. For the purpose of assessing the impact of energy security on the export abilities of countries, solely the supply capacity function was used for further investigations.

The following formula of the regression equation investigates the determinants of supply capacity of country i at time t:

$$Y_{it} = \alpha + \beta_1 \ln gdppc_{it} + \beta_2 fdigfcf_{it} + \beta_3 icrg_{it} + \beta_4 udr_{it} + \beta_5 \ln enr\_total_{it} + \\ + \beta_6 \ln enr_{exp}c_{it} + \beta_7 \ln enr_{conpc_{it}} + \beta_8 \ln enr_{int_{it}} + \varphi_i + \varepsilon \quad (1)$$

We used fixed-effects regression model with panel data analysis. We estimated the influence of each exogenous variable on the endogenous (explained) variable in the regression function. While proceeding calculations, we expected the fixed effect in the model due to the fact that each analysed country has its individual characteristics which may or may not influence the predictor variables (the export of goods in the assumed groups), and it should be controlled. In order to confirm the above expectations, we conducted the Hausman test in three regressions (one for each exporting good), and indicated the fixed effect for capital and intermediate goods. In terms of consuming

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[1] Exclusively manufacturing was taken into consideration at the regression model.

goods, while Hausman test had not brought the result in the decision of the usage of an appropriate effect, we implemented the solution of the artificial regression approach described by Arellano (1993) and Wooldridge (2002, pp. 290-91), in which a random effects equation is re-estimated by being augmented with additional variables consisting of the original regressors transformed into the deviations-from-mean form. The rejection implies that the fixed effect model is more reasonable or preferred. Under conditional homoskedasticity, this test statistic is asymptotically equivalent to the usual Hausman fixed-vs-random effects test. Unlike the Hausman test, the xtoverid test by Stata extends straightforwardly to heteroskedastic- and cluster-robust versions.

Below we present the Hausman test results of regression functions for:

1. consumption goods:

Number of clusters = 20,
Cross-section time-series model: xtivreg2 fe robust cluster (id),
Sagan Hansen statistic = 0.000,

2. intermediate goods:

Table 1. The Hausman test results of the intermediate goods regression

	Fe (b)	re (B)	Difference (b-B)	sqrt(diag(v_b-v_B))
lngdppc	-0.16795	0.39997	-0.56793	0.07295
fdigfcf	0.00470	0.0042	0.00050	-
icrg	-0.45594	-0.91123	0.45529	-
udr	0.00046	0.00038	0.00008	-
lnenr_total	-0.04813	-0.02152	-0.02662	0.00860
lnenr_expc	1.07215	1.24593	-0.17378	0.03347
lnenr_conpc	0.40275	-1.04080	1.44355	0.26789
lnenr_int	-2.32545	-0.09279	-2.23265	0.39201

b = consistent under Ho and Ha; obtained from xtreg; B = inconsistent under Ha, efficient under Ho; obtained from xtreg; Test: Ho: difference in coefficients not systematic chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 54.62; Prob > chi2 = 0.0000 (V_b-V_B is not positive definite).
Source: own calculations.

3. capital goods:

Table 2. The Hausman test results of the capital goods regression

	Fe (b)	re (B)	Difference (b-B)	sqrt(diag(v_b-v_B))
lngdppc	0.1473	0.28499	-0.13769	-
fdigfcf	0.00080	0.0009	- 0.00009	-
icrg	-0.63484	-0.79015	0.15531	-
udr	0.00031	0.00020	0.00011	-
lnenr_total	-0.08797	-0.07552	-0.01245	-
lnenr_expc	0.70878	0.78111	-0.07234	-
lnenr_conpc	1.45621	1.00749	0.44872	0.05805
lnenr_int	-1.71316	-1.10759	-0.60557	0.09571

b = consistent under Ho and Ha; obtained from xtreg; B = inconsistent under Ha, efficient under Ho; obtained from xtreg; Test: Ho: difference in coefficients not systematic chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 35.29; Prob>chi2 = 0.0000 (V_b-V_B is not positive definite).
Source: own calculations.

The regression model refers to manufactured goods grouped according to the BEC classification (Broad Economic Categories), which presents end-use categories which are meaningful within the framework of the System of National Accounts (SNA). There are categories approximating the three basic classes of goods in the SNA: capital goods, intermediate goods and consumption goods. The composition of the three basic classes of goods in the SNA in terms of the basic categories of the BEC is as follows:

− capital goods include the following categories: 41 – Capital goods (except transport equipment), 521 – Transport equipment, industrial,
− intermediate goods include the following categories: 111 – Food and beverages, prima-ry, mainly for industry; 121 – Food and beverages, processed, mainly for industry, 21 – Industrial supplies not elsewhere specified, primary; 22 – Industrial supplies not else-where specified, processed; 31 – Fuels and lubricants, primary; 322 – Fuels and lubri-cants, processed (other than motor spirit); 42 – Parts and accessories of capital goods (except transport equipment); 53 – Parts and accessories of transport equipment,
− consumption goods include the following categories: 112 – Food and beverages, prima-ry, mainly for household consumption; 122 – Food and beverages, processed, mainly for household consumption; 522 – Transport equipment, non-industrial; 61 – Consumer goods not elsewhere specified, durable; 62 – Consumer goods not elsewhere specified, semi-durable; 63 – Consumer goods not elsewhere specified, non-durable.

Thus, the following groups of goods were considered in the analysis:

− *lnexp_consump* – export of consumption goods,
− *lnexp_intrm* – export of intermediate goods,
− *lnexp_capital* – export of capital goods.

The dependent variable Y_{it} (where Y is a group of goods: consumption goods, inter-mediate goods, capital goods) is the export of goods from country i at time t over the period from 1995 to 2014. The export data come from COMTRADE database.

In terms of the explanatory variables, the model includes GDP per capita (*lngdppc*) as standard variable indicating the market size (and consumers' preferences). It enables the esti-mation of the effect of the market size and common preferences on exports in various groups of goods. It is expected that countries reveal larger volumes of trade as long as they are similar in the economic size. This variable data were obtained from the OECD database and are meas-ured in current PPP (in USD). Foreign direct investment as a percentage of gross fixed capital formation ($fdigfcf$), as the second independent variable, is assumed to capture the state's technological environment. The data come from the World Bank database. Moreover, institu-tional quality ($icrg$) and the labour market (udr) flexibility are used to for portray the eco-nomic framework and business environment in a country. The institutional quality is measured by the ICRG index (International Country Risk Guide) which precisely reflects an established framework (and quality) for business conditions in a given country. The mean value of the ICRG index reflects "Corruption", "Law and Order" and "Bureaucracy Quality" in the scale of values from 0 to 1 – higher values correspond to the better quality of institutions. The second indica-tor reflects the labour market flexibility, and union density rates – the value of net union membership as a proportion of wage and salary earners in employment.

Apart from the general economic conditions measures, the model takes into ac-count variables specific to this research – four critical variables to control for energy

security. In order to make the energy security concept operational for empirical studies, we decided to follow the IEA and the EC logic breaking down the phenomenon into three different aspects. The data availability of these variables is our major concern in this estimation, and therefore it determines the period used in the model – years 1995-2014. The data were sourced from the U.S. Chamber of Commerce Institute for 21st Century Energy (2016 database of the International Energy Security Risk). Indicators are given in the form of indexes with the 1980 base.

The analysis covers 23 economies which have been selected by the U.S. Chamber of Commerce Institute for 21st Century Energy as world leading energy consumers[2]. First of all, we included total energy import exposure (*lnenr_total*) into the model in order to establish the connection with the prime focus of energy security studies, namely supply disruptions (e.g. Leiby *et al.*, 1997). This variable defines the relation of energy import value to total primary energy supply (TPES). The second aspect pertains to energy cost affordability and is expressed by energy expenditures. We use the total real dollar energy expenditures divided by the number of population in each of the analysed countries *(lnenr_expc)*. This dimension shows a price or cost effect of energy security calculated *per capita*.

The last element of the function refers to the environmental aspect, which is captured by energy consumption (*lnenr_conpc)* and energy intensity *(lnenr_int)*. The energy consumption variable controls the population size. The energy intensity variable is given in million British Thermal Units of the total primary energy supply (TPES) used in the domestic economy for each 1 000 USD of the real GDP of a country.

All energy input data are used in the original form offered by the U.S. Chamber of Commerce Institute for 21st Century Energy (e.g. dividing each variable by the population of the country). Applying such an approach allows to control the scale size effects as it includes population size in energy expenditures and consumption.

The fixed-effects model controls for all countries – (α) and time-invariant (φ_t) differences among the countries (Kohler *et al.*, 2009).

Table 3. Regression results

	(1)		(2)		(3)	
	lnexp_consump		lnexp_intrm		lnexp_capital	
lngdppc	0.286*	(2.34)	-0.168	(-0.95)	0.147	(1.61)
fdigfcf	-0.00435*	(-2.37)	0.00470	(1.63)	0.000804	(0.54)
icrg	-0.915*	(-2.34)	-0.456	(-0.90)	-0.635*	(-2.40)
udr	0.00121	(0.61)	0.000457	(0.25)	0.000308	(0.32)
lnenr_total	-0.0777*	(-2.16)	-0.0481	(-0.74)	-0.0880*	(-2.59)
lnenr_expc	0.640***	(4.61)	1.072***	(7.32)	0.709***	(9.31)
lnenr_conpc	0.134	(0.37)	0.403	(1.10)	1.456***	(7.62)
lnenr_int	-1.036*	(-2.41)	-2.325***	(-4.64)	-1.713***	(-6.56)
constant	24.85***	(9.36)	33.90***	(8.85)	21.12***	(10.60)
N	344		343		343	
R^2	0.6418		0.5911		0.8383	

Note: t-statistics in parentheses; * p<0.05, ** p<0.01, *** p<0.001
Source: own calculations.

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[2] Australia, Brazil, Canada, China, Denmark, France, Germany, Indonesia, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Poland, Russia, India, Spain, Thailand, Turkey, Ukraine, Great Britain, the United States.

RESULTS

By analysing the results of the estimations, our first impressions lead us to the conclusion that, to some extent expected, the export of goods is mostly driven by other variables than market characteristics or business environment. We indicated that GDP per capita, as well as FDI as % of GFCF, and the quality of institutions are statistically significant solely in terms of the export of consumption goods. However, the results revealed rather weak relationships between the export of consumption goods and GDP per capita or FDI. Nevertheless, the impact of GDP per capita is positive, but FDI affects export slightly negatively. The quality of institutions plays a negative role in the exports of consumption and capital goods. It is even more statistically significant when compared to economic indicators such as GDP per capita and FDI, and it affects export performance much more strongly.

It is noteworthy that previous studies identified a positive impact of an institutional quality on export performance (Rodrik, Subramanian & Trebbi, 2002). Thus, we expected the same results in the model of supply capacity. However, our calculations revealed exactly the opposite results – the better quality of an institution, the lower value of export in the group of consumption and capital goods. The result was statistically insignificant for intermediate goods. To look for an explanation, we went back to the raw data package and it turned out that in our 23-country group, large exporters were ranked low in terms of the quality of institutions (e.g. Russia, China).

In spite of the fact that in the case of capital goods the model fits the best, the evidence for consumption and intermediate goods were also indicated. Our empirical analysis sheds some light on the impact of energy variables on supply capacity. First, surprisingly, the variable referring to energy import exposure stands weak statistical significance in the group of consumption goods and capital goods. The model revealed no statistical significance in assessing the impact of energy import exposure on the export of intermediate goods. Concurrently, we expected this variable to be one of the major export determinant on the basis of the literature review. One of the reasons for that might be the sample composition of a country. In the group we had energy exporters such as: Norway, Russia, Australia, and countries relying heavily on domestic energy production in their energy mix, such as: India, USA or Brazil. For such economies energy import exposure is not an issue. Secondly, we observed a statistically significant, positive impact of energy expenditures on supply capacity in all the considered groups of goods. In fact, a higher level of energy expenditures translates into a greater volume of export – the most important impact was found in the group of intermediate goods. Correspondingly, energy intensity was indicated as statistically significant, however, if energy intensity grows, the supply capacity of the country decreases. It means that the attractiveness of export is greater whenever a country uses energy more efficiently. Our model indicated the strongest negative effect of the above variable within the group of intermediate goods.

Finally, it is worth mentioning that we noticed the significance of energy consumption solely for capital goods, and its revealed impact is positive and rather strong. Nevertheless, there were unidentified effects of this variable in neither consumption nor intermediate goods.

CONCLUSIONS

To sum up, the effect of energy variables on the supply capacity of a country is observed in the three estimated models, but statistical significance of all energy variables was noted only for capital goods. This result confirms the established hypothesis that energy security affects the export of capital goods in the analysed period.

Surprisingly, it turns out that out of all variables depicting energy security, it is not energy availability that plays a crucial role. Environmental and cost aspects of energy security have been found as much more important. This conclusion sheds a new light on energy security, both in terms of the methodological and practical approach. Firstly, the analysis proves that energy security is indeed a complex and multidimensional phenomenon. Therefore, doing any research in this field has to be preceded by an extensive literature review revealing the complexity of energy security. Only then it is possible to include its multidimensional perspective which covers the economic and environmental aspects. Our analysis proves that the following triangular energy security definition brings rich conclusions. Firstly, even though in our investigation energy import exposure did not play any role, we are convinced that different country composition might bring opposite results. Probably, including only net energy importers lacking sustainable indigenous energy production might prove the significance of energy import exposure. This idea confirms that energy security is also a country-specific phenomenon, though any panel-data investigation needs careful interpretation. Secondly, we believe that our analysis shows that energy security experiences changes in the internal structure. It is visible that on average there is a shift from the availability aspect towards the cost-environmental perspective. Such findings deny putting energy import exposure at the forefront of the energy security investigation. The study results confirm that the ability to perform successful export depends rather on aspects which can be easily measured in money terms. While in the case of energy expenditures this link is expected, for energy intensity – it is not that obvious. A decrease in energy intensity translates indirectly into energy savings or an increase in energy efficiency. Looking at energy security from such perspective leads us to the conclusion that this is not a blurred or elusive concept but a down to earth cost-benefit analysis.

Like any study, our empirical investigation has its research limitations. They are conditioned by the analytical approach, the sample content and data availability. Firstly, capturing international competitiveness through export supply capacity is just a proxy of complex determinants shaping the competitive advantage of the nation. Therefore, we stipulate the need for deeper research into export competitiveness in the context of energy security. Secondly, treating large energy users as a homogenous group proved to be a difficult task in terms of the interpretation of the results. It was clearly visible in the variable explaining the quality of an institution and energy import exposure. Therefore, grouping all countries with respect to their net position in energy imports/exports and their stage of development (UNCTAD, 2005; Rodrik *et al.*, 2002) seems to mitigate these problems. Thirdly, the lack of reliable and comprehensive data source on exchange rates did not allow us to include this variable in the regression. However, we are aware of dynamic fluctuations of the exchange rate and its effects on the value of foreign trade transactions, and as a next research step we would enrich the group of macroeconomic variables by an exchange rate dataset. Fourthly, static character of our analysis did not

show any possible time-delay effects. Therefore, we recommend including lagged energy variables (e.g.: *t-1* and/or *t-2*), as in our opinion that would facilitate measuring energy security changes and their influence on export within one and/or two years. Allowing for all of the mentioned research limitations requires to establish a comprehensive model of international competitiveness with broader energy security variables.

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Innovation Forms and Firm Export Performance: Empirical Evidence from ECA Countries

Andrzej Cieślik, Jan Jakub Michałek

A B S T R A C T

Objective: The main objective of this paper is to verify empirically the relationship between various forms of innovation and export performance of firms from European and Central Asian (ECA) countries.

Research Design & Methods: In our empirical approach we refer to the self-selection hypothesis derived from the Melitz (2003) model which proposed the existence of a positive relationship between firm productivity and the probability of exporting. We argue that innovation activities should be regarded as a key element that can increase the level of firm productivity. We focus our analysis on four forms of innovation activities: product, process, marketing, organizational and managerial innovation. The empirical implementation of our analytical framework is based on the probit model, applied to the fifth edition of the BEEPS firm level dataset covering 2011-2014.

Findings: Our empirical results indicate that the probability of exporting is positively related to both product and process innovations. The marketing and managerial innovations do not seem to affect positively export performance of firms from ECA countries.

Implications & Recommendations: It is recommended to develop innovation supporting mechanisms that would target both product and process innovations rather than other forms of innovation in the ECA countries.

Contribution & Value Added: The originality of this work lies in the use of the multi-country firm level dataset that allows distinguishing between various forms of innovations in the ECA countries.

INTRODUCTION

Innovation is a crucial element of the modernization and development of post-communist countries located in Europe and Central Asia (ECA) and their convergence with the more developed members of the European Union (EU). The measures of innovative activity of firms typically include innovation inputs, such as R&D spending, as well as innovation output, such as product and process innovations. Previous studies on the role of innovations in the context of firm export performance have focused on developed countries with a high level of innovation activities. These studies distinguished mainly between product and process innovation while other forms of innovation received relatively little attention.

The main goal of this paper is to analyze the relationship between various forms of innovation of firms from the ECA countries and their export performance. In particular, we aim at validating empirically the main hypothesis concerning the positive relationship between various innovation activities and the probability of exporting. In contrast to the previous studies that used either the measures of innovation inputs or outputs, we study the effects of both. Our research hypotheses postulate a positive nexus between the probability of exporting, R&D spending and four different types of innovation activities: product, process, marketing and managerial innovations. In particular, we aim at determining which of these innovation forms is the most important for firm's probability of exporting. The results of our study can help in proposing a set of policy recommendations that firms from the ECA countries can implement to improve their export performance.

The structure of this paper is as follows. First, we provide the literature review of previous empirical studies on the innovation-exports nexus. Then, we describe the analytical framework and the dataset. Finally, we present our empirical results. The last section summarizes and concludes.

LITERATURE REVIEW

There is an extensive theoretical literature on the determinants of innovation and their consequences for productivity and exporting. In particular, a key hypothesis in this literature is that innovation is a driver of productivity improvement that in turn can stimulate exports. For example, Atkeson and Burstein (2007) and Constantini and Melitz (2008) have analyzed dynamic industry models to formalize linkages between firm-level productivity and the choices of both to export and to invest in R&D or adopt new technology. In these models, productivity distinguishes heterogeneous firms, and its evolution is endogenous and affected by innovation decisions at the firm level apart from the stochastic component.

There is also an extensive empirical literature that points to a positive impact of innovation as such on exports at the firm- or plant-level. Two main types of innovation: product innovation and process innovation were studied in this literature. Both types of innovation were found to raise firm's productivity and propensity to export. In particular, product innovations seemed to be more important in determining the export performance of firms than process innovations. However, the empirical evidence on the impact of other forms of innovations such as marketing and managerial innovations is scarce.

The majority of existing empirical studies refer to innovation activities in developed economies, especially in the context of the old EU-15 members. For example, in one of the

earliest studies Wakelin (1998) employed British firm-level data to report a positive impact of innovation on exports. Similar findings were reported in the majority of studies for other countries: Bernard and Jensen (1999) for the US, Roper and Love (2002) for the UK and Germany, Ebling and Janz (1999), Lachenmaier and Wößmann (2006) and Becker and Egger (2013) for Germany, Caldera (2010) and Cassiman, Golovko and Martínez-Ros (2010) for Spain, Van Beveren and Vandenbussche (2010) for Belgium, and more recently Gkypali *et al.*, (2015) for Greece.[1]

In the context of the new EU member states firm-level empirical evidence on the relationship between innovation and exporting is still scarce. The majority of previous studies devoted to firm-level determinants of export performance used R&D spending as an indirect measure of innovation and did not distinguish between different types of innovation. For example, in the context of post-communist countries Cieślik, Michałek and Michałek (2012a,b; 2014; 2015) confirmed the positive relationship between R&D expenditure and the probability of exporting using the BEEPS data.

One of the few studies that explored the relationship between innovation and export activities of firms exception was done by Damjan, Kostevc and Polanec (2010) in Slovenia. They confirmed the importance of spending on R&D and product innovation for probability of exporting. More recently, Cieślik and Michałek (2016) attempted to verify empirically the hypothesis concerning the importance of innovations for firm involvement in export activities using BEEPS firm-level data for Poland. In particular, they examined not only the relationship between R&D activity and the likelihood of exporting, but also analyzed the importance of different forms of innovation for the export performance. Their empirical results confirmed the positive role of R&D spending for exporting, while the results obtained for various forms of innovations were less clear-cut. In particular, they found that only marketing innovations could matter for exporting. However, these results should be treated with caution due to the very small sample size.

Subsequently, Cieślik, Michałek and Szczygielski (2016) studied the relationship between various types of innovations and export performance of Polish firms over the period of 2008–2010 using the Polish CIS data. They controlled for human and physical capital endowment, firm size (employment size groups), the level of technological sophistication of a sector as well as the presence of foreign capital. However, they did not control for the level of productivity. They found that the likelihood of exporting by Polish firms was positively related to both product and process innovations, firm's size, the share of university graduates in employment and foreign ownership.

Similar results were also reported by Brodzicki and Ciołek (2016) in a direct survey panel of 470 Polish manufacturing industry firms. However, only process and organizational innovations were found to increase the probability of exporting. Also Brodzicki (2016) studied the relationship between the extent of innovation and the extent of internationalization in the cross-sectional sample of firms from Poland. He found that productivity was a principal driver of firm exports and firm internationalization. He also found some support for the causality between innovation and internationalization.

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[1] The problems associated with the use of survey data on innovations in econometric studies are discussed in Mairesse and Mohnen (2010).

It is important to note, however, that the results of previous studies for particular countries may not generalize to the whole group of the ECA countries. Therefore, in our paper we attempt to investigate empirically whether various innovative activities contribute to increased efficiency of firms from ECA countries and whether they improve their ability to compete and stay at international markets. First, in contrast to previous studies conducted for selected EU countries, our study is based on multi-country firm-level dataset, based on individual firm-level data collected by the World Bank. This allows us to study the relationship between various forms of innovative activities and exporting for firms from ECA countries.

Second, in contrast to previous empirical studies, we focus both on sources of innovations such as domestic R&D, the use of foreign technologies as well as the innovation outcomes. The use of foreign technology will be proxied by the purchase of foreign licenses by domestic firms as well as the involvement of foreign companies in the host country. In addition, we will distinguish and examine the relative importance for exports of four types of innovation outcomes: product, process, marketing and managerial innovations. This allows us to identify the relative importance of specific types of innovation activities for exporting of firms from ECA countries, which are still much less innovative when compared to companies from the old EU-15 member states.

In addition, our study will allow formulating specific recommendations for economic policy for firms from ECA countries, especially for policies that encourage specific forms of innovation in these countries which still differ from the old EU member states in terms of the level of economic development. As regards possible conclusions for economic policy for the old EU-15 countries, the findings of the previous studies suggest that policy instruments should be targeted towards specific innovations rather than innovation input, if these countries want to improve their export competitiveness in world markets. In particular, some authors of the previous studies focused on the old EU-15 countries have argued that subsidies and other programs aiming at product innovations should be on average more likely to cause entry into export markets than general expenditures on R&D or legal environments which particularly favor process innovations. In this paper we attempt to verify this recommendation in the context of the ECA countries.

MATERIAL AND METHODS

In our empirical approach we refer to the self-selection hypothesis derived from the Melitz (2003) model. This model proposed the existence of a positive relationship between firm productivity and export performance, i.e. that more productive firms self-select into foreign markets. The majority of empirical studies find support for the theoretical prediction of this model having controlled for a number of firm characteristics which may affect their export performance.[2]

Our dependent variable indicating the export status of firm i is denoted by Y_i^*. Instead of observing the volume of exports, we observe only a binary variable Y_i indicating the sign of Y_i^*, i.e. whether the firm sells its output in the domestic market (local,

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[2] According to surveys by Wagner (2007, 2012) of empirical studies based on firm-level data from different countries exporters and importers were more productive that non-exporters and non-importers. In particular, his surveys provide extensive evidence in favor of the self-selection hypothesis.

regional or national) or it exports. Moreover, we assume that the variable Y_i^* follows $Y_i^* = \mathbf{X_i}\mathbf{\Theta} + \varepsilon_i$ where the error term ε_i is independent of $\mathbf{X_i}$ which is a vector containing explanatory variables that affect exports with the first term equal to unity for all i, $\mathbf{\Theta}$ is the vector of parameters on these variables that needs to be estimated and ε_i is assumed to be normally distributed with a zero mean.

Our dependent variable follows a binary distribution and takes the value 1 when the firm exports and 0 otherwise:

$$Y_i = \begin{cases} 1 & if\ Y_i^* > 0 \\ 0 & if\ Y_i^* = 0 \end{cases} \tag{1}$$

We can obtain the distribution of Y_i given $\mathbf{X_i}$. Hence, the probability that a firm exports can be written as:

$$P(Y_i = 1 \mid \mathbf{X_i}) = \Phi(\mathbf{X_i}\mathbf{\Theta}) \tag{2}$$

where:

$\Phi(\ )$ - denotes the standard normal cumulative distribution function (cdf).

Our study is based on "EBRD-World Bank Business Environment and Enterprise Performance Survey" (BEEPS) data collected by the World Bank and the European Bank for Reconstruction and Development in the post-communist countries located mainly in Europe and Central Asia (ECA). The main objective of the BEEPS survey was to obtain feedback from enterprises in the aforementioned countries on the state of the private sector. The survey examined the quality of the business environment. The survey questions concerned the identification of firm, sector of activity, legal and economic status, characteristics of managers and size of the firm, the infrastructure of services in analyzed country, economic performance and key characteristics of reviewed firms, as well as stakeholders, e.g. employers organizations, employees organizations, local government, central government, ICT industry, SMEs, academics, etc.

Our sample includes only the period 2011-2014 for which the BEEPS V data was collected. Almost 60% of surveys in all countries were made in year 2013.[3] The BEEPS surveys covered both the manufacturing and services sectors and are representative of the variety of firms according to sector and location within each country. The number of firms operating in the service sector was relatively small compared to the manufacturing sector. Therefore, it was not possible to perform estimations separately for the manufacturing and service sectors. Moreover, particular industries within each sector can differ with respect to their capital intensity and export performance. Therefore, to control for heterogeneity across industries we used industry-specific effects in addition to individual firm characteristics in our estimating equations.

In all countries where a reliable sample frame was available, the sample was selected using stratified random sampling.[4] However, only a small proportion of firms was sampled every year. This means that the application of panel data analysis is not possible. Therefore, we used the standard probit procedure on the pooled cross-section dataset without controlling for individual firm effects but we control for

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[3] The numbers of observations (surveys) per year were as follows: 2884 in 2011, 1833 in 2012, 13435 in 2013 and 4287 in 2014.

[4] The only exception was Albania. The details concerning the sampling methodology are explained in the Sampling Manual available at: http://www.enterprisesurveys.org/Methodology/.

country-specific and industry-specific effects.[5] In the majority of cases the data includes about 250-350 observations per country. The larger samples of firms are available for Russia (3012), Turkey (833) and Ukraine ((767).

Our dependent variable indicating the export status of the firm takes the form of a binary variable. It takes value zero if the firm sells its output only in the domestic market, and one otherwise, i.e. if it sells also some of its output abroad. In our study we selected a number of explanatory variables chosen from the survey, which should reflect the important characteristics of firms and the innovation efforts of analyzed firms. The description of all variables used in the empirical study is presented in the Table 1.[6]

Table 1 Variables used in the empirical analysis

Export	Binary variable that takes the value 1 if the establishment is exporting and zero if not
Lprod	Natural logarithm of productivity expressed as total amount of annual sales per full time employee
Lsize	Natural logarithm of the number of permanent, full-time employees of this firm at end of last fiscal year
Uni	Percentage of full time employees who completed a university degree
Fo	Binary variable indicating whether the percentage owned by private foreign individuals is larger than none
age[7]	Variable indicating how many years elapsed since the foundation of the firm
share_gov	Percentage of assets owned by government/state
Innov_product	Binary variable describing whether new products/services were introduced over last 3 years
Innov_process	Binary variable describing whether new production/supply methods were introduced over last 3 years
Innov_management	Binary variable describing whether new organizational/ management practices were introduced over last 3 years
Innov_marketing	Binary variable describing whether new marketing methods were introduced over last 3 years
R_D	Binary variable describing whether there was a spending on R&D over last 3 years
Folicences	Binary variable describing whether the firm used technology licensed from a foreign-owned company

Source: own elaboration.

RESULTS AND DISCUSSION

In this section we report and describe two sets of our estimation results. First, we show the results of our baseline estimations in Table 2. Then, we present the results of our sensitivity tests in Table 3.

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[5] The list of countries in our sample is shown in Table A1 in the Appendix.

[6] Their summary statistics are reported in Table A2 while the simple bilateral correlations between the explanatory variables are reported in Table A3 in the Appendix. The results presented in Table A3 demonstrate that the highest correlation, equal 0.567, exist between marketing and management innovations. The other forms of innovations are also positively correlated (close to 0.47). Thus, the interpretation of estimators of various forms innovations should be treated with caution.

[7] The variables *age* and *share_gov* were used only in the robustness tests reported in Table 3.

Table 2. Baseline estimation results for ECA countries over the 2011-2014 period

VARIABLES	(1)	(2)	(3)	(4)
Lprod	-0.0438***	-0.0276***	0.0360***	0.0733***
	(0.00537)	(0.00557)	(0.0103)	(0.0107)
innov_product	0.258***	0.248***	0.235***	0.199***
	(0.0353)	(0.0361)	(0.0373)	(0.0384)
innov_process	0.0367	-0.00453	0.130***	0.0786*
	(0.0399)	(0.0409)	(0.0420)	(0.0431)
innov_management	0.0334	0.0773*	0.0193	0.0559
	(0.0408)	(0.0418)	(0.0430)	(0.0442)
innov_marketing	-0.0846**	-0.0618	-0.103**	-0.0778*
	(0.0390)	(0.0400)	(0.0409)	(0.0422)
R_D	0.473***	0.433***	0.364***	0.319***
	(0.0427)	(0.0437)	(0.0449)	(0.0461)
Uni	-0.00453***	-0.00393***	0.00127**	0.00212***
	(0.000440)	(0.000456)	(0.000520)	(0.000540)
Lsize	0.230***	0.209***	0.274***	0.263***
	(0.0108)	(0.0113)	(0.0117)	(0.0123)
Fo	0.615***	0.619***	0.475***	0.456***
	(0.0462)	(0.0471)	(0.0489)	(0.0502)
Folicenses	0.337***	0.320***	0.240***	0.213***
	(0.0367)	(0.0376)	(0.0394)	(0.0405)
Constant	-1.002***	-0.984***	-2.455***	-2.759***
	(0.0757)	(0.0808)	(0.177)	(0.183)
sectoral effects	No	yes	no	yes
country effects	No	no	yes	yes
Observations	11 866	11 866	11 866	11 866
Log likelihood	-5575	-5285	-4992	-4698
Mc Fadden's Pseudo R2	0.130	0.176	0.221	0.267

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: own calculations in STATA.

In column (1) of Table 2 we report the benchmark results on the relationship between various forms of innovation activities and export performance obtained from the specification in which we control for a number of individual firm characteristics but not for individual sectoral and country effects. The innovation activities of firms include the measures of product, process, management and marketing innovations as well as their R&D spending. The control variables include firm productivity, firm size, firm ownership, the stock of human capital measured by the percentage of workers with the tertiary degrees, and the use of foreign licenses.

The estimated parameter on the productivity variable is statistically significant already at the 1% level of statistical significance but surprisingly displays a negative sign. Out of four different forms of innovation outcomes only two are statistically significant. The estimated parameter on product innovation is significant at the 1% level and displays a positive sign, while the parameter on marketing innovations is statistically significant at the 5% level, but displays an unexpected negative sign. In addition, the estimated parameter on

the R&D spending is also statistically significant at the 1% level and displays a positive sign. Moreover, the majority of our control variables are statistically significant and display expected signs. In particular, firm size, foreign ownership and the use of foreign technology are positively related to exporting. However, the estimated parameter on the share of workers with tertiary degrees (*uni*) displays an unexpected negative sign.

In column (2) we report estimation results obtained from the specification in which we control for broad sectoral effects. The benchmark category was basic manufacturing. The majority of individual sectoral effects were statistically significant. For example, the other manufacturing and textiles sectors were more export oriented compared to the benchmark category while food, construction and wholesale less export oriented. The inclusion of the sectoral effects did not have a major impact on statistical significance and signs of the estimated parameters on our measures of innovation activity as well as the control variables. The main difference is that the estimated coefficient on management innovations becomes positive and statistically significant at the 10% level, while the coefficient on marketing innovations lost its previous statistical significance.

In column (3) we report estimation results obtained from the specification in which we control for country effects. The reference country was Albania. The majority of individual country effects were statistically significant. For example, almost all new EU members are more export oriented countries compared to Albania, while the majority of the former members of the Soviet Union are less export oriented. The inclusion of country effects had a significant impact on estimators of four variables. First, the sign of the estimator of labor productivity variable changed the sign to a positive one and was still statistically significant already at the 1% level which is in line with predictions of Melitz (2003) model. This result confirms the importance of controlling for individual country effects and reflects differences in the level of development amongst analyzed countries. Second, the process innovation variable became statistically significant at the 1% and displayed a positive sign. Third, marketing innovation variable became statistically significant at the 5% level but surprisingly displayed a negative sign, while the management innovation variable lost its statistical significance. Finally, the *uni* variable, describing the stock of human capital in the firm, became positive and statistically significant at the 5% level, which is in line with expectations and results obtained in other studies.

Finally, in column (4) we report the estimation results obtained from the specification in which we control for both sectoral and country effects. These results are similar to those reported in the column (3). The major difference is that the estimated parameter on the marketing innovation variable remained statistically significant, but only at the 10% level with a surprising negative sign, while the statistical significance of the process innovation variable decreased from the 1 to 10% level. In conclusion we can state that product innovations are more important in comparison to process innovations in the analyzed group of ECA countries as the value of the estimator and statistical significance are higher in the case of product innovations compared to process innovations. This result is in line with a number of previous studies for other, more developed countries. In addition, it was found that other forms of innovations such as management and marketing innovations were not important for exporting. Moreover, the R&D expenditure was also found to be positively related to exporting. Finally, the internationalization of firms through foreign capital participation and the use of foreign licenses were also important for export performance.

The instability of estimated coefficients on marketing and management innovation variables that probably results from a relatively high level of correlations between them requires additional sensitivity tests which are provided below. In order to check the robustness of our results and explore further the role of innovations we made some additional estimations. In particular, in our estimated equations we added two variables frequently used in other empirical studies. The first variable *age* is describing the number of years elapsed since the foundation of the firm. Typically, the expectation is that older firms should have more experience and should be more competitive so the expected sign of this variable is positive. The second variable *share_gov* describes the percentage of assets owned by the state/government. In some studies the sign of this parameter is negative since state owned firms are sometimes less efficient in comparison to private ones. The estimation results for extended specifications that control for both sectoral and country effects are reported in Table 3.

In column (1) we report the estimation results with two additional variables, i.e. *age* and *share_gov,* jointly. Since these estimations are obtained controlling for sectoral and country effects they should be compared to the baseline results shown in column 4 of Table 2. It can be noted that these results are very similar to those from Table 2. The variable *share_gov* displays the expected negative sign but the estimated coefficient is statistically significant at the 10% level only, while the estimator of *age* variable is statistically not significant at all. The remaining explanatory variables display the same signs and statistical significance with the exception of marketing innovations variable which now becomes statistically significant at the 5 and instead of 10% level.

In the estimation results shown in column (2) of Table 3 we eliminated the variable *age*, which was statistically not significant in previous estimations reported in column (1). In these estimation results the variables *share_gov* and *innov_marketing* became statistically not significant. Thus, they were dropped from the specification reported in the last column.

Finally, the estimation results presented in column (3) contain only statistically significant variables. All variables used in the final specification display the expected signs. In particular, the estimated coefficient on product innovations variable displays a positive sign and is statistically significant at the 1% level. The coefficient on the process innovation variable is also positive but its value is smaller, and it is statistically significant at the 10% level only.

Thus, our sensitivity tests confirm that out of four different forms of innovation outcomes only two are statistically significant and positively related to export performance. Management innovations and marketing innovations do not seem to be statistically significant for exporting in the case of ECA countries. The estimated parameter on the measure of innovation input, i.e. R&D spending, always displays the expected positive sign and is statistically significant at the 1% level. In addition, all our control variables are statistically significant and display expected signs. In particular, firm size, foreign ownership, foreign licenses and the share of workers with tertiary degrees are statistically significant at the 1% level of statistical significance and are positively related to exporting.

Table 3. Robustness tests with firm age and government share for ECA countries over the 2011-2014 period

VARIABLES	(1)	(2)	(3)
Lprod	0.0702***	0.0715***	0.0748***
	(0.0108)	(0.0108)	(0.0107)
Age	0.00185		
	(0.00128)		
share_gov	-0.00333*	-0.00317	
	(0.00196)	(0.00196)	
innov_product	0.209***	0.208***	0.188***
	(0.0387)	(0.0385)	(0.0376)
innov_process	0.0771*	0.0930**	0.0784*
	(0.0434)	(0.0420)	(0.0407)
innov_management	0.0532		
	(0.0445)		
innov_marketing	-0.0848**	-0.0586	
	(0.0425)	(0.0387)	
R_D	0.324***	0.325***	0.314***
	(0.0464)	(0.0460)	(0.0452)
Uni	0.00215***	0.00216***	0.00214***
	(0.000545)	(0.000543)	(0.000538)
Lsize	0.257***	0.265***	0.263***
	(0.0129)	(0.0124)	(0.0122)
Fo	0.496***	0.492***	0.453***
	(0.0526)	(0.0524)	(0.0500)
Folicenses	0.208***	0.203***	0.212***
	(0.0408)	(0.0407)	(0.0403)
Constant	-2.718***	-2.741***	-2.781***
	(0.185)	(0.184)	(0.183)
sectoral effects	yes	Yes	yes
county effects	yes	Yes	yes
Observations	11 722	11 804	11 913
Log likelihood	-4633	-4665	-4721
Mc Fadden's Pseudo R2	0.268	0.268	0.266

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
The number of observations increases with the elimination of some variables.
Source: own calculations in STATA.

CONCLUSIONS

In this paper we investigated the relationship between various forms of innovation and export performance of firms from the ECA countries using the probit model and the BEEPS V firm level data set covering the period 2011-2014. Our empirical approach referred to the Melitz (2003) theoretical model which emphasized the role of firm productivity in export performance. We argued that various forms of innovation should be regarded as key factors in increasing the level of firm productivity, having controlled for a number of firm characteristics. Our estimation results indicated that the probability of

exporting was positively related to both product and process innovations, labor productivity, R&D spending, firm size, the share of university graduates in productive employment, foreign capital participation and the use of foreign licenses. Management and marketing innovations were not found to be statistically significant determinants of export performance. These results suggest that from the policy perspective, financial support for the development of new products and processes as well as R&D activities should have a positive impact of export performance of firms from the ECA countries. In particular, supporting product innovation should be highly desirable. In contrast, the implications of financial support for marketing and management innovations for exporting were far less clear. These results, however, should be verified in future studies for particular countries and broader samples covering a larger number of years.

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APPENDIX

Table A1. The list of countries analyzed and the number of observations on labor productivity

Country	Summary of lprod		
	Mean	**Std. Dev.**	**Frequency**
Albania	14.31475	1.459064	342
Belarus	18.90565	1.165908	285
Georgia	10.09093	1.512932	289
Tajikistan	10.26632	1.617868	252
Turkey	11.00044	2.20712	833
Ukraine	11.16808	1.170125	767
Uzbekistan	16.98649	1.533923	365
Russia	13.95404	1.304657	3021
Poland	12.53481	1.886507	390
Romania	11.60442	1.477842	476
Serbia	15.23636	1.152075	333
Kazakhstan	15.10829	1.018941	430
Moldova	12.15994	1.384795	312
Bosnia & Hercegovina	11.26366	0.950644	296
Azerbaijan	9.480009	1.214444	248
FYR Macedonia	14.16691	1.287866	343
Armenia	15.79516	1.159174	243
Kyrgyz	13.40486	1.150492	215
Mongolia	16.89435	0.980459	324
Estonia	10.88395	1.058498	243
Kosovo	10.28185	1.445028	179
Czech Rep.	14.34824	1.445675	215
Hungary	16.63346	1.384401	193
Latvia	9.789768	1.467226	270
Lithuania	11.36614	1.178445	223
Slovak Rep.	10.75806	1.515367	172
Slovenia	11.64111	1.286459	243
Bulgaria	10.61182	1.10446	273
Croatia	12.98574	0.843683	322
Montenegro	10.28256	1.167177	102
Total	13.04625	2.57869	12199

Source: own calculations in STATA.

Table A2. The summary statistics for all ECA countries

Variable	Obs	Mean	Std. Dev.	Min	Max
lprod	12.199	13.046	2.578	-3.4012	25.798
age	15.724	14.392	11.717	0	174
share_gov	15.720	0.878	7.651	0	99
R_D	15.752	0.106	0.308	0	1
uni	15.883	37.197	33.694	0	100
lsize	15.778	3.027	1.253	0	9.306
multi	15.314	15.569	22.052	0	100
fo	15.883	0.078	0.269	0	1
folicenses	15.688	0.146	0.353	0	1
innov_product	15.797	0.242	0.428	0	1
innov_process	15.796	0.197	0.398	0	1
innov_management	15.795	0.212	0.409	0	1
innov_marketing	15.778	0.230	0.421	0	1

Source: own calculations in STATA.

Table A3. The correlations between explanatory variables for all CEE countries

		lprod	age	share_gov	R_D	uni	lsize	multi	fo	Fo licences	Innov_ product	Innov_ process	innov_ management	innov_ marketing
Lprod	1													
age	-0.061	1												
share_gov	0.131	0.106	1											
R_D	0.02	0.075	0.003	1										
uni	0.157	-0.154	-0.027	0.002	1									
lsize	0.033	0.285	0.132	0.165	-0.096	1								
multi	0.018	0.043	-0.004	0.087	-0.028	-2E-04	1							
fo	0.05	0.032	0.008	0.065	0.007	0.191	0.016	1						
Folicenses	-0.047	0.057	-0.002	0.134	-0.001	0.17	0.023	0.131	1					
innov_product	0.037	0.062	-0.004	0.328	0.008	0.128	0.138	0.072	0.134	1				
innov_process	0.061	0.058	0.003	0.327	0.009	0.144	0.093	0.054	0.113	0.487	1			
innov_management	0.073	0.057	0.005	0.317	0.027	0.162	0.096	0.078	0.11	0.371	0.476	1		
innov_marketing	0.076	0.038	0.005	0.296	0.029	0.117	0.121	0.067	0.11	0.37	0.405	0.567	1	

Source: own calculations in STATA.

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Motives of Poland's Outward Direct Investments from the Lodz Region: Results of a Direct Study

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A B S T R A C T
Objective: The objective of the paper is to identify motivation behind FDI followed by enterprises from the Lodz Region and to find out if these motives are similar in companies different in size, share of foreign capital and internationalisation path.
Research Design & Methods: Empirical research was based on questionnaire-based interviews and in-depth interviews which covered 80% of outward direct investors from the Lodz Region. It provided grounds to assess the importance of their motives.
Findings: Enterprises from the Lodz region which decided to get involved as FDIs most often pointed to market seeking motives. The significance of other motives was secondary. With several exceptions (mainly with respect to cost) the size of an enterprise, foreign capital holdings and internationalisation path did not differentiate motives that encouraged respondents to engage their resources abroad.
Implications & Recommendations: The study is explorative, and its results should be understood as the starting point for further studies. Results suggest that, firstly, at the present stage of internationalisation the state should offer possible support to all operators on equal conditions. Secondly, if already some enterprises invest abroad seeking better and cheaper employees, it may be profitable for the state to take upgrade the quality of workforce and reduce its relatively high costs in Poland.
Contribution & Value Added: The main input delivered by the study to the current body of knowledge about OFDI motives consists in trying to identify relationships between motives followed by the Polish direct investors and their selected characteristics (size of a firm, share of foreign capital holdings, and internationalisation path).

INTRODUCTION

Poland's outward direct investments (PODI) are increasingly more visible in statistical data. While in 2000 their stock amounted to only PLN 1,109.6 million, in 2014 it increased almost eighty times to reach PLN 95, 237.9 million (NBP, 2015), i.e. 5.5% of GDP. However, the increase reported over the above period was not systematic; PODI-related transactions ranged from PLN 74 million in 2000 to 23, 774.2 million in 2006 assuming negative values in the years 2001, 2003, 2012, and 2013. These large fluctuations in flows resulted mainly from the values of single transactions showing that PODI were still in its infancy. Nevertheless they grew much faster than Poland's inward direct investment (PIDI). As a result the stock of PODI which was less than 1% of PIDI stock in 2000 increased to the equivalent of 13% in 2014 (NBP, 2015).

Thread-wise changes in annual PODI flows and their still relatively little importance have made us investigate reasons behind decisions of Polish enterprises to expand or reduce their capital holdings in other countries. The objective of this paper is to examine not only FDI motives followed by enterprises from the Lodz Region, but also their relative importance and relationship between these motives and main investors' characteristics (their size, foreign capital holdings, and paths of internationalisation). Data for the study were collected from a questionnaire-based interview and an in-depth interviews. Collected data was digitalised and statistically analysed. The scope of available data enabled studying the significance of similarities in the distribution of statistical characteristics (Mann-Whitney test & Kolmogorov-Smirnov test).

There are some reasons why our study is different from similar studies in Poland. Firstly, the sample includes ca. 80% of the total population of direct investors from the region. It is representative because, unlike samples used in national studies, it covers a relatively homogenous economic area at an early stage of active internationalisation, which we will discuss below. Secondly, the study examines not only general motives, but also 40 partial motives. Such level of detail is necessary as motives may be subjectively perceived by respondents and usually they come in groups rather than individually. Thirdly, so far attempts to identify relationships between motives followed by Polish direct investors and investors' characteristics, which may impact the differentiation of such motives, have been rare (Gorynia, Trąpczyński, Nowak & Wolniak, 2015b). Such knowledge may be important from the point of view of policy recommendations for regional as well as national authorities as the motives followed by Lodz investors are likely to be little divergent from those observed in other parts of the country.

The paper has the following structure. The next section reviews literature on motives of outward direct investment. Short characteristics of the Lodz region economy from the point of view of its participation in international trade and investment is presented and hypotheses are formulated in the third section. Empirical material and methods are described in the fourth section. In the fifth section there are findings and discussion. The final section includes conclusions, policy recommendations, and suggestions for further research.

LITERATURE REVIEW

Economists provide different responses to the question why would an enterprise decide to launch production abroad by means of a direct investment (FDI). According to the neoclassical school of thought, which assumes that markets are perfectly free, owners are interested exclusively in maximising the value of their holdings, which increases mainly as a result of long-term profitability of an enterprise. Thus, it is irrelevant where businesses invest in production facilities, domestically or abroad (Dunning & Lundan, 2008).

By rejecting the assumption that markets ensure optimum allocation of resources we may consider a series of additional circumstances that impact FDI decision. According to Yip (2004) these may include higher returns on capital, lower risk, and reinforced bargaining position of the enterprise. When examining investments from less developed countries located in developed countries, Cantwell and Barnard (2008) draw attention to the fact that benefits of an enterprise may be unobvious if, e.g., it strives to survive in a competitive environment by building up its reputation as a global player at the cost of short-term profits. On such occasions, FDI serves fostering the competitiveness through the economies of scale and scope of production, learning from experience or diversification of operations. Buckley, Clegg, Cross & Voss (2008) highlight the issue of ownership structure. Until the mid-1990s, enterprises controlled by the Chinese government invested abroad to deliver economic and political goals of the central government and provincial authorities. Similarly, development strategies of family businesses may significantly diverge from the goals of their competitors, who have more dispersed and anonymous owners (Dunning & Lundan, 2008).

Thus, market imperfections are the reason why the taxonomy of motives followed by enterprises involved in FDI is so rich[1] (Gorynia, Nowak & Wolniak, 2005; Daszkiewicz & Wach, 2014; Beleniak, 2015; Wach, 2016; Franco, Rentocchini & Vittucci, 2008; Cuervo-Cazzura & Narula, 2015). According to many authors (inter alia Cuervo-Cazzura & Narula, 2015), lack of precision in defining various types of motives is not entirely accidental and may result from, e.g., specificities of the sector, in which an investor operates (van Tulder, 2015). Moreover, the motives of internationalisation need to be rethought when analysing, e.g., emerging market multinationals (Pananond, 2015) or enterprises operating in global value chains (Giroud & Mirza, 2015). Hence, it is hard to disagree with Cuervo-Cazzura and Narula (2015), who claim that FDI motives may not only be approached in a variety of ways but, first of all, "are always evolving, like strategies, because they are aspiration-driven, and when they fail to produce the desired outcome, require a revision in motivation, if not also in strategy".

Probably the most often cited taxonomy of FDI motives is the one proposed by Dunning (2000). He divided FDIs into four groups equivalent of types of investment: *resource seeking, market seeking*, *efficiency seeking*, *strategic asset seeking*[2]. The first two are

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[1] That is most probably due to the broad interpretation of the word "motives" in the context we take into account. For example, Obłój and Wąsowska (2012) understand them as "goals", Jaworek (2013) as "stimulants", and Wach (2016) notes that they are sometimes identified with "factors" or "determinants". Some authors even use the term "motivating factors" (Bartels, Alladina & Lederer, 2009).

[2] The taxonomy results from Dunning's eclectic paradigm of international production (Dunning, 1979, 1988; Cantwell & Narula, 2001). Ownership, location, and internalization (OLI) are the three potential sources of

most often evoked and discussed in literature, in particular with regard to international trade models that try to formalize the OLI paradigm and define them, respectively, as vertical and horizontal FDI (Franco, Rentocchini & Vittucci, 2008).

Contrary to theoretical considerations, empirical studies on motives followed by enterprises who invest abroad are much more scarce (Gorynia, Nowak & Wolniak, 2007). Among researchers involved in the issue we should list Kudina and Jakubiak (2008), Kaya (2014) or Drogendijk and Blomkvist (2013). In Poland the subject has been dealt with from the macroeconomic perspective by, inter alia, Obłój and Wąsowska (2012), while microeconomic perspective that is of interest to us can be found in, inter alia, Hadryś (2011), Karaszewski, Jaworek, Kuzel, Szałucka and Szóstek, (2014) Buczkowski, Kłysik-Uryszek, Kuna-Marszałek and Świerkocki (2015), and Gorynia *et al.* (2015a, 2015b). Existing studies differ predominantly by thematic scope. Karaszewski *et al.* (2013) and Buczkowski *et al.* (2015) identified in details several dozen motives and prioritised their relevance without, however, formulating hypotheses. Applying descriptive statistics, Gorynia *et al.* (2015a) specified the importance of four groups of motives in accordance with Dunning's approach (Dunning, 2000), simultaneously trying to point to dependences among them, stages of internationalisation and forms of FDI. In turn Gorynia *et al.* (2015b) using company-based cases investigated the relationship between those FDI motives, firm characteristics and host-country determinants of FDI mode choice. All these studies were conducted on small samples of enterprises (from 10 to 64).

Relevance of International Trade to the Economy of the Lodz Region[3]

The Lodz Region (Voivodeship) is not one of the best economic performers in Poland and even less so in the European Union. According to PPS, its GDP per capita in 2014 represented 63% of the EU-28 average. It was below the average for all the country (68%) and Lodz ranked 6th among 16 voivodeships in Poland (Eurostat News Release, 2016). Since the capital city of the region is the third biggest city in Poland, the ranking is below the city population potential.

The above is caused by little modern intra-sectoral structure of the production of goods and services. On the one hand, in 2011 agriculture and manufacturing, including industrial processing, generated slightly more gross value added, while construction and services slightly less than the average for the country. However, on the other hand, productivity measured with gross value added per one worker was lower than the country average by almost 11 percentage points (pp), and by as many as 19 pp in industrial processing, which was one amongst the worst results for voivodehips in Poland. The reason why the sector lags behind is not related with the shortage of capital for the share of fixed assets gross value in industrial processing was by more than 2 pp higher than the average for Poland GUS (2013).

Low average productivity in the Lodz Region means that productivity is low in most of its enterprises, which, in accordance with Melitz's hypothesis and the so

advantage, which, taken together, may incline an enterprise to get involved into FDI. Besides, Dunning and Lundan (2008) identified *escape investments*, *support investment*s, *passive investments* as motives (types of investment) that remain outside of principal categories.

[3] If not stated otherwise, all data quoted in this section come from: Handel zagraniczny oraz bezpośrednie inwestycje zagraniczne w województwie podkarpackim w latach 2010-2013 (2014).

called new international trade theory (NITT) (Melitz, 2003) must result in low internationalisation of the economy[4]. It is also reflected in the below statistical data.

Trade with other countries is the basic form of internationalisation. Exports to GDP ratio in the voivodeship was one amongst the lowest in the country and amounted to 19.4% in 2011 compared to the average for Poland 36.7% (Rocznik Statystyczny RP, 2012). Only in three other voivodehips output was more domestic market oriented. As a result, the Lodz voivodeship provided as little as 3.5% of the Polish exports in 2013 but we must stress that in 2010 its share was only 3.1%[5]. The increase is thus notable. It was largely due to high exports dynamics, which was ca. 19% annually over the period 2010-2012. The value of exports per capita placed the voivodeship on the 12th place in Poland.

Regional economy was slightly more dependent on imports than on exports. In 2013 imports represented 4.8% of all imports and in terms of *per capita* import the voivodeship ranked 6th in Poland.

NITT also suggests that average productivity of the entire economy, crucial for the rate of growth, is the higher the more enterprises are involved in international trade. With respect to that, the Lodz Region performs much better than in the above quoted rankings. Both in terms of the number of exporters and importers per 10 k inhabitants the voivodeship ranked 4th in Poland in 2013, while from the point of view of the share of exporters in the total population of economic operators it ranked even 1st (together with other two voivodeships). The data reflect a rather big potential in trade with abroad, owed mainly to high entrepreneurial potential as many operators realise and try to tap into opportunities to develop outside of the Polish market[6]. On the other hand, however, comparing these rankings with those relating to exports and imports we can see that these operators are relatively small and only with time, if they grow strong, may become meaningful for international cooperation[7].

Foreign direct investors – which on average perform better in economic terms than domestic operators GUS (2015) – are believed to play fundamental role in the internationalisation of Polish economy (e.g. Chojna, 2014). Lodz voivodeship received rather lukewarm attention from foreign investors[8]. In 2014 only 4% of all companies with foreign capital operating in Poland were registered in the Lodz Region. They employed 4.8% of all the people employed in this group of enterprises and their equity represented 2.8% of total equity GUS (2015). Hence, these were relatively small inves-

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[4] The theory assumes that only the most effective enterprises are able to expand to international markets due to fixed costs involved. Numerous empirical studies conducted globally, e.g., EFIGE (2011), Bernard, Bradford and Schott (2005) and in Poland, e.g., Hagemejer and Kolasa (2011), Gabrielczak and Serwach (2014) confirmed that exporters (and importers) are usually more effective than non-exporters and direct investors are more effective than exporters (and importers).

[5] International trade data broken down by voivodeships should be approached with caution since they do not consider exports and imports pursued through other voivodeships (e.g., material inputs) or the fact that turnover is attributed to enterprises by their headquarters not concrete factories. Since many headquarters are based in Warsaw, Mazowieckie voivodeship is over-represented as an exporter, importer and the region receiving the FDI.

[6] Every fifth business from the Lodz Region that employs at least 9 people is involved in exports. Export directions include mainly the EU but also China, USA and Brazil (Przedsiębiorcy…, 2012).

[7] As we read in Cieślik (2014), in many countries smaller enterprises operate internationally on a small scale and rather irregularly but in countries which have experienced systemic transformations thus is particularly visible.

[8] It is reflected in investment attractiveness rankings of voivodeships and subregions in Poland, in which the Lodz voivodeship ranked 8th in the period 2011-2015 (IBnGR in various years).

tors who, compared to the rest of the country, employ work-intensive production methods. Their active involvement with international markets was, however, exceptionally high. Half of them dealt with exports and imports, while in Poland the ratio amounted to 41% and 45% respectively. The share of revenue from export sales of goods and services in total revenues of this group of enterprises was also higher in the voivodeship (29%) than on average in the country (26.4%).

Enterprises from the Lodz voivodeship who invest abroad accounted for ca. 4.5-5% of all investors from Poland in the years 2009-2012 (Buczkowski *et. al.*, 2015). Together they owned between 119 to 146 foreign affiliates, i.e., ca. 4.3-4.5% of all foreign affiliates related with Polish investors in other countries. The number of these investors – in relation to the number of companies with foreign capital registered in the voivodeship – represented ca. 12%. The majority of foreign investors from Lodz, ca. two thirds, invested their own resources, i.e. without the involvement of any foreign investor. Average employment in their foreign affiliates was ca. 30-37 people (i.e. by ca. 10 people fewer than on average in Poland) and over half as many as in companies with foreign capital in the Lodz voivodeship.

Summing up, the above quoted data demonstrate that enterprises in the Lodz Region and the economy of the region, are at the early stage of internationalisation in terms of trade and investment. The process, however, clearly gains in dynamics compared to other regions in Poland. That is largely due to relatively high and active presence of local entrepreneurs in international markets. The trend is in line with the policy pursued by regional authorities, who decided that until 2020 investment and exports will be the main driving forces of the growth of the region with individual consumption playing a less prominent role[9].

According to Dunning and Lundan (2008), when enterprises start investing abroad, their first investment decisions are usually resource- and market-seeking. If the first experiences are positive, further projects implemented abroad are designed to improve the efficiency and, next, to acquire strategic resources, i.e., in most cases new technology that could help boost the competitiveness. Motivations that drive the investors are guided by certain rules and follow a specific sequence, which can be detected also in the pattern followed by investors from the emerging markets as suggested by, e.g., China's outward direct investments studies (Yao & Wang, 2014).

Polish investors' experience in foreign markets is too short and too limited when it comes to its scope to avoid doubts if they have passed through similar stages. If enterprises from the Lodz Region internationalize in accordance with Dunning's theory, we will find confirmation of the fact in relative importance of motives: the highest attributed to resource-seeking, followed by market- and efficiency seeking, which is our first hypothesis. At the same time, some researchers indicate that in developed economies motivation followed by parent companies depends on the size of an enterprise: in investing abroad large enterprises are guided by market seeking motivation while smaller ones by resource seeking motives (Mutinelli & Piscitello, 1997). Is it also the case of parent companies from the Lodz Region – this question is our second hypothesis. Direct investment labelled in the statistics as Polish direct investment originates from Polish domestic entities as well as from daughter companies – foreign subsidiaries based in

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[9] Strategia Rozwoju Województwa Łódzkiego, Łódzkie 2020, p. 69. In the document there is nothing about expectations of FDI, neither inward nor outward. Retrieved from http://www.rpo.lodzkie.pl/images/prawo-i-okumenty/srwl_2020_uchwalona_26_02_2013.pdf

Poland. The latter ones supported by their parent companies are usually much more experienced in operations abroad, have better development potential, better contacts in foreign markets and easier access to finance. In accordance with Dunning's theory, these foreign subsidiaries should exhibit more mature approach and be guided less by resource and market seeking motivation than domestic enterprises and focus on efficiency seeking. This sums up our third hypothesis. The fourth hypothesis results from suggestions formulated in literature, according to which investors' motivation differs depending on their strategies and degree of internationalization (Nachum, 2000). Thus, we decided to double check whether enterprises from the Lodz Region, which entered the path of stepwise internationalization (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; Korth, 1985; Luostarinen & Hellman, 1994), were guided by motives other than the rest, i.e., those which called themselves "born global" and those, for which internationalization was the effect of a spontaneous decision. It is believed that enterprises from the first group prefer to invest in countries, which are close to them in terms of geography and culture (Obłój & Wąsowska, 2012)[10].

MATERIAL AND METHODS

The objective of this paper is to examine FDI motives of enterprises from the Lodz Region, their relative importance and relationship between these motives and main investors characteristics (their size, foreign capital holdings, and paths of internationalisation). Data for the study was collected using a questionnaire-based interview and an in-depth interview conducted in 2014 with 48 enterprises, which, according to the Statistical Office in Lodz represented ca. 80% of the total population of investors in the Lodz Region; the remaining 20% refused to participate[11]. Respondents were mainly top managers: usually CEOs, directors or lower level managers delegated by the top management. Collected data was digitalised and statistically analysed.

Most enterprises participating in the study were established in the 20th century: in the 1990s (41.7%), in the 1950s (4.2%) with the oldest one dating back to the early 1920s. Quite a substantial group started to operate in the years 2000-2009 (35.4%). Respondents were experienced in operating in the Polish market. Over a half of them (60.4%) are located in the capital of the Region and almost 75% in the Lodz Metropolitan Area (LMA), which includes Lodz and the counties (poviats): brzeziński, łódzki wschodni, pabianicki, and zgierski[12]. Almost 77% were companies, among them 56.3% limited liability companies, 20.8% joint stock companies, and 10.4% of operators were sole proprietorships.

When it comes to the size, both in terms of employment and revenues, the sample was dominated by small enterprises (employing from 10 to 49 people), which accounted

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[10] Among authors, who studied geographical proximity as element of FDI motivation we should list, e.g., Bitzenis, Tsitouras and Vlachos (2007), Kowalewski and Radło (2013), Karaszewski *et al.* (2014).

[11] The study was conducted by a team of interviewers headed by research workers from the Department of International Trade of the University of Lodz under the NCN (National Centre of Science) grant "Determinants and effects of active internationalization of enterprises from the region of Lodz".

[12] Compared against the area of the region, the LMA (Polish abbr. ŁOM) occupies 13.7% of the area (data from the LMA strategy) and it is inhabited by 44% of the population. In 2012 LMA hosted almost 54.2% of all economic operators. They supplied 52.5% of GDP generated in the region. Concentration of enterprises who invest abroad was much more intense than the concentration of economic activities within the LMA.

for 35.4% of the sample. The share of medium-sized (from 50 to 249 people) and large (250 people or more) enterprises was 25% each. The sample also included micro-enterprises (fewer than 9 employees), which represented 10.4% of the studied population. The remaining 4.2% did not specify their employment.

The structure of respondents' activities was dominated by industrial processing and trade. Majority (47.9%) pointed to various type of manufacture (section C)[13], while 35.4% to wholesale and retail trade, including 12.5% of trade in textiles, clothing and footwear, products which used to be the specialty of the region (Table 1).

Table 1. Main fields of activities of respondents according to PKD[14]

Type of activity	PKD section	No. of respondents with respect to types of activities	
		absolute	in %
Manufacture	C	23	47.9
Wholesale and retail trade, motor vehicles repairs	G	17	35.4
Other	A, H, J, K, L, M, N, P	8	16.7
Total		48	100.0

Explanation: A – Agriculture, forestry, hunting and fishing, H – Transport and storage, J – Information and communication, K – Financial intermediary and insurance, L – Real estate services, M – Professional, scientific and technical activities, N – Administration and supporting services, P – education.
Source: own study.

Besides principal activities, 28 respondents (58.3%) listed other types of activities pursued domestically as relevant for their market position (Table 2). These were mainly wholesale and retail trade (to 42.9% of the group), manufacture (to 7.1%), and other, very diverse activities connected with services, which were important to the majority of these enterprises. Thus, considering principal and other types of activity taken together, we can see that in the domestic market investors from the Lodz Region were almost equally involved in trade and manufacturing.

It seems obvious that sectoral structure by PKD sections of investors from the Lodz Region pursued abroad should be close to that pursued in Poland. However, it turned out that while in Poland manufacturing prevailed (47.9 %) followed by wholesale and retail trade (35.4%), abroad only 16.7% operators dealt with manufacturing while as many as 66.7% of investment projects were connected with trade pursued with the expansion of exports in mind. Thus, these were predominantly vertical "upstream" FDIs designed to provide distribution channels abroad for products manufactured in Poland[15]. This is how the companies wanted to more effectively control sales and observe changes taking place in the market. Investments connected with relocation of the same type of production abroad, which could help adjust products to the needs and tastes of foreign customers and better use local production resources, played a considerably smaller role.

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[13] Manufacture of cordage, ropes, twine and nets, joinery and carpentry products for construction, dyes and pigments, cosmetics and toiletry articles, products made of plastics, ceramic tiles and tiles, mortar, electric tools and equipment, ovens and furnace burners, special utility machinery, motor vehicle bodies, trailers and semitrailers, furniture and casting of steel, mechanical processing of metal elements (results of questionnaires).

[14] PKD 2007 – Polish Classification of Activities, compiled on the basis of the Statistical Classification of Economic Activities in the European Community — NACE Rev. 2.

[15] Such internationalisation is classified as "direct exports" (Rymarczyk, 2004).

Table 2. Other types of activities of respondents according to PKD

Type of activity	PKD section	No. of respondents with respect to types of activities	
		absolute	in %
Manufacture	C	2	7.1
Wholesale and retail trade, motor vehicles repairs	G	12	42.9
Other	H, J, K, L, M, N, P, R, S	14	50.0
Total		28	100.0

Source: own study.

Most enterprises investing abroad (58.3%) were owned exclusively by Polish capital. The remaining 41.7% of respondents had foreign investors on board from, e.g., Italy, Cyprus, Denmark, the Netherlands, Germany, and Switzerland, i.e. they were subsidiaries of foreign firms[16].

In the majority of enterprises included in the study (60.4%), internationalisation proceeded incrementally (stage-wise). Others took to internationalisation spontaneously, taking advantage of opportunities (27.1%) or identified themselves as *born global* (12.5%) meaning enterprises established to operate in foreign markets (Table 3).

Table 3. Internationalisation paths of respondents

Internationalisation paths	No. of operators	% of operators
Slow (step by step)	29	60.4
Spontaneous (taking advantage of opportunities)	13	27.1
Born global (firms which operate internationally from the start)	6	12.5
Total	48	100

Source: own study.

RESULTS AND DISCUSSION

Empirical study was divided into three stages. In the first stage we assessed the relevance of general and detailed motives of international expansion of enterprises from the Lodz Voivodeship (Region). Then, we ranked these motives using means and medians broken down by selected categories of enterprises. Finally, in the third stage we examined the significance of similarities in the distribution of statistical characteristics (Mann-Whitney test & Kolmogorov-Smirnov test) for these categories.

General and Detailed Motives for International Expansion

The first stage dealt with the assessment of the relevance of general and detailed motives behind FDIs made by investors from the Lodz Region. The motives were divided into four groups with reference to the classification promoted by Dunning (Dunning & Lundan, 2008). Our classification is based on prevailing characteristics of investors from the Lodz Region identified in the questionnaires, in particular the scope of their activities abroad focused on trade, not manufacturing. That is why we omitted strategic assets seeking motivation.

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[16] The so called "roundtripping" does not play any major role in Poland. According to the NBP data (2016), the pool of FDI made in Poland by foreign entities controlled by Polish residents did not exceed 5% of all of the FDI in Poland in 2015.

Thus our study included market seeking, cost related (efficiency), resource seeking and institutional motives. The latter are considered vital single factor for investors seeking markets for their products (Dunning & Lundan, 2008), who – due to trade-driven goals of most investment projects – dominated our sample.

First, respondents answered a general question about the importance of a particular group of motives for the FDI decision, e.g., how important market seeking motives were in their FDI decision, and then they assessed the relevance of detailed motives in the particular group.

Market seeking motives were divided into 14 categories connected with, inter alia, the absorption capacity of the target market, favourable outlook for the market (growth of the host country), intensified competition or following a customer. For cost-related motives we prepared 15 categories, e.g., the role of lower prices of raw materials, semi-products, auxiliary services and energy in FDI decision. Institutional motives contained 10 categories concerning, inter alia, regulatory framework, tax allowances, formalities connected with establishing a business or relevance of trade barriers in the host country. Resource seeking motives were investigated through 18 categories relating to, e.g., the availability of labour, better technology, more skilful workforce, possibilities to acquire a local brand, as well as better use of the resources of the parent company resulting from foreign investment.

Responses provided a clear picture of motives followed by enterprises from the Lodz Region in their FDI decisions. When answering the general question concerning the relevance of the entire group of motives (on a scale from 1 to 4, where 1 means very much relevant and 4 irrelevant), respondents most often listed market seeking motives (mean answer 1.24)[17]. Cost-related motives ranked second (2.13) followed by resource seeking and institutional motives, whose relevance was almost the same (2.32 and 2.36, respectively). The results were close to those obtained in studies for all of Poland (e.g. Karaszewski (ed.), 2013; *Polski Czempion,* 2012; Kowalewski & Radło, 2013; Gorynia *et al*., 2015a; Gorynia *et al*., 2015b).

Mean responses calculated for individual groups based on answers to detailed categories turned out to be more convergent (differences between means for detailed category were smaller than for the general one), and their relative importance took a bit different course. Although market seeking motives remained the most important (mean answer 2.53), resource seeking (2.70) and institutional (2.86) motives were more important than cost-related ones (3.00). It seems only logical when the main goal pursued by most investors was to facilitate the growth of exports from Poland rather than launching production abroad. Moreover, each of the four categories of motives behind international expansion at the detailed level was assessed as less important than the same category at general level of the study[18] (Table 4).

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[17] Responses were given on a 4-point scale ranging from 1 = very much relevant to 4 = irrelevant. Means can be calculated and further statistical processing may follow when these points are equally spaced on the scale. In our case we are not able to prove it. However, in social sciences the assumption of equal intervals is generally adopted and thus means are calculated, which are further used to calculate other statistics. Such approach is represented by, inter alia, Churchill (2002, p. 408), as well as Wieczorkowska and Wierzbiński (2012, pp. 55-56). There are also numerous examples of empirical studies based on this approach, e.g., Chen and Glaister (2006), Starosta (ed.) (2012), Dzikowska, Gorynia and Jankowska (eds.) (2016).

[18] Similar relationship between general and detailed assessment was identified in other questionnaire-based studies concerning, e.g., investment attractiveness of special economic zones in Poland (KPMG, 2014).

Table 4. Respondents motives for investment expansion

Relevance of motives	Mean
Relevance of overall market seeking motives in FDI decision	1.24
Relevance of market seeking motives in FDI decision (based on detailed questions)	2.53
Relevance of overall cost related motives in FDI decision	2.13
Relevance of cost related motives in FDI decision (based on detailed questions)	3.00
Relevance of overall institutional motives in FDI decision	2.36
Relevance of institutional motives in FDI decision (based on detailed questions)	2.86
Relevance of overall resource seeking motives in FDI decision	2.32
Relevance of resource seeking motives in FDI decision (based on detailed questions)	2.70

Source: own study.

Rankings of Motives for Selected Categories of Enterprises

In the second stage we investigated whether motives differ depending on selected characteristics of enterprises. To this end, we ranked motives behind FDI decisions in rankings of mean answers divided according to the following three grouping variables (see Figure 1):

1. The size of parent company in terms of employment (x_1).
2. The share of foreign investor in the parent company (x_2).
3. Internationalisation path (x_3).

   Then each grouping variable was aggregated into two classes:

1. x_{11} – micro and small enterprises, x_{12} – medium and large enterprises.
2. x_{21} – enterprises with foreign capital involvement (foreign affiliates), x_{22} – enterprises with no foreign capital.
3. x_{31} – slow path of internationalisation (step by step, equivalent to the Uppsala model), x_{32} – *born global* internationalisation path and other paths (spontaneous, opportunistic).
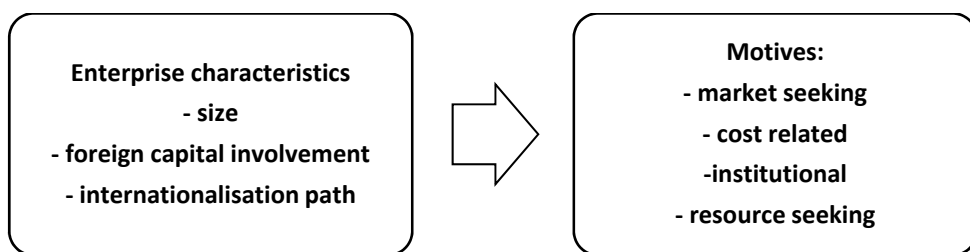
Figure 1. Relationships involved in internationalisation
Source: own elaboration.

For the purpose of our analysis, we selected 40 variables, which describe detailed motives for internationalisation divided into four groups:

1. Market seeking (y_1).
2. Cost related (y_2).
3. Institutional (y_3).
4. Resource seeking (y_4).

Our assumption was that grouping variables, which we selected (x_1, x_2, x_3) may diversify motives that drive enterprises to expand internationally (y_1, y_2, y_3, y_4), because the size of the enterprise, involvement of a foreign investor or internationalisation path may impact, inter alia, the economies of scale and the scope of production, tangible and intangible materials, experience and contacts in international markets, as well as expectations vested in international expansion.

With the above in mind, we developed 6 partial rankings, which identify motives behind FDI decisions of enterprises representing specific characteristics, in accordance with the division by grouping variables (x_1, x_2, x_3). Each ranking included 10 partial motives assessed by respondents as the most relevant (on a scale from 1 to 4, where 1 means very much relevant, 2 – relevant, 3 – little relevant, 4 – irrelevant).

In the first pair of rankings we compared the relevance of motives with the size of enterprises identified based on the employment. Table 5 shows that independently of the size, enterprises who invested abroad were guided by similar motives as 7 out of 10 motives regarded the most relevant were shared by all of them. All respondents were, first and foremost, seeking markets for their products. Six out of ten questions about concrete reasons referred to this very motive and three to the resource seeking motive.

Enterprises were the most strongly motivated by optimistic economic outlook of the host country. Typically, there were slight differences in the perception of other individual motives by respondents from the two selected groups of investors. However, as we could expect, there are some differences among investors in how they assess these motives. For instance, large enterprises, operating at bigger scales considered the limited size of the Polish market, striving for achieving new advantages over their competitors and the wish to distribute risk across a broader group of clients much more important than small businesses. Small enterprises, with smaller human and financial resources appreciated geographical proximity of the host country. Taking account of trade-related nature of FDI, not much attention paid to prices of production factors in the host country, comes as little surprising.

The second pair of rankings compares motives followed by enterprises fully owned by domestic capital and operators with the involvement of foreign capital. In this case (Table 6) 8 out of 10 selected motives were shared. Both groups of enterprises were predominantly interested in securing markets for their products. Five out of ten top detailed assessments concerned this very issue and the decision to get established abroad was motivated by positive outlook of the host economy. For enterprises with foreign capital this factor was very important, meaning their earlier investment in Poland was a platform for export activities. They also paid more attention to lower costs of labour, which were not important to fully domestic investors. The latter clearly more appreciated geographical proximity of the host country. It seems understandable as enterprises fully owned by domestic capital are expected to be less experienced internationally than MNEs' affiliates, which may use the knowledge, contacts and resources of their foreign owners.

In the third pair of rankings we identified similar differences in juxtaposed groups (as many as 7 out of 10 major motives were shared). Similarly to the previous two pairs, market seeking motives dominated and the major attention was paid to positive outlook of the host economy. To those who followed the Uppsala model of internationalisation it was even more than relevant. Enterprises, which entered foreign markets spontaneously, (or taking advantage of an opportunity) in 7 out of 10 cases did it to conquer the foreign market.

Table 5. Ranking of FDI motives depending on the size of parent enterprise

	micro and small enterprises (x_{11})					medium-sized and large enterprises (x_{12})			
Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median	Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median
1.	Positive market outlook	y_1	1.91	2	1.	Positive market outlook	y_1	1.88	2
2.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.23	2	2.	Small domestic market (ramifications)	y_1	2.04	2
3.	Good relations with enterprises in the host country	y_4	2.25	2	3.	The wish to acquire technological, organisational, and marketing advantage	y_1	2.09	2
4.	Availability of labour resources	y_4	2.28	2	4.	Good relations with enterprises in the host country	y_4	2.18	2
5.	Geographical proximity of the host country	y_1	2.32	2	5.	Risk distributed over a bigger number of clients (markets)	y_2	2.32	2
6.	Little competition in the host country market	y_1	2.36	2	6.	Better capacity utilisation in the home country	y_4	2.39	2
7.	Small domestic market (ramifications)	y_1	2.43	3	7.	Maintaining the already conquered export markets	y_1	2.41	2
8.	Prices of resources/factors	y_2	2.44	2	8.	Better use of technology	y_4	2.42	2
9.	Better capacity utilisation in the home country	y_4	2.47	2	9.	Little competition in the host country market	y_1	2.43	2
10.	The wish to acquire technological, organisational, and marketing advantage / Stagnation in the home market	y_1 / y_1	2.50 / 2.50	2.5 / 2	10.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.48	2

Source: authors' own studies performed using the SPSS software.

Table 6. FDI motives ranking for enterprises with and without foreign holdings

	enterprises with foreign capital (x_{21})					enterprises fully owned by domestic capital (x_{21})			
Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median	Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median
1.	Positive market outlook	y_1	1.70	2	1.	Positive market outlook	y_1	2.00	2
2.	Small domestic market (ramifications)	y_1	2.16	2	2.	Small domestic market (ramifications)	y_1	2.22	2
3.	Good relations with enterprises in the host country	y_4	2.17	2	3.	Good relations with enterprises in the host country	y_4	2.24	2
4.	The wish to acquire technological, organisational, and marketing advantage	y_1	2.25	2	4.	Geographical proximity of the host country	y_1	2.25	2
5.	Lower cost of labour	y_2	2.30	2	5.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.35	2
6.	Little competition in the host country market	y_1	2.32	2	6.	Better capacity utilisation in the home country	y_4	2.36	2
7.	Availability of labour resources	y_4	2.32	2	7.	The wish to acquire technological, organisational, and marketing advantage	y_1	2.42	2
8.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.42	2	8.	Little competition in the host country market	y_1	2.46	2.5
9.	Risk distributed over a bigger number of clients (markets)	y_2	2.42	2	9.	Maintaining the already conquered export markets	y_1	2.52	2
10.	Maintaining the already conquered export markets/ Better capacity utilisation in the home country	y_1 / y_4	2.50 / 2.50	2 / 2	10.	Better use of technology	y_4	2.60	2

Source: authors' own studies performed using the SPSS software.

Table 7. Ranking of FDI motives depending on the path of internationalisation

Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median	Ranking	Motive	Motive by category (y_1, y_2, y_3, y_4)	Mean	Median
	Uppsala model internationalisation path (x_{31})					***born global*** **and other paths of internationalisation (spontaneous, opportunistic)** (x_{32})			
1.	Positive market outlook	y_1	1.83	2	1.	Positive market outlook	y_1	2.00	2
2.	Small domestic market (ramifications)	y_1	2.14	2	2.	Good relations with enterprises in the host country	y_4	2.13	2
3.	Good relations with enterprises in the host country	y_4	2.24	2	3.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.31	2
4.	Better capacity utilisation in the home country	y_4	2.30	2	4.	Availability of labour resources	y_4	2.31	2.5
5.	Better use of technology	y_4	2.38	2	5.	The wish to acquire technological, organisational, and marketing advantage	y_1	2.37	2
6.	The wish to acquire technological, organisational, and marketing advantage	y_1	2.39	2	6.	Small domestic market (ramifications)	y_1	2.40	2
7.	Geographical proximity of the host country	y_1	2.41	2	7.	Maintaining the already conquered export markets	y_1	2.40	2
8.	Risk distributed over a bigger number of clients (markets)	y_2	2.43	2	8.	Little competition in the host country market	y_1	2.44	2.5
9.	Better adjustment of activities to the needs of recipients in the host country	y_1	2.44	3	9.	Geographical proximity of the host country	y_1	2.44	2
10.	Little competition in the host country market	y_1	2.45	2	10.	Prices of resources	y_2	2.50	2.5

Source: authors' own studies performed using the SPSS software.

In all three rankings we calculated the means and medians for variables. Vast majority of medians assumed the value of 2 (55 out of 62), which confirms conclusions from the analysis of the means, which suggested little differentiation of the relevance of motives for individual categories of grouping variables.

Statistical Analysis Using the Mann-Whitney Test and Kolmogorov-Smirnov test

Presented rankings of mean answers (and medians) reveal little differences in the relevance of motives followed by specific groups of investors. To validate this conclusion, we used statistical methods, which helped us more reliably examine the significance of differences between the means for the available data. We tested normal distribution using Kolmogorov-Smirnov test. Due to the fact that variables diverged from the normal distribution, we could not deploy the t-test. That is why we took advantage of the Mann-Whitney test first, a non-parametric alternative to the t-test. Similarly to the ranking of the means, we took the following as grouping variables:

1. x_{11} – micro and small enterprises, x_{12} – medium and large enterprises.
2. x_{21} – enterprises with foreign capital (foreign affiliates), x_{22} –without foreign capital.
3. x_{31} – internationalisation path in accordance with the Uppsala model, x_{32} – *born global* internationalisation path and others (spontaneous, opportunistic).

The tests were performed for 40 variables, which identify FDI motives.

We started with the Mann-Whitney test and the following hypotheses:

H0: two independent samples come from the population representing the same distribution.

H1: ~ (two independent samples come from the population representing the same distri-bution).

For the purpose of the study, the above hypotheses can be formulated in the following way:

H0: grouping variables p ($p = 1,2,3$) do not differ for k motives ($k = 1,2,…,40$).

H1: grouping variables p ($p = 1,2,3$) differ for k motives ($k = 1,2,…,40$).

For the calculated test probability $p \geq 0.05$ there are no grounds for rejecting the H0, i.e., if cumulative distributions in distinguished sub-group are equal, it means the phe-nomenon follows a similar course in the studied population.

While when $p < 0.05$ we may reject the null hypothesis, (H0), i.e., if the cumulative distributions in distinguished sub-groups are not equal, distribution parameters, as well as the means, are different, which in our case means that the grouping variable is the differentiating factor for a given FDI motive (tested variable).

In total, we validated 120 hypotheses. Only four differences turned out to be statistically significant at the level of $p < 0.05$ for:

1. Higher quality of labour (resource seeking motif $p = 0.001$) for micro and small enterprises, as well as medium and large ones (the first grouping variable). The quality was more important for micro- and small enterprises than for medium and large ones (2.67 and 3.41, respectively),
2. Lower cost of labour (cost motif, $p = 0.002$) for entities with and without foreign capital involvement (second grouping variable). Enterprises with foreign investor were more sensitive to the cost of labour than entities with exclusively Polish capital (2.30 and 3.26, respectively),
3. Trade barriers (institutional motif, $p = 0.016$) for entities with and without foreign capital (the second grouping variable). For enterprises without a foreign investor the possibility to circumvent trade barriers through FDI was more important than for en-tities with foreign capital involvement (2.39 and 3.05, respectively),
4. Higher quality of labour (resource motif, $p = 0.036$) for entities, which selected step-wise and opportunistic internationalisation path (the third grouping variable). Higher quality of labour was more important for enterprises, which have selected the oppor-tunistic path of internationalisation (2.75) than for the "Uppsala followers" (3.27).

We need to stress that motives, for which the difference turned out to be statistically significant, with two exceptions (lower cost of labour for entities with foreign capital involve-ment and the possibility to circumvent trade barriers for other enterprises), were in general little important to all six categories of investors as they do not appear in any of the three rankings. It confirmed our conclusion drawn based on the ranking of the means that differ-ences among the most important motives for enterprises in the Lodz Region were minor.

In the remaining cases there were no grounds for rejecting the null hypothesis H0.

Next, we performed the Kolmogorov-Smirnov test, for which we adopted the following hypotheses:

$$H0:\ F_{pk1} = F_{pk2}, \quad H0:\ F_{pk1} \neq F_{pk2}$$

where:

F_{pk1}, F_{pk2} - cumulative distributions for the first and the second class of grouping variables p ($p = 1,2,3$) for k motives ($k = 1,2,...,40$).

Like in the Mann-Whitney test, we validated 120 hypotheses. It turned out that only in one case we arrived at the value of $p < 0.05$ for the variable identifying the share of foreign capital in the parent company (the second grouping variable). It is the differentiating factor for the motif "lower costs of labour" in the category of cost-related motives ($p = 0.018$).

All the three remaining tests for each of the three grouping variables show no significant differences in the distributions of motives of international expansion of enterprises.

Thus, we may conclude that with some exceptions (mostly those connected with the cost of labour) the size of an enterprise, the involvement of foreign capital and internationalisation path did not differentiate the motives, which made the enterprises from the Lodz Region get involved into resource seeking internationalisation.

CONCLUSIONS

Enterprises from the Lodz Region are at a very early stage of internationalisation. This conclusion, which results from the analysis of statistical data concerning regional economy, was confirmed by our study based on primary data collected from questionnaires. Its goal was to identify the motives followed by the local enterprises when making direct investment abroad and test whether they were identical or different in enterprises that differed with respect to the size, involvement of foreign capital, and internationalisation path.

Average answers obtained from the study demonstrate that parent companies in their decisions took account, predominantly, of generally understood market seeking motives, and the majority of FDI was intended to promote the sales of products manufactured domestically rather than to dislocate their production abroad. Cost-related motives ranked second and were followed by, *ex aequo*, resource seeking and institutional motives, almost equally relevant. Average assessments of partial motives, which make up the above general categories turned out to be rather close. The advantage of market seeking motives was smaller at that time, while resource seeking and institutional motives were found to be more important than cost-related ones. This hierarchy is not entirely consistent with the sequence suggested by Dunning and Lundan (2008) but, in principle, overlaps with the one revealed in similar studies in the countries of Central and Eastern Europe, including Poland (Zemplinerová, 2012; Sass, 2012; Gorynia *et.al*, 2013; Karaszewski *et al.*, 2014).

Among several market seeking motives, all respondents – independently of the size of the enterprise, the involvement of foreign capital, and internationalisation path – mentioned first of all growth perspective of the host country, i.e., its macroeconomic situation. Differences in the assessment of all several dozen partial motives included in the study were minor and the relevance of motives other than market seeking was secondary. For instance, in large enterprises FDI decisions were dictated, much more than in the SMEs, by the limited size of the Polish market, striving for acquiring various advantages over the competitors, and the wish to distribute risks among a bigger group of

recipients. For small enterprises, geographical proximity of the host country was much more relevant. Enterprises with foreign capital involvement attached more importance to the cost of labour than fully domestic entities, for which geographical proximity of the host country was relevant. "Uppsala followers" were slightly more encouraged to invest abroad by domestic market limitations in Poland; those who embarked on other paths of internationalisation were driven by poor competition in the host country.

Conclusions drawn from mean answers were confirmed in statistical texts. The findings demonstrated that in investing abroad enterprises from the Lodz Region were guided mostly by market seeking motivation, with the size of the enterprise, involvement of foreign capital, and internationalisation path playing negligible role. The most influential partial motives of individual investors' categories were in principle the same. The only exceptions are: firstly, higher quality of labour, more important for SMEs and for enterprises that follow non-incremental development path; secondly, lower cost of labour abroad, more important to foreign affiliates than to domestic investors.

Summing up, we may conclude that our study:

1. Did not confirm the first hypothesis that enterprises from the Lodz region, which invest in other countries, do it first and foremost to ensure access to resources treating other motives as secondary,

2. Did not provide sufficient support for the three remaining hypotheses, which link motives with investors' characteristics, especially to claim that:
   − when investing abroad large entities are guided by market seeking motives and smaller ones by resource seeking,
   − foreign direct investment pattern of daughter companies operating in Poland is much more efficiency seeking than the FDI of domestic operators,
   − enterprises, which follow the incremental OFDI path prefer host countries, which are geographically and culture-wise close unlike enterprises, which embarked on the non-incremental path.

Nevertheless, the study enabled the formulation of some recommendations for State policy in regard to Polish direct investors. Firstly, possible aid should be addressed to all operators across the board and favouring any of them, e.g., SMEs is unjustified. Secondly, in the light of the increasing interest in getting market access, we need to facilitate access to information about doing business in other countries and about commercial and investment agreements in force, to conclude new agreements, organise trade missions, and ensure stable rules for economic operators. Thirdly, if some operators already at this point invest abroad seeking better and cheaper labour, the State should take care of upgrading the skills of labour and reduce its relatively high cost mainly due to, e.g., taxation. The fact that differences in the cost of labour are observed mainly by foreign affiliates operating in Poland should act as a warning to the government that they might wish to move to other countries.

Obtained results should be taken with sufficient care especially when we think of partial motives. The reason is the subjectivity, with which respondents (and researchers) perceive specific motives as linked with one another (e.g. market and cost related), and their weight changes with the change of enterprise's competitive position and its operating conditions. Being careful in drawing conclusions is also dictated by the short period and specific region of Poland, where the study was conducted. Slight

differences observed in the relevance of motives resulting from enterprises' profile can be the starting point for more in-depth research. On top of that, attention should be paid to the specificity of investment motivation in developed markets, also in the EU Member States, and in developing markets, the role of the age of an enterprise, and selected investment strategy (joint venture, greenfield).

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Sources of the Competitive Advantage of Family Enterprises: An International Approach Focusing on China, Nigeria and Poland

Joanna Bednarz, Tomasz Bieliński, Anna Nikodemska-Wołowik, Ade Otukoya

A B S T R A C T
Objective: The objective of this paper is to identify some crucial factors influencing family businesses in China, Nigeria and Poland through a prism of the competitive advantage theory as well as company values.
Research Design & Methods: The empirical research results were employed: findings from a survey on competitive advantage, from a study of Family Enterprises' (FEs) survival in Nigeria, from interviews conducted with the owners of Polish FEs, from a survey with Polish consumers, and from interviews conducted with FEs' managers in China. International desk research was carried out as well.
Findings: Major attributes of FEs which can support their competitive advantage created on the market were identified. The significance of family enterprises in contemporary economies of China, Nigeria and Poland was examined.
Implications & Recommendations: The success of FEs and their important nature mean that more research is needed to understand their development for the future. A holistic and cross-cultural approach is required. As the consumers' attitudes towards FEs in the three countries differ significantly, a unified survey which can be adjusted for the cultural requirements of each country is recommended.
Contribution & Value Added: While comparing FEs in the three countries, some crucial factors which influence their functioning were discovered. Despite of identified obstacles in performance of FEs, there are some sources of CA highlighted and divided into similarities, differences and autonomous features by the authors.
Article type: research paper
Keywords: family enterprise; entrepreneurship; competitive advantage; values
JEL codes: L14, L22, L26
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INTRODUCTION

The role of Family Enterprises (FEs) in the contemporary economy has gained attention of experts since the advent of the new millennium. Some of the reasons for such a turn towards these business entities are quite explicit, while others require deeper investigation. Nevertheless, among them one can find the core attributes of FEs, specific for this type of firms, which have built their competitive advantage on the market.

The objective of this paper is therefore to identify some crucial factors influencing family business through a prism of the competitive advantage theory as well as company values. As a result of the vast majority of available literature concentrated on American, West European and Japanese FEs, this article is focused on three countries of different economic yet differing backgrounds: China, Nigeria and Poland. There is a dearth of research on cross-cultural studies conducted on this field. FEs in these three countries were targeted intentionally: they are remote to each other, localised on 3 continents and have limited economic cooperation. Therefore, the development of FEs in any of them has not been influenced by the other ones. This enables researchers to seek for the universal attributes and values of FEs. Despite geographical and cultural distances, as well as differences in the economic development, they have some significant similarities.

Moreover, the paper attempted to recognise factors influencing the Chinese, Nigerian, and Polish FEs' positions on their domestic markets. Current international economic challenges were considered. The article also pinpoints some common attributes of FE in the 3 markets. Being aware of many limitations of the study, the authors attempted to initiate a deeper discussion on cross-cultural studies on FEs in the international context.

The article covers three related areas. First, it shows the evolution of definitions and approaches towards the competitive advantage theory. Second, the article reviews definitions of Family Enterprises presented in the literature. In doing so, it conceptualises this type of business structure as well as highlights major attributes of FEs which can support their competitive advantage created on the market. Third, it examines the significance of FEs hitherto in the contemporary economies of China, Nigeria and Poland.

MATERIAL AND METHODS

This article, theoretical in character, is based on international desk and field research findings.

In the paper, the authors employed some parts of their own empirical research results from the last 3 years: from a quantitative research on competitive advantage (further in the article as CA) built on (1) resources which are valuable, rare, compatible and difficult for imitation or substitution, (2) value creating strategies and (3) competitive instruments (mostly marketing-mix), findings from a study on the FE survival in Nigeria which links different factors to the survival of FEs (in 2015 the online questionnaire was sent by electronic mail to over 4,000 entrepreneurs who were randomly selected from the data base of the Enterprise Development Centre; focus group interviews were conducted with 9 entrepreneurs to verify and clarify some of the answers), conclusions from in-depth individual interviews conducted on a non-probability sample of the Polish FEs' owners (meetings in 2014-15: 15 in Pomeranian and 4 in Wielkopolska regions), and the results of a nationwide survey

carried out in 2015 on a representative sample of Polish consumers (the detailed methodology in: Nikodemska-Wolowik, 2015). The Chinese study was based on the results of the observations and 30 unstructured, in-depth interviews with FE managers in the years 2008 – 2016 in the Chinese provinces of Beijing, Shanghai and Guangdong on the FEs operating in the manufacturing sector.

The authors used an approach as neutral researchers. The investigated period covered the end of the last millennium to more recent years, with some references to the economic backgrounds, emblematic for the histories of the 3 countries. The object of the study was a FE deeply rooted in the country of origin and the considerations given below refer mostly to the businesses operating as family owned in at least the second generation. The research was focused mainly on Small and Medium Enterprises (SMEs).

LITERATURE REVIEW AND THEORY DEVELOPMENT

General Values Which Build a Competitive Advantage in Contemporary Enterprises

The idea of competitive advantage (CA) is to provide a company with the superior position or to allow a company to be seen differently than its competitors (Porter, 1985). There is no generally accepted definition of CA. It is defined in different ways by individual authors (Wach, 2014; Bednarz, 2013).

The precursor of this notion is W. Alderson. He was one of the first authors to recognise that firms should strive for unique characteristics to distinguish themselves from competitors in the eyes of consumers. Alderson concentrated on firms operating in a heterogeneous marketplace and proposed three bases for differential advantage: technological, legal, and geographical. He also hinted the ways in which entities can achieve a differential advantage: segmentation, selective appeals, transvection, and differentiation (Alderson, 1965; Shaw, Lazer & Pirog III, 2006; Beckman, 2007).

The idea of a sustainable CA appeared in 1984. Day (1984) suggested types of strategies which may help to "sustain the competitive advantage". The following year, M.E. Porter explained that the source of competitive advantage is the value that a firm can provide for its customers. From his point of view, CA can be based either on cost or the ability to differentiate the firm from others in the same sector. The first allows the company to charge less, in this case, it allows the company to compete on price, this might result from a lower cost base or a more efficient process or through paying less for the goods or services it sells (Porter, 1985).

Another formal definition of CA was by Barney (1991, p. 102) who attests that: "a firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy". Moreover, Hunt (1990) believes that most businesses strive for competitive advantage because it gives them an edge over their competitors.

Day and Wensley (1988) proposed a conceptual model of sustainable competitive advantage, also referred to as a model of integrated advantage. This is the most comprehensive approach to competitive advantage which is adequate to the market realities of entities (Figure 1). They used the fact that this is the market and the buyers that verify the effectiveness of each company. The sources of advantage refer to a situation where

a firm has superior skills (i.e. distinctive capabilities of personnel or systems and organisation structures) and/or tangible resources (i.e. scale of manufacturing, location, and distribution coverage) relative to its competitors. These skills/resources if used competently by the company may lead to positional advantages and result in the above average performance such as better consumer satisfaction, loyalty, higher levels of profitability and bigger market share.

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┌─────────────────────────┐   ┌─────────────────────────┐   ┌─────────────────────────┐
│ Sources of advantage:   │   │ Positional advantages:  │   │ Performance outcomes:   │
│ -  superior skills      │──▶│ -  superior customer    │──▶│ -  satisfaction         │
│ -  superior resources   │   │    value                │   │ -  loyalty              │
│                         │   │ -  lower relative costs │   │ -  market share         │
│                         │   │                         │   │ -  profitability        │
└─────────────────────────┘   └─────────────────────────┘   └─────────────────────────┘
         ▲                      ┌─────────────────────────┐               │
         │                      │ Investment of profits   │               │
         └──────────────────────│ to sustain advantage    │◀──────────────┘
                                └─────────────────────────┘
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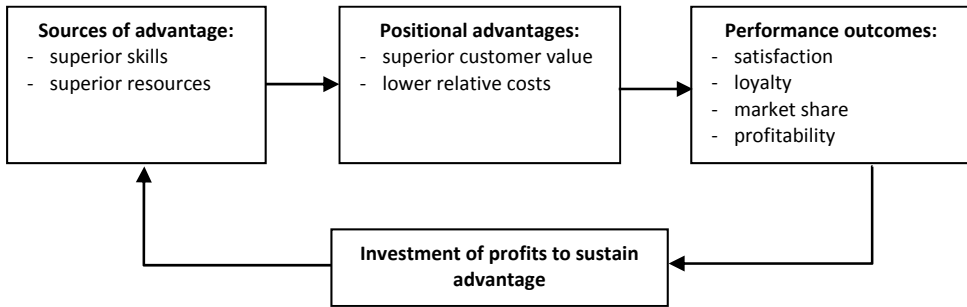
Figure 1. The Elements of Competitive Advantage
Source: Day and Wensley (1988).

There are many authors who followed the concept of Day and Wensley (1988) who indicates that there are other resources necessary to build CA of companies. Barney (1991) contended that the resources with the potential to provide a competitive advantage for a company must be: valuable (in the sense that it exploits opportunities and/or neutralises threats in a firm's environment), rare among a firm's current and potential competition, imperfectly imitable (either through unique historical conditions, causal ambiguity, or social complexity), and without strategically equivalent substitutes (Barney, 1991; Barney, 1995).

Dierickx and Cool (1989) asserted that asset stocks are strategic to the extent that they are non-tradeable, non-imitable and non-substitutable.

Prahalad and Hamel (1990) emphasised that firms should consolidate resources and skills into competencies which allow them to adapt quickly to changing opportunities and thanks to these entities they can build their CA. The authors called them core competencies that can also act not only as a differentiating factor but can become a form of restriction or barrier to entry into the sector by other firms (Wernerfelt, 1984).

Continuing the resource-based view, Conner (1991) proposed that to achieve above-average returns, a firm product must be distinctive in the eyes of buyers. If the firm sells an identical product in comparison to competitors, it must have a low-cost position. That is why each company must be 'costly-to-copy'.

Experts analysing the sources of CA in 1990 noticed the importance of various intangible resources. For example, Hall (1993) identified intangible resources and distinguished assets and competencies of the firm. Assets such as intellectual property rights, the company's reputation, brands, signed contracts and licenses, trade secrets and databases help to characterise the ownership of the company. Competences are related to what a company can use on the market, these are; corporate culture, organisational

and personal network, knowledge of employees, know-how of business partners, suppliers, intermediaries and advisors (Hall, 1993).

The resource-based concept makes it possible to answer new questions about the changing reality of firms, experts started to look for some other sources of CA placed outside the entity. While reviewing the modern concept of CA, the diversity in the approach of their representatives should be emphasized. For example, the concept of competitive advantage based on market orientation became more important at that time. Narver and Slater (1990) perceived market orientation as organisational culture – which includes three behavioural components: customer and competitor orientation as well as inter-functional coordination. These are the utilisations of company resources in creating superior value for target customers.

The role of marketing relations in getting resources and building CA was analysed by Morgan and Hunt (1996). A solid foundation based on mutual trust and involvement of partners will help them to build exceptional relations. As they are usually rare and difficult to be copied by the competitors, they have a chance to become a source of sustaining CA.

In 1990s, the time-based competition as a source of CA was commonly analysed. Using Stalk's concept, it is possible to say that time is the equivalent of money, productivity and quality, and even innovation and organisational changes. Companies using time to compete on the market can reduce their costs, improve the technology, offer a wider range of products directed to various market segments (Stalk, 1988).

This approach corresponds to the concept of building a CA based on innovation. Innovations (especially technology-based innovations) were considered the main element of entrepreneurship. The experts underlined that they contribute to shortening life cycles of products and technologies. Innovations also lead to organisational changes and are crucial to the speed of changes implemented by the firm.

Firms use different value chain activities in order to have a CA (Porter, 1996). Long term sustainable CA strategy needs to be exceptional in its mix to an organisation rather than a unique process in itself (Rothaermel, 2008). CA is therefore at the heart of a firm's performance according to Porter (1985). It gives companies an edge over their competitors.

The Definition of FE in Brief

The authors followed the analysis of about 250 publications brought out by experts in the investigated field at the end of the last century, which presented definitions of a FE (Sharma, Chrisman & Chua, 1997) and compared them with the contemporary approach. As per the literature review, to distinguish a FE – one should use a package of such criteria as: structure of ownership, family relations, influence on strategic decisions, vision of succession. There are two common strands to the definitions, firstly, that the owners are connected or related and most importantly, there is an implied assumption that the company may pass on to future generations of the same family. Ownership can be defined as more than 50% of the controlling interest or voting right, but there are other scenarios where the descendants of the founders may still be involved, either in day to day running of the business or have some strategic involvement in the decision-making process. Family relationships can be by blood, adoption or marriage. Thus, a Family Business is an enterprise where the majority of the ownership or control is with a group of people who are related by blood or marriage (Lyman, 1991).

FEs are "enterprises in which members of the nuclear or extended family hold majority shareholding" (Onuoha, 2012; Ring, Brown & Matherne, 2017). FEs are also besieged of problems of and the need to employ or promote family members at the expense of better qualified 'outsiders'. There are also issues of the right benefits and compensation to entice and keep talented family members, the promotion of family members at the expense of outsiders or vice-versa can also lead to conflict in the FE, the guidelines on family participation in the business, the acceptable profit sharing mechanisms as well as acceptable succession mechanism within the FE. These issues can also be complicated by family members who work for the company, but are not regarded as owners or those who own part of the business, and do not take part in the management of the business (Bowman-Upton, 1991).

There is a broad consensus on three main criteria characterising the family enterprise (Nikodemska-Wolowik & Zientara, 2012): family ownership, management by a family member, involvement of family members in day-to-day running of a company.

The Significance of FEs in the Contemporary Economy

The position of FEs is strengthening in most of the global economies, for example in Germany they make up 40% of the total number of businesses, whereas in the USA – 33%, with 40% and 50% in Brazil and India respectively (The Economist, 2015).

There is now a remarkable turn towards FEs evident in an inspiring article published in the Harvard Business Review (Kachaner, Stalk Jr. & Bloch, 2012). Moreover, stakeholders trust FEs more than non-family businesses in the majority of cases (Edelman Trust Barometer, 2014). The stakeholders' trust belongs to the crucial intangible assets of FEs and these relationships base on an honest and long-term attachment. Although, the paper concentrated on the positive aspects of FEs', it should be noted that some of these issues also constitute the major problems with FE for example, the lack of succession planning can constitute a major challenge for many FEs. Even though there are many advantages for FEs – presented further in the article – at the end of the last century only 30% and 14% of FEs respectively pass on to the 2nd and 3rd generation (Lansberg, 1999), with the average life lasting as long as the original founders are still in place for around 24 years (Onuoha, 2012). Ernst and Young experts claim that nowadays the number is even smaller -10% of FEs survive beyond the 2nd generation (EY Family Business Yearbook, 2014). Their reason for the failure is that family members are selected to critical positions based on their family ties rather than on the grounds of competence (Joseph, 2014). Succession planning requires a commitment to find, select and develop the appointed successor, but this must be taken in the context of the talent pool within the business and the emotional complexity within the family dynamics. The successful succession of a FE is a continuous process with issues such as legal and financial handover sorted out, but the transferee or successor must not only be willing to continue the FE, but must be capable and qualified to run the business in his or her own capacity (Lambrecht, 2005). Therefore, an efficient succession plans strengthens a firm's position on the market.

The universal Values for Family Enterprises in the International Scope

In the case of FEs, it can be noticed that CA allow them to differentiate the products or services they offer to their customers who may prefer to be seen as unique, some prefer customised products to distinguish themselves from other consumers in the market place. The

key element from a FE is the ability to draw on the talent of other family members, their history, continuity of service or the availability of their products or services into the future. Most companies now emphasise the 'family' part of their businesses as they are deemed to be 'nimble' and able to react quicker to the demand of their customers. The ability to combine the resources mentioned above better can lead to better efficiency which can translate into cheaper cost of production and hence earn excessive profits.

There are some universal attributes of FEs in different countries, such as: employment of family members, continuity of FE owing to inheritance, survival of the ownership and financial independence and successful succession. Furthermore, those features can be identified by their core cross-cultural values. An essence of FEs' values is included in the ELISA model (Cappuyn, 2006). The abbreviation (ELISA) stands for: E – excellence, L – labour ethic, I – initiative for innovation, S – simplicity of lifestyle, A – austerity. Those qualities can be compared with the KPMG experts' list of FEs' values, explicitly: loyalty, legacy, access to labour, access to capital, key employees and career opportunities (Walsh, 2011). Loyalty is an essential element, as well as the sense of commitment when more than one family member is involved in the running of the business. There is also the sense of continuity and the need to leave behind a legacy to continue to build on the efforts of the older generation of the family and take the business to new heights. FEs tend to have some elements of 'grooming' of the younger members of the family in preparation for joining the family business. They also find it easier to get access to labour within the extended family members. Another unique advantage of family businesses is their long-term approach to the future performance and survival of the business as they pass on the family tradition and values that have worked well or served past generations better (Garces-Galdeano, Larazza – Kintana, Garcia – Olaverri & Makri, 2016). Many successful FEs are also keen to discuss and put succession planning in place to continue with the legacy, hence they try to develop family members who can take control of the business in the future.

The existence of family ties and relationship forms the basis of what is defined as the family capital (Hoffman, Hoelscher & Sorenson, 2006). The ties within a family business is more pronounced in FEs than in any other type of organisation. FEs tend to work better because members are likely to interact more frequently outside of the business, they communicate more and have history which precedes the business. This leads to quicker resolution of problems as the overall interest is the improvement in the FE to make things better for future family members (Hoffman, Hoelscerh & Sorenson, 2006). A FE also relies on the network of family members for support, resources and even capital as well as network linked to and by others (Portes, 1998).

This can help in building so called collective trust. In essence, family members can rely on each other to make the best decision in the overall interest of the organisation, this can lead to people working well together (Kramer, Brewer & Hanna, 1996). Taking into account the CSR subject, one can refer to a profound international study by Cruz, Larraza-Kintana, Garce´s-Galdeano and Berrone (2014). Those authors concluded that in general FEs "can be socially responsible and irresponsible at the same time. FE is "a business with a human face", it is created by specific people as compared to large organisations where staff remain anonymous. Thus, the success of a FE is as a result of specific people and continuation of their ancestors' work.

Moreover, FEs have proved to be more "crisis-resistant". The last two economic downturns in the 21st century showed that relatives are engaged to a much higher degree than other employees. As it turned out, they are more stable, if more conservative by staying away from high risk projects and through being less greedy. The fundamental crux of their existence is their belief in people and respect for human dignity.

DISCUSSION

Below, the comparison of the chosen values specific for FEs in the 3 countries is presented.

FE like other firms, are affected by the national and – synonymously to them – cultural elements of the environment they stem from. Culture, as a complex multidimensional structure, consists of some fundamental parts which have tremendous impact on an enterprise's overall functioning, mostly on strategy, identity and image. Quoting Marques, Presas and Simon (2014, p. 220) "values are part of the culture of the organization and cultural change will probably be based on value changes, which in the case of a family firm are conditioned by the values of the owning family".

The Role of FEs in the Chinese Economy

The history of FEs and entrepreneurship in the People's Republic of China dates back only to the late 1970s, when the Cultural Revolution came to an end. Although many private firms existed when PRC was established in 1949, most of them were transformed to state owned enterprises (SOE) by 1956. The remaining small businesses ceased to exist during the Cultural Revolution, when all kinds of entrepreneurship activities were called "the capitalist tails" (Zhang & Stough, 2012, p. 16). Initially, the government allowed only for the creation of Township and Village Enterprises (Xiangzhen qiye), which could be set up by "townships, villages, several households (or partnerships), individual household (or private), or jointly by Chinese and foreign partners through shareholding mechanisms or shareholding cooperative systems" (Liang, 2006). The success of that reform led to the creation of individual businesses in areas such as "repair, service, and handicraft industries" (Wu, 2005). Despite many limitations, the number or registered private businesses went up from 0.3 million in 1978 to 14.53 million in 1988 – almost all such individual businesses were FEs (Zhang & Stough, 2012). In 2015, there were 7.4 million private enterprises in PRC and FEs accounted for 85.4% of them. Additionally, the number of family-based individual businesses (which employ up to 7 workers) rose from 24.64 in 2005 to 34 million in 2015. Almost one third of China's listed companies in 2015 were family controlled (Cai, 2015). Most of those enterprises are successful businesses (PWC, 2014). The Chinese FE sector went through the period of fast development and their number was growing fast for the last 3 decades. On the one hand, the Chinese economy is restructuring and the sector of services, which is traditionally dominated by FEs will be playing a major part in that transition. That will give many FEs the potential for high growth. On the other hand, most of FEs in China will soon face the problem of the first succession and the need to change the social perception of their companies.

Governmental Policy Towards FEs in China

The Chinese government still favours SOEs and does not allow private investment in strategic and most profitable businesses. The government not only does not provide support for FEs, but usually discriminates against them in favour of SOEs. This becomes particularly evident

around financing. Most of the banks operating in the Chinese market are state owned, and provide soft loans to SOEs at the same time limiting FEs' access to capital (Cheng, 2014). The government help in the form of tax breaks for small and micro enterprises (of which most are FEs) improved in 2015 in the face of market turbulences which threatened the labour market with a possible rise of unemployment (Swire, 2015).

The Attributes, Values and Core Competences of the Chinese FEs

The manners in which businesses are conducted within the Chinese FEs are largely determined by social and cultural factors. Especially important are the values connected with Confucianism, like family hierarchy and harmony (Hui-Chen & Huang, 2012). A typical Chinese FE is headed by a patriarchal or matriarchal figure who is often the founder of the business. The other family members may have other key positions. The extended family may conduct its own businesses which are linked together to form a complex network. Cross-holdings are common but not always apparent since the knowledge of such holdings is often kept private. Decision making is often informal even in publicly held corporations and occur at such events as family dinners (Ming-Jer, 2003).

Family ties are crucial for building guanxi, which is often seen as the key intangible asset for doing business in China (Chow-Hou, 2014). Guanxi is a term meaning relationships or connections and is considered important in the Chinese society and in some peculiar business realms. It is an unwritten agreement that the group expects to do favours to other partners in the network. Reciprocity is expected without ever being communicated. Establishing and maintaining a guanxi network is the imperative in most Chinese businesses (Wall & Preston, 2010). People are evaluated informally and personal reputation is more important than achievements. Seniority, trustworthiness and reliability play more important role in deciding about promotion, firing, hiring, rewarding, and evaluation criteria instead of good performance (Susanto & Susanto, 2013). Guanxi does not cause FE operations dysfunctional. Management in the Chinese FEs is long term oriented, and given favours should be returned in the future. If there is a market turmoil or a FE goes through a period of financial problems they can expect help from other related FEs. Loyal cooperating firms expect the same treatment if they face hardship.

One of the major problems of the Chinese FEs is inheritance. Most of them are still managed by their founders. Recent study revealed that only 8% of FEs have successfully managed to pass on the baton to the next generation (Cai, 2015). However, the Chinese Confucian values lead to successful inheritance in overseas Chinese businesses (Yan & Sorenson, 2006). FEs in mainland China face a very different problem. Family planning policy introduced at the end of 1970 allowed most of the Chinese entrepreneurs to have only one child. Although the policy was reformed in 2015, making it possible to raise the second heir for most of the families, it might be too late to raise a child who would take over the management of some of these FEs. It might have a negative influence on the succession process in the Chinese FEs (Man, Wing & Fang, 2016). There is a positive association between family size and family ownership and control has been proved (Bertranda, Johnsonb, Samphantharakc & Schoa, 2008). It is certain that a smaller number of children in China will result in lower succession rates.

The Chinese Stakeholders' Attitudes

In the nation's struggle toward modernisation, the Chinese suffered because of feudalism, in which family cronyism played an important part (You-Li & Ling, 2003). Traditional FEs were called "class enemies" and oppressed in many ways. Nowadays, families play important roles in the success of a significant proportion of economy, but many businessmen, particularly the successful and prominent ones, tend to conceal or evade questions about their family background out of fear that people will stigmatise them as traditional and undermine their achievements. Chinese companies do not organise themselves around their identity as FEs even though the Chinese have established numerous associations in their hometowns. Without advocates, such as business associations to plead their case, the weaknesses of FEs, such as nepotism and family infighting are overplayed and even ridiculed in the media and even in popular soap operas. It is prevalent and accepted as a common fact that FEs in China are mostly small, unprofessional, backward, nepotistic and fraught with questionable business practices (Morris, 2011).

The Position of FEs in the Nigerian/African Economy

SMEs form 98% of all businesses in most countries, the same as in Nigeria, they are therefore a critical part of the Nigerian economy with majority of these companies classified as FEs, hence the importance of FEs in the local, national and global economic environment. Onuoha shows the lack of objectives, defined goals and strategies by many of the families surveyed for the research in Nigeria (2012). Of those surveyed, 89% do not have a clear vision or mission statement, 87.5% have not attended any form of training and 77% are unaware of government policies setup to encourage entrepreneurs. There are many benefits – missed by FEs in Nigeria – to be gained if they have clear objectives, with staff being well trained and if the companies have functional and effective board of directors. Nigeria has one of the highest population growths in the world at around 2.3% per annum (The World Bank DataBank). Like many developing countries in Sub-Saharan Africa, the country suffers from high levels of unemployment which official figures give at 12.1% quoted in Asaju, Arome and Anyio (2014), but researchers believe to be at least 3 times the official figures. SMEs play an important role in the economic development and growth of countries, in terms of employment creation and being close to their customers and the ability to react to the dynamic business environment. FEs form a large percentage of SMEs and this trend is likely to continue into the foreseeable future (Emerole, 2015). In Nigeria, due to lack of capital for business start-ups, many businesses were started by family members. This setup has helped to pull together both capital and human resources, at the same time provide employment opportunities for family members. The Nigerian Economic intelligence unit report, 2013 confirms that 52% of the 200 largest listed companies on the Nigerian Stock Exchange were FEs. SMEs are the recognised engine of growth and with between 70% – 90% of business enterprises in Nigeria being FEs, they contribute to the economic growth, development and reduction in the poverty level (Onuoha, 2013).

Institutional Support for FEs in Nigeria

There are no specific institutional supports for FEs in Nigeria, but the government is now developing policies to support small businesses in general, the majority of which are FEs. The government support programmes are in the form of lending schemes and the provision of financial help to support SMEs, such as the National Economic Reconstruction Fund (NERFUND), the World Bank Small Scale Enterprise Loan Scheme (SMES), Nigeria Export and Import Bank (NEXIM) as well as the community Banks and the People's Bank of Nigeria (Osotimehin, Jegede, Akinlabi & Olajide, 2012). Having realised the importance of the role of SMEs in other countries where SMEs contribute not only to GDP, but employment and the economic development, the government now provides some institutional support through agencies which support SMEs in general and is also involved in the production of data to help formulate policies to support SMEs. As part of the government institutional support, the government at the local, state and federal levels have embarked on many entrepreneurship schemes to encourage business start-ups. Many of these schemes lead to the creation of employment to help absorb some of unemployed workers. These schemes have therefore led to the creation of many SMEs. These enterprises are seen as the source of employment creation, the eradication of poverty and they help in the economic development. It is easy to understand why this approach is tenable (Onuoha, 2013).

The Key Attributes of the Nigerian FEs, Major Values, Competitive Advantage

The most enduring attribute of FEs in Nigeria is the importance of the extended family in helping to develop FE businesses and in their contributions to the gathering of much needed capital for the setup of FE in Nigeria. It is an important institution in Nigeria, but Wolf (1955) contends that this can be a stumbling block to the entrepreneurship development by reducing the level of risk since more conservative family members may be unwilling or reluctant to contribute capital where a venture requires a lot of capital or is considered to be too risky.

The Nigerian culture is still based on gender hierarchy, where women are treated less favourably than men and male off springs are promoted before the female members of the same family because men are seen as being able to continue the family name (Joseph, 2014). The Nigerian culture also favours the eldest child in many instances, even when not suitably qualified. The Nigerians are also guided by a system which respects age over experience or qualification when it comes to inheritance and succession (Fadipe, 1970). The issues are compounded by the polygamous nature of family relationships where men can marry several wives and have children from multiple women (Ogundele, Idris & Ahmed-Ogundipe, 2000). Researchers such as Obayan (1995) believe that the extended family system is a burden on entrepreneurship. This state of affairs can lead to more successful family members looking after less successful ones with no incentive for the less successful ones to strive for themselves (Joseph, 2014).

In the study of FE survival in Abia state of Nigeria, Emerole (2015) confirms the link between different factors which affect the survival of FEs, these factors include, the age, education, the experience, the type of business and the gender of the founder, but most critically, the survival of a business depends on the implementation of robust succession planning and good corporate governance mechanism by the business.

Many FEs do not survive to the next generation, in part due to the lack of transparency, poor corporate governance mechanism and inadequate future plans (Newell & Frynas, 2007). Onuoha (2013) concluded that 95% of businesses which were surveyed for his research did not have any succession plans in place.

As a developing country Nigeria has an undeveloped private sector which consists mainly of FEs, most of them are a critical part of the nation's economic development, hence the need for this type of business to be professionally structured and managed (Onuoha, 2012). The same enduring qualities of FEs also provide some of the biggest challenges for such enterprises and their eventual survival in the future.

Nigerian Stakeholders' Attitudes

The large numbers of FEs in Nigeria mean that they are generally seen in a positive light, the issues of succession, family disputes and other matters enumerated above make FEs not particularly attractive to the people outside the family. These issues are compounded by a culture where polygamy is common and extended family members and cultural beliefs can also influence the business decision making process. These factors can lead to instability or threaten the existence of FE. They can affect the stakeholders' attitudes towards such entities, especially the breakdown of family relationship may also affect the continuation or the survival of the business entity.

The Role of FEs in the Polish Economy

FEs have been in existence in Poland for many centuries. However, it was only at the turn of the 20th and 21st centuries when experts focused on the subject in a perceptible way. During the communist era, Polish private property was limited to minimum so the fact of running own business used to be a natural aspiration. In state-owned companies the sentence: "It belongs to the state, that means to nobody" caused stiffening negative attitudes. Subsequently, all those circumstances led to the killing of entrepreneurial spirit. However, there were some exceptions to the rule: small firms owned by Polish families tended towards traditional sectors and their roots. But contrary to some communist countries, private companies could function in a limited scope in Poland. Hence, the country was not totally closed with regard to economic, tourist and cultural contacts with the West (Nikodemska-Wolowik, 2005). With the collapse of the old regime in 1989, the outburst of entrepreneurship resulted in the creation of numerous family businesses, which became the backbone of the blossoming free-market economy.

The period of the economic transformation established tough rules of competitive struggle in which many companies did not survive. FEs hold an important place in the Polish economy with self-employed i.e. entities employing no staff (which are a priori qualified as family firms). They dominate over non-family ones in the following sectors: wholesale, retail, industrial processing, transportation, storage management, hotels and restaurants. It is noteworthy that 44% of micro-enterprises and SMEs are run by families, with 78% of them employing the first generation family members at different levels of the firms' hierarchy and 51% of them at the management level (Nikodemska-Wolowik, 2015).

Institutional Support in Poland

When Poland joined the European Union in 2004, enterprises gained new opportunities to develop their businesses. The number of Polish organisations whose activities are dedicated to FEs has increased rapidly since the year 2008. The Polish Agency for Enterprise Development has support for family businesses as one of its top priorities. Since autumn 2008, PARP, a governmental body, has been engaged in an unprecedented project entirely concentrating on family enterprises per se. The aforementioned project is an exploratory one because of the significance of FEs for the Polish economy, as well as the role of training and consulting tools designed to help them, which are new to Poland. Nowadays some institutions and organisations support family businesses on a regular basis. They include: associations of family firms, academic institutions and consulting firms. Two of them are worth mentioning here as they were founded in 2011; the Family Business Foundation (in Polish: Fundacja Firmy Rodzinne), which strictly concentrates on FEs' needs and problems. The other association is the initiative of Family Enterprises (IFE), a private association established in 2007. All those aforementioned undertakings have had a positive impact on building Polish FEs' position on the market.

Attributes and Values of Polish FEs

The strengths of FEs which shape their competitive position can be discovered in the Polish history. FEs have survived difficult times thanks to their philosophy of faithfulness to basic values, respect for others and solid work. These entrepreneurs have always believed and are still convinced that the power of a family constitutes a great value in itself. The companies which survived experienced double verification: during the communist regime, when private initiatives were treated suspiciously by the government, and after 1989, when the free market was being shaped. Polish entrepreneurs began to enjoy some of the benefits of having their own family identities. FEs, especially those with many years of history, give solid bases for building strong and unambiguous identity which relates to reputation and perceived image. One can notice their stability, advantages of organic development, conservatism, which are however, compensated by the elimination of risk and the guarantee of predictability, as well as active involvement in social initiatives, especially in the local area. FEs present much greater flexibility when it comes to the needs of their clients. Thanks to unregulated working time, they can have a more flexible approach to the needs of the market. They often locate themselves in market niches, providing specialised non-standard services. As a result of their flexibility and greater adjustment capabilities, family firms are more resistant to economic downturns: they promptly adjust to new conditions in times of "crisis", reducing costs when necessary and refraining from unnecessary spending. Enterprises like these can reduce or even refrain from giving remuneration to family members. FEs are characterised by a greater responsibility level for the family, employees, as well as the local community in which they function. While making any kind of decisions, managers remember that they are responsible not only for their employees, but in some way also for their families, as well as the closest local community whom they often help.

Polish Stakeholders' Attitudes

The Polish society has dynamically changed the attitude towards FEs which has been becoming positive for circa one decade. The Poles associate FEs with such features as: cultivating tradition, high quality products guaranteed by the owner personally, reliable, honest and trustworthy (Nikodemska-Wolowik, 2015). The owners are considered to be entrepreneurial, hard-working, resourceful, creative and brave. Tradition was chosen as the major feature by 25% of the Poles (Nikodemska-Wolowik, 2015). More than 30% of the Poles would pay more for products manufactured by FEs (Nikodemska-Wolowik, 2015). The Polish society shows lack of trust towards foreign investors who a few times followed the scheme: "buy out, transfer profits, then sell or transfer to a cheaper country and leave the staff with their problems". Moreover, there are strengthened ethnocentric attitudes of the Polish society which support domestic business more distinctly. It is worth highlighting here that young, well-educated and ambitious graduates perceive their chances for better careers in SMEs, as well as FEs, not just in large international businesses.

Similarities and Differences Between Chinese, Nigerian and Polish FEs

While comparing the attributes of FEs and external conditions of their functioning in the 3 countries, some crucial factors which influence their performance can be noticed. They are considered from the global perspective to make the judgement more universal. Despite several obstacles in FEs' performance (particularly in China and Nigeria, i.e. economic, demographic, legal, and political conditions presented above) there are some sources of CA. The geographical and cultural distances are widely known as well as differences in the economic development but the similarities should be also analysed. Thus, the sources of CA, summed up in Table 1, are divided into 3 groups of features.

CONCLUSIONS

The paper deepens the knowledge of FEs in the international context, encouraging researchers to conduct profound studies in this area. Being aware of some limitations, as the lack of the typical comparative research procedure and statistical analysis, the inquiry focuses on opening a wider discussion on those issues. It was highlighted that the input of FEs in the development of the Chinese, Nigerian and Polish economies is substantial, nevertheless they need a holistic approach concentrated on their specific attributes. The success of FEs and their distinctiveness mean that more research would enable to understand how they can continue to develop for the future. Moreover, as the consumers' attitudes towards FEs in the 3 countries differ significantly, a unified survey which can be adjusted for the cultural requirements of each country is recommended. Furthermore, the policymakers in the 3 countries should support FEs to pass smoothly through the succession process in legal and financial terms. Similarly, the financial rules in these countries should be more stable and approachable for FEs. In the historical perspective FEs have proved to be important players in building a relatively solid economical environment. Therefore, it is highly recommended to promote the value of FEs and support their significance in the economic development. The Chinese and Nigerian managers could enhance the productivity of their enterprises by evaluating the experience and qualifications of their workers over their position in the family.

Table 1. Selected factors influencing the FE performance as the sources of CA

	SIMILARITIES	DIFFERENCES	AUTONOMOUS FEATURES
POSITIVE	- FEs are rooted deeply in tradition - family hierarchy and harmony - seniority, trustworthiness and reliability inside the firms - **in Nigeria** FEs are generally seen positively, **in Poland** the overall perception of FEs is much enhanced - **in China and Poland** FEs avoid risky undertakings in business	- **in China and in Nigeria** age more respected than experience or qualifications - **in Poland** a progress in staff judgement - deep solidarity even among distant relatives **in China**, grounded in the philosophy - **in Nigeria** strong support among extended families' members, **in Poland** weaker ties among families - historical experiences in creating entrepreneurial spirit much stronger **in China** and **Poland** than **in Nigeria**	- **in Poland** attempts to build free market economy - **in Poland** multidimensional support dedicated to SMEs by the EU funds and the FEs' associations (mostly soft) - **in China** guanxi as the key asset for doing business - **in Poland** a noticeable progress in succession planning
NEUTRAL	- decision making process is often informal - personal reputation more important than formal achievements - in micro and small firms business financed by members of family/families because of limited access to capital	- the conditions for running business being on completely different levels - the advancement in exposing FEs' identity	- **in Poland** quality products guaranteed by the owner personally - **In Nigeria**, polygamy can lead to fighting between the children of different wives of the founder. This may lead to issues when it comes to succession

* a phenomenon visible in at least 2 countries
Source: own study.

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Strategic Changes in Transnational Corporations as an Adjustment to the Challenges of the 21st Century

Magdalena Rosińska-Bukowska

A B S T R A C T
Objective: The article aims to discuss the direction of changes in the strategies of the most powerful transnational corporations (Top-TNCs) as a result of adjustments to the new challenges created by the evolving global economy – an attempt to identify the fundamental, universal pillars of the strategy the Top-TNCs.
Research Design & Methods: The paper, apart from literature review and its critique, presents the results of a survey among 252 TNCs. The author conducted in-depth studies – using the Multidimensional Statistical Analysis, the Strategic Analyses, as well as the Grounded Theory Method.
Findings: The changes in the strategies of the Top-TNCs proceeded according to a uniform scheme – the authorial Model of Business Integration was presented as the standard for TNCs adjusting to further challenges posed by the evolving global economy. Based on the survey, the author identified universal pillars of the Top-TNC strategy: glocalization, business networking, orchestration and coopetition.
Implications & Recommendations: TNCs desiring to engage in the most efficient system for creating international competitiveness should apply the following tactics: link globalization and regionalization, build a multi-level relationship system, creatively combine various types of organizational and social structures, simultaneously employ cooperation and competition.
Contribution & Value Added: The work sought to provide evidence that regardless of the area of activity, the pillars of strategy for Top-TNCs are the same in terms of the core, but are often implemented in different forms. The author proposes the original concept for assessing the competitiveness of network enterprises – the Synthetic Indicator of Creation of Added Value.

INTRODUCTION

In the 21st century, the global economy has undergone dynamic changes. It resulted in new challenges for companies – requiring the combination of internationalization, integration, entrepreneurship, innovation and sustainable development (Rosińska-Bukowska, 2016; Hagen, Denicolai & Zuchella, 2014). Thus, the most powerful transnational corporations (Top-TNCs) have been forced to create the basis of multi-layered network structures in order to build their competitiveness – therefore creating the model of Global Business Network (GBN) in stages.

The main objective of the article is to discuss the direction of changes in the strategies of the most powerful transnational corporations (Top-TNCs) as a result of adjustments to the new challenges created by the evolving global economy – an attempt to identify the model of transformations taking place in transnational corporations (TNCs). On the basis of the concept of Grounded Theory Method (GTM), the fundamental pillars of the strategy which can be considered as universal attributes of modern corporations that are the leaders of individual industry sectors have been indicated.

The paper, apart from literature review and its critique, presents the results of a survey conducted among the Top-TNCs which were classified in the *Top 100 TNCs* in the UNCTAD's World Investment Reports of 1991-2013. When selecting from 252 TNCs listed in the rankings, the Multidimensional Statistical Analysis (MSA) was used – the original Synthetic Indicator of Creation of Added Value (SICAV) of the author's own invention. The ranking of TNCs in selected industry sectors was made by the linear ordering method (by SICAV). Then, for the 3 leaders in each of the sectors, in-depth studies were conducted. Based on the concept GTM, test results for the TNC-leaders of all sectors were juxtaposed four pillars of strategy identified, which can be considered universal indicators of modern corporation development.

The analytical model is based on an assumption that changes in the global economy have forced changes in corporations – the intensification of cooperation on many levels, international entrepreneurship, the creation of multi-level network structures. This study assumes that the creation of value added to the current standard emerges through the use of a multi-layer GBN capital. For the purpose of the analysis of company business systems, they have been divided into the following subsystems (Rosińska-Bukowska, 2012): market (KRn), financial (KFn), innovative (KInn), organizational (KOrg) and institutional (KIns). Thus, the analysis becomes multidimensional and enables both an analysis of internal conditions (relationships established among the various subsystems) and external ones (the principles of harmonizing with the surroundings).

It is very important to emphasize that macro factors (economical, political, ecological etc.) are constructive for the power of TNCs. It seems reasonable to identify the key macro challenges, such as: linking globalization and regionalization (glocalization), building a multi-level relationship system (global network), a creative combination of various types of organizational, managing and social structures (orchestration), simultaneous cooperation and competition allowing for a replacement of operation with exploration (coopetition). These ideas are fundamental and appear to be pillars of strategy for some of the most powerful TNCs. These challenges are included in the analysis of institutional capital of corporations and networks to which they belong to – as inseparable elements of strategic planning of corporations today.

The proposed approach focuses on the role of knowledge and innovation (behavioural concepts, theories innovation, key competencies), the possibility of exploring the capacities of the global environment potential through internationalization (the concept of international entrepreneurship, theory of economic integration, international-by-stages) and the ability to build appropriate relations and structures (theories of agglomeration, mergers and acquisitions, organization and management). The concept is an attempt to present the model for the assessment of competitiveness of TNCs as the combination of positional and resource streams, taking into account the importance of the international context.

The first part of the paper includes the review of the literature on the shaping of views on the essence of corporations as well as on the causes and directions of changes in their strategies resulting from the adjustments to the new challenges. The second section discusses the methodological assumptions of the empirical studies, including the hypotheses, the research design, the analysis diagrams and the rules governing the selection of objects. The third section elaborates on the results of the empirical research as well as the conclusions and suggestions regarding further studies.

New challenges posed by the global economy have determined appropriate behaviours of corporations. An adequate competitive strategy requires the development of networks with numerous internal and external stakeholders, including competitors, customers, employees, non-profit organizations as well as the national and local government in the home and host countries. The foundation of corporation effectiveness is the ability to adapt to new requirements. On the basis of the research, it can be said that changes in the strategies of Top-TNCs proceeded according to a uniform scheme – described via the MBI concept. Consequently, Top-TNCs developed universal pillars of strategies, which are: glocalization, business networking, orchestration and coopetition.

LITERATURE REVIEW

The literature review regarding the shaping of notions on the essence of corporations and the bases of their successful expansion should begin at an early point, in order to determine the most crucial pillars of the corporate strategies generating highest success. The description of corporations as specific forms of organization is observable in the works of Kaldor (1934), who stressed the matter of a dynamic development of corporate structures as a basis for an unlimited, higher-than-average development. In his later works, he also emphasized that corporations are, above all, coordinating structures and therefore, their actions do not fall into the scope of the paradigm applied to the traditional (typically private) companies (Kaldor, 1960). It evidently indicates the necessity of transferring the focus point during the TNC analysis from the study of production structures to the study discovering the management mechanisms. In the research on TNCs, the works of Coase (1937) are also of highest importance, as it was him who described enterprise as a system of relations and correlations aiming to organize a specific transaction thread and not always based on the rules of trade contracting.

For the purpose of this study, the work of E. Penrose (1959) was of utmost importance. She emphasized that the strength of TNCs is based on the organization and coordinating skills used to create an adequate resource collection adjusted to meet the requirements of the neighbouring environment. These resources constitute the essence of the existence of corporations. They comprise tangible and intangible assets, including human resources.

The key role of the organization is creating a satisfactory system of the available resource usage. It seems a legitimate assumption that combining this theory (developed by P. Selznik) with the classic Ricardian notion of comparative advantage resulted in the creation of the theory that is the base of the modern perception of the essence of corporate strategy – the Resource Based View (RBV). The RBV concept accentuates the role of the soft resources, that is the informal knowledge or skills, human resources, relations with the stakeholders (clients) and image in building a comparative advantage.

Yet another crucial observation indicates that the essence of corporate strategy includes the transformation of non-specific resources (mostly the financial capital) into specific resources constituting unique and crucial competencies (Hamel & Prahard, 1990). At the same time, it needs to be emphasized that generally the assets of a given subject, understood as specific resources, have a limited capability of adapting to changes, and the individual market participants have an additionally limited knowledge about the requirements and directions of changes on the global market. In the corporate model of network layouts, it is possible to limit the transaction costs and, therefore, gain the comparative advantage as, among others, the effect of the synergy of resources. The combination of various types of specific resources presents the TNCs with better adaptative skills. Additionally, thanks to their global arrangement, it is possible to learn from inner experiences by transferring knowledge and experience between the network members. The improvement in the decision-making rationality is related to the wider access to knowledge about the specificities of particular market zones. The restriction of opportunistic behaviours occurs thanks to the creation of an entangled organization, working as a system of joined vessels (Khandwalla, 1972; Williamson, 1991; Håkansson & Snehota, 1995; Rosińska-Bukowska, 2012; Barczak, 2016). As a result, the crucial elements of the modern business model include coopetition and orchestration, that is the abilities to organize and combine competition and cooperation as well as market and hierarchy. It should be mentioned that the concept of combining competitiveness and cooperation could be already found in the work of Alchian and Demsetz (1972), wherein the authors deem enterprise as both the specialized market structure and the substitute of the market within the scope of organized transactions. The enterprise collects and processes market data in order to effectively organize a collective production of goods and services using various resources of numerous administrators. The concept of orchestration is the collection of processes serving to create values thanks to the unique ability of the effective usage of various resources of numerous subjects (Dhanaraj & Parkhe, 2006; Czakon, 2012, pp. 196-210).

Referring to all the above-mentioned concepts aims to substantiate the later selection of titles characterizing the pillars of the development strategies in modern corporations. The selected elements have a fundamental meaning in the modern model of business, although they are not exactly innovative.

In conclusion, the strategy of corporations in this text is presented from the evolutionary perspective – as an adjustment to the global changes. The state of balance is a moment in which a TNC is optimally incorporated into the requirements of the environment (Hodgson & Knudsen, 2006). Therefore, the model of organization and management (international enterprise), the rules of expanding onto new markets (internationalization), the approach towards dealing with the complexity of the inner and outer environments (balanced development) assumed by the TNCs are of crucial importance.

The role of the selection of an adequate strategy concept, which would contribute to a long-term development of organizations and match numerous categories of stakeholders, is still a subject of discussion. Researchers have provided various evidence on how different factors facilitate or constrain the success of certain companies. Individual researchers focus on their preferred approaches e.g.: the role of the internationalization process (Daszkiewicz & Wach, 2014); the role of intellectual capital and the innovation model (Sveiby, 2015; McCutcheon, 2008; Bounfour, 2003); the role of entrepreneurship in the context of internationalization and globalization (Wach, 2015) and so on. Others seek to create holistic approaches – the management based on an effective implementation of the concept of sustainable development (Pike & Roos, 2000; Viedma, 2001).

In this article, the main references are to: the concept of phased economic integration based on Balassa's model (the internationalization concept for TNCs – the Model of Business Integration); the models based on the concept of incremental accumulation and implementation of knowledge (the behavioural theory of the firm); the concept of international entrepreneurship (the interdisciplinary theory of the firm). Therefore, the approach combines at least four research domains/theories of: entrepreneurship, international business, global economy and international management (Cavusgil, 1980; Andersson, 2003; McDougall, Oviatt & Shrader, 2003; Zucchella & Sciabini, 2007; GBN around the Top-TNCs which become orchestrators of this system (Rosińska-Bukowska, 2012; McDougall-Covin, Jones & Serapio, 2014; Vahlne & Ivarsson, 2014; Coviello, Jones & McDougall-Covin, 2014).

The classical competitive perspective of internationalization has been explained by the author. The internationalization process is incremental (international-by-stages), members accumulate knowledge and experience (Wickramasekera & Oczkowski, 2006). Therefore it uses the ideas of so-called models of learning and the concept of learning by export (Wach, 2015, pp. 37-42; Wąsowska, Obłój & Ciszewska-Mlinarič, 2016). The Top-TNCs go through various stages of internationalization as a 6-phase process of excellence. This is the Model of Business Integration (Rosińska-Bukowska, 2015) – the concept shows that companies pass through following stages of creating competiveness using new methods developed as a result of experience gained. The last phase comprises the creation of the GBN around the Top-TNCs which become orchestrators of this system (Rosińska-Bukowska, 2012).

On the basis of a 6-stage model of building a single economic and political organism (according to Balassa), the personal concept of the Model of Business Integration (MBI) was built, which depicts 6 stages of integration development adequate for businesses (Rosińska-Bukowska, 2015, pp. 139-145). Each subsequent stage is to achieve a higher level of organizational sophistication and reflects the improving model of acquiring knowledge, developing skills and competence of a given entity. MIB is a flow diagram of the companies that can be considered as reflecting the essence of the changes made in the integration of the classical model (countries). MIB it is the idea which applies a well-known and widely accepted scheme in order to determine the sequence of integration activities of enterprises. The concept allows for staging and department development, describing the subsequent phases of exploitation of resources, skills and competences (including the under-built integration structure). Companies accumulate knowledge and experience during the integration process, which is a progressed internationalisation

considered an incremental process. The following stages of the corporation development are related because of the incremental deepening of the process of internationalization. It can be described using the constructed Model of Business Integration, which refers to the most popular economic integration model by B. Balassa.

Gradual changes help improve the position in the global economy by implementing innovative concepts of international entrepreneurship as a combination of innovative and proactive behaviours, as well as those directed at risk-taking, which cross national borders and aim to create values (Knight, 1921; Drabik, 2016). However, it needs to be emphasized that currently it is more about the ability of TNCs to create socially-useful values. Top-TNCs function as social structures with high survival rates thanks to upholding their institutional continuity and the multi-layer, multi-directional transfer of knowledge and experience.

In conclusion, the development of TNCs is one of the most important processes of social and economic changes in the global economy. The strategy selected by the TNCs turned out to be the perfect form of organization, capable of a flexible adjustment to new challenges (Waśniewski, 2011, pp. 48-50). TNCs have the ability to divide the risk associated with demanding projects and are able to create the added value systematically. These qualities allowed them to dominate on the international market (Friar & Meyer, 2003) and set the pace of technological changes, investments and economic development (Weidenbaum & Jensen, 1991; Astebro, 2003). As a result, they are organizations which continuously need to include: the complicated collective decision-making processes, the moderation of inner conflicts, the complicated and dynamic relationship with the external environment and reconciling the interests of many diverse members of the system. The research question is: to what extent can these requirements be contained within the scope of universal strategic pillars common to all corporations? Or, rather do different corporations show qualitatively varying patterns of behaviour and is there no single perfect model of activity?

MATERIAL AND METHODS

The main objective of the study is to discuss the direction of changes in the strategies of the most powerful transnational corporations (Top-TNCs) as a result of adjustments to the new challenges posed by the evolving global economy and determine the main pillars of their development strategies.

The research hypotheses tested in this research study were as follows:

H1: Transnational corporations, in order to be able to adjust to the next challenges of the evolving global economy, implement the phased process of adjustment, which can be described using the constructed Model of Business Integration. The following stages of the corporation development are related because of the incremental deepening of the process of internationalization.

H2: The universal pillars for the development of the most powerful corporations can be identified, because even though they worked in various sectors, they have been subjected to the same factors requiring an adequate conduct. Requirements for the leaders of business networks have a cross-sectorial nature, as they reflect the trends of universal character – related to the challenges of the evolving global economy e.g. the sustainable development requirement.

The Top-TNCs were selected on the basis of the *Top 100 TNCs* UNCTAD (1991-2013). The sample contained 252 TNCs. They have been divided (by the author) into 9 sectors: automotive, petrochemical, electronics, telecommunication and media, chemical-pharmaceutical, consumer, industrial goods and services, public services and holdings. Only the corporations classified in the ranking for at least a decade were the included in the study.

The main research method for the non-experimental quantitative research, which was applied in this research project, comprised of the collection of comparable data (from international reports, annual reports of corporations, rankings and statistics) with the intent to process them with the MSA and generalize the sample results to a population. In order to gather empirical material, the author used primarily *Top 100 TNCs* (when needed, the data was supplemented by: *Forbes Global 2000* 1990-2014, *Fortune Global 500* 1990-2014, and the annual reports of surveyed corporations).

Assuming that creating the GBN requires from corporations to have an adequate development potential, the author created SICAV to assess elements of the economic and intellectual capital of Top-TNCs. The constructed SICAV is designed to reflect the ability of the corporation to create added value through the power of connecting all categories of capital held within the network. The parameters taken into account in the design of the synthetic indicator were chosen in such a way, as to reflect the impact of each layer of capital on the competitiveness of TNC. A set of five diagnostic indicators was used for the construction of the indicator.

Within the proposed concept the element reflecting the state of the economic capital of the company is Return On Equity, which combines elements describing the area of finance, production and sales. This indicator considers the impact on the profitability of committed capital of three important factors: operational efficiency, expressed by return on sales, efficient use of acquired assets, and leverage, reflecting the impact of the involvement of foreign capital to increase profit per equity unit: equity multiplier.

Four indicators illustrate the state of intellectual capital[1]:

− share of intangible assets in the creation of the value of sales [(MV-SE)/S] – the impact on sales of standard factors not measured directly, i.e. soft stimulants of competitiveness; an attempt to quantify the hidden factors increasing the competitive potential related to intellectual capital (Marr & Roos, 2005, pp. 28-41),

− cost of research and development per employee [(R&D)/E] – the technological advancement of the production system against competitors, the ability to create new standards and value added (Andelin, Karhu & Junnila, 2015),

− indicators of assets (the share of foreign assets in total assets) [AF/A] and employment (the share of foreign employment in total employment) [EF/E] – the internationalization of the organizational system; the ability to derive potential from the multicultural human capital, build creative international teams and arbitrate is highlighted, resulting from the investment of assets outside the home country; the skilful following of trends, including the movements of the competition and building creative international teams.

The calculations of SICAV were made using Microsoft Office Excel and numerical taxonomy (Kolenda, 2006). Via the methods of linear ordering MSA (Mikulec, 2011, pp.

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[1] MV – Market Value, SE – Shareholder's Equity, S – Sale Value, E – Employment, EF – Employment Abroad, A – Assets, AF – Foreign Assets, R&D – Research and Development Costs.

93-101) on the basis of SICVA, TNCs ranks in all sectors were established. As a result, 3 leaders emerged in every sector – these corporations were further tested. The in-depth qualitative analyses included the examination of: the path of internationaliza-tion – the stages of the MBI; the creation of networks – diagrams of strategic analysis; the guidelines for development strategies – the study of records in the annual reports of the TNCs. The last phase of the study comprised the use of the GTM methodology to indicate the pillars of corporation strategy, universal for modern TNCs.

The MBI is the author's original concept using the Balassa's integration concept to explain the changes in corporations resulting from the adjustments to the changes in the environment (Rosińska-Bukowska, 2012). The author performed the study to confirm the passage of the sectors' leaders through the described MBI path (the history of building relationships, creating structures) – for TNCs-leaders in each sector.

The study of the process of unifying smaller subjects that comprise TNCs (the free trade zone; the agglomeration model) was conducted via the MBI. It has been tested whether consolidation (an equivalent of a customs union – the creation of "national monopolists" or trade oligopolists) is present on the level of the home country. The question of how did TNCs undertake trade and investment-production expansions into the international market was asked. Common undertakings (regional ones as well as the undertakings within a given sector) with foreign partners and the models of step-ping outside of the home trade (or region) were studied. A list and models of *joint venture* agreements (both vertical and horizontal in nature) as well as the models of the "ageing" of cooperation were identified. The issue of whether they concern only the trade and production aspects or, also, the flow of technology and the intellectual resources, was studied together with the question of how many of them lead to changes in ownership (mergers and takeovers). The next stage (of the currency union) comprised the analysis of the rules of building a portfolio of brands – the purchase of shares, a takeover by the exchange of shares, another *joint venture* and the identifica-tion of the appropriate strategies of a brand. Reaching the highest level of GBN maturi-ty consists of TNCs noticing the necessity of cooperating with the competitors in creat-ing standards, innovative solutions and solving global problems etc. It is enabled by the indication of changes in the strategies confirming the functioning of TNCs based on the principals of social responsibility and sustainable (balanced) development.

The confirmation that a given TNC has built a GBN was the basis for further stud-ies. Using the methodology of strategic analyses (Obłój, 2014), a study (via the PARTS study, the value chain, strategic groups) was conducted, serving to identify the base assumptions of the development strategies of the TNC leaders of sectors (3 TNCs in each sector – 27 TNCs which are representative for main trends in the cur-rent global economy). Then, on the basis of the GTM methodology, or discovering the theory from experience (Götz & Jankowska, 2014), development priorities were determined by the systematic identification of the crucial elements of the strategies applied by the studied corporations. Subsequently, by the development and verifica-tion of the theoretical concepts emerging on the basis thereof, the 4 following pillars of strategy comprising the bases of Top-TNCs development were distinguished: coopetition, glocalization, business networking and orchestration.

RESULTS AND DISCUSSION

The stage models of internationalization – companies which are not interested in operating on the international market (Kalinic & Forza, 2012) or "born globals" (Rennie, 1993) or "born regionals" (Sui, Yu & Baum, 2013) have been discussed critically. In addition, the legitimacy of the following statement by Waśniewski has been challenged: "in the same macroeconomic environment, even in the same culture, different corporations present qualitatively different behaviour patterns – there is no single, ideal pattern of activity". Many researchers criticized stage models and juxtaposed them with the accelerated or rapid internationalization models. It is doubtful whether the models dubbed as falsifying contradict stage learning and development. The companies which are not interested in operating on the international market usually make sub-products or offer services for big businesses from the very beginning – the pace of their internationalization is in general higher than average. Others, "the born regionals" – those conducting their business in the given region, can be considered internationalized from the beginning, although their scope concerns mainly the markets of neighbouring countries. Clearly, not every business passes through all the stages of the integration chain. Some stages take place while other are omitted (Cannon & Willis, 1981). In most cases – including the most powerful corporations – the consecutive model collecting experience and implementing the acquired knowledge works. As a result, they fulfill the integration step by step, with possible shifts between the phases, by fulfilling the whole range of requirements before reaching the stage of full maturity (GBN).

In this approach the author made an attempt to combine the macro- and microeconomic approaches – by presenting the model for the strategy of the competitiveness of TNCs that combines the strength of a merging of positional and resource streams (Gorynia & Dzikowska, 2012), taking into account the importance of the international context and the challenges it presents. To conclude, the triad of entrepreneurship for modern corporations constitutes: the orchestrator of the Global Business Network as a key factor in the internationalization of the corporation; the internal and external environment comprising the system capital of the corporation and the corporation's pillars of strategy which determine the directions of the entrepreneurial process. The developed pillars of the strategy of modern TNCs, which allowed them to become leaders in particular sectors because they are a response to the challenges of the current phase of globalization, are universal. They are adequate for the new requirements of building competitiveness in the international market, identical for all industries.

During the study, various types of relationships between the units in the networks of individual corporations (owned – PW, strategic – PS, cooperative – PK) were distinguished and analysed; additionally, a detailed characterization of the layers of the capital (KRn, KFn, KInn, KOrg, KIns) was conducted. The characterization of the system of relationships between the units in the network of a given corporation – an orchestrator – and the elements building the individual layers of the GBN capital, assured a correct interpretation of the recordings regarding the priority directions of development strategies included in the annual reports of the corporations.

Through the research it was determined that among the Top-TNCs there is a high concurrence of developmental priorities in all sectors. This undermines Waśniewski's

claim that TNCs present qualitatively varying patterns of behaviour despite being subjected to the same stimuli of the macro environment. The strategic models have displayed similarities in developmental priorities in all studied examples (leaders of each sector). This paper presented the results of a survey conducted among all of the most powerful transnational corporations which were classified in the Top 100 TNCs in the UNCTAD's World Investment Reports (WIR) of 1991-2013. The total number of objects tested was 252 TNCs. The corporations were divided into 9 sectors and then the Multidimensional Statistical Analysis was used to organize the corporations listed in the WIR-rankings. The ranking of Top-TNCs in selected industry sectors was made via the linear ordering method (by the original Synthetic Indicator of Creation of Added Value – SICAV of the author's own invention). The SICAV was calculated for all of the 252 TNCs. The economic and intellectual capital (reflecting the impact of each layer of capital on the competitiveness of a TNC) was therefore rated for all of the 252 Top-TNCs. All five diagnostic indicators which were used for the construction of the SICAV were calculated for all TNCs. On the basis of SICVA, referring to the methods of linear ordering, it was established which corporations are constantly the most powerful in global economy. In every sector three leaders were chosen – also in-depth qualitative analyses were conducted for 27 corporations. These in-depth qualitative analyses included the examination of: the path of internationalization – the stages of the Model of Business Integration; the creation of networks – diagrams of strategic analysis; the guidelines for development strategies – the study of records in the annual reports of the TNCs. TNCs which were further tested are representative for all sectors and for global economy, because these corporations create patterns for the other participants of the international business. It should be underlined that the top three companies in all sectors were selected to show results as case studies. Based on the concept of Grounded Theory Method using the methodology of strategic analyses – the PARTS study, the value chain study and the strategic groups analyses were conducted, serving to identify the base assumptions of the development strategies in the 21st century.

The aspiration to improve the condition of the economic capital by putting pressure on the increase in assets and profitability indexes – KFn – and the growth of structures for acquiring the local resources – KRn have been observed. All Top-TNCs have accentuated the role of the intellectual capital as a multiplier of the economic capital value. Although specific attributes of TNCs were described as a driving force of the development, their main purposes were, in fact, identical. The key, repeating priorities were: the multicentre R&D systems – the development of KInn; the reorganization of the management, the increase in the scope of internationalisation, the development of the portfolio of brands – KOrg; the development of institutional networks with a diverse group of stakeholders – KIns. It was observed that the phenomenon of repeating priorities occurs regardless of the sector, although its range varies depending on the maturity of the integration process of the business network surrounding a given TNC. The scope of filling in individual ideas, ordered by sectors is presented in the table 1.

It has been established, through the use of the GTM, that the pillars of development of Top-TNCs (on the basis of the analysis of the records in the strategies) are generally cohesive and comprise of:

− business networking – building a multi-level global network; ownership, strategic, cooperative relationships on the level of economic and intellectual capital,

- glocalization – the distribution of activities on the global scale, while establishing the competency centres of given areas; appreciating the social capital of local areas,
- coopetition – combining competitiveness with cooperation; appreciating all stakeholders; creating the value added to the continuously growing standard resulting from the inner interactions of all subsystems within a global structure,
- orchestration – the regulation model; multiple possible types of organizational and management structures, brand strategies, distribution and resource management; the notion of coherence – innovativeness, balanced development, the inclusion of diversity and its creative nature.

Table 1. Synthetic summary of the test results – the sectorial approach

Sector	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PW	++	+++	++	+++	+	+	++	++	+
PS	+++	++	+++	++	++	+++	+	++	+
PK	++	+	++	+	+++	++	+	+	++
KFn	++	+++	++	+++	+	+	++	++	+
KRn	+++	+	++	++	++	+++	+	++	+
KInn	+++	+++	+	+++	++	+	+	+	+
KOrg	++	+	+++	+	+++	+++	+	+++	+
KIns	+	+	++	++	+++	+++	++	+++	+
business network	+++	+++	++	+++	++	+++	+	++	+
coopetition	+++	+++	+++	+++	+	++	++	+	+
glocalization	+++	+++	+++	+++	++	+++	+++	+++	++
orchestration	+++	+++	++	+++	++	+++	+++	+	+

Sectors: (1) automotive, (2) petrochemical, (3) electronics, (4) telecommunication&media, (5) chemical-pharmaceutical, (6) consumer goods&services, (7) industrial goods&services, (8) public services, (9) holdings. Meaning: + basic, ++ significant +++ key factor, paramount importance.
Source: own elaboration based on the own study.

In conclusion, the pillars of strategy of Top-TNCs comprise of: business networking, coopetition, glocalization and orchestration. The implementation of these notions in the TNC strategies can take on different forms, since they were carried out using the individual attributes of each TNC. The in-depth analysis of the TNC strategies of all sectors has indicated that they are convergent in essence. The highest level of fulfilment of the indicated sectors is presented in the TNCs of the following sectors: automotive, petrochemical, telecommunications, consumerist and electronic. Studies have shown that these subjects instituted a similar programme of strategic changes – the further changes of MBI as a path assuming the increase in the internationalisation in order to meet the next developmental challenges (confirmation of the H1 hypothesis). As a result, despite the TNCs relying on their original attributes, their strategies ultimately evolved so that the key notions/pillars are almost identical (confirmation of the H2 hypothesis).

CONCLUSIONS

The purpose of the article was to determine the key changes occurring in the strategies of modern corporations. The research findings suggests that Top-TNCs have developed a model of adjusting to new challenges posed by the evolving global economy.

The model of adjustments turned out to be convergent to the concept of economic integration. On the basis of the studies it can be determined that Top-TNCs, regardless of the sector, have implemented the Model of Business Integration, striving for the creation of a system of multi-level connections – the GBN. This evolution was a result of the necessity to fulfil the requirements of building the international competitiveness – it required crucial re-evaluations of their developmental strategies.

The studies determined, on the basis of the GTM methodology, that the key universal pillars of Top-TNC strategies are: business networking, coopetition, glocalization and orchestration. These pillars of strategy allow the Top-TNCs to continuously interact with all formal and informal "institutions" as well as the networks that include them and create the value added to the still-evolving global standards. However, the advancement level of the process of implementation of these rules varies. Further tests will be designed to determine to what extent it is related to the level to which a given corporation fulfils the requirements of individual attributes determining the development advancement of corporate strategy.

To conclude, companies desiring to engage in the most efficient system for creating international competitiveness, under the conditions created by the global economy in the 21st century, should understand the leading ideas ruling the system. It seems reasonable to identify the key challenges, such as: linking globalization and regionalization (glocalization), building a multi-level relationship system (global network), creative combination of various types of organizational, managing and social structures (orchestration), simultaneous cooperation and competition allowing for a replacement of operation with exploration (coopetition). These ideas are fundamental, so the author has proposed the original concept for assessing the competitiveness of network enterprises – the SICAV. The indicator is based on quantitative indicators (measurable and comparable), which, properly configured, allow to take into account the key qualitative requirements determining the building of competitiveness.

In the future, I would like to draw upon more scientific fields in order to increase the interdisciplinary nature of this research stream – to increase the depth of research and attempt to lower the research limitations. In this paper I tried to show the ideas which are fundamental and appear to be pillars of strategy for some of the most powerful TNCs. However, the advancement level of the process of implementation of these rules varies in each economic sector. I attempted to find out if a level of development of strategy matches the attributes which describe corporations. Further tests will be designed to determine to what extent it is related to the level to which a given corporation fulfils the requirements of individual attributes determining the development advancement of corporate strategy.

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Immigrant Entrepreneurship and Economic Adaptation: A Critical Analysis

Jan Brzozowski

A B S T R A C T
Objective: The main goal of the article is to discuss the theoretical relationship between immigrant entrepreneurship and immigrant's economic adaptation.
Research Design & Methods: The paper reviews the theoretical and empirical literature on immigrant entrepreneurship and economic adaptation of immigrants in a host country. Then the paper develops testable propositions and a theoretical model for future empirical research on this topic.
Findings: The paper describes three main potential outcomes of immigrant economic adaptation through entrepreneurship: segmented assimilation, transnationalism and provisional business project strategy.
Implications & Recommendations: Understanding the factors that contribute to adaptation of immigrant entrepreneurs is crucial from policy-making perspective, as immigrant entrepreneurship is increasingly promoted as a viable strategy for economic adaptation for new immigrant groups in major host countries.
Contribution & Value Added: The theoretical relationship between immigrant entrepreneurship and economic adaptation remains underaddressed in the literature. Thus, the paper contributes to the knowledge on economic adaptation of immigrants, by proposing a model of immigrant entrepreneurship evolution and development. The model stresses interrelations between immigrant entrepreneurship and economic adaptation.

Article type:	conceptual paper
Keywords:	immigrant entrepreneurship; entrepreneurial development; economic adaptation
JEL codes:	L26, F22

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INTRODUCTION

Self-employment of immigrants is increasingly considered as an effective strategy which improves the economic situation of ethnic minorities and enables their economic integration in host country. Moreover, immigrant entrepreneurship is perceived as a way by which newcomers can contribute not only to the well-being of their ethnic community, but also to the economic development of the host country (Kushnirovich, 2015). Among biggest American enterprises listed in Fortune 500 list for 2010, 204 firms were established by immigrants, yielding the combined revenues of 4.2 trillion USD and employing more than 10 million people worldwide (Partnership for a New American Economy, 2011). But also at the lower end of the economic "food chain" there are millions of small-scale immigrant businesses which pay taxes and provide income for the entrepreneurs and their families. Therefore, most of the more important countries of intensive immigration (i.e. the US, Canada, Australia and most of the EU Member States) either adopt immigrant policies that facilitate the settlement of foreign entrepreneurs or implement integration policies aimed at encouraging immigrant self-employment (Rath & Swagerman, 2016).

Yet, the existing empirical studies on the performance of immigrant entrepreneurs and the effects of their economic integration do not confirm only optimistic outcomes. In many cases, immigrants' economic activity is connected with marginal gains, instability of immigrant businesses and lack of economic security, long working hours and exploitation of workers belonging to the owner's family (Pécoud, 2002; Caparrós Ruiz, 2010). Moreover, in terms of economic integration outcomes, the foreign-born entrepreneurs do not surpass the achievements of salaried immigrant workers (Hjerm, 2004; Hwang, Xi & Cao, 2010). The poor performance in terms of disposable income as compared to native entrepreneurs and salaried workers is visible even in the case of second-generation immigrant entrepreneurs (Beckers & Blumberg, 2013). Additionally, most of the research on the linkage between immigrant entrepreneurship and socio-economic integration remains purely empirical, and most of the authors rely on existing theoretical approaches developed within migration studies (e.g. ethnic enclave theory – Wilson & Portes, 1980; blocked mobility hypothesis – Li, 1997) and studies on entrepreneurship (e.g. the concept of mixed embeddedness – Kloosterman & Rath, 2001). In terms of theoretical models, the conceptual frameworks developed by Aldrich and Waldinger (1990), Strüder (2003) and Volery (2007) are mostly static, focusing on the explanation of the determinants of entrepreneurial behavior of immigrants and/or ethnic minorities and on the identification of the structural forces that shape these behaviors. Those theories and concepts have some explanatory power in terms of describing the origins entrepreneurial activity, but are not sufficient to predict convincingly the outcome of this activity for the process of socio-economic integration of an immigrant in host country.

Consequently, the aim of this conceptual paper is to fill the gaps in theoretical discussion on immigrant entrepreneurship by developing a theoretical model on immigrant entrepreneurship development, which identifies the main factors which influence the performance of immigrant businesses and the process of the economic adaptation of immigrant entrepreneurs in a host country. To the best knowledge of the author, in the literature on immigrant and ethnic entrepreneurship there is no theoretical framework which precisely describes the relationship between those processes. Therefore, the de-

velopment of such a model is a most important contribution of this paper to the studies on entrepreneurship and on immigrant businesses in particular. The structure of this paper is as follows: in the next section, the author critically reviews the theoretical and empirical literature on immigrant entrepreneurship and economic adaptation of immigrants in a host country, identifying the most relevant gaps in knowledge. Then the author develops a theoretical model that allows to build testable propositions for future empirical research on the socio-economic integration of immigrants and on the immigrant business evolution. Section four concludes the paper, brings the most important policy recommendations and discusses puzzles for further research.

MATERIAL AND METHODS

In this paper the author discusses the economic impact of immigrant entrepreneurship on individual level in a host country. The author critically reviews the existing literature on immigrant and ethnic entrepreneurship and develops a theoretical model on the evolution of immigrant entrepreneurship, linking the outcomes of the business activity with the individual's strategy in terms of the economic integration. To be more precise, the investigated relationship is the effect of the business creation, maintenance and development by immigrants – on the economic adaptation of such individuals in a host country. Thus, the main aim of this theoretical model is to provide a sound conceptual framework for future research on immigrant entrepreneurship, by providing a set of research propositions that might be tested in empirical studies. In such a case, several issues deserve special attention and need to be defined in a precise manner.

First, this paper deals with the immigrant entrepreneurship, a term is often connected to ethnic and diaspora entrepreneurship (Eraydin, Tasan-Kok & Vranken, 2010). Immigrant entrepreneurs are foreign-born persons who start business activities in a host country (Brzozowski, Cucculelli & Surdej, 2014). Ethnic entrepreneurs use their ethnic ancestry as a brand to market their products usually by offering typical ethnic goods (e.g. halal food), or services (e.g. Ayurveda medicine). Moreover, compared to immigrant entrepreneurs, the ethnic businesses might be run by the second- and former generation of immigrants born in a host country, and sometimes they might target larger ethnic groups than just one, coming from one origin country – for instance Hispanic community in the US, or Indian community in the UK (Volery, 2007). Additionally, Zhou (2004) indicates that ethnic entrepreneurs are mutually the owners and managers of their own businesses, suggesting that such firms belong mostly to the SME sector. Finally, diaspora entrepreneurship is composed by diasporans (Elo, Harima & Freiling, 2015) – i.e. individuals from an ethnic group (both first- and former generations born in host countries) which is dispersed from one centre (original homeland – not necessarily the home country, e.g. Punjab in India, Kurdistan in Iraq) across various geographical locations (Cohen, 1992), usually in different countries (but sometimes also various cities or regions in one country). Such a form of entrepreneurship is commonly connected to transnational activities (Elo, 2016) that span across different countries and involve diasporic communities in various places (Riddle, Hrivnak & Nielsen, 2010), for instance Chinese trading companies in South East Asia, which can operate in Singapore, Taiwan, Vietnam and all other destinations where Chinese diaspora community is strong (Zhou & Liu, 2015).

Second, the paper discusses entrepreneurship, in this case, as a synonym to self-employment, which is quite common in the literature (Langlois & Razin, 1995). The author is aware of the terminological complexity of both concepts (Faggio & Silva, 2012), but in the case of the economic adaptation process of an immigrant, a self-employment status is usually considered as a first step for the entrepreneurial involvement and a proxy for small business ownership (Szarucki, Brzozowski & Stankevičienė, 2016).

Third, as in the case of many other processes in social sciences and economics in particular, the relationship of interest is of a two-way nature: entrepreneurship activity influences immigrants' economic adaptation, but also the process of immigrant's economic adaptation affects the likelihood of business creation, maintenance and development (Ohlsson, Broomé & Bevelander, 2012; Andersson & Hammarstedt, 2015). In this sense, the self-employment propensity rises with the time spent in the host country, as an immigrant gains human, financial, cultural and social capital and the needed experience to start a business (Caparrós Ruiz, 2010). Yet, many immigrants start their businesses from the very beginning of their entry to the host country (Brzozowski & Pędziwiatr, 2015), often encouraged by special programs within immigration policies, which encourage the entry of immigrant entrepreneurs (Hiebert, 2008). Therefore, the paper focuses on the effects of entrepreneurship on immigrant's economic adaptation only, albeit the author recognizes that the adverse relationship also takes place.

Finally, this paper focuses on the economic adaptation, a term which is often confused with the economic integration. The latter is a more exclusive term, described as a "process by which the socioeconomic characteristics of immigrant group members resemble those of natives in host societies" (Zhou & Liu, 2015, p. 191). Within the discussion on economic integration, the main expectation is that the immigrant economic activity should gradually converge to the "perfect model". This "perfect model" is strongly dependent on the socio-economic, institutional and cultural characteristics of the host country and might differ from the one in the country of origin of immigrant. Therefore, an immigrant might follow a successful strategy of economic adaptation in the host country but, at the same time, may fail to integrate economically as, for instance in the US, where the "successful integration entails the incorporation into the middleclass core, not the segments of the mainstream occupied by working or lower classes" (Zhou & Liu, 2015, p. 194). Yet, most of the integration policies and political concerns on immigrant integration focus not on the "perfect model" achievement, but rather on preventing the socio-economic marginalization of immigrants: i.e. economic inactivity, long-term unemployment, precarious or illegal forms of employment and successive immigrant exploitation. Consequently, from the policy-making perspective, it is much more viable to consider how immigrant entrepreneurship affects immigrant economic adaptation. Economic adaptation "refers to the degree to which work is obtained, is satisfying and is effective in the new culture" (Berry, 1997, pp. 13-14) and entails livelihood strategies or measures of the economic achievement of immigrant at destination (Kibria, 1994).

LITERATURE REVIEW AND THEORY DEVELOPMENT

In this section, I critically review the basic literature on immigrant economic integration and I link the theoretical and empirical findings with immigrant entrepreneurship. This allows to identify the key factors that affect immigrant entrepreneurship,

leading to a set of forms of the economic adaptation in which the business activity of the immigrant might play a differentiated role. Additionally, I formulate a set of propositions that indicate the potential direction between these processes. Finally, all the determinants and outcomes of economic adaptation are brought together in a single theoretical model, which summarizes this section.

The Role of Migrants' Personal Strategies and Motivations

Although there is not a single theory migration which can explain all aspects of population movements in the international environment, in migration studies there is a consensus that immigrants act in a complex set of linkages, which influence their decision-making (Davis, D'Odorico, Laio & Ridolfi, 2013). Consequently, the early neoclassical models which perceived migrants as rational economic agents, i.e. selfish individuals who act only for the sake of the private economic benefit, are not suitable to fully explain the behavior of these populations (De Haas, 2010). Migrants do not act in a social vacuum, they take into the account the interests of their "important others": mostly family members, but also friends, and even co-ethnic neighbors both in the home country, the host country and in third countries in which those people reside (Kloosterman, Van Der Leun & Rath, 1999).

The existing theoretical models on immigrant and ethnic entrepreneurship either point out at the structural forces which drive immigrants towards self-employment or at the specific interaction between immigrant and environment in which one operates. For instance, in seminal contribution of Aldrich and Waldinger (1990), entrepreneurial actions result from the existing opportunity structures and resources, understood as the ethnic group characteristics (i.e. cultural traditions, ethnic networks etc.). Therefore, the "ethnic strategies emerge from the interaction of opportunities and group characteristics, as ethnic groups adapt to their environments" (Aldrich & Waldinger, 1990, p. 114). This approach is somehow surprising, as it presents the ethnic entrepreneur as the object of transformation of external forces, neglecting individual aspirations[1] and the role of entrepreneurs as the actors of change. In Strüder's (2003) approach, there is no place for individual entrepreneur at all, as the model analyzes the ethnic business, not the owner and founder of the firm. This is once again intriguing, as most of popular forms of immigrant entrepreneurship are rather small and medium-size businesses (Volery, 2007; Rath & Swagerman, 2016), in which the analysis of the entrepreneur is crucial for the understanding of the firm further evolution. The individual perspective of entrepreneur is only included in the enhanced interactive model of ethnic entrepreneurship, developed by Volery (2007). The author recognizes, that individual characteristic matters for entrepreneurial actions, thus: "even people with the same nationality or from the same ethnic group have differences which affect the way they recognize and pursue opportunities" (Volery, 2007, p. 36). His understanding of personal motivations is much alike to the neoclassical approach, consequently does not taking into the account the role of "important others", which obviously affects the economic behavior of immigrant in a host country.

Developing this line of argumentation, I argue that the theoretical model of immigrant entrepreneurship should take into the account the role of migrants' families and friends, which is suggested in migration studies by the new economics of labor migration

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[1] Aldrich and Waldinger (1990) actually tend to suggest that the ethnic entrepreneurs from the same group share the same motivations and aspirations, so there is no internal heterogeneity within the ethnic group.

(De Haas, 2010). In this aspect, most economic decisions, including the entrepreneurial ones, are the result of collective decision making and of the interplay of the aspirations, dreams and personal goals of migrant and one's family located both in host and home country. Consequently, if an immigrants starts a business activity in a host country, one's entrepreneurial strategy is deeply influenced not only by the individual interest, but also by the economic interests of "important others". Let us consider three different situations of immigrant entrepreneurs, which are provided in the literature on immigrant and ethnic entrepreneurship. In a first scenario, described by the new economics of labor migration theory, a migrant is sent abroad by the entire family/household, which aims to diversify the sources of income. Upon arrival and after the business is started, a migrant is expected to contribute to the collective budget of the household located in a home country through remittances (Taylor, 1999). Moreover, at least in the context of the initial motivations, the migration itself is perceived as a temporary event, which should help in accumulating needed capital to be invested back in the home country (Coniglio & Brzozowski, 2016). In this context, the immigrant's business development is constrained by the fact that the profits would be either continuously transferred back to the home country (to contribute to the budget of the migrant's household), or reinvested in the home country after the migration spell is resumed. Consequently, there should be no surprise that many migrants who adopt such strategy are pursuing business activities in the niches of the markets left by the native entrepreneurs, who perceive them as less attractive due to low profits, higher risk and harsh working conditions. The perspective of such migrant is much different from a native entrepreneur, as the migration is planned as a temporary event. Therefore, they accept harsher working conditions and higher risk of the business activity, as the migration strategy entails rather short- or middle-term form of entrepreneurship, rapid accumulation of capital (combined with limited consumption in host country) and yet is considered as profitable because of the income differentials between destination and home country.

The second scenario entails a situation, in which a migrant does not want to choose between a definite settlement in a host country, but on the other hand does not have any clear vision whether the return to home country should be envisaged. In such a case, the transnationalism strategy is possible. Immigrant transnationalism is a situation, in which an immigrant maintains personal, social or economic activities in both worlds: in the home and destination country (Schiller, Basch & Blanc, 1992; Portes, Guarnizo & Landolt, 1999; Vertovec, 2004). In this way, one's presence is manifested simultaneously in both countries. The transnational immigrant entrepreneurship in this case is manifested through a maintenance of business activities in dual locations. This kind of strategy can both be perceived as the alternative form of economic adaptation in a host country (Portes, Guarnizo & Haller, 2002), but also as a more secure alternative: this way the potential homecoming is facilitated, as the immigrants maintains an economic foothold in a home country (Levie and Smallbone 2009). Moreover, in some instances the transnational immigrant entrepreneurs due to access to very specific and unique set of resources, both in host and home country, are able to outperform the competitors, understood as non-transnational immigrant entrepreneurs (Brzozowski, Cucculelli & Surdej, 2014) or even native ones.

In the third scenario, the immigrant has the intentions to stay permanently in the host country[2]. Consequently, the immigrant should – other things held constant – adopt a more long-term perspective in one's enterprise development. However, even in this case the entrepreneur's activities are influenced by different norms, values and expectations than the ones respected in a host country, an issue that will be considered in the next section. Moreover, in such occasions, the development of an immigrant enterprise might be connected to different outcomes in economic adaptation. The segmented assimilation theory clearly shows, that the immigrants must not follow one single path of the cultural, but also socio-economic integration, over time spent at the destination becoming much more alike to the receiving society (Portes & Zhou, 1993). On the contrary, they might follow different directions, including social marginalization, or integration within the ethnic enclave economy, or finally experience the mainstream integration. In this contexts, also immigrant businesses can be developed into: 1) highly segmented marginal firms, operating in the niches of the market left by the locals, 2) ethnic enterprises, which operate in the ethnic enclave and serve mostly the co-ethnic population (i.e. product-integrated firms), or cater the wider clientele by offering specific ethnic goods and services (i.e. market-integrated firms), finally to 3) highly integrated mainstream businesses, which compete on equal terms with native entrepreneurs (Curci & Mackoy, 2010). Therefore, I formulate the following proposition:

Proposition 1: Migrants' strategies have an impact on the entrepreneurship creation and further busi-ness development.

Expanding on this general proposition, it is important to consider that the businesses created by immigrants are closely connected to their migration projects, which means that those businesses can serve different purposes, where the future return and the permanent settlement at destination are the two opposite perspectives. In reality, most of the immigrant entrepreneurs "stay in the middle", drifting between those two alternatives. Therefore, there is no single, "perfect" path of the immigrant enterprise development.

The Role of Cultural Differences

Most of immigrants, when coming to the host countries bear a set of cultural values, norms and ethnic identities which might and usually do differ from the ones respected and practiced by the native population (Berry, 1997). Those cultural values influence not only the religious practices, social behavior and habitation strategies (e.g. widespread tendency to live in the ethnic districts, where the neighborhood consists mostly of people from the same ethnic background), but also affect the economic decisions of immigrant and the family in the host country.

The values and consequently the attitudes towards entrepreneurship do differ substantially across countries and nations (Basu & Altinay, 2002). One of the important measures that shows the attitudes towards business activity is the variable "Entrepreneurship as Desirable Career Choice", included in the Global Entrepreneurship Monitor (GEM). This indicator shows what percentage of the adult (18-64) population in a given

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[2] In all aforementioned scenarios, I consider only immigrant motivations and future plans, which can possibly change over time. Albeit this can happen with many migrants (especially in the case of temporary migration, which can easily be transformed into a more permanent one), the rich literature on that topic clearly shows that the initial motivations clearly matter for the economic decisions taken at the destination (e.g. Dustman and Mestres, 2010).

country agrees with the statement that statring own business activity is the right strategy for career development. The most recent results of GEM survey for 2014 and 2015 show a great heterogeneity in the value of this indicator, ranging from extreme 95.6% in Guatemala, very high values in Brazil, Philipines and South Africa (over 70% for each country), moderate ones in the US and most of the EU member states (between 50 and 65%), and very low values in India, Japan, Southern Korea and Finland (below 50%, cf. GEM 2016). Therefore, in some host countries the "ideal" career path is the waged employment, while in others the businessman status (Pécoud, 2003). Moreover, as the classic research of Hofstede (2001) shows, the attitudes towards risk-taking, a crucial precondition for entrepreneurial activity, are also very heterogenous across the national cultures. Some nations are more risk takers than others. For instance, a reservation towards risk especially visible in the case of CEE nations, which is attributed mostly to a heritage of the communist system which still influences people's identities and beliefs. This risk aversion matters for the self-employment propensity: the recent study of Szarucki, Brzozowski and Stankevičienė (2016) sugests that the Polish and Romanian immigrants in Germany exhibit much smaller likelihood of becoming self-employed than in the case of other ethnic groups.

Moreover, in the case of many national cultures, the wealth of the individual might not be perceived as the ultimate life goal. For instance, the last wave (2010-2014) of World Values Survey (WVS) shows a great disparity within the nations in terms of how wealth is perceived: almost 30% of Nigerians totally agree with the statement "It is important to be rich; to have a lot of money and expensive things", while in the case of Indians this share was 18%, Philipinos – 8.5% and for Poles mere 1.6%, just to mention few important migrating nations (WVS, 2016). The need of acceptance or social recognition is also very important. Some national cultures are sceptical towards the wealth accumulation and people living there expect an individual to share his/her wealth with family members, even with distant relatives. Thus, solidarity with members of the same ethnic group becomes an important motivation which influences the economic activity of many immigrant groups, including for instance Lebanese (Abdelhady, 2006) or Mexican immigrants in Northern America (Vallejo & Lee, 2009). In such a case, the immigrant entrepreneur might be expected to contribute with some share of his income in social capital building, by supporting charity and religious organizations and community events – both in the host and home country (Lindley, 2009). Such investments for the investigator who is not aware of the socio-cultural context in which immigrant entrepreneur operates, might be perceived as unproductive spending, as their impact on individual income is not significant. Yet, although less productive in pure economic sense, these social investments might be important for the entrepreneur in the long run, as they give access to other forms of capital: including social and lead to the creation, extension and enforcement of personal linkages, both business and private ones. Moreover, they might contribute to the increment of the social position of immigrant entrepreneur in the local co-ethnic community, both in the host country and in the home one (Grigolini, 2005). Additionally, we have to take into account a potentially adverse effect, which is due to the high social pressure coming from co-ethnic community: lack of such financial contribution to a given ethnic cause (e.g. to the repair of local temple, organization of local religious or ethnic festival, or contribution to some other charity goal) might lead to

ostracism and to a social exclusion of immigrant entrepreneur. The risk of a social exclusion is a strong disciplinary mechanism in many ethnic communities (Sanders & Nee, 1996), and the potential costs of such act might strongly (and negatively) influence the performance of the immigrant's enterprise. Consequently, it is justified to formulate the following proposition:

Proposition 2: The societies in host and home countries have diverging sets of values and expectations towards the economic adaptation, which in turn influence immigrant business activities.

It is worth to expand this general reasoning, by adding a remark that the business activities of immigrants are created, sustained and developed not only for the purpose of income maximization. Moreover, the influence of co-ethnic community in host and home countries, contrary to what is suggested in the existing literature, must not be only positive. Therefore, the obvious direction of future research on immigrant entrepreneurship is in-depth investigation of the internal, co-ethnic social norms and obligations that can inhibit and restrain the growth of such businesses.

The Role of the Socio-Economic System in the Host and Home Countries

The current literature on entrepreneurship emphasizes the role of the economic development of a country in which the businesses operate for the incidence, dynamics and in explaining the existence of different forms of entrepreneurial activities (Wennekers, Wennekers, Thurik & Reynolds, 2005; Acs, Desai & Hessels, 2008). Still, immigrant are the actors who bridge at least two socio-institutional environments: of the host and home countries. Migrants when adapting to a new situation in host country, are still influenced by "clichés" of the livelihood strategies from their home countries and regions. Therefore, the level of the economic development at home and the characteristics of local economy matter for the entrepreneurial model chosen in the destination by immigrant. For instance, immigrants coming from rural and conservative areas would be much more traditional and risk averse in terms of their entrepreneurial characteristics than the immigrants coming from developed cities in which the economic environment are much more innovative and competitive.

The situation becomes even more nuanced, when one realizes that these socio-institutional environments of the home and host countries are not stable: they can, and usually they do change over time. Moreover, due to a set of interpersonal connections between immigrants and their families and friends at home, such changes do influence activities of immigrants, including the economic ones and the entrepreneurial strategies in particular. In this vein, it is important to take into the account the social networks and connections created by diaspora members. The term of diaspora stresses the dispersion of the ethnic group from one centre to various geographical locations (Cohen, 1992). Yet, the communities originated from one place, and currently located in these different destinations retain common identity and multiple (social, cultural and economic) linkages not only with the "home" or "homeland" (understood as the place of origin, but not necessarily home country, as there are nations without nation-state), but also between each other (Brubaker, 2005).

The diaspora framework offers a new perspective for investigation of immigrant entrepreneurship and its impact on the economic adaptation of immigrants. The traditional framework assumed the existence of South-North dichotomy, in which immigrants originated from usually poorer, underdeveloped countries of the Southern hemisphere. By

settling in the developed economies of the North, they were gradually learning how the "modern" socio-economic settings differ from the "backwarded" environment in the home country, and they were consequently adjusting their business activity to fit into these new patterns. Yet, Elo clearly shows, that immigrants do not only move between developing and developed countries (Elo, 2016). As she rightly points out, the forms and directions of migration movements are in reality much more complex and multidirectional, and they occur not only from developing and emerging countries to developed, but also in an opposite direction, thus yielding 9 types of diasporan entrepreneurs: "poor-to-poor", "less poor-to-poor", "rich-to-poor", "poor-to-less poor", "less poor-to-less poor", "rich-to-less poor", "poor-to-rich", "less poor-to-rich" and "rich-to-rich". In same line, Harima (2014) discusses about the "Ascending Diaspora Entrepreneurship" for those individuals who move from less developed countries to more developed ones, and "Descending Diaspora Entrepreneurship", for those who move in the opposite direction, suggesting that the incidence of this second type of entrepreneurs is also substantial and worth further investigation. These two typologies are even more useful, when the dynamics in the condition of the source and destination economies is taken into the account. The destination country can be hit by a serious economic recession, which diminish the economic opportunities for immigrant entrepreneurs and reduces the attractiveness of this environment in terms of conducting further business activities. On the other hand, the home country can also change, for instance by advancing economically from low income to lower middle income category, which in turn offers new perspectives and opportunities for future investors. In such a case, immigrant entrepreneurs might and usually do respond to changing economic environment, consequently changing their business models. One of the possible transformations of immigrant businesses in the case of the falling attractiveness of the host country and the luring economic boom at home might be the decision to move back the business to the place of origin or maintain dual economic activities at source and destination economies.

Immigrant entrepreneurs are potentially in a favorable situation when considering to move or start a business activity in their home country. Thanks to rich diaspora networks, they are able to gather information, funds, employers and know-how in a faster and more efficient way than the outsiders, namely the foreign investors. Consequently, they have country-specific cultural capital that allows to identify and exploit new opportunities more effectively than in the case of foreign entrepreneurs. The experience of such economies as China or India clearly show that diaspora investment played a pioneering role in transformation of these countries (Smart & Hsu, 2004; Kapur, 2010). Moreover, diasporans can play a key role in the growth and internationalization processes of businesses that operate in a source country (Minto-Coy, 2016). In such a case, a diasporan entrepreneur might either start transnational business activity, form partnerships with existent firms at home or even consider return migration, to reap the benefits of this economic boom. Consequently, I formulate the following proposition:

Proposition 3: The level of the economic development at host and home countries influences immigrant entrepreneurship.

Expanding on this proposition, it is worth to consider a potentially inverted u-shape, non-linear relationship between the economic development at home country and the propensity of entrepreneurial engagement of immigrant entrepreneur, both in the em-

pirical studies on transnational immigrant entrepreneurship and the entrepreneurial activities of the returnees. At the early stage of economic development, the lack of effective institutions and market mechanisms and poor infrastructure does not encourage entrepreneurial involvement of the diaspora entrepreneurs. Then, the intermediate levels of development offer better perspectives for such activity, as the growth potential of the home country increases and the institutional environment is more favorable for investors. Finally, as the home country becomes a highly-developed economy and the internal market becomes very competitive and saturated, the possibilities for the market entry for new players, including diaspora entrepreneurs tend to decrease.

The Role of Immigrant's Family

A very typical, yet overlooked problem in the discussion on immigrant businesses is the role of the family. As the social embeddedness theory suggests, the individual's networks and personal relationships are vital, especially when one wants to mobilize the resources to support a new economic activity, such as firm startup. Thus, family members not only provide a financial capital, but also contribute indirectly, through business ideas, advice, know-how transfer etc. This family support comes not only from the relatives located in the neighborhood, but also from the ones who stay in the home country or other geographical locations (i.e. other countries of immigration). Still, the family reunification in the host country strongly affects the further immigrant business evolution, as the long-term commitment to permanent settlement implies the need for evaluating the existing forms of economic activity. In this sense, an immigrant entrepreneur must decide whether the existing business model is still suitable for the needs of his/her family (Bird & Wennberg, 2016).

Moreover, most of the small immigrant businesses are also family firms (Walton-Roberts & Hiebert, 1997), in which family members are the partners, owners, managers and employees in the enterprise. Therefore, the role of the family is usually crucial not only for the process of business creation, but also in its further development and evolution (meaning also the possible exit from entrepreneurship, cf. Bird & Wennberg, 2016). Thus, the impact of family on the business performance should be investigated in detail. From the well-developed literature on family firms' research we know that family enterprises are not necessarily the most profitable ones, but they value the long-term goals and the sustainability of doing business over short-term gains (Block, 2010). Thus, they might offer less competitive salaries, but at the same time – more stable jobs (Bassanini, Breda, Caroli & Rebérioux, 2013). The same can be said about many immigrant businesses. Albeit they often rely on the ethnic enclave and ethnic market, employ ethnic employees, this is not only the weakness of the firm. The employees from family in the immigrant enterprise can be less skilled and more conservative, but on the other hand more committed to a common goal, more trustworthy and hardworking. Additionally, an immigrant might take suboptimal economic decisions in terms of transactions, while choosing a client or supplier, who offers a smaller price or lower quality of goods and services, but on the other hand he/she is a member of a family (especially in non-Western world the notion of family is much broader and extends over more distant relatives, such as uncles or cousins). Therefore, such decision might be suboptimal from purely economic perspective, but profitable from the social capital perspective, because is involved with reciprocity (i.e. "favor for favor" effect). Finally, often the patriarchal relations in the immigrant family firms (Walton-Roberts & Hiebert, 1997) lead to the exploitation of the family employees and to the inter-

nal crises within the companies, which are dangerous both for the enterprise's and the family's internal coherence. Therefore, I formulate the following proposition:

Proposition 4: The family plays a key role in immigrant firms' creation and development.

This proposition provides some suggestions for further exploration of the role of the family on the entrepreneurial activities of immigrants. Even if the role of the family is stressed already in the literature on immigrant entrepreneurship (e.g. Mustafa & Chen, 2010), there is an obvious deficiency of approaches that investigate the negative impact of families on the business development. In such a case, the studies on immigrant entrepreneurship should look for the factors which are already well-known in the studies on family firms, including the problems of succession and transmission of power (Surdej & Wach, 2012) within the businesses owned by immigrants' families.

The Outcome: Segmented Assimilation, Temporary Business and Transnationalism

Based on the aforementioned factors that affect immigrant entrepreneurship and economic adaptation of immigrants in a host country, I integrate them within an unified framework (model), which brings together inputs, the intervening factors and proposes three different outcomes of an immigrant business strategy (see Figure 1). The immigrant starts a business activity in a host country using his/her skills (formal education, entrepreneurial capabilities) and experience (business and professional). At the same time, immigrant's business activity from the very beginning is influenced by personal motivations and migration strategy – both of which are the results of the internal negotiations between a migrant and his/her family (including family members residing both in the host and home country). Once the business entity is created, its development is influenced by a set of intervening factors which originate from (at least) 2 sources: the host and home country. These factors include the level of socio-economic development, and the set of socio-cultural norms and expectations towards the immigrant.

Based on these inputs and factors, immigrant entrepreneurship can evolve into three distinct strategies of economic adaptation:

– Provisional business project: in this case, the migration is perceived as an intentionally temporal one. Therefore, the business model implies the exit from entrepreneurship after the economic aim (acquisition of a specific amount of financial capital) is achieved, as immigrants intends to return to home country. In this scenario, the profits are not invested in a further development of the enterprise, but mostly transferred back to home country. In this scenario, the typical model of entrepreneurship is a micro-enterprise, and the immigrant alone is self-employed in the firm.

– Segmented assimilation: this strategy implies the permanent stay of immigrant and (usually his/her family in a host country. Consequently, the immigrant firm is either developed in order to provide a stable source of income for entire immigrant's family, or the business is closed. In the case of the business development, the immigrant enterprise fate depends on the initial outputs and the socio-economic development of the host country, yielding at three different options: 1) highly segmented marginal firms, operating in the niches of the market left by the locals, 2) ethnic enterprises, which operate in the ethnic enclave and serve mostly the co-ethnic population (i.e. product-integrated firms), or cater the wider clien-

tele by offering specific ethnic goods and services (i.e. market-integrated firms), finally to 3) highly integrated mainstream businesses, which compete on equal terms with native entrepreneurs (cf. Curci & Mackoy, 2010).

− Transnationalism: a strategy which implies an economic engagement of immigrant in both locations: at home and host country. In this sense, an immigrant maintains socio-cultural and economic ties with two worlds, which can be perceived as an intermediary strategy, allowing for flexible movements between segmented assimilation and provisional business project. Therefore, the immigrants keep both options "open". Yet, this strategy might also evolve into a more permanent and alternative model of economic adaptation, forming a viable alternative to the former ones. Yet, the continuity of such forms of economic adaptation and transnational immigrant business activities remains until now relatively unknown and needs much more in-depth research.
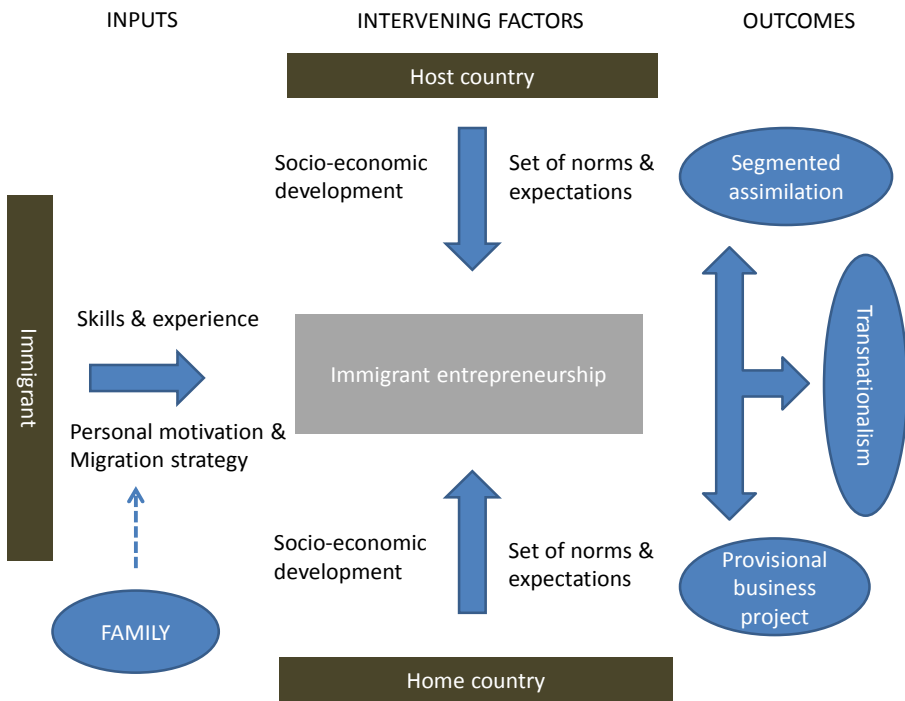
Figure 1. The theoretical framework for immigrant entrepreneurship and economic adaptation outcomes
Source: own elaboration.

CONCLUSIONS

In this paper, I developed a set of testable propositions that might be helpful in empirical analyses on the role of entrepreneurship in the process of economic adaptation of immigrants in their host countries. I am pointing out at the significance of migrants' personal strategies and motivations, the role of cultural differences between immigrant's home and home country, socio-economic system in the host and home countries, and the im-

portance of immigrant's family in running the business project. All these factors need to be taken into account while investigating the impact of immigrant entrepreneurship on the economic conditions of immigrant in a host country. Yet, the advantage of the model is its elasticity: as the list of determinants is not exhaustive, the researchers that adopt this framework for future analyses can easily drop and add new elements.

In terms of the puzzles for further research on immigrant entrepreneurship and economic adaptation, several issues need to be addressed. First, the clear limitation of the current analysis is the emphasis on mostly positive role of the ethnic networks, resources and family ties. Yet, those factors can also have an adverse, negative effect on the immigrant firms: social pressure, family obligations and cultural norms obviously do influence an entrepreneur, but might lead to suboptimal managerial and investment decisions. Second, there is a need of deeper understanding of how the immigrant firms evolve over time, and what is the role of the social networks (including family connections, but also co-ethnic ties) in this regard. The analysis of the evolution of immigrant businesses has to take into the account the heterogenous paths and strategies adopted by immigrants and their families. In this context, it is important to remember that entrepreneurial activity usually follows a mobility of the person, and it is partly a result of the adopted migration strategy of the individual as well as his/her family. In this sense, entrepreneurial motivations and plans of the immigrants do not resemble the ones adopted by the native population. Moreover, it means that many immigrant business projects can be intentionally short-lived, and the aims of such activities is to accumulate funds at home, anticipating future return.

This remark has also some implications for empirical investigations and the methods adopted. The existent typical approaches based on case studies or on representative quantitative surveys are not helpful in explaining the evolution of immigrant enterprises. A much more promising approach is the usage of qualitative panel survey, which implies the cyclical in-depth (structured) interviews on smaller, non-randomly selected groups of respondents. Such approach combines the advantages of the panel survey (i.e. possibility to catch the dynamism of the immigrant business activity) with the benefits of in-depth interviews, which enable more flexible approach and further investigation of the new trends of immigrant economic activities.

Third, we have to take into the account the importance of former, failed business projects and their importance for current and future forms of economic activities of immigrants. The weakness of the current literature of immigrant entrepreneurship is the fact that most of empirical analyses include only "winners" or "survivors", i.e. these individuals which at least succeeded in starting an entrepreneurial activity and at the moment of investigation were still operating such businesses. Still, there are numerous individuals who either started their firms and failed, or the ones who have not even succeeding in creating a firm they wished to create. How these experiences influenced their process of economic adaptation in a host country? Have these failed business attempts made them stronger or weaker in this regard? Have they tried again to become entrepreneurs? These are only few of the research questions that need to be answered.

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The Use of Social Networking Sites in Job Related Activities: A Cross-cultural Comparison

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A B S T R A C T

Objective: The main objective of the paper is to identify the use of Social Networking Sites (SNSs) in job related activities and indicate the interdependencies between these activities and age, gender, as well as education in culturally diversified markets (China, Poland, Turkey, the United States).

Research Design & Methods: In the exploratory empirical study the authors used two research methods: PAPI (*Paper and Pen Personal Interview*) and CAWI (*Computer Assisted Web Interview*). The empirical data were collected in 2016 and the total number of respondents from four culturally diversified countries was 1246.

Findings: The analysis with the use of Kruskal-Wallis and Dunn post-hoc tests showed that the Turkish respondents most often use SNSs for job related activities, while it is the least often done by the studied Americans. Moreover, from among the studied factors (gender, age and education level) that differentiate the SNSs usage for job related activities in a statistically significant way age is of greatest importance.

Implications & Recommendations: The results of the research provide implications for the recruitment policy of multinational enterprises (MNEs). Since more and more enterprises use SNSs in order to look for new employees and advertise themselves as employers (employer branding), the identified interdependencies between the SNSs activities and the analysed factors can support firm attempts to develop the proper recruitment policy taking into account the cultural diversity of potential workers.

Contribution & Value Added: There are not many studies in the literature which present the usage of SNSs for job related activities from the perspective of individual users in the cross-cultural approach. The majority of studies are related to the usage of SNSs by enterprises in the recruitment process.

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INTRODUCTION

The growth of the Internet has contributed to changes in many areas of life. It is a source of information, a tool used for work, an instrument used for entertainment and communication, a place to purchase or sell products, look for business partners, etc. (Correa, Hinsley, De Zúñiga *et al.*, 2009). The number of ways of using the Internet is incredibly large, regardless of the industry or the nature of the entity (individuals, companies and other institutions).

Social Networking Sites (SNSs) are an important stage in the continuous growth of Internet services and their innovativeness. They have become a tool which is used by a large number of people worldwide. It is difficult to estimate the number of SNS users as it is extremely large and the statistics are mainly done with reference to a particular platform or medium of a service. It is worth adding that the number of Internet users worldwide exceeded 3.4 billion and the number of active users of social media amounted to 2.3 billion at the beginning of 2016, including around 1.6 billion users of the most popular portal which is Facebook (Kemp, 2016). The purpose of creating the first SNSs was the need to maintain contact with other individuals and entities (companies, institutions), finding and creating networks of friends, who very often lived in other parts of the world, as well as broadly understood communication (Yang & Wang, 2015). Later on it turned out that the specificity of SNSs allows to use them for many other purposes, as they are a good source of information in terms of purchasing decisions, education, and they play an important role on the job market. According to Kaplan and Haenlein (2010), SNSs offer a common platform to exchange contents created by users.

This paper presents more broadly the use of SNSs for job related activities by individual users, therefore looking for business contacts through SNSs, presenting one's own professional achievements, looking for job offers and materials needed for the job. From the point of view of enterprises, SNSs are also a source of information about potential employees, thus they contribute to the quality of human resources which are crucial from the perspective of firm competitiveness. According to Gurchiek (2015), social media play a crucial role for firms while looking for talents (Madera, 2012), and can be effectively used in employer branding (Katiyar & Sain, 2016).

The main objective of the paper is to identify the use of SNSs for job related activities in culturally diversified groups and try to verify if the relationship between these activities and age, gender and education exists. An attempt has been made to answer two research questions: firstly, whether the frequency of using SNSs for job related activities differs among the studied countries? Secondly, if there are relationships between the use of SNSs for job related activities and three factors: age, gender and education level? By doing this the authors attempt to formulate some hints which can contribute to the quality of human resources, which are the key source of competitive advantage of a firm nowadays. The analysis of the literature has been complemented with the results of the empirical study, which was conducted in China, Poland, Turkey and the United States. In the exploratory empirical study the authors used two research methods: PAPI (*Paper and Pen Personal Interview*) and CAWI (*Computer Assisted Web Interview*). The empirical data were gathered in 2016 and the total number of respondents was 1246.

The added value of this study is not limited just to the recruitment policy of MNEs. The great significance of human capital for firms' competitiveness and thus

sustainable growth of economies makes the results important not only from the perspective of particular companies, but even whole economies.

The structure of the article includes the literature overview in the discussed area, the methodology of the empirical study, its results, as well as conclusions and implications.

LITERATURE REVIEW

SNSs and Job Related Activities

The way and character of using SNSs depend first of all on people's needs and on the extent to which the usage corresponds with the needs. For example, the need to share one's travel memories with their friends may be met by using a website or communicator such as Facebook, Instagram or Snapchat (Nadkarni & Hofmann, 2012). The SNSs which connect people into networks of friends that share common features are ones of the first media and are continuously popular among users, e.g. Facebook, LinkedIn or MySpace. Many people also use the media which make it possible for them to express themselves in writing, verbally or with video recordings, e.g. Twitter, YouTube, as well as using the information placed there by other users (*Kim, Sin & Tsai,* 2014; Hamid, Waycott, Kurnia & Chang, 2015).

The literature widely presents the results of various projects relating to the use of the Internet in general, ways and areas of using SNSs (Lin & Lu, 2011; Hamade, 2013), however there are a few studies referring directly to job related activities (Verhoeven, Mashood & Chansarkar, 2011; Manroop & Richardson 2013), as well as cultural and demographic determinants differentiating this use. However, the attempts to show the correlation between the ways of using SNSs and personality features can be observed more often (Ryan & Xenos, 2011; Nadkarni & Hofmann, 2012). Therefore, the presented paper is an attempt to fill the gap in this field in the literature on the subject.

What is the usage of SNSs in terms of job? Using SNSs for job related activities can be examined from two perspectives, i.e. of an employee and an employer. From the viewpoint of an employee, virtual communities help provide information (not always objective) about a potential or current employer when exchanging opinions on forums or social networking sites. Networks of friends on SNSs can also turn out to be helpful when looking for a job. Moreover, SNSs can be a source of new job offers through placing such information on corporate social networking sites, thus sites of potential employers (Williams & Verhoeven, 2008). Moreover, particular media, e.g. LinkedIn, enable employees to present their profile, education, experience and career path (Gerard, 2012), which is extremely helpful during preliminary selection of candidates (Katiyar & Sain, 2016).

The number of the conducted studies in the international literature shows that this field has not been thoroughly explored yet (Manroop & Richardson 2011). Studies conducted more often are related to the usage of SNSs among enterprises – potential employers (Malita, Badescu & Dabu, 2010; Bissola & Imperatori, 2013; Girard, Fallery & Rodhain, 2013; Bondarouk, Ruël, Axinia & Arama, 2013; Landers & Schmidt, 2016; Katiyar & Sain, 2016), rather than for job related activities from the perspective of an individual (Manroop & Richardson, 2013). It is even more difficult to get the information about profiles of individuals (gender, age, education) who use SNSs for job related activities.

SNSs and Cultural Differences

Cultural distinctness is related to values, behaviour, lifestyle or habits recognized in a particular cultural group (Steenkamp, 2001). The values of cultural groups represent cultural dimensions distinguished in the studies conducted among others by G. Hofstede. They include: individualism/collectivism (IDV), low/high power distance (PDI), low/ high degree of uncertainty avoidance (UAI), masculinity/femininity (MAS), long/short term orientation (LTO) and indulgence/restraint (IND) (Hofstede, Hofstede & Minkov, 2010). Individualism/collectivism distinction refers to the way of perceiving an individual – an individual person and a group. Power distance refers to an extent to which members of a given society accept the fact that there are significant differences in power (jobs, positions) between people both in a society, organisations, as well as in a family. Masculinity/femininity dimension refers to values dominant in a given society, concerning e.g. the quality of life, achieving success, competition, the role of man and woman in the society. Long/short term orientation concerns "the differences in cultures regarding how they view time and the importance of the past, present and the future". Indulgence/restraint dimension refers to the extent to which people are willing and able to control their desires and impulses (Hofstede *et al.*, 2010). Indulgence/restraint dimension refers to the level at which people are prone and able to control their own desires and impulses (Hofstede *et al.*, 2010).

Culture also influences the way and purpose of using SNSs (Furner & George, 2012). However, there are not many studies on how cultural distinctness influences the perception and use of SNSs, as well as the attitude towards them (Suzuki & Takemura, 2013). In those which are presented in the literature the authors mainly refer to Hofstede`s cultural dimensions (Hofstede *et al.*, 2010) and in majority of cases the individualism/collectivism dimension is used. For example, Kim, Sohn and Choi (2011) proved that in cultures emphasising individualistic values (e.g. the USA) SNSs are mostly used as entertainment and as a way of spending free time, while in collectivistic cultures (e.g. Korea) the tendency to get social support in social relations based on SNSs can be observed. Hsu, Tien, Lin and Chang (2015) showed that for users from individualistic countries SNSs are mainly a source of information, while for people from the collectivistic countries socialisation and self-presentation are the main motivators.

The growing significance of SNSs from the viewpoint of a person looking for a job is indicated by the results of the international study conducted by the Randstad Research Institute in 29 countries of Europe, Asia, Australia and both Americas (Salesnews.pl, 2015). SNSs play a particularly important role on the markets which are characterised by a high percentage of young employees using such media, e.g. in Chile (92%), India (90%) or China (90%). All these countries belong to collectivistic cultures with significant power distance and restraint. The results of this project confirm previous statements that SNSs are a source of looking for information about vacancies or a potential employer. For example, among Polish respondents more than a half (54%) emphasised the fact that SNSs are helpful in looking for a job. Moreover, 37% of Polish respondents stated that they use SNS profiles in order to promote themselves as a potential employee. According to experts, the results obtained in Poland do not significantly differ from other researched countries, except for India where 78% of respondents highlighted the use of

such media for professional purposes, especially in order to present their own achievements and experience (Salesnews.pl, 2015).

Another study conducted among the representatives of Generation Y at one of the universities in Dubai Verhoeven, Mashood and Chansarkar (2011) concluded that SNSs are used to look for a job on a regular basis. On the other hand, the results of the qualitative research carried out by Manroop and Richardson (2013) among young Canadians (2 years after graduation) from Generation Y show that there are two groups of young employees. First of all, there are those who are aware of the strength and significance of SNSs in job search. However, the same people claim that they lack knowledge or skills in order to fully use modern technologies. They are people who look for a job through placing their CVs and using SNSs to contact those they already know. Secondly, there are people according to whom SNSs are only used to establish and maintain social contacts with friends and family. They are concerned about their privacy when using SNSs excessively, and when looking for a job they rely solely on traditional methods. The results of those two projects confirm the relation to cultural values referring to individualism and collectivism, as well as distribution of power in the society. Arab countries are collectivistic with large power distance, while Canada is an individualistic country with small power distance.

The results of the presented studies indicate that there are differences between users from different countries in terms of using SNSs for job related activities.

MATERIAL AND METHODS

The methodological approach in this paper corresponds to the deductive approach, since the authors attempt to answer the two research questions formulated on the basis of prior literature review and regarding the main objective:

RQ1: Does the frequency of using the SNSs for job related activities differ among the studied countries?

RQ2: Are there any relationships between the use of SNSs for job related activities and three factors: age, gender and education level?

Measurement Development and Data Collection

In the exploratory empirical study the authors used two research methods: CAWI (*Computer Assisted Web Interview*) and PAPI (*Paper and Pen Personal Interview*). Firstly, the authors used CAWI with an online questionnaire as a research instrument, filled in by the respondents themselves in order to collect fast responses. The main advantage of CAWI is time (shorter time than PAPI) and cost (lower cost because of the distribution of the questionnaire via the Internet). But, since the use of the online questionnaire did not produce great feedback, only 3.5% of all the collected questionnaires, secondly, the authors decided to use the PAPI method on each market. This method is more expansive and time consuming, but it gave better results in the case of the presented research. The percentages of PAPI and CAWI in particular groups were: China – 100% of PAPI questionnaires, Poland – 10% of CAWI and 90% of PAPI, United States – 5.4% of PAPI and 94.6% of CAWI, Turkey – 100%of PAPI. These differences were caused by difficulties in respondents` recruitment to participate in the research via the Internet. Nevertheless, in each country the share of questionnaires collected via PAPIs in the total

number of the questionnaires prevailed and was not lower than 90%. The relatively similar distribution of the collected questionnaires in terms of the used method of collecting data contributes in a way to the comparability of the results.

In the research part where CAWI was used, random selection was used but the number of the completed questionnaires was not satisfactory. In the research part where PAPI was used the non-random sampling method was chosen. The data were collected by snowball sampling and there were people designated to collect the questionnaires among the respondents on each market. The research assistants (usually they were Poles who were staying in the studied countries for more than six months) who recruited the respondents who used SNSs, were differentiated by age, gender and education level and agreed to take part in the measurement (initial respondents). Then, they received information from those respondents who had already taken part in the study about others who could participate in the study. In that way the sample was growing till the amounts when the authors decided to stop the measurement. The use of snowball sampling allows to recruit for the study respondents who are ready to answer the questions. Thus, it may help to collect reliable responses.

People are not eager to talk about such personal issues as using SNSs, and in particular using them for job related activities, and to get reliable data we need respondents open for sharing their opinions and eager to reveal their individual perception of SNSs. Since SNSs have become very popular, some people can think that they should enjoy using them and may be afraid of speaking frankly about different perception of SNSs. By using the snowball sampling we were able to control for the respondents' eagerness to cooperate.

The measurement instrument was a standardised questionnaire prepared for the purpose of this research. The element differentiating the research questionnaire on particular markets was the language. In Poland the Polish language was used, in China Chinese, in Turkey Turkish, and on the American market it was English. In the preparation of the different versions of the questionnaire a back translation procedure was used in order to eliminate mistakes stemming from linguistic, lexical or context differences (Craig & Douglas, 2006).

The empirical data were gathered in 2016 and the total number of respondents surveyed in the four culturally differentiated (main criteria of the choice of the markets) countries was 1246, including 295 respondents from China, 296 from Poland, 395 from Turkey and 260 from the United States. The countries were chosen because of different level of development and as examples of `West` and `East` countries. The authors of the paper wanted to investigate if the usage of SNSs for job activities is universal or it differs among countries.

In order to identify the job activities, respondents were asked to specify the frequency of performing them (*very often -1, often-2, from time to time-3, rarely-4, very rarely-5, never-6*) for particular statements which were identified during the trial measurement (conducted before the main study). In the reliability analysis, according to the used scale, Cronbach's Alpha was used. The level of Cronbach Alpha – $\alpha=0.78$ – confirms that the proposed scale is a reliable tool for measuring. The applied statements are: I look for business contacts (W1); I look for new job offers (W2); I look for information and materials for my job (W3), and I place information about my professional achievement (W4).

Trying to answer the first research question (RQ1) Kruskal-Wallis test was used. The authors decided to use Kruskal-Wallis test for the comparison of the results obtained in the four groups of respondents from different countries (if there would be two groups

the U Mann-Whitney test could be used). The requirements for Kruskal-Wallis test were met: the dependent variable measured at least by ordinal scale and the items from the surveyed groups were independent (it means that one respondent can be only in one group being compared). The statistically significant result of Kruskal-Wallis test forces to use multiple comparison tests to determine how and which groups differ significantly from each other. The specificity of the data achieved in the research influenced the usage of post-hoc test which involves comparing the average rank for all groups – the Dunn test. The Dunn test, due to multiple testing, is corrected by the Bonferroni correction.

To examine the relations between gender, age, education level and ways of using SNSs for job activities (in general, without distinguishing particular sites) Pearson's chi-square statistics was used. On the other hand, in order to determine the strength of that interdependence, Cramer's *V* factor was applied. Using the distinguished figures stems from the features of the scales of measure applied in the questionnaire. The independent variable was the respondents' country of origin.

RESULTS

The surveyed respondents in each country were people who agreed to participate and were willing to express themselves on how they use SNSs for job activities. The study was conducted among people of all ages and three age groups were distinguished, i.e. 15-20, 21-30, 31 or more (Table 1). In China, Poland and Turkey the respondents within 21-30 age group prevailed. On the other hand, in the United States most participants belonged to the age group of 15-20. Considering the number of participants within the age ranges, it can be stated that in the studied cultural groups the representatives of the so-called Generation Y are are prevalent. Thus, the results are even of greater significance for firms, since people at this age usually are looking for their first job and those are people open for changes in their life. The smallest number of respondents was observed in the age group of 31 and more.

Table 1. Respondent profile (%)

GENDER				
Categories	China	Poland	United States	Turkey
Women	68.1	70.9	56.5	48.7
Men	31.2	27.7	43.1	49.7
No data	0.7	1.3	0.4	1.5
AGE				
15 – 20 years	14.2	35.5	79.6	9.6
21 – 30 years	66.4	63.5	16.9	76.5
31 years and more	19	0.7	3.5	13.4
EDUCATION LEVEL				
Schoolboy/girl	17.3	4.4	33.1	0.0
Bachelor degree	27.8	78.9	58.5	78.1
Master degree	42.0	16.3	5.8	7.6
Postgraduate – professionally active	11.8	0.3	2.7	14.3

Source: own study.

Taking into account the diversity of the study group in terms of gender, it should be emphasised that it is difficult to determine whether there is significant prevalence of any gender. In two countries gender parity was nearly set (e.g. the United States and Turkey), i.e. almost equal proportions of both genders. The biggest predominance of women was observed in two groups, Chinese and Polish, where their structure in terms of gender is very similar.

When analysing the respondents in relation to the level of education, it should be emphasised that in almost all studied countries young people, schoolboys/schoolgirls, undergraduates (during their Bachelor studies) and graduates (during their Master studies) predominate. The largest group classified as schoolboys/schoolgirls was observed in the United States (33.1%), which is also related to its structure in terms of age. The country where a significant number of participants were also schoolboys/schoolgirls was China (17.3%). On the other hand, in Poland and Turkey undergraduate students predominated, while in China, graduate students formed the largest percentage group. The differences among cultures and education level are caused by the differences in the education system in the studied countries.

In order to examine whether respondents from the examined countries differ in terms of the frequency of using SNSs for job related activities, an analysis with the use of Kruskal-Wallis test was performed (Table 2). In Table 3 the results of the post-hoc test – Dunn Bonferroni are shown to present which groups differ significantly from each other.

Table 2. Kruskal-Wallis test for SNSs' usage for job related activities in four researched countries

Sign of activity	Country	N	M	SD	r	H	p
W1	Poland	283	4.66	1.40	700	**102.72**	**<0.001**
	China	275	4.34	1.47	624		
	Turkey	372	3.58	1.48	453		
	United States	256	4.46	1.36	647		
W2	Poland	278	4.17	1.51	610	**88.71**	**<0.001**
	China	269	4.08	1.41	589		
	Turkey	355	3.45	1.51	456		
	United States	253	4.58	1.42	702		
W3	Poland	278	3.59	1.65	632	**63.56**	**<0.001**
	China	279	3.17	1.47	548		
	Turkey	365	2.99	1.43	508		
	United States	258	3.98	1.69	709		
W4	Poland	278	3.31	1.37	557	**68.01**	**<0.001**
	China	276	3.87	1.59	668		
	Turkey	358	2.88	1.52	460		
	United States	253	3.69	1.67	626		

N – number of the respondents; M – mean; SD – standard deviation; H – result of Kruskal-Wallis test;
p – level of significance for K-W test; r – medium rank
Source: own study.

The analyses demonstrated statistically significant differences among the studied groups in terms of looking for business contacts (W1): $H (3, N = 1186) = 102.72$; $p < 0.001$. Multiple comparisons showed that people living in Turkey more often used SNSs in order to look for business contacts than respondents living in Poland ($p < 0.001$), China ($p < 0.001$), and the United States ($p < 0.001$) (Table 2). The post-hoc test – Dunn Bonferroni – showed that significant differences concern Poland and Turkey (Turkish respondents used SNSs more regarding to W1 than Polish ones), China and Turkey (Turk-

ish respondents used SNSs more regarding to W1 than Chinese ones), Turkey and the US (Turkish respondents used SNSs more regarding to W1 than theAmericans) (Table 3).

Table 3. Dunn Bonferroni post-hoc test for SNSs' usage for job related activities in four researched countries

Sign of activity	Groups	Post-hoc Dunn Bonferroni [z / p]			
		Poland	**China**	**Turkey**	**United States**
W1	Poland	–	2.61 / 0.054	**9.12 / <0.001**	1.77 / 0.464
	China	2.61 / 0.054	–	**6.26 / <0.001**	0,79 / >0.999
	Turkey	**9.12 / <0.001**	**6.26 / <0.001**	–	**6,98 / <0.001**
	United States	1.77 / 0.464	0.79 / >0.999	**6.98 / <0.001**	–
W2	Poland	–	0.73 / >0.999	**5.75 / <0.001**	**3.18 / 0.009**
	China	0.73 / >0.999	–	**4.92 / <0.001**	**3.87 / 0.001**
	Turkey	**5.75 / <0.001**	**4.92 / <0.001**	–	**8.95 / <0.001**
	United States	**3.18 / 0.009**	**3.87 / 0.001**	**8.95 / <0.001**	–
W3	Poland	–	**2.92 / 0.021**	**4.57 / <0.001**	2.63 / 0.052
	China	**2.92 / 0.021**	–	1.46 / 0.859	**5.50 / <0.001**
	Turkey	**4.57 / <0.001**	1.46 / 0.859	–	**7.27 / <0.001**
	United States	2.63 / 0.052	**5.50 / <0.001**	**7.27 / <0.001**	–
W4	Poland	–	**3.40 / 0.004**	**4.11 / <0.001**	2.36 / 0.110
	China	**3.40 / 0.004**	–	**7.71 / <0.001**	**5.68 / <0.001**
	Turkey	**4.11 / <0.001**	**7.71 / <0.001**	–	1.50 / 0.796
	United States	2.36 / 0.110	**5.68 / <0.001**	1.50 / 0.796	–

z – value of the Dunn test; p – level of significance with the Bonferroni correction
Source: own study.

The analyses demonstrated statistically significant differences among the studied groups in terms of looking for new job offers (W2): H(3, N = 1155) = 88.71; p < 0.001. The post-hoc test – Dunn Bonferroni – showed that significant differences concern Poland and Turkey, Poland and the US, China and the US, and Turkey and the US. People living in Turkey more often used SNSs in order to look for new business offers than respondents living in Poland (p < 0.001), China (p < 0.001), and the United States (p < 0.001). Moreover, respondents from the United States used SNSs in order to look for new job offers less frequently than people living in Poland (p = 0.008) and China (p = 0.001). This result may stem from the age of American respondents.

In terms of looking for job related information and material, we can observe statistically significant differences among the studied groups (W3): H(3, N = 1180) = 63.56; p < 0.001. The post-hoc test – Dunn Bonferroni – showed that significant differences concern Polish and Chinese groups, Polish and Turkish, Chinese and American, and Turkish and American groups. Multiple comparisons demonstrated that people living in Poland used SNSs in order to look for job related information and materials less frequently than respondents from China (p = 0.021) and Turkey (p < 0.001). Moreover, American respondents used SNSs for W3 less frequently than people living in China (p < 0.001) and Turkey (p < 0.001).

Kruskal-Wallis test demonstrated that there are statistically significant differences among the studied groups in terms of placing information about professional achievements on SNSs H(3, N = 1165) = 68.01; p < 0.001. The post-hoc test – Dunn Bonferroni – showed that significant differences concern Poland and China, Poland and Turkey, China and Turkey and China and the US. Polish respondents used SNSs for W4 less frequently than Turkish ones (p = 0.004), however more often than people living in

China ($p < 0,001$). Moreover, people living in Turkey used SNSs for W4 more often than people living in the US ($p < 0.001$) and China ($p < 0.001$).

The analysis with the use of Kruskal-Wallis test and the Dunn Bonferroni post-hoc test showed the differences among the studied groups. Turkish respondents use SNSs most often for job related activities, while it is done the least often by the surveyed Americans. Thus, the obtained results are convergent with the results of the international research conducted by the Randstad Research Institute in 29 countries in 2015 (Salesnews.pl, 2015).

Referring to the dimensions distinguished by Hofstede and the obtained results on using SNSs for job related activities, convergence in relation to three dimensions can be observed: individualism/collectivism (IDV), power distance (PDI), and indulgence/restraint (IND) (Figure 1).
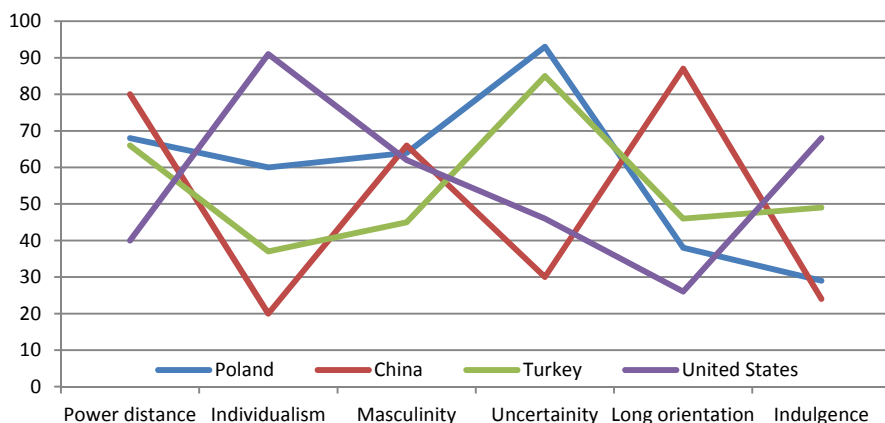
Figure 1. Values of coefficients of dimensions for the studied countries in Hofstede's research
(the max score in particular dimension is 100,
e.g. if the score of IDV is closer to 100 it means that country is classified as individualistic)
Source: Hofstede *et al.*, (2010).

A greater use of SNSs for job related activities by respondents from the Turkish and Chinese groups is related to the lower level of individualism, a higher level of power distance and a higher level of restraint. On the other hand, lesser use of SNSs for job related activities by respondents from the American groups is related to the higher level of individualism, a lower level of power distance and a higher level of indulgence. Turkey and China, according to Hofstede's studies, are collectivistic countries (IDV$_{China}$=20, IDV$_{Turkey}$=37) where behaviours focused on a group, and not the achievements of an individual predominate (Hofstede *et al.*, 2010). These characteristics were the basis for creating SNSs in general, thus networks of friends, exchanging and looking for information, etc. Moreover, these countries are similar to each other in relation to power distance, which indicates the distance and hierarchy among particular members of the society because of education, age or gender, among others (PDI$_{China}$=80, PDI$_{Turkey}$=66) and in relation to the level of restraint which regards "not putting much emphasis on leisure time and controlling the gratification of their desires" (IND$_{China}$ =24, IND$_{Turkey}$ =49) (Hofstede *et al.*, 2010).

Therefore, it can be noticed that more frequent usage of SNSs for job related activities is connected with a higher level of collectivism cultures, power distance and restraint.

On the other hand, the analysis of correlations with the use of Pearson's chi-square test between W1…W4 and gender, age and education also indicated significant differentiation among the studied groups (Table 4). Taking into account a group where the largest number of correlations was identified, the Chinese group should be observed. Each studied element – gender, age and the level of education – differentiates the use of SNSs for job related activities among Chinese respondents.

Table 4. Correlations between gender, age education level and the way of using SNSs for job activities

Sign of activity	China		Poland		the United States		Turkey	
	χ2	V	χ2	V	χ2	V	χ2	V
GENDER								
W1	11.37*	0.21	2.78	0.1	3.5	0.11	10.2	0.16
W2	11.52*	0.22	21.6**	0.3	3.8	0.12	5.54	0.12
W3	5.48	0.14	4.3	0.12	0.8	0.05	6.31	0.13
W4	31.88**	0.35	1.29	0.07	4.69	0.13	2.7	0.08
AGE								
W1	24.67**	0.25	15.9*	0.17	18.17*	0.19	22.4**	0.18
W2	18.2*	0.18	16.98*	0.18	18.44*	0.19	30.4**	0.2
W3	20.7*	0.2	6.2	0.1	11.06	0.14	13.6	0.13
W4	17.4*	0.19	5.86	0.1	4.53	0.09	18.6*	0.17
EDUCATION LEVEL								
W1	51.95**	0.22	7.6	0.09	18.5	0.15	7.5	0.08
W2	31.8*	0.17	10.05	0.1	14.2	0.13	18.4	0.13
W3	45.5**	0.21	10.9	0.11	19.1	0.15	15.4	0.12
W4	22.23	0.14	10.96	0.11	16.6	0.24	18.9	0.22

*Correlation is significant at the p<0.05 level   **Correlation is significant at the p< 0.01 level
χ2 – Pearson chi2 statistics; V – Cramer`s indicator
Source: own study.

Taking into account the studied criteria, chi-square coefficients show the largest number of correlations between the use of SNSs for job related activities and gender. In each group statistically significant correlations were identified. In all the studied groups age differentiates the usage of SNSs in order to look for business contacts (W1) and new job offers (W2). In all the studied groups respondents from the 21-30 age group do it more often than others. In the Chinese and American groups age differentiates also the usage of SNSs in order to place information about professional achievements (W4).

Referring to the criterion of gender, it needs to be emphasised that in the Chinese group statistically significant correlations between the use of SNSs for job related activities and W1 (*p* < 0.05; *V* = 0.21), as well as W2 (*p* < 0.05; *V* = 0.22) were identified. These relations show that Chinese women use SNSs for both looking for business contacts and job offers more often than men. On the other hand, Chinese men much more often place information about their professional achievements (W4: *p* < 0.01) on SNSs. Moreover, the level of V-Cramer coefficient shows that this correlation (*V* = 0.35) is quite strong. Among the studied groups and activities (W) statistically significant corre-

lation between gender and W2 ($p < 0.01$; $V = 0.3$) was also identified. Polish women more often than men use SNSs in order to look for new job offers.

Analysing the obtained results in relation to education level it needs to be emphasised that only in the Chinese group statistically significant correlations with regard to the usage of SNSs in order to look for business relations (W1: $p < 0.01$; $V = 0.22$), look for new job offers (W1: $p < 0.05$; $V = 0.17$) and look for materials for job (W1: $p < 0.01$; $V = 0.21$) were observed. All these activities are most often performed by Master's students.

DISCUSSION

The analysis of literary studies and empirical research demonstrated that markets are differentiated in terms of using SNSs for job related activities (Verhoeven *et al.*, 2011; Manroop & Richardson, 2013). The results of the empirical research presented in this paper show that SNSs are a tool most often used by Turkish respondents, and companies operating on that market definitely should use SNSs in the recruitment process. SNSs can be used effectively in Turkey both in employer branding (Katiyar & Sain, 2016) and looking for new workers (Gurchiek, 2015; Madera, 2012).

The study also showed that age differentiates the use of SNSs in terms of looking for both business contacts as well as job offers in each of the studied groups. It is most often done by people from the 21-30 age group, i.e. representatives of Generation Y. These results refer to the works presented earlier by other authors (e.g. Verhoeven *et al.*, 2011; Luscombe, Lewis & Biggs, 2013). The information that SNSs should be one of sources of collecting data regarding future employees is crucial for companies looking for employees from this age range.

In the Chinese group, it was observed that the way of using SNSs for job related activities is differentiated because of gender, age and education. When looking for employees with a particular profile, companies on that market can use the fact that Chinese women more often look for job offers through SNSs. On the other hand, Chinese men definitely more often place information about their achievements there. Gender and education level were not variables relating the frequency of SNS usage for job related activities in other studied countries, which is an interesting contribution in the literature. The most important factor is age.

Social networking platforms can be a useful tool in employer branding strategy on the international market (Madera, 2012). They play a particularly important role among young employees from Generation Y, however the way they are used is differentiated in terms of market and culture.

The current literature usually presents the problem of the use of SNSs in job related activities by an analysis carried out in enterprises (from the perspective of enterprises). The results of the exploratory study presented in the paper show the perspective of individual SNS users. This can be a value for managerial implications for enterprises within the framework of their recruitment policy and further their competitiveness. More and more enterprises use SNSs in order to look for new employees who constitute the key source of competitive advantage. It also stems from the research done by Jobvite company in 2011, where 89% out of 800 researched companies indicated using SNSs in the recruitment process. Moreover, an upward trend can be observed in comparison to this study from 2010 where 83% of respondents emphasised using SNSs in the recruitment process (Manroop & Richardson, 2013). SNSs are a valuable source of information used by headhunting companies because from the point of view of an employer analysis of data provided on SNSs it

is an important element in searching for and the preliminary assessment of the qualifications of a potential employee (Bissola & Imperatori, 2013). It is not only about portals used for presenting one's career path, e.g. LinkedIn, Research Gate or GoldenLine (Loiacono, Djamasbi & Tulu, 2011). Employers sometimes, with the consent of a potential candidate, analyse the history of activity on other SNSs, e.g. Facebook, Twitter, Instagram. The main purpose here is to examine whether a given person has a broad network of friends (and is therefore an open person who establishes relationships easily), how often they use social media, what information is placed there, etc. (Kluemper, 2013; Girard *et al.*, 2013). The results of one of the studies conducted among 2667 American managers showed that the analysis of activity and posts of a candidate for an employee on SNSs may be decisive in terms of hiring or rejecting them in the further stage of the recruitment process. The reasons for rejecting a candidate which were most often indicated in this project were provocative or inappropriate photos and information (also from private celebrations), unfavourable opinions about employers, sharing confidential information, poor communication skills, discriminating comments among others. On the other hand, information from SNSs which can help in getting a job includes the appropriate presentation of professional qualifications, creativity of an applicant, good communication with other users, good opinions about a given person posted by other users, etc. (Kluemper, 2013).

Apart from analysing social media profiles of potential employees, many companies also upload information about current vacancies and job requirements to their SNSs profiles or are in dialogue with the applicants through social media (Bruning, Dials & Shirka, 2008). Therefore, SNSs are becoming an important recruitment tool (Malita *et al.*, 2010) and an instrument used for corporate image building on the job market (so-called employer branding) (Bondarouk *et al.*, 2013; Sivertzen, Nilsen & Olafsen, 2013). Both Social Media and Human Resources experts suggest that companies should be more creative in the recruitment process when SNSs are used and for this purpose apply not only LinkedIn, Facebook or Twitter, but also YouTube which would be more attractive for young applicants (Robbins, 2008). The results of the presented exploratory study prove the importance of SNSs in such activities, especially among people from Generation Y.

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

To conclude the obtained results of the presented research it needs to be stated that, firstly, there is differentiation among the studied groups in relation to the use of SNSs for job related activities (W1…W4). Turkish respondents do it much more often than others. The least use of SNSs for these purposes was noted in the American group (it might have been caused by the age of American respondents). Secondly, from among the studied differentiating factors which influence the use of SNSs for job related activities, age is of the greatest importance. Age differentiates the use of SNSs in order to look for business contacts (W1) and job offers (W2) among all the surveyed respondents regardless of the country. The remaining factors, that is gender and education level, also influence the use of SNSs for job related activities, however only in the Chinese group. Referring to the applied inductive method, it can be stated that the above statements regarding the correlations of using SNSs for job related activities can be research hypotheses on which further, more thorough studies and statistical analyses can be based. That study can be treated as a pilot one and the background for future research. It is because of numerous

limitations related to the presented research problem and its scope. Firstly, in the questionnaires, although a respondent replies to a given question about how they behave (or would behave) in particular situations, it could be that their actual behaviour would slightly differ from the one declared. In this case, qualitative methods could be more effective. However, when undertaking a study across multiple national markets, the qualitative method generates considerable costs and that is why researchers often decide to apply only questionnaire methods (with closed questions). Another limitation of the presented research is that the non-random sampling, the group sizes and the demographic differences among groups lead to the lack of a possibility of extrapolating the results to the whole population for each individual country.

This notwithstanding, research limitations are very often a stimulus to either continue the study or expand it, especially in relation to international activities. The presented exploratory study could be expanded and improved via random sampling, and considering larger and of similar structure samples of SNS users. The authors are aware that the until now the obtained results are a kind of snapshot of the subject matter. Nevertheless, the findings are the foundation for future, cross-country qualitative and in-depth studies focused on the utility of SNSs.

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Human Capital Reporting and Its Determinants by Polish and German Publicly Listed Companies

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A B S T R A C T
Objective: The importance of human capital in the contemporary business environment is rising. Therefore, the aim of the study is to determine what the quality, extent and determinants of human capital disclosure in Polish and German companies are.
Research Design & Methods: The research was conducted with the use of human capital disclosure index which was built with three main categories: employee information, internal communication and employee development policy. The sample consisted of WIG-30 and DAX entities.
Findings: The Polish firms reported worse than the German ones in terms of all studied items. The worst reporting was found in the case of participation initiatives, the best in the case of employment structure.
Implications & Recommendations: As human capital disclosure index was insufficient in the case of both Polish and German entities, enterprises shall report more on human capital.
Contribution & Value Added: The study compares human capital disclosure practices in the two countries with a different level of economic development.

INTRODUCTION

According to the IMF methodology, Poland belongs to the group of transition economies which means that it has changed its economic model from the centrally planned economy to the market-oriented economy (since 1989). This shift had a huge impact on the way of managing local companies and the domestic financial market. Close cooperation and trade with Poland's largest (in terms of GDP) neighbour, Germany, was an important factor fostering the process of the economic transformation. In turn, Germany is a developed nation with a long history of the market-oriented economy. As the current processes of globalisation have moved many nations to the knowledge-based economy, this phenomenon is also observable in the Polish environment. One of the factors determining the pace of the knowledge-based economy development is human capital, which, surprisingly, as the most important company asset, is rarely reported in terms of value, quality and extent in corporate documents. The paper fills in this gap by identifying the inadequacy of human capital disclosure practices in company annual reports. An important challenge for human capital research is the inability of the field to identify a set of measures which are widely accepted and adopted (Massingham & Tam, 2015).

Researchers argue that human capital is the firm's most important asset because it is the source of creativity and, therefore innovation, change, and improvement (Carson, Ranzijn, Winefiel & Marsden, 2004). Researchers suggest that human capital reporting shall be studied due to several reasons. One of them is the proper valuation of each entity. Since traditional accounting concentrates mainly on tangible assets, there is a huge gap in valuating assets which are intangible. Human capital, in most cases, does not appear in companies' balance sheets. Moreover, its reporting is insufficient which leads to the conclusion that market does not possess full information about entities, thus the efficient market hypothesis may no longer be valid. In-depth reporting by the companies about their most important asset (human) may bring more light on their true value. According to Huang, Luther, Tayles and Haniffa (2013), research on financial analysts and fund managers suggest lack of information on company management and key corporate decision makers who could provide a firm with competitive advantage. Thus, the human capital information provided is limited, and tends to focus on directors, many of whom may be figureheads with little impact on the way companies are run and in creating value for the firm. Accordingly, analysts rely on alternative sources to get their desired information – a costly process for private shareholders. Marr (2003) identified five main reasons why firms measure and report their intellectual capital:

1. To help organisations with strategy formulation.
2. To help assess strategy execution.
3. To assist in strategic development, diversification and expansion decisions.
4. As a basis for employee compensation.
5. To communicate with external stakeholders.

The purpose of this paper is to examine the extent, quality and determinants of voluntary human capital disclosures by publicly listed companies of Poland and Germany. The research questions being asked are:

RQ1: What is the extent and quality of voluntary human capital disclosure by Polish and German companies?

RQ2: What are the determinants of human capital disclosure?

The research method adopted for this study are: content analysis, tools of descriptive statistics and correlation analysis.

The structure of this paper is the following: Section 1 is introduction, Section 2 provides the literature review on human capital and prior research. Section 3 sets out the background of the two economies and its stock markets. Moreover, methods used in the study are described in this part. Section 4 outlines the results and discussion which is followed by Section 5 pointing to conclusions and limitations of the study, along with the future lines of research.

LITERATURE REVIEW

Human capital refers to the skills of employees, such as education, training and experience, to act in a variety of situations (Sveiby, 1997; Guthrie & Petty, 2000). Human capital encompasses inseparable integration of a human individual, his skills, knowledge, experience, ideas rendered in the form of services in the enterprise. At the same time, the company is not the owner of human capital, however it can lease it on special terms (contract) (Brilman, 2002). The value of human capital is the total value of investments in employee training, competence and the future (Pablos, 2002). Human capital encompasses not only the knowledge and skills that individuals own and use but also their capacity to create all those resources. Human capital is made up of everything that people know, along with their capacity to learn and with others that may be beneficial for the organisation (CIC, 2012). As Ndinguri, Prieto and Machtmes, (2012) suggest, due to the specific characteristics of individuals, human capital becomes hard to be imitated, and thus plays a strategic role for the organisation to keep leadership.

In the literature, studies on human capital are often concentrated along with the studies on intellectual capital which encompasses three primary interrelated components: human capital, structural capital and relational capital[1] (Sveiby, 1997). Therefore, intellectual capital and human capital terms may not be used interchangeably. According to Stewart (1997), intellectual capital is a broader term and may include: patents, processes, people's skills and experience, technologies, information about customers and suppliers. Nevertheless, many of human capital studies may be found in papers concerning intellectual capital research.

Recently, many empirical studies concentrate on the intellectual capital reporting practice around the world (e.g. Goh & Lim, 2004, Schneider & Samkin, 2008, Yi & Davey, 2010; Whiting & Woodcock, 2011, Liao, Low & Davey, 2013; Vishnu & Gupta, 2014; Low, Samkin & Li, 2015). Research on intellectual capital and human capital reporting may be divided into three groups of studies concentrating on:

1. Identification and valuation.
2. Determinants of disclosure.

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[1] An interesting and relatively simple approach concerning valuation of each of the intellectual capital components was developed by Pulic (2004). The key role in calculating each intellectual capital component is played by value added which, according to Pulic, is the sum of: operating profit, employee costs and amortisation/depreciation. Value added is later used to calculate human capital and structural capital (together with relational capital). Human capital is the sum of the total salary and wage duties for the company, structural capital (together with relational capital) is the difference between value added and human capital. As a result, intellectual capital is the sum of human capital and structural/relational capital. Despite its low level of complexity and controversies, this method has gained adequate popularity among researchers.

3. International reporting comparisons.

Table 1 provides information on selected studies referring to the problem of identification and valuation of human capital.

Table 1. Selected studies on the identification and valuation of intellectual capital and human capital

Authors	Key findings
Guthrie and Petty (2000)	The analysis of 20 annual reports of Australian entities shows that there is a small number of companies interested in the identification and measurement of IC and HC*. Moreover, the lack of commonly accepted research scheme seems to be an obstacle.
Brennan (2001), Bontis (2003), Xiao (2008), Yi and Davey (2010), Singh and Kansal (2011)	Disclosure practices of IC and HC are rare.
Bismuth and Tojo (2008), Ariff, Cahan & Emanuel, (2014)	The reason behind insufficient IC and HC disclosure (perceived as intangible assets) are conservative accounting rules.
Goh and Lim (2004), Schneider and Samkin (2008), Yi and Davey (2010), Whiting and Woodcock (2011), Liao, Low & Davey (2013), Vishnu and Gupta (2014), Low, Samkin & Li (2015)	The research concentrating on practice, techniques and methods of IC and HC reporting.

Source: own study on the basis of the mentioned literature or the above literature.

Although there are many theoretical attempts to measure and report human capital, the Authors state that the level of human capital disclosure by contemporary business entities is highly insufficient. The reason behind that are traditional accounting rules which are based on the conservative approach. Moreover, the plethora of human capital indicators may bring scientific confusion. The second group of studies on intellectual capital and human capital concentrating on the determinants of intellectual capital and human capital disclosure are shown in Table 2.

Selected studies on the second group of studies on human capital provide information that, although there can be many factors taken into account while analysing human capital reporting, the most important ones appear to be the firm size and the industry. The third group of studies on human capital disclosure is presented in Table 3.

The theoretical framework as well as empirical evidence provide information that intellectual capital and human capital disclosure is still a relatively rare phenomenon, despite its great importance and effect on the strategic performance of companies. Research suggests that the reason behind that is the lack of one commonly recognised definition of human capital, as well as the ways of its identification and measuring. Moreover, reporting standards on human capital differ significantly between countries and as most of studies suggest the quality and extent of disclosure depends on the level of the economic development of the firm's country of origin.

Table 2. Determinants of intellectual capital and human capital

Authors	Key findings
Guthrie and Petty (2000), April, Bosma & Deglon (2003), Goh and Lim (2004), Yi and Davey, (2010), Curado *et al.* (2011), Liao, Low & Davey (2013), An, Harun & Sharma (2014)	The authors stress the crucial importance of the criteria being taken in the study. Moreover, the criteria choice is often determined by the study objective.
Bozzolan, Favotto & Ricceri (2003)	The study on the sample of 30 Italian, non-financial publicly listed companies suggests that the industry and the firm size are significantly important factors in IC and HC* disclosure.
Pablos (2003)	Industry plays an important role in human capital disclosure in Danish, Swedish and Spanish entities – the banking sector was ahead of other sectors in human capital reporting.
Guthrie, Petty & Ricceri (2006)	The research on 50 listed entities in Australia and 100 entities in Hong Kong. There is a positive correlation between voluntary intellectual capital and human capital disclosures and the company size.
Bruggen, Vergauwen & Dao (2009)	Industry and firm size are a key factor in IC and HC disclosure (a sample of Australian companies).

Abbreviations stand for intellectual capital (IC) and human capital (HC) respectively
Source: own study.

Table 3. International comparative analysis of intellectual capital and human capital reporting

Authors	Key findings
Pablos (2003)	The study on Danish, Swedish and Spanish companies showed that Swedish entities reported best on human capital, whereas Spanish firms worst.
Abeysekera (2008)	The quality of IC and HC* reporting is higher in the case of Singapore companies than firms from Sri Lanka.
Yi and Davey (2010)	IC and HC disclosure depends on the firm's country of origin.
Joshi, Ubha & Sidhu (2012)	A sample of Indian and Australian IT companies suggests that there is a gap between IC and HC disclosure between enterprises from developed and developing nations.
Wang, Sharma and Davey (2016)	Publicly listed IT entities from India perform better in IC and HC disclosure than Chinese ones.

Abbreviations stand for intellectual capital (IC) and human capital (HC) respectively
Source: own study on the basis of the mentioned literature or the above literature.

Previous empirical findings argue for more research on human capital reporting and its determinants, especially in relation to emerging countries. As this paper is focused on studying the extent of human capital disclosure and its determinants among enterprises from the countries on a different level of development, two research hypotheses were formed.

H1: Enterprises from developed nations report better on human capital than firms from transition economies.

H2: The size of the company (measured by market value, revenue and employment) and the industry determine the quality and extent of human capital reporting.

MATERIAL AND METHODS

The research compares the annual reports and other publicly available corporate documents[2] for the financial year 2015 of top 30 Polish companies to those of German companies. The research method adopted for this study consists in: content analysis, tools of descriptive statistics and correlation analysis. Guthrie and Petty (2000) consider annual report of the company as generally most widely distributed of all public documents; what is more, the management of the firm can control the reporting of information in this document.

The Studied Sample Description

Poland and Germany are two closely linked economies on a different level of development. In Poland there is one stock exchange (Warsaw Stock Exchange – WSE), and in Germany there are nine stock exchanges, however, the most important one is Deutsche Börse based in Frankfurt. Data concerning both financial markets are shown below.

Table 4. The comparison of Polish and German stock exchanges in 2015

	Warsaw Stock Exchange	Deutsche Börse
Annual turnover (EUR mln)	49 055	1 409 830
Market capitalisation (EUR mln)	126 017	1 570 301
Listed companies	905	619
No. of employees	369	5 283
Year of establishment	1991	1585

Source: own study based on the Federation of European Securities Exchanges (2016).

Deutsche Börse, as the more established stock exchange (since 1585), is much larger than the WSE, taking into account almost all major criteria. The yearly turnover of the shares traded is 29 x larger, the value of all listed companies is 12 x larger, whereas the total number of employee is 14 times higher in the case of Deutsche Börse than in the WSE. Only in terms of the number of listed companies the WSE records a greater value (905 vs. 619).

The level of the development of financial markets indicates the level of a nation's economy, including the largest enterprises. In the case of Poland and Germany, the largest companies are listed on stock exchanges and often build up the main market indices. This paper examines 30 publicly listed enterprises in each country.

For the purpose of the study, Polish and German companies belonging to WIG-30[3] and DAX[4] respectively were researched (October 2016). Such a choice of studied companies derives from the fact that, according to the literature review, intellectual capital and human capital disclosure is more frequent in publicly listed firms. Entities were

[2] In addition to the annual report, the following documents were analysed (if available): the CSR report, the management report and the financial statement. However, in some cases the annual report was a comprehensive document covering all the data needed. Such a situation occurred mainly in the case of German companies.
[3] WIG-30 includes the following entities: Alior, Asseco, Bogdanka, BZWBK, CCC, CD Projekt, Cyfrowy Polsat, Enea, Energa, Eurocash, Grupa Azoty, GTC, ING, JSW, Kernel, KGHM, Lotos, LPP, Mbank, Millenium, Orange, Pekao, PGE, PGNIG, PKN Orlen, PKO BP, PKP Cargo, PZU, Synthos, Tauron.
[4] DAX includes the following entities: Adidas, Allianz, BASF, Bayer, Beiersdorf, BMW, Commerzbank, Continental, Daimler, Deutsche Bank, Deutsche Borse, DHL, Deutsche Telekom, EON, Fresenius Medical Care, Fresenius, Heidelberg, Henkel, Infineon, Linde, Lufthansa, Merck, Muenchener Rueck, ProSieben, RWE, SAP, Siemens, ThyssenKrupp, Volkswagen, Vonovia.

compared in terms of the market value, total revenue and employment. To measure the market value the quantity of shares and unit stock price on 4th November 2016 were taken, however, the total revenue refers to the values for the yearly 2015 turnover, whereas the employment category was adopted as the average number of employees during 2015. In the case of the Polish companies, 8 entities were classified to Banks and Insurance, 7 to Production, 8 to Energy and 7 to Services. However, in the case of the German enterprises, most of the studied firms belonged to the Production entities (15), 8 to Services, 5 to Banks and Insurance and 2 to Energy. Figures describing the research sample are presented in the table below.

Table 5. The comparison of the studied Polish and German enterprises

	WIG-30 (n=30)		DAX (n=30)	
	Total	**Mean**	**Total**	**Mean**
Market value (bln EUR)	83.2	2.8	1 350	45
Revenue (bln EUR)	4.7	1.5	1 209	40.3
Employment	398 375	13 279	3 664 087	122 136

Source: own study on the basis of the studied sample.

Content Analysis

For the purpose of the study content analysis was adopted as a research method. Content analysis is defined as a technique for gathering data (Abeysekera, 2007). The aim is to codify qualitative and quantitative data into pre-defined categories in order to receive quantitative scales of different levels of complexity (Guthrie, Petty & Ricceri 2004; Guthrie & Petty, 2000; Abeysekera, 2007; Dumay & Cai, 2015). It should be mentioned that content analysis has some limitations. One of them is the problem of subjectivity in assessing each category (coding process). Another major problem is the interdependence on companies to report certain items. Moreover, there also has to be the assumption made that information provided by the companies are reliable. However, despite these arguments, according to Schneider and Samkin (2008), Guthrie and Petty (2000), Yi and Davey (2010) content analysis is perceived to be empirically valid in social sciences, intellectual capital disclosure and in the reporting fields of accounting research.

The Structure of Human Capital Disclosure Index

To assess the extent and quality of human capital reporting a disclosure index was applied. An important part in constructing it is the decision on scale scheme. The selection of scale scheme used to score IC items differs in specific studies. Schneider and Samkin (2008), and Yi and Davey (2010) adopted a six-point scale (from 0 to 5); Whiting and Miller (2008) established the quality criteria on a three-point scale (from 0 to 2, 0 for nondisclosure, 1 for qualitative disclosure and 2 for quantitative disclosure); Brennan (2001) and Abeysekera and Guthrie (2005) used a two-point scale (0-1, 0 represents nondisclosure and 1 represents disclosure). In this study a five-point scale was adopted – the details are presented below:

1. No disclosure (0 pts.): there was no information in corporate documents.
2. Narrative (1 pts.): information presented in a basic (short) narrative form.
3. Numerical (2 pts.): information presented in a numerical form.

4. Monetary (3 pts.): information presented in a monetary form (alternatively more in-depth numerical forms appear).
5. Qualitative and quantitative (4 pts.): combination of qualitative and quantitative information.

Secondly, a list of the items of human capital was identified based on: prior literature, the researchers' own knowledge of the studied firms and the initial study on the sample of 2 enterprises from Poland and Germany. An analysis of human capital disclosure is often based on individual assumptions taken by the researchers. One of the reasons is the plethora of scientific approaches developed on the theoretical level. Massingham and Tam (2015) include three items in human capital, namely: employee capability (measured by: qualifications, experience, skills and knowledge), employee satisfaction (measured by: affective attachment locus of control, calculative reward, calculative approval and personal outcome expectancy) and employee commitment (measured by: trust and careerism). Liao *et al.* (2013) include two items in human capital, which are employee satisfaction (understood as: employee support, employee safety, employee retention, work-family balance, employee motivation and employee satisfaction) and employee capital (understood as: intelligence, know-how, education/training, competence, expertise, brain power, specialist, human resource). Yi and Davey (2010) identify four items, these are: employee (measured by: indicators related to employees), education/training (measured by: education or training programmes provided by the company), work-related knowledge (measured by: knowledge acquired for the job or training by employees), entrepreneurial spirit (measured by: innovation and risk-taking).

Literature review on human capital items and national context of the studied firms enabled us to form a comprehensive and broad spectrum of all (to our best knowledge) items concerning human capital disclosure possible to identify and measure in the corporate, officially released documents. This group of items was later applied and tested in terms of prevalence in the initial study on a small sample of Polish and German entities[5]. Taking into account that the national context of the studied firms in the research process is a common approach in the research on human capital, as suggested by Liao, Low and Davey (2013) and Wang, Sharma and Davey (2016).

As a result, we decided, basing on the country-specific features and the initial study, to identify three main human capital categories with a further division. Details on human capital disclosure index are presented in Table 6.

These items partially agree with prior research, however the structure of the index shall be perceived as unique. Two human capital items (internal communication policy and development programme) were difficult to measure with the use of disclosure index due to the fact that companies tend to report on those categories mainly in a narrative form, thus in these cases Likert's scale (0-4) was adopted. Three human capital items (Voluntary Leave Plan, Trade Unions and Stock Option Plan) were of specific case. In some of the studied entities the information was given that there is no Voluntary Leave Plan, Trade Unions or Stock Option Plan. Therefore, the adoption of disclosure index would be pointless. Thus, we decided to give the maximum score of four when such a situation appeared. A similar approach was undertaken by Yi and Davey (2010).

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[5] As it will be later presented in the Results and Discussion section, some items were reported very rarely which was the consequence of the broad spectrum of human capital items considered.

Table 6. The description of human capital disclosure index

Human capital category	Methods
1. Employee information	**Mean 1.1-1.3**
1.1. Employee benefits	disclosure index
1.2. Employment structure	disclosure index
1.3. Voluntary Leave Transfer Programme	disclosure index
2. Internal communication	**Mean 2.1-2.4**
2.1. Internal communication policy	Likert's scale
2.2. Trade unions	disclosure index
2.3. Employee satisfaction survey	disclosure index
2.4. Participation initiatives	disclosure index
3. Employee development policy	**Mean 3.1-3.4**
3.1. Development programme	Likert's scale
3.2. Incentive scheme	disclosure index
3.3. Stock Option Plan	disclosure index
3.4. Employee voluntary service	disclosure index
Human capital overall score	**Mean 1-3**

Source: own study.

In the study we perceive the above-mentioned items as equally important, thus there were no weighs put to any of the item. The final score of human capital disclosure is the mean value of employee info, internal communication and employee development policy. The coding process did not provide any obstacles, mainly due to an easy public access to corporate documents.

RESULTS AND DISCUSSION

The study conducted on the sample of total 60 entities provides useful data on human capital disclosure. Mean human capital values were higher in the case of the German (2.15) entities than the Polish ones (1.75). Table 7 presents human capital disclosure values and the category breakdown.

The Polish entities reported worse than the German ones in terms of all the studied categories. The largest differences were reported in terms of employee satisfaction survey and development plan. Meanwhile, the smallest differences were found in the case of Voluntary Leave Plan, Trade Unions and Stock Option Plan. Both Polish and German companies performed worst in reporting about participation initiatives (0.12 and 0.5, respectively) and Voluntary Leave Plan (1.1 and 1.3, respectively). However, the studied enterprises reported well on employee benefits (2.57 and 3.15, respectively) and Stock Option Plan (3.07 and 3.27, respectively). To sum up the quality of human capital disclosure, it shall be stressed that, although in some categories both the Polish and German firms perform well, on average the human capital disclosure is not sufficient. Mean human capital disclosure index values were 1.75 (43%) for the Polish companies and 2.15 (53.8%) for the German ones. The achieved results confirm prior research of Abeysekera (2008), Yi & Davey (2010) concerning the national context of the studied firms and analyses of Joshi *et al.* (2012) who argue that more developed countries report better in terms of the quality of human capital disclosure than developing nations. However, the results are not in line with the studies of Wang, Sharma

and Davey (2016) on Indian and Chinese entities. However, although there is a difference in the level of the economic development between India and China (measured by GDP per capita), still both countries are classified as developing nations.

Table 7. The average human capital disclosure values with the breakdown of categories

Human capital category	Mean PL	Mean GER
1. Employee information	**1.85**	**2.29**
1.1. Employee benefits	2.57	3.15
1.2. Employment structure	1.74	2.4
1.3. Voluntary Leave Transfer Programme	1.1	1.3
2. Internal communication	**1.23**	**1.46**
2.1. Internal communication policy	1.32	1.6
2.2. Trade unions	1.37	1.53
2.3. Employee satisfaction survey	1.1	2.2
2.4. Participation initiatives	0.12	0.5
3. Employee development policy	**2.17**	**2.7**
3.1. Development programme	1.87	2.86
3.2. Incentive scheme	2.02	2.73
3.3. Stock Option Plan	3.07	3.27
3.4. Employee voluntary service	1.66	1.93
Human capital overall score	**1.75 (43%)**	**2.15 (53.8%)**

Source: own study.

In the second step of the study, the extent of human capital disclosure was analysed. The extent of human capital disclosure may be measured by its frequency which is equal to the quantity of firms disclosing each human capital item. The results are presented in Table 8.

Table 8. The frequency (in %) of reporting on the studied items of human capital

Human capital category	PL	GER
1. Employee information	–	–
1.1. Employee benefits	29	30
1.2. Employment structure	30	30
1.3. Voluntary Leave Transfer Programme	13	17
2. Internal communication	–	–
2.1. Internal communication policy	24	27
2.2. Trade unions	14	23
2.3. Employee satisfaction survey	15	22
2.4. Participation initiatives	2	10
3. Employee development policy	–	–
3.1. Development programme	28	30
3.2. Incentive scheme	25	30
3.3. Stock Option Plan	28	28
3.4. Employee voluntary service	15	21

Source: own study.

From Table 8 it can be concluded that only one human capital item was disclosed by all the Polish and German companies (information on employment structure). However three human capital items were reported by almost all studied firms (employee benefits, development programme and Stock Option Plan). The least frequently disclosed human

capital item were participation initiatives, which was also observable in terms of human capital disclosure quality. Apparently, more often than participation initiatives, but still more rarely than other human capital items trade unions and employee satisfaction were disclosed. What is interesting in terms of the extent of human capital disclosure are the best scoring fields in the case of the Polish and German firms reported similarly, however major differences appeared in the worst scoring of human capital items. The findings are partly contradictory with the results of Wang, Sharma and Davey (2016).

Human capital disclosure varied among the studied industries. Four industries were distinguished (Banks and Insurance, Energy and Mining, Production and Services). The results are presented in Table 9.

Table 9. Human capital disclosure against the industry

Industry*	Germany					Poland				
	Total	B	E&M	P	U	Total	B	E&M	P	U
Number	30	5	2	15	8	30	8	8	7	7
Human capital overall score	**2.15**	**1.92**	**1.91**	**2.23**	**2.20**	**1.75**	**2.06**	**2.49**	**1.19**	**1.11**
1. Employee info	**2.29**	**2.58**	**1.86**	**2.33**	**2.16**	**1.85**	**1.74**	**2.82**	**1.27**	**1.45**
1.1.Employee benefits	3.15	3.20	3.25	3.03	3.31	2.57	2.63	3.31	2.14	2.07
1.2. Employment structure	2.40	2.33	2.33	2.56	2.17	1.74	1.33	2.60	1.52	1.43
1.3. Voluntary Leave Transfer Programme	1.33	2.20	0.00	1.40	1.00	1.11	1.00	2.43	0.14	0.86
2. Internal communication	**1.46**	**0.88**	**1.25**	**1.58**	**1.66**	**1.23**	**1.93**	**1.92**	**0.32**	**0.54**
2.1. Internal communication policy	1.60	0.90	1.00	1.83	1.75	1.32	2.03	1.65	0.68	0.76
2.2. Trade unions	1.53	1.00	2.00	1.53	1.75	1.37	1.43	3.13	0.17	0.17
2.3. Employee satisfaction survey	2.20	1.40	2.00	2.33	2.50	1.11	2.38	1.14	0.14	0.50
2.4. Participation initiatives	0.50	0.20	0.00	0.60	0.63	0.12	0.17	0.00	0.00	0.33
3. Employee development policy	**2.70**	**2.31**	**2.63**	**2.79**	**2.79**	**2.17**	**2.51**	**2.73**	**1.97**	**1.33**
3.1. Development programme	2.86	2.53	2.50	3.09	2.71	1.87	2.21	2.44	1.52	1.19
3.2. Incentive scheme	2.73	2.70	2.50	2.73	2.81	2.02	3.06	2.06	1.64	1.14
3.3. Stock Option Plan	3.27	3.40	3.00	3.07	3.63	3.07	3.00	3.50	3.43	2.29
3.4. Employee voluntary service	1.93	0.60	2.50	2.27	2.00	1.66	1.75	2.86	1.29	0.71

* The following industries were identified: B – Banks & Insurance, E&M – Energy & Mining, P – Production, U –Services
Source: own study.

Human capital disclosure values differed among industries. The German companies performed best in Production and Services industry (mean values of human capital disclosure: 2.23 and 2.2, respectively), whereas the Polish entities scored the best performance in Energy and Mining industry (2.49). What is interesting, German Energy and Mining industry reported worst of all German companies (1.91). The worst disclosing Polish industry appeared to be Services (1.11). These findings are not in line with the conclusions of Pablo (2003) who argued that the banking sector reports best (a sample of Danish, Swedish and Spanish enterprises). On the contrary, in German banking entities human capital disclosure index was the second worst with the score almost similar (1.92 vs. 1.91) to the Energy and Mining industry. In Poland in the banking sector the quality of human capital disclosure was average.

Literature studies suggest the importance of other factors determining human capital disclosure, such as the firm size. In our study the firm size was defined as

Market Value and Number of Employees. Table 10 presents human capital disclosure values depending on the market value.

Table 10. Human capital disclosure and the market value

Market Value	Germany					Poland				
	Total	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th
		quartiles					quartiles			
Number	30	1	8	8	13	30	14	7	7	2
Human capital overall score	2.15	2.52	1.89	2.06	2.34	1.75	1.45	1.79	2.12	2.43
1. Employee info	2.29	1.44	2.16	2.18	2.51	1.85	1.70	1.73	2.00	2.78
1.1.Employee benefits	3.15	3.00	3.19	3.25	3.08	2.57	2.39	2.79	2.43	3.50
1.2. Employment structure	2.40	1.33	2.29	2.42	2.54	1.74	1.71	1.36	1.86	2.83
1.3. Voluntary Leave Transfer Programme	1.33	0.00	1.00	0.88	1.92	1.11	1.00	0.67	1.50	2.00
2. Internal communication	**1.46**	**2.63**	**1.02**	**1.44**	**1.65**	**1.23**	**0.76**	**1.36**	**1.88**	**1.75**
2.1. Internal communication policy	1.60	2.50	1.19	1.38	1.92	1.32	0.99	1.23	2.08	1.25
2.2. Trade unions	1.53	4.00	1.25	2.00	1.23	1.37	0.85	1.86	1.67	3.00
2.3. Employee satisfaction survey	2.20	3.00	1.38	1.75	2.92	1.11	0.54	0.67	2.14	2.50
2.4. Participation initiatives	0.50	1.00	0.25	0.63	0.54	0.12	0.00	0.50	0.00	0.00
3. Employee development policy	**2.70**	**3.50**	**2.49**	**2.56**	**2.85**	**2.17**	**1.88**	**2.27**	**2.49**	**2.75**
3.1. Development programme	2.86	3.00	2.42	3.17	2.92	1.87	1.43	1.64	2.67	3.00
3.2. Incentive scheme	2.73	4.00	2.56	2.69	2.77	2.02	1.64	2.07	2.57	2.50
3.3. Stock Option Plan	3.27	4.00	3.25	2.88	3.46	3.07	3.43	2.86	2.86	2.00
3.4. Employee voluntary service	1.93	3.00	1.75	1.50	2.23	1.66	1.00	2.33	1.86	3.50

Source: own study.

Market values of the studied companies from both countries are significantly different due to the level of financial markets development, which was shown in Section 3. Thus, the research was conducted with the percentile division according to each country. The smallest German firms (from the first quartile) had to be excluded due to the fact that there was only one enterprise. Nevertheless, the highest human capital disclosure was reported by the entities with the greatest market value. Such a phenomenon was observed in relation to both German and Polish companies.

The second factor influencing human capital disclosure taken into account in our study was the number of employees. The results are presented in Table 11.

The data in Table 11 suggest that the greatest human capital disclosure values can be observed in the case of the largest German and Polish enterprises. The largest Polish entities performed on average the same as the German ones (2.34 vs. 2.35). In the German firms a linear trend of human capital disclosure values was observed (the larger enterprise the better human capital reporting). Such a phenomenon was not recorded for the Polish companies which tend to form two distinct groups – the largest companies (in the 4th quartile) performed much better than the rest (in quartiles 1-3).

To find the human capital disclosure determinants we conducted a correlation analysis with the industry and country breakdown[6].

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[6] As not all variables are normally distributed (e.g. Market Value and Revenue in Poland) as shown by Shapiro-Wilk test, we used Spearman correlation coefficient. The significance levels in Table 12 (marked with asterisks) show the results of the *t* test results on variable independence.

Moreover, in a firm size we included market value, revenue and employment. Table 12 shows the results.

Table 11. Human capital disclosure and employment

Employment	Germany					Poland				
	Total	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th
		quartiles					quartiles			
Number	30	8	7	7	8	30	8	7	7	8
Human capital overall score	2.15	1.86	2.03	2.37	2.35	1.75	1.19	1.84	1.62	2.34
1. Employee info	2.29	2.12	2.17	2.47	2.42	1.85	1.44	1.71	1.48	2.70
1.1.Employee benefits	3.15	3.19	3.29	2.93	3.19	2.57	1.88	2.71	2.29	3.38
1.2. Employment structure	2.40	2.42	2.24	2.62	2.33	1.74	1.71	1.43	1.86	1.94
1.3. Voluntary Leave Transfer Programme	1.33	0.75	1.00	1.86	1.75	1.11	0.75	0.67	0.29	2.71
2. Internal communication	1.46	0.97	1.36	1.77	1.77	1.23	0.60	1.43	0.97	1.90
2.1. Internal communication policy	1.60	1.25	1.57	1.64	1.94	1.32	0.69	1.71	1.20	1.71
2.2. Trade unions	1.53	1.25	1.43	2.14	1.38	1.37	0.88	1.33	0.50	2.71
2.3. Employee satisfaction survey	2.20	1.25	1.71	3.00	2.88	1.11	0.29	1.29	1.00	1.86
2.4. Participation initiatives	0.50	0.13	0.71	0.29	0.88	0.12	0.00	0.17	0.33	0.00
3. Employee development policy	2.70	2.49	2.57	2.88	2.85	2.17	1.52	2.38	2.40	2.43
3.1. Development programme	2.86	2.83	2.71	2.95	2.92	1.87	1.25	1.67	2.38	2.23
3.2. Incentive scheme	2.73	2.63	2.71	3.00	2.63	2.02	0.81	2.71	2.50	2.19
3.3. Stock Option Plan	3.27	3.00	3.14	3.71	3.25	3.07	2.50	3.57	3.29	3.00
3.4. Employee voluntary service	1.93	1.50	1.71	1.86	2.63	1.66	1.50	1.57	1.43	2.14

Source: own study.

Table 12. Correlation analysis between human capital disclosure index and market value, reve-nue and employment with country/industry breakdown

	Market Value	Revenue	Employment	Country	Industry
Human capital index	-0.1147	0.3523*	0.3849**	Germany	All sectors
	0.3496*	0.2781	0.5707***	Poland	
Human capital index	0.1569	0.3688	0.2884	Both countries	Banking
	-0.2551	-0.5449	-0.1751		Energy & Mining
	0.2579	0.5896***	0.5683***		Production
	0.5094	0.4851*	0.4256		Services
Human capital index	0.4798	0.8786**	0.8	Germany	Banking
	–	–	–		Energy & Mining
	0.0099	0.5336**	0.5339**		Production
	0.2403	0.2138	0.1318		Services
Human capital index	0.0919	0.2856	0.3777	Poland	Banking
	0.6071	0.5893	0.7106*		Energy & Mining
	0.666	0.8258**	0.6398		Production
	-0.1343	0.7567**	0.5992		Services

Source: own study.

The strongest relations were recorded between human capital disclosure values and employment and revenue in both countries in the Production industry. Also the relation between human capital disclosure index and revenue in the Banking industry in Germany and in the Services in Poland appeared to be significantly important. The results partially confirm previous studies of Guthrie, Petty and Ricceri (2006) and

Bruggen, Vergauwen and Dao (2009) concerning a positive relation between the quality of voluntary human capital disclosure and company size.

CONCLUSIONS

The study conducted in this paper examined the extent, quality and determinants of voluntary human capital disclosures by Polish and German publicly listed companies. The mean value of human capital disclosure is insufficient, which corresponds with the research of Guthrie and Petty (2000), Brennan (2001), Bontis (2003), Xiao (2008), Yi and Davey (2010) and Singh and Kansal (2011). Even the best scoring entities could not reach the level of 80% of maximum human capital disclosure index. In Poland the greatest human capital disclosure values were found in the case of PGE (3.13-78.2%), in turn in Germany – Bayer (3.08-77.1%). Moreover, the Polish enterprises performed worse than the German ones, which is in line with the similar studies of Abeysekera (2008), Yi and Davey (2010) and Joshi, Ubha & Sidhu (2012), in the sense that entities from developed nations report on human capital more comprehensively than firms from a developing country. However, studies of Wang *et al.* (2016) suggest the opposite relation. Among the factors influencing human capital disclosure the firm size (understood as revenue and employment) and industry were determined as significantly important, although the relations were different in each country and dependable upon the industry. Such conclusions are partially corresponding to the studies of Bozzolan, Favotto and Ricceri (2003), Guthrie *et al.* (2006) and Bruggen *et al.* (2009).

As the findings derived from the study suggest the level of human capital disclosure as insufficient, the achieved results might foster a debate on the importance of human capital reporting and thus improve the extent and quality of disclosing practices, especially by Polish entities. However, numerous German firms still have a potential to report better in some key areas concerning human capital.

The study has its limitations, such as a relatively small research sample and the lack of time analysis. It would be worth making a comparison between human capital disclosure today and five, ten years ago so that it would be possible to present the human capital disclosure evolution. In addition, further research shall concentrate also on more cross-country comparisons.

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International Development of German Enterprises on the example of the Wielkopolska Region

Magdalena Śliwińska, Rafał Śliwiński

A B S T R A C T
Objective: The aim of the research is to understand how German enterprises are developingtheir activities and sales in the Wielkopolska region in Poland, in particular to investigate how they perform in terms of sales volume, what the drivers of their growth on the foreign market are, what constitutes the Wielkopolska region, and what the barriers to their growth are.
Research Design & Methods: The qualitative research method, in particular the multiple case study approach. The research covers 12 firms and was conducted using the direct interview method.
Findings: We found that German firms functioning in Wielkopolska have extraordinary growth rates, over 20% per year, substantially higher than those achieved in Germany, that they did not follow the classical Uppsala model of internationalisation, and that their main sources of growth are their high quality, employees, and innovativeness in combination with the fast growing market of a less developed economy.
Implications & Recommendations: The study suggests that in order to reduce or eradicate the barriers to growth of German firms in Wielkopolska, the appropriate authorities should care more about the higher stability and good enforcement of the law and political stability in Poland's eastern neighbour – Ukraine.
Contribution & Value Added: The research contributes to the development of knowledge on the functioning of German firms' growths rates in Wielkopolska and factors enhancing and impeding their growth on the practical and theoretical level.

INTRODUCTION

Wielkopolska is a region in the west of Poland and due to its geographical and historical conditions there are many economic ties between this region and the German economy. Intensification of these relations took place after 1989, when the Polish economy became more and more open to foreign trade and investors. For German firms Poland, and the Wielkopolska region as one of the closest and best developed regions in the country, was a natural direction of expansion, which is why they have become the biggest foreign employer in the region.

The functioning of foreign companies on a local market has been analysed in the literature, but despite intensive economic globalisation, it may still evoke emotions and controversies on the political and scientific levels. On the one hand, there are many studies which examine broadly understood growth factors and barriers to growth for firms functioning on foreign markets (Keen & Etemad, 2012; Davidsson *et al.*, 2009; Shepherd & Wiklund, 2009). On the other hand, there are many studies concentrating on the benefits and costs of opening up areas for trade and investments from highly developed economies and the conditions necessary to achieve benefits on both sides (Dornbusch, 1992; OECD, 1999; McCulloch, Winters & Cicera, 2001), but there are still no precise sets of factors shaping the growth of enterprises on foreign markets or their export performance. There are also no solutions found on the practical and theoretical levels, how to avoid growing inequalities between highly and lesser developed countries. For the above-mentioned reasons we decided to take a closer look at the issue of the functioning of German firms in the Wielkopolska region. Unfortunately, there is very little literature describing this issue, and it mostly refers only to cross-border exchange (Raczyk, 2014). We identified a gap in the research and literature on the description of export performance, and internationalisation strategies or growth factors of German enterprises in Poland. Therefore, the purpose of the research was to understand how German enterprises are developing their activities and sales in the Wielkopolska region in Poland, in particular to investigate how German enterprises perform in terms of sales volume, what the drivers of their growth on the foreign market are, what constitutes the Wielkopolska region, and what the barriers to their growth are.

The chosen topic seems to be highly important from the scientific and practical point of view. First, it explores the issue of growth factors and obstacles to growth of enterprises functioning on foreign markets and then it goes a step further, trying to identify the above-mentioned factors in the case when enterprises expand into relatively less developed economies, which is the case when German firms invest in the Wielkopolska region. Trying to identify new factors of growth and barriers to growth is important not only for the further development of the firm's internationalisation theory, but also for economic integration theories, as the latter explore the elements of policy and economic circumstances crucial for creating a common market between countries, giving enterprises better conditions to expand and grow. From the practical point of view, this research is important for policy makers on both sides, whose aim is to support the development of firms related to or functioning in their country or region. The findings of this research are important for attempts to estimate the implications of the functioning of German firms for the region and its economy.

The research had a qualitative character, applying the multiple case approach as a research method, and was conducted in 2015 within the confines of a bigger interna-

tional project – CLILiG – initiated and supervised by the Goethe Institute together with University Tampere in Finland, and executed by the University of Economics in Poznań.

The paper is divided into five parts. After the introduction, the literature review on the internationalisation and export performance as the basis for the research will be analysed. In the next section the methodology of the research will be explained. Then the main findings will be described, followed, as the penultimate part, by the discussion. And the last part of the paper will present the overall conclusions.

LITERATURE REVIEW

Because of the scope and the main aim of the research, we took as the basis for considerations the internationalisation theories and literature concerning export performance. The latter is also important because the studied German companies derive a lot of the products they sell in Poland from Germany and they sell them also on the East European markets. A vital place in the research on enterprises' internationalisation is occupied by the stages theories, which imply that the internationalisation is a sequential process realised in a few phases. The dominating paradigm within these theories constitutes the Uppsala model presented by Johanson and Wiedersheim-Paul (1975). Later, Johnson and Vahlne (1977) added to the Uppsala model a dynamic perspective and proved that the next stages in the model are determined by the level of resources involved in the internationalisation process and the knowledge about foreign markets, where both are interrelated and influence each other, causing a change in the internationalisation involvement and internationalisation stage. Consequently, the model was developed further by Luostarinen (1980), Larimo (1985), Swedenborg (1982), Gandemo and Mattson (1984). Apart from the stages theory, there are other views which point to the internationalisation strategies of firms. The resource-based view of the firm (RBV) suggests that valuable, rare, inimitable and non-substitutable resources of the firm allow a company to grow (Wernerfelt, 1984; Barney, 1991; Nelson & Winter 1982; Grant, 1991). Successful competition and reaching company's long-term aims is possible if the firm has enough resources and uses them effectively (Sharma & Erramilli, 2004). The RBV argues that firms with valuable resources and capabilities favour high control modes of internationalisation (Ekeledo & Sivakumar, 2004). Moreover, a specific entry strategy depends on the type of resource advantage (Malhotra, Agarwal & Ulgado, 2003). The shortages of the RBV are reflected in difficulties in explaining the choice of some entry mode strategies (e.g. licensing vs. joint venture) and measuring some intangible assets (Malhotra *et al.*, 2003). The organisational knowledge creation view (Nonaka & Takeuchi, 1995) suggests that a firm learns from the experience of incidents and their location and internalises this experience in order to increase its productivity, competitiveness and growth. The external manifestation of the organisational knowledge creation view (OKCV) is that firms progressively increase efficiencies and effectively expand their product-market portfolios, including those on international markets. While the "gained experiential knowledge" in the stage models of internationalisation is tacit learning, the OKCV moves beyond such tacit states.

According to the theory, foreign-owned firms are widely assumed to have a performance advantage over their domestic counterparts. The specific comparative advantage paradigm of multinational enterprises (MNEs) (Dunning, 1988; Caves, 1974, 1996; Weche Geluebcke, 2011) points out that foreign-owned firms by definition are endowed with,

e.g. a superior production technology or organisational superiority which is available within the entire multinational corporation at a low marginal cost due to its public good character. These advantages may, according to Dunning, be the underlying reason for internationalisation. MNEs nowadays are strongly internationalised, if not globalised. In parallel, the SME sector is catching up with MNEs internationalising more and more. Simon (2009) shows that an SME can be very successful in internationalisation, grasping even a substantial global market share. US and German SMEs are among the leaders of international competitiveness (KFW, 2014). Whilst quality, delivery times and service orientation are the key competitive advantages of German SMEs, Brazilian and Chinese SMEs compete globally based on the prices of their products or services, and in the case of the US, UK and Japan innovativeness is the main competitiveness driver. While Cooper and Kleinschmidt (1985) found a negative association between export performance (sales) and a company's size (the most frequently investigated characteristic), Kirpalani and Macintosh (1980) found no significant relationship between company size and export performance. Christensen, da Rocha and Gertner (1987) found that larger firms have more competitive advantages with respect to cost and price due to their stronger bargaining position and better human resources. The direction of the association between export performance and export experience is also unclear. Experience may help a firm select its export markets and formulate and implement its marketing strategies more effectively (Cavusgil & Zou, 1994; Douglas & Craig, 1989; Terpstra, 1987). Taking into consideration the above presented theories, the RBV and the OKCV seem to be most appropriate to explain the export performance of German enterprises in Wielkopolska. Whereas the stages and Dunning's theories explain the internationalisation entry strategy, they do not say much about successful growth on foreign market. The RBV points directly that the quality of resources (valuable, rare, inimitable and non-substitutable) determines success on the market (domestic and international). The OKCV adds to this perspective the dynamic of organisational development of internationalising companies which progressively increase efficiencies and effectively expand their product-market portfolios capturing market shares abroad.

MATERIAL AND METHODS

In order to achieve the aim of the study, i.e. understanding how German enterprises develop their activities and sales in the Wielkopolska region in Poland, the qualitative research method was chosen, as it provides useful in-depth findings, giving a good understanding of the behaviour of firms (Reiner *et al.*, 2008). Due to the qualitative research method we had a chance to identify possibly new growth factors and barriers to development, whose importance and significance can be further tested in quantitative research. As a consequence, the research did not test any hypothesis, but realised the above-mentioned aim of the qualitative research (Czakon, 2013). From an array of qualitative methods the multiple case study approach was chosen, which according to Yin (2003) is the most suitable research method for theory testing, as well as for potential theory development (Eisenhardt, 1989; Merriam, 1998). This method allowed to explore and draw conclusions referring to a larger group of companies, which took place in this case (12 companies), and allowed a complex coverage of the subject and an identification of those factors which have the greatest impact on the studied phenomenon. The

research was conducted using the direct interview method (Maxwell, 2005) and a semi-structured interview (Nikodemska-Wołowik, 2008) based on a prepared questionnaire. It gave the possibility to interact directly with the respondents, to use the laddering technique deepening the answers (Reynolds & Gutman, 1979, 1984, 1988), and to ask more in-depth questions which allowed to identify the factors which the respondent would not determine alone. Moreover, it was also possible to eliminate the situations when some questions would be unclear to the respondent, which would result in a lack of cognitive responses received. The interviews were conducted with CEOs or members of the company's Board of Directors. The adoption of this form of research had a significant impact on the quality of their responses and also allowed to get full answers to the questions that were given. Additionally, we used triangulation technique by verifying the respondent's answers with the secondary data which were derived from the companies' websites or published articles about the studied firms.

The criteria to select companies for the study was simple – a German company was supposed to have the majority of its capital in an enterprise which operated in the Wielkopolska region and it should have a presence in Wielkopolska. The assumption behind those criteria was that the chosen companies will represent different branches and different sizes in order to identify factors independent of the size of the company and the branch. There were 53 companies selected and 12 of them took part in the study (Aesculap-Chifa (Chifa-Braun corporation), Anton Roehr Logistyka, Arvato (Bertelsmann corporation), BTC, Craiss Logistik, Herding Polska, Hermes, MAN, Rehau, Roedl&Partner, Tente, Volkswagen).

In this paper we analyse the responses of the surveyed companies on the following five questions:

1. How have your sales been growing over the last 10 years on the Polish market?
2. What are the sources of growth of your firm on the Polish market?
3. What factors decide about the market success of your firm?
4. How does your firm take care of the innovativeness of products, services or processes?
5. What would now expedite the growth of your firm in practice?

The respondents could indicate one or more factors.

RESULTS AND DISCUSSION

In general, it should be noted that the studied German companies are developing on the Polish market quickly and dynamically. The BTC company has achieved a fivefold increase over the last 10 years, and Aesculap-Chifa within the 14 years of its presence on the Polish market marked a 32-fold increase, from 20 million to 640 million PLN. On the other hand, Hermes increased its turnover 8 times, and the last year's annual growth of the company stands at 30%. A similar increase in turnover is recorded by Tente – with about 30% per year. This growth is not always uniform. Arvato shows that the average annual growth on the Polish market is approx. 20%, but in some years it is a 55-year-percent increase, and others 30-or 15%. Generally, an increase in the sales of the surveyed companies on the Polish market is at an average of 20-30% per annum. This also applies to companies whose detailed data we cannot disclose. Some companies also indicated that during the first few years there was a period of adjustment to the market and the lack of growth period, but in the other surveyed companies increases were noticeable from the very beginning.

The average growth of companies in Germany has oscillated in recent years around 6%, and it is rare there that companies have increases by 20 percent or more. This means that the growth of German companies in Poland, on average 20-30%, are above average for German companies. The impressive results of the German firms functioning in Wielkopolska show that the growth potential of German companies in the Wielkopolska region is huge and results mainly from the combination of advanced technologies and market knowledge with the less developed Polish economy which easily absorbs new, high quality products and technologies, so in consequence with the growing market and weak local competition.

The surveyed companies paid attention to different sources of their growth, but several of them frequently overlapped. The Arvato company, BTC and Hermes emphasised the role of their employees, their enthusiasm, commitment, knowledge, ideas and skills. They identified them as the most important capital affecting the quality and efficiency of the company. On the other hand, VW, Chifa-Braun and Anton Roehr drew attention to an increase in sales and the growing market as the primary sources of growth, though in conjunction with other factors. VW, next to a continuous increase in sales, thought the focus on servicing used cars (service) to be important. Similarly, Anton Roehr felt that a combination of transport and logistical services, and the quality and reliability of services within the growing furniture market translated into the growth of their company. Aesculap-Chifa as the source of its growth recognised, alongside the growing market, the importance of product quality, the product itself and branding. The quality of services and products but also competitive price were pointed out by MAN. Essential for the growth of the company are also expanding current operations through the introduction of new products, such as: consulting in the field of EU funding (Roedl) or enlarging the market through the creation of new application areas for wheels (Tente). Likewise, innovation and continuous improvement of products (Rehau), the quality of solutions, meeting difficult challenges and investing in R&D (Herding) and the introduction of IT systems for cost optimisation and electronic customer service (Craiss Logistik) are among the main sources of growth of German companies on the Polish market. The quality of their products and services was indicated by the studied companies most often as the source of their success. The elements affecting the quality were classified as service and customer service, which was given the highest priority. Parallel to the quality of their products, the firms' knowledge on how to operate on the market should be indicated – which allows the use of the same standards of market conduct in Poland, a country less developed than Germany,. What is more, German companies often have on the Polish market, not so much as on the stabilised German market, the ability to influence market standards and to position themselves into a good market position. With regard to the priority of quality, the research results are consistent with the results of other researchers (Simon, 2009; KFW, 2014). Prasad, Ramamurthy and Naidu (2001) argued that the possession of competencies such as product development skills, product quality, technical support/after sales service, product line breadth, cost/price competitiveness, and customer relationship skills enable a firm to enjoy superior export performance, and our research results support this statement.

The observations also pointed to a consistent and prudent operation of the studied companies in the financial sphere and to financial support from their headquarters accompanied by the support of one of the world's most powerful German state support systems, fostering the internationalisation of enterprises (Śliwiński, 2005). Re-

source commitment and market knowledge was also found in the study by Souca *et al*. (2008) to be important capabilities and competencies that have an influence on a firm's export performance. The relationship between a firm's size and international experience emerged as a key determinant of export performance. This statement is not supported by our results, however, as enterprises from both the small and medium sized groups performed very well in growth on the Polish market. The same was found by Simon (2009) and Kirpalani and Macintosh (1980).

As mentioned above, as a source of their market success the companies pointed out to an appropriate ratio of value to cost of their products or services. It was very important for the studied firms that the customer understood the prices in relation to the value offered. Prasad, Ramamurthy and Naidu (2001) report a similar finding. Contrary to the above-mentioned research finding, however, Simon (2009) shows that price is definitely less important for German enterprises, with the quality of the product and an innovative product and technology supposed to be the driving force for good export sales performance. This may be, however, dependent also on the market itself, because the study about fast growing Polish companies (Śliwiński, 2011) shows that for Polish firms selling on the Polish market, similar as for the studied firms, price is only on the third place in the ranking of factors which determine sales on the Polish market. The fact that the studied companies pay attention to price may indicate the need to adjust to the Polish market, characterised by its high price elasticity in spite of the priority of quality.

Although innovativeness was perceived by the companies as very important, it seemed to be incorporated as a continuous process which is very important in the longer run but not the highest priority. The export marketing literature promotes firms' innovativeness as a critical export marketing capability (e.g., Kropp, Lindsay & Shoham, 2006; Lages, Silva & Styles, 2009) and as a core driver of exporters' international business success (Calantone, Cavusgil & Zhao, 2006). The studied firms did not deny this but did not see it as being as crucial as it is portrayed in the literature (Uner *et al*., 2013), which can be caused by the fact that their main task is to develop sales on the local market and support the innovative process written down in the strategy of the whole firm. It may be seen differently by parent companies, which are in 100% of cases responsible for innovativeness.

The studied companies were questioned how they care about the innovativeness of their products, production processes or services. The responses indicate that they all implement a policy in terms of innovation, and in this respect a Polish subsidiary is no different than the German parent company. This does not mean, however, that all Polish subsidiaries have an R&D department. For example, Aesculap-Chifa admits that innovations come only from the parent company, and the task of the Polish subsidiary is to send information about its acceptance and demand on the local market. In order to stimulate creativity, Chifa-Braun awards the Innovation Prize, and rewards creative ideas every year. On the other hand, Herding Holding, which allocates very large funds for research and development, delivers semi-finished and finished components to its Polish subsidiary, and the subsidiary spends money on improving them and finding ways to use these products in new situations and solving advanced technological problems at the same time. The observations showed that high attention paid to the very broad understanding of the concept of innovation varied among the studied firms. Rehau stresses the importance of

modern methods of production processes, extensive knowledge on the use and methods of the treatment of various materials, and technical support to customers. BTC invests in new products and improving the qualifications of employees, and VW cares about innovation through the introduction of new car models, improving current models, caring for the environment and changing the sales model (from ownership to leasing). Arvato stresses that innovativeness is embedded in the company's strategy, therefore, it always tries to be "one step ahead". They constantly look for new solutions, improve the existing services and add new ones. In addition to procedures for continuous improvement, development of production and the way in which services are performed, MAN draws attention to the need to reduce resource absorption and find methods to increase their efficiency. Similarly, Roedl, next to the training of employees and employer branding, drew attention to the role of introducing the principle of lean management and new IT tools. The surveyed companies also emphasised that not only investing in R&D, but careful focus on the customer is the source of innovation (Tente). Many ideas are born because of the current contact with customers and analysis of their needs.

Our research confirms the RBV and the quality of resources of the studied firms and the specific comparative advantage paradigm of multinational enterprises (Dunning, 1988; Caves, 1974, 1996). German firms operating in Wielkopolska are endowed with, e.g. a superior production technology or organisational superiority, giving them special benefits on the less economically developed market. However, it is worth stressing that, as mentioned above, in many cases the Polish subsidiaries develop the technologies and processes and these improvements and developments have sometimes a universal character or sometimes are specific for the Polish market. It is quite a distinctive contribution of our research to see that Poland is perceived by German investors as a place for innovation creations. This could be justified by the high educational level of the Polish society and by the fact that the necessary technology or equipment is delivered by the German parent company very often overcoming the capital barrier which many Polish enterprises cannot overcome.

In general, it should be noted that the use of certain company-wide standards that are restrained on the German market and applying innovations across the company group contributes to market changes in the Wielkopolska region that result in either raising the technical level of the market offer, or are more beneficial for employees' working conditions or other solutions. Generally, in this way, German companies impede the life of local enterprises, but in doing so they also force changes which are positive for competitiveness in local businesses, which, trying to defend their position, have to make changes and improvements both in terms of quality, technology, but also in issues related to the labour market.

All the surveyed companies started operations in Poland, either from a local sales office or from the acquisition of Polish enterprises or the launch of production in Poland (Aesculap-Chifa, VW, Rehau). In consequence, it needs to be stated that it contradicts the need of sequence in the internationalisation process described by the classical Uppsala model – which deems that the enterprises gradually increase their involvement on a foreign market. In choosing the direct form of entry into the Polish market, companies emphasise the ability to focus on quality and full control over the development activities on the foreign market. So it appears that the priority of quality has very far-reaching consequences for German companies. In the case of Aesculap-

Chifa, VW, and Rehau, the launch of their production facility is also inconsistent with sequence internalisation of the classical Uppsala model; however, it should be noted that these companies are corporations, which in turn means that they are interested in full commitment to the local market in order to maximise the benefits of the internalisation decisions. As a result, their activity could be justified by the dynamic Uppsala model, which has proven that the next stages are determined by the level of resources involved in the internalisation process and the knowledge about foreign markets. In the case of Arvato, the establishment of the production company in Poland was the first decision taken about the internalisation process of that German company. It follows from the above considerations that the decisions of the surveyed enterprises are, however, fully justified by the resource based view.

Answers to the question about the factors that, in practice, would at present accelerate growth on the Polish market shows that German companies on the Wielkopolska market feel similar restrictions to those faced by Polish companies. However, only one company – Hermes – drew attention to the internal conditions, such as new machinery. All other companies, in turn, stressed external factors, at the international, national, regional and industry level. For Herding, where the Polish branch serves also as a gateway to eastern markets, one aspect crucial to accelerating the development would be reaching a peaceful geopolitical situation in Ukraine, which would allow, among others, to collect current receivables. MAN drew attention to the deregulation of the labour market outside Poland, which would enable faster development in our country. At the moment, this is blocked because of the protection of jobs on the German market. Attention was also paid to the lack of uniform and unambiguous laws and regulations and to the need to mitigate legal and financial regulation and improve the public procurement law (Arvato). Aesculap-Chifa drew attention to the problem of law enforcement and a decrease in attention to compliance with laws when they increase in their number. This firm also stressed the problem of the industry, which is the need to regulate the principles of the functioning of the health care system. BTC in turn drew attention to the difficulties in finding qualified staff, due to high demand for specialists on the market of Wielkopolska and an inability to compete for employees against corporations such as Samsung and Volkswagen.

There were no signs observed of any discrimination against German enterprises in Wielkopolska. The enterprises felt they were treated exactly as Polish counterparts, which is the consequence of the fact that Poland is a member state of the European single market on the one hand, and of the fact that products and services from German companies are perceived very positively by the Polish cooperates and customers on the other hand. "German" is in Poland associated with good quality. Definitely this approach of the Polish market helps a lot to achieve good sales results. Unfortunately, it does not work in the opposite direction. Very often Polish enterprises signal cases of discrimination from German administration and, secondly, that the Polish goods and services do not have the best reputation in Germany – although due to strong Polish companies such as Comarch this trend is altering.

Table 1. Key findings

Studied issue	Key findings	Description
1. Sales growth in last 10 years	growth of the German companies in Poland, on average 20-30%, is above average for German companies, much higher than in Germany, the home country	above average growth
	32-fold increase, from 20 million to 640 million PLN	individual case
2. Sources of firms' growth	employees, their enthusiasm, commitment, knowledge, ideas and skills	emplyees
	growing market	external factors
	reliability of services	efficient organisation
	meeting difficult challenges	challenges
	product quality, the product features and branding	quality
	competitive price, appropriate ratio of value to cost of their products or services	price
	enlarging the market through new products or services	new products
	innovation and continuous improvement of products, the quality of the solutions, and investing in R&D (Herding) and the introduction of IT systems for cost optimisation and electronic customer service, Innovative offer	innovations
3. Sources of firms' market success	make the customer understand the prices in relation to the value offered	price/value ratio
	innovativeness incorporated as a continuous process	innovativeness
	innovative product & quality	product, quality, technology
4. Innovativeness	innovations come only from the parent company	no local R&D
	investment in new products and improving the qualifications of employees	investment in employees
	caring for the environment and changing the sales model	environment and sales model
	trying to be always "one step ahead"	new solutions
	reducing the resource absorption and finding methods to increase efficiency	increasing efficiency
	introducing the principle of lean management and new IT tools	lean management and IT tools
	careful focus on the customer is the source of innovation	focus on customer
	large investment in local R&D – product & technological problems	large local R&D
5. Factors that, in practice, would accelerate firms' growth on the Polish market	new machinery	internal condition
	reaching a peaceful geopolitical situation in Ukraine	external condition, makroeconomic
	deregulation of the labour market in Germany	external, labour market
	lack of uniform and unambiguous laws and regulations	external, legal system
	improvement of the law on public procurement	external, legal system
	problem of law enforcement and a decrease in attention to compliance with laws	external, legal system
	need to regulate the principles of the functioning of the health care system	external, industry specific
	difficulties in finding highly qualified staff	internal, labour market

Source: own study.

Due to the fact that only German companies were studied, the obtained information puts them and their impact on the economy of the region generally in a positive light. For obvious reasons, therefore, the direct study of German companies did not provide any data on the negative impact on competitors, society, or the environment in the Wielko-

polska region. However, it should be noted that beside the positive effects of the activities of German companies on the Polish market, there are also negative ones. The most important of them is the matter of conquering a part of the market. It is obvious that the needs of Polish consumers are limited and the demand captured by foreign companies is very hard to regain, if at all. For Polish companies, this means a much greater difficulty in reaching a certain threshold of sales or sometimes the impossibility of entering the market already occupied by a strong German company. This is a win/lose game and one should bear this in mind. From the point of view of the Polish economy it is also important that the profits will be reinvested and not transferred abroad.

CONCLUSIONS

The aim of this research was understanding how German enterprises are developing their activities and sales in the Wielkopolska region in Poland, in particular to investigate how German enterprises are performing in terms of sales volumes, what the drivers of their growth on the foreign market, in the Wielkopolska region, are and what the barriers to their growth are. The qualitative research based on the multi case study approach and in-depth interviews in 12 German firms functioning in Wielkopolska allowed to obtain answers to the questions that are aforementioned and allow to draw conclusions also on the basis of the existing literature on this topic.

All the studied firms started their activities in Poland using direct modes of internationalisation, such as sales agencies, production units or from acquiring a Polish enterprise, which denies the sequence of the classical Uppsala model but which is partly justified by the dynamic Uppsala model and well justified in the resource based theory. The average sales growth rate of the studied firms estimated about 20-30% per year, is very impressive, especially in comparison with the average growth rate of German firms on the German market in the same period. This level of growth is remarkable, especially when one takes into account that this growth covers the world crisis in the years 2008-2010, which led many German enterprises to slow-down (Wagner & Geluebcke, 2014). Among other factors but due to very good export performance of German subsidiaries global-wide, as e.g. in Poland, the German trade has actually survived almost without harm (Statistisches Budesamt, 2015).

Our research has revealed that the studied firms do not face any discrimination on the Polish market and similarly to Polish enterprises they feel the same boundaries which local counterparts have to cope with. Almost all of them indicated external factors, like instability and poor enforcement of the law, on the branch and national level, and the political instability in the context of the conflict in Ukraine, as the Polish subsidiary is often used as a base for expansion to the East. Only one firm indicated an internal factor, namely new machinery. It shows the difference between Polish and German firms because a lot of Polish firms, especially SMEs, indicate the lack of capital for development as the basic barrier to growth.

The studied firms indicated high quality, knowledge how to operate on the market, consequent and judicious behaviour, a good ratio between price and quality, concentration on well qualified employees and clients, the constant process of innovativeness, often embedded in the strategic and operational activities, and the growing market as the main sources of their growth in Poland. It seems to be an interesting conclusion that innovations are not enumerated by the studied firms as the most important factor of growth. This can be explained by the fact that our respondents were subsidiaries not parent firms,

and as subsidiaries they are not in 100% responsible for the innovative process, but rather they support that process, whose centre of gravity is carried out within the framework of the parent company. Their main aim is mostly to develop sales on new markets. However, an important finding of the research is also that relatively less economically developed countries are not only just the receivers of technology. From our study it follows that many subsidiaries in Poland constitute either a vital source of small, incremental innovations, or run R&D activity which serves the entire group.

The contribution of the research is also the observation that the main source of the achieved growth for the German enterprises is the combination of the aforementioned growth factors and the fast growing, unsaturated Polish market. Without the last factor – a fast growing less developed market – the firms would not generate such high growth.

From the research one can draw some implications and recommendations for practice. As the German firms are the biggest foreign investors and employers in the Wielkopolska region, the Polish authorities should care for the well-being of domestic and foreign enterprises about the higher stability and good enforcement of the law. Secondly, there should be efforts made to ensure political stability in Ukraine and between the EU and Russia, as the Polish subsidiaries are often a basis for the expansion to the East. Also the abolition of the possibility of the labour market protection in the home country (Germany) could contribute to the growth of German firms in the Wielkopolska region. On the other hand, a vital conclusion for the Polish authorities on the national and regional level should be the necessity to support local, domestic enterprises so that they could start to compete on the same level of quality and innovativeness with foreign companies on the local and international markets.

Our research has some limitations. First, as a qualitative study it could neither verify any thesis, nor conclusively prove any statement; it could and did, however, identify some new phenomena and factors which can be tested in further quantitative studies, which we would see as a further research direction, especially in the area of the growth factors and innovativeness of foreign investors in less developed countries. Second, it relied only on the statements of one or two of the highest management members and publicly available information and not on in-depth and long term analysis of the functioning of the firm. Third, the scope of the research allowed the researchers to visit only 12 German firms functioning on the Wielkopolska market. It is more than enough to conduct multiple case studies, but there can be no general judgement made. They have to be based on the quantitative studies. Fourth, in order to achieve its goal, the research covered firms from different branches with different sizes. It allows however no comparison between the studied studied companies. It is advisable to do some research among German firms functioning in Poland from the same branch and with a similar size to be able to make some comparison and more in-depth observations. Fifth, the selection criteria of companies with a presence in Wielkopolska implied that only companies with a sales subsidiary or a production facility were taken into account, leaving behind t pure German exporters. It would be valuable to do a separate study with a broader scope covering also indirect entry modes of German companies into the Polish market.

Taking into account the conclusions of this paper, it would be also advisable to do a study on how to raise international competitiveness of Polish enterprises on the local and foreign markets, taking into account limitations given by the fact that Poland is

a member of the EU and has to obey the rules on no discrimination of enterprises from other member states. It is also definitely worthwhile after 12 years of Poland being in the EU to do research which would analyse how the economic integration and openness for foreign, especially German, trade and investments contribute to the development of Poland and its catching up with the more developed economies, e.g. Germany.

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