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Department of International Trade
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Performance vs. Family Ownership and Management: The Case of Portuguese Wine Firms

Luis Pacheco

ABSTRACT

Objective: The objective of this article is to empirically examine the relationship between firms' ownership and control structure and their financial performance. The literature about performance determinants is abundant, however, the relation between performance and ownership and control structure in the context of family firms (FF) is much less studied.

Research Design & Methods: The article is focused on Portuguese wine firms due to their increasing importance in the Portuguese economy. A Unbalanced panel data of 117 firms for the period from 2011 to 2016 were used and a random effects model was applied.

Findings: The degree of family involvement shows a U-shaped relationship with performance, meaning that those firms where the family does not hold the majority in the board should be open to receive external managers with greater knowledge and experience and increase their internal competencies in order to enhance performance. However, the same is not true when the family has already a majority position in the board.

Implications & Recommendations: Firms willing to attain better performance should have boards either primarily composed of external managers, potentially more independent or, preferably, mostly composed of family members, with their interests fully aligned. One implication for FF owners, when the family does not have the majority in the board, is the need to reduce family presence in it, opening the board to non-family members, albeit that decision could ultimately depend on the family members' competencies.

Contribution & Value Added: In the light of the agency and stewardship theories, this article extends the literature providing an application to a less studied sector and country.

Article type:	research article
Keywords:	ownership structure; financial performance; family firms; agency theory; stewardship theory; wine industry
JEL codes:	G32

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INTRODUCTION

In past decades, a considerable number of studies researched how to mitigate agency costs between managers and shareholders, with a fraction of them focused on family firms (FF). Family firms represent a distinctive subset of firms, where family members' ownership, presence and involvement in managerial decisions produce an interesting research topic. Research into FF performance and family's influence in the process of value and wealth creation was boosted by two theoretical papers (Habbershon *et al.*, 2003; Chrisman *et al.*, 2003). The *familiness* concept refers to the sum of resources and competencies generated by the interaction of family, business and the environment, providing a differentiator factor for firm performance (Sciascia & Mazzola, 2008; Zellweger *et al.*, 2010). Subsequently, several recent studies have found a significant relationship between FF and firm performance across countries (e.g., Anderson & Reeb, 2003; Gama & Rodrigues, 2013; De Massis *et al.*, 2013; 2015), most of them focused on large and listed firms. Since the results are mixed it is important to contribute to the definition of stylised facts on FF from different countries, because country specific characteristics, such as the legal system, affect FF differently (Bertand & Schoar, 2006). To the best of our knowledge, with the exception of the recent papers from Vieira (2014; 2017), focused on larger and listed firms, this is the first empirical article examining the relationship between FF and firm performance in Portugal.

Although there is no general consensus on the definition of a FF (Maury, 2006; Villalonga & Amit, 2006; Kontinen & Ojala, 2010), such firms can be defined as a business in which members of one or various families share, to a great extent, capital, management responsibilities and the intention of passing the business to future generations. Concerning the definition of a FF, Astrachan *et al.* (2002) propose the F-PEC model, which identifies a FF regarding its degree of *familiness* computed as a result of three factors (*Power*, *Experience* and *Culture*). In Portugal, according to the Portuguese Families Businesses Association (www.empresasfamiliares.pt), 70% to 80% of Portuguese firms, and probably more than 60% of GDP and 50% of employment are ensured by firms "whose property is, total or partially, in the hands of one or more families, with the family having the control over the firm's management."

The wine business in Portugal is a sector where small and predominantly FF coexist with larger and strongly business-focused firms. The wine sector constitutes a source of proud and reputation for Portugal, a country with a high diversity of producing regions, with 31 Protected Designations of Origin and an extraordinary diversity of castes. Wine production and exports in value grew in 2017 for the eighth consecutive year, while the sector also consolidated its position in terms of volume and value in the domestic market. According to the Portuguese Institute of Vine and Wine (www.ivv.min-agricultura.pt), the average annual total production of wine was nearly 7 million hectolitres in 2017, having exported almost 3 million hectolitres with a value of around €778 million. Portugal is the eleventh world producer, with France, United Kingdom, the United States and Germany being the four main export markets, either in terms of volume or in terms of value. The majority of firms in the sector are familiar and mature firms, where emotional values, the commitment to preserve family assets and succession are relevant issues. Additionally, the sector faces a limited domestic market, a decrease in available land and the need to find

new customers abroad. All these factors highlight the importance to understand the determinants of firms' financial performance and justify the choice of this sector. Note that these challenges are also faced by wine producers around the globe, so the conclusions from this article could be potentially generalised to other countries.

The objective of this article is to study if FF levels of ownership and control in the Portuguese wine industry have a differentiating impact on their performance. Some control variables are also added to explain performance, namely firm age, size, internationalisation and debt. Considering a representative sample, unbalanced panel data of 117 Portuguese wine SMEs are used for the period from 2011 to 2016, with a total of 697 observations, concluding that family ownership and presence in the board of directors (in a "public limited liability company") or senior management teams (in a "private limited liability company") has a significant, albeit non-linear, positive impact on performance.

The rest of the article is structured as follows. The next section reviews the literature on the relation between family firm performance and the ownership structure and management control. The section also presents the other determinants of performance and the hypotheses to be tested in the article. Section three presents the variables, the data and the methodology to be used. The following section presents and discusses the empirical results with the final section presenting some concluding remarks.

LITERATURE REVIEW

This article is not strictly focused on the determinants of performance, which is a multidimensional construct heavily researched in the literature (e.g., Venkatraman & Ramanujam, 1986), but specifically interested in the association between performance and the firm's ownership and control structure. The impact of corporate governance on firms' strategic decision-making and performance has been well documented in the literature (Shleifer & Vishny, 1986; Villalonga & Amit, 2006), mostly for large and listed firms, but the idiosyncrasies of family firms and their impact on firms' performance have been less studied. Theories of the relationship between concentrated ownership and firm performance predict positive, negative, or no statistically significant relationship, depending on the trade-offs between the alignment and entrenchment effects (King & Santor, 2008). Over the past decades, a considerable number of studies researched how to mitigate agency costs between managers and shareholders, with only a fraction of them focused on FF.

Family firms add a dimension to the shareholders vs. managers relation since family members' interests could not be the same as those of their non-family counterparts (Claver *et al.*, 2009; Le Breton-Miller & Miller, 2009). Also, since often owners in FF are also managers, how would those factors influence performance? FF possess some strengths favouring performance, namely their experience and knowledge of the business, their solid values and group-belonging culture and their long-term perspective (Pukall & Calabrò, 2014). However, some limitations are succession turbulence, weak organisational structure, lack of professionalism and difficulties in financing (Claver *et al.*, 2009; Le Breton-Miller & Miller, 2009).

Family firms tend to present higher levels of ownership concentration and thus lower agency conflicts, that being a potentially positive factor for performance (Sciascia & Mazzola, 2008). Concentrated ownership means higher risk and sunk costs, and increased chances that managers will act in the interest of the owners. In the context of the agency

theory, non-family managers have the incentive to assume more risky projects (Anderson & Reeb, 2003). Since the personal wealth of family members is invested in the firm, family controlled firms present higher risk aversion and concerns with survival and transmission to the next generation, so that the effects on performance of the firm's ownership dispersion between family members and their involvement in the firm's managerial decision becomes a relevant topic, though with mixed empirical evidence (Anderson & Reeb, 2004; Miller *et al.*, 2010; Minichilli *et al.*, 2010).

Ownership Structure and Family Firm Performance

The disputes concerning performance parallel fundamental disagreements about FF conduct and its social consequences. As stressed by Le Breton-Miller and Miller (2009) and Le Breton-Miller *et al.* (2011), two perspectives dominate: agency and stewardship. According to the agency theory perspective, FF will be characterised by underinvestment, centralised and hierarchical organisations, cronyism, thus resulting in inferior growth and returns. In contrast, stewardship theory predicts that the investment in capabilities, staff and long-term relationships, the cohesion values and commitments shared with all the stakeholders provide superior growth and financial returns (Davis *et al.*, 1997). Family members act as stewards, strongly identifying with the firm, and working with a superior commitment because they perceive the firm performance as an extension of their own well-being.

Agency theory explains the consequences of the separation of ownership and control (Jensen, 1986; Aggarwal & Samwick, 2003). The concentration of ownership in a few hands increases the incentives that owners have to monitor managers or giving managers incentives to act according to shareholders' interests (Jensen & Meckling, 1976). There is substantial evidence that the behaviour of manager-controlled firms is different than the behaviour of owner-controlled firms, thus supporting agency theory. For example, manager-controlled firms are more likely to maximise sales than profits and be more diversified (Amihud & Kamin, 1979; Amihud & Lev, 1981), both factors with a potential positive impact on performance. Nevertheless, as pointed by Le Breton-Miller and Miller (2009), some researchers have shown that FF present inferior market valuations (Tobin's q) and financial returns (returns on assets and investment) (e.g., Bennedsen *et al.*, 2007; Claessens *et al.*, 2002; Cronqvist & Nilsson, 2003), whereas others show that these firms neither outperform nor underperform (Miller *et al.*, 2007). These disagreements appear to be due to the way FF are defined, with founder firms or those with modest firm involvement having an edge over firms with more family owners and more generations (Anderson & Reeb, 2003; Villalonga & Amit, 2006).

De Massis *et al.* (2013) evidence that the agency costs encountered in the decision making process of a FF go beyond the effects due to the degree of family involvement in ownership and management, and depend on the degree of the dispersion of ownership among family members. Specifically, family ownership dispersion has a non-linear effect on performance, this being worse when a moderate number of family members hold equity and higher when family ownership is highly concentrated in the hands of a single family member (thus confirming previous literature defending the presence of non-linearities: e.g., Anderson & Reeb, 2003; Villalonga & Amit, 2006; Sciascia & Mazzola, 2008). When family ownership gets dispersed among few family members, performance could deteriorate due to agency and entrenchment problems arising among equity owners (e.g., conflicts between

the founder and new family owners), whose interests are not fully aligned with some preferring to pursue private and non-economic returns (Schulze *et al.*, 2003; Sciascia & Mazzola, 2008). This negative trend on performance is reversed when family ownership is further dispersed among multiple members, who have now only a limited stake in the firm, while it fosters an alignment of interests between equity owners and a reduction of agency costs.

Management Control and Family Firm Performance

According to Fama and Jensen (1983), combining ownership and control allows concentrated shareholders to exchange profits for private rents (Shleifer & Vishny, 1997). Thus, FF, which are characterised by concentrated ownership, are condemned to present poor performance (Morck *et al.*, 2000). Although prior literature suggests that family ownership and control can lead to poor firm performance, family influence can also provide competitive advantages, namely, through long-term managerial horizons, the alignment of managers' interests and reputation concerns (Demsetz & Lehn, 1985; Davis *et al.*, 1997; Anderson *et al.*, 2003).

The implementation of governance structures has shown to be indispensable in FF as the company grows, thus those structures can become a strategic resource, avoiding risks that it may endanger the performance of the firm and thus support its longevity (Gomez-Mejia *et al.*, 2001; Schulze *et al.*, 2001). Structures that unite the ownership and management of firms may help to reduce agency costs. It is expected that through family ties in FF, higher levels of loyalty and mutual trust increase managers' horizons (James, 1999). Nonetheless, this advantage also comes with additional risks when missing hierarchies cannot put governance structures in place. This effect may lead to a situation which encourages the retention of incompetent family staff, while competent employees may leave the firm (De Massis *et al.*, 2008). Dyer (2006) argues as well that professionalisation of a FF is one mean to avoid adverse selection in the company.

The question of whether family presence in the board hinders or facilitates firm performance becomes an empirical issue. In a seminal approach, Anderson and Reeb (2003) evidence that when family members serve as CEO, profitability is higher than with a non-family member CEO. In the same vein, Villalonga and Amit (2006) show that performance improves when the founder serves as CEO but decreases when descendants occupy that position, and Maury (2006) shows that active family control is associated with higher profitability compared to NFF. Finally, Chrisman *et al.* (2004) find that family involvement reduces overall agency costs and increases performance, and Ernst *et al.* (2012) evidence that family involvement in management seems to be the dominant force in the relation between performance and ownership.

As a result of this literature review, we can now state a first set of hypotheses to be tested:

H1: FF outperform NFF.

H1a: Family ownership has a positive effect on profitability.

H1b: Family involvement in the board has a positive effect on profitability.

H1c: Those effects are non-linear.

Additional Determinants of Performance

The present article includes a set of control variables in order to rule out alternative determinants of the sampled firms' performance. Those variables are traditionally used in studies on performance determinants: firm age, size, internationalisation and debt (Sciascia & Mazzola, 2008; De Massis *et al.*, 2013).

Theoretically, older firms should possess a greater stock of knowledge and experience, which could have a positive impact on performance. So, older firms have enjoyed the benefits of learning, they are not prone to the liabilities of newness and can, therefore, enjoy superior performance. Yet, as firms age they tend to become more conservative and prone to inertia as the influence of the founding entrepreneur is replaced by the next generation (Hannan and Freeman, 1984; Aggarwal and Gort, 1996), albeit in the context of FF it could be precisely that the second generation is responsible for the rebirth of the firm, bringing a more innovative and profitable approach. Therefore, the impact of age on performance is ultimately an empirical question (Coad *et al.*, 2013; Capasso *et al.*, 2015).

Regarding the impact of size on performance, the literature points to the fact that size can be a source of competitive advantage because larger firms have at their disposal greater technical and commercial opportunities, allowing them the access to economies of scale, a greater bargaining power and the capability to raise barriers to deter potential competitors or have an easier access to capital markets (Marcus, 1969; Capon *et al.*, 1990). For instance, Sellers and Alampi-Sottini (2016) evidence a positive and statistically significant relation between firm size and profitability for Italian wine firms. Nevertheless, fixed costs and organisational inefficiencies associated with a larger size could outweigh the benefits of increased market power, with larger flexibility of smaller firms being a competitive advantage (Chen & Hambrick, 1995) or size could only influence performance in certain industries, given specific differences in terms of the degree of competition or the existence of economies of scale (Marcus, 1969). According to the agency theory, a negative relationship between size and profitability is expected, since the separation of ownership and control creates a conflict between managers and shareholders, which in turn could shift the objective from maximising benefits for others towards management, such as survival or growth. Since those conflicts are less prevalent in the FF environment, a positive relation for those firms could be expected. Nevertheless, the existence of competitive advantages positively related to size also remains an empirical issue.

The discussion of the effects of internationalisation on performance has mainly covered large firms, with the literature generally finding a positive relation between internationalisation and performance (Lu & Beamish, 2004; Kontinen & Ojala, 2010; Hsu *et al.*, 2013). Assuming the existence of this positive effect, albeit FF could be more reluctant to expand internationally because of the desire to maintain control and their conservative attitude and lack of resources, we expect a positive impact of internationalisation on performance.

Regarding leverage, some studies show that FF prefer going into debt before increasing capital to finance their investments, thus avoiding the entry of non-family shareholders (Anderson *et al.*, 2003). However, other studies show that FF prefer to be more prudent, not going into debt in order to avoid losing their independence to creditors (López-Garcia & Aybar-Arias, 2000). Given that FF have specific concerns in terms of privacy, control and

generational transition, they tend to prefer internal financing policies, favouring the reinvestment of their own funds to a capital increase or long-term debt (Gallo *et al.*, 2004; Zahra, 2005), nevertheless, their attitude towards debt could change as generations, managers and the business as a whole evolves (Lussier & Sonfield, 2009). According to Miller *et al.* (2010), FF tend to be more conservative than NFF, trying to minimise risk through investment reductions in R&D and lower debt levels. So, debt ratios are included because a firm's ownership may influence its capital structure (Demsetz & Lehn, 1985; Randøy & Goel, 2003) and, in line with the agency and pecking order theories and the majority of the literature, we expect a negative relationship between debt levels and financial performance.

So, regarding the control variables, we state the following set of hypotheses:

H2: The relation between family power and performance differs between younger and older firms, the latter being more profitable.

H3: The relation between family power and performance differs between larger and smaller firms, the former being more profitable.

H4: The relation between family power and performance differs between export oriented and domestically oriented firms, the former being more profitable.

H5: The relation between family power and performance differs between more or less indebted firms, the latter being more profitable.

MATERIAL AND METHODS

Dependent and Independent Variables

The use of ROA is widely supported in the literature and has been used in several studies analysing the relationship between *familiness* and firm performance (e.g., Dyer, 2006; De Massis *et al.*, 2013; Gama & Rodrigues, 2013; Vieira, 2017), being generally considered to be a key performance indicator of managers and FF in particular (Minichilli *et al.*, 2010). ROA is computed as net income scaled by the book value of total assets. In order to check robustness, we also proxy financial performance as the ratio between EBITDA and total assets (REBITDA) and the ratio between EBIT and total assets (REBIT).

To classify a firm as a FF or not, and due to data availability reasons, we will use two indicators associated to the *Power* dimension of the F-PEC scale (Astrachan *et al.*, 2002). Firms will be classified as family or non-family according to the family members' percentages of equity ownership and presence in the board:

$$\text{Family Power (FP)} = \%\ \text{family equity (FAME)} + \%\ \text{family presence (FAMP)} \quad (1)$$

Notice that, depending on the legal form under which the firm operates, there is a board of directors (in a "public limited liability company") or a senior management board (in a "private limited liability company"), albeit here the term "board" is used interchangeably.

For younger firms the determination of those percentages is straightforward, being the family members and their holdings easily identified. However, several generations after, the family expands to include distant relatives whose last names may no longer be the same, so that we resolve descendant issues by examining individual corporate histories and by checking the addresses of the different board members. Following De Massis *et al.* (2013), besides FP, the variables FAME and FAMP (and their squares) will also be tested individually. Additionally, in alternative to the continuous variable FP, a dummy variable

will be used to differentiate between FF and NFF. A FF is defined as a firm where the variable FP assumes a value equal or higher than 100%, while those with a lower percentage are classified as NFF. Finally, using a dummy variable it is also tested if the presence of foreign capital has any effect on performance.

Control Variables

For kurtosis reasons, variables' age (AGE) and size (SIZ) are, respectively, measured as the log of the number of years since the firm's inception and the log of total assets. The debt level of the firm is measured as total debt (TD = Total liabilities/ Total assets) and its subdivision in long-term and short-term debt (respectively, Non-current liabilities/ Total assets and Current liabilities/ Total assets). Concerning the variable "international diversification" (INT), studies reported in the literature the use of different measures, so that a consensus is still lacking on the best or a true measure of international diversification. The use of a uni-dimensional measure such as the ratio of foreign sales to total sales does not take into account the geographical distribution of sales, i.e., whether or not they are geographically well balanced in major world markets. Following Majocchi and Strange (2012), a measure of entropy is used, which accounts for the dispersion of a firm's sales by three main geographical areas (Portugal, the European Union and the rest of the world). Nevertheless, as stated by Majocchi and Strange (2012), such a measure has also some weaknesses: a firm's level of international sales is not expected to be evenly distributed between destiny areas, and an ideal measure of internationalisation should not only measure the dispersion of foreign sales, but also their level. For this reason, the traditional measure of total exports as a percentage of total sales (EXP) is also used.

Data and Methodology

This article analyses a sample of SMEs from the wine sector (included in the 1102 NACE code – Manufacture of wine), obtained from SABI (*Sistema de Análise de Balanços Ibéricos*), a financial database powered by Bureau van Dijk. The database includes data for 708 wine sector firms, with a turnover of over 1 300M€, total assets of around 3 200M€, a mean ROA of 2.66% and more than nine thousand employees (data for 2016). Applying the criteria for the SME definition, thus excluding a large number of micro firms (which employ fewer than 10 people and whose annual turnover and/or annual balance sheet does not exceed 2M€), considering only firms with at least 5 years of complete data from 2011 to 2016 and excluding firms with negative debt ratios or liabilities greater than assets, we obtained unbalanced panel data of 117 SMEs distributed by all Portuguese wine producing regions. Notice that we do not include micro-enterprises with fewer than 10 employees in order to focus on firms that are large enough to experience and demonstrate some managerial decision making as well as family involvement and influence.

The sample is representative for the sector, accounting for 3 290 employees, a turnover of around 460M€ and total assets of 1 125M€ in 2016. The sample has only 11 medium-sized firms and, applying the criteria explained above, 52 firms can be considered FF, of which 42 have a full measure of "family power." The sample's mean values for the different variables, differentiating between FF and NFF are presented in Table 1, together with the results of a test for differences in mean values between the two sub-samples. Table 1 also presents the correlation matrix of the variables. Notice that FF are significantly better performers than NFF, they are significantly older and smaller, and display a higher degree

of export diversification. Compared to NFF, FF tend to present lower levels of debt but the differences do not seem to be statistically significant.

A panel data methodology is estimated through three different regression models: Pooled Ordinary Least Squares (POLS), Fixed Effects Model (FEM) and Random Effects Model (REM). Applying the Breusch-Pagan and Hausman tests to choose the most appropriate regression technique, the Breusch-Pagan test leads to the rejection of the null hypothesis, indicating that REM is more appropriate than POLS, whereas the Hausman test leads to the acceptance of the null hypothesis that REM is preferable to FEM. As stated by King and Santor (2008), a random-effects specification seems well suited since a number of our variables are either time-invariant or exhibit few changes over time (e.g., size or family presence).

Table 1. Descriptive statistics (FF and NFF) and the correlation matrix between independent variables

Variable	Mean values (2016)	FF (n=52)	NFF (n=65)	Mean differ. (t-test)	FP	AGE	SIZ	INT	EXP	TD
ROA	1.83%	3.61%	0.41%	5.26 (***)						
REBITDA	6.47%	8.56%	4.81%	5.34 (***)						
REBIT	3.36%	5.25%	1.85%	5.02 (***)						
FP	87.8%	194%	3%		1	0.125 (***)	-0.176 (***)	0.078 (**)	0.053	-0.047
AGE	3.24	3.32	3.17	3.19 (***)		1	0.364 (***)	0.153 (***)	0.166 (***)	-0.143 (***)
SIZ	8.90	8.82	8.97	-3.80 (***)			1	0.151 (***)	0.129 (***)	-0.175 (***)
INT	0.59	0.64	0.57	1.80 (***)				1	0.760 (***)	-0.174 (***)
EXP	33.0%	35.3%	31.2%	1.46					1	-0.186 (***)
TD	54.7%	53.1%	56.1%	-1.16						1
LTD	23.7%	20.5%	26.3%	-1.53 (*)						
STD	31.0%	32.6%	29.8%	0.37						

FF = Family firms; NFF = Non-family firms; ROA = return on assets; REBITDA = ratio between EBITDA and total assets; REBIT = ratio between EBIT and total assets; FP = family power; AGE = logarithm of firm age, in years; SIZ = firm size, measured by the logarithm of total assets; INT = index of international diversification; EXP = total exports as a percentage of total sales; TD = total debt: LTD = long-term debt; STD = short-term debt.
Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.
Source: own study.

RESULTS AND DISCUSSION

Empirical Results

The regression results for the random-effects model are presented in Table 2, where the three alternative dependent variables (ROA, REBITDA and REBIT) are run on the variable "family power" (FP) and the control variables AGE, SIZ, internationalisation (INT or EXP) and debt (TD, also divided in LTD and STD). Variables with the suffix FF are interaction variables with the FF dummy, in order to see if the effects of those variables are statisti-

cally different between FF and NFF, thus testing our hypotheses. Table 3 presents the results for the FF and NFF sub-samples, considering ROA as the independent variable, albeit the results for REBITDA and REBIT are very similar.

Table 2. Random-effects model results

Variable	ROA	REBITDA	REBIT	ROA	ROA	ROA	REBITDA	REBIT
C	-0.001 (0.005)	0.045*** (0.007)	0.015*** (0.006)	-0.005 (0.032)	-0.004 (0.038)	-0.011 (0.031)	0.051 (0.036)	-0.029 (0.036)
FP	0.011*** (0.004)	0.013*** (0.005)	0.012*** (0.005)	0.012*** (0.004)	0.001 (0.020)	0.013*** (0.004)	0.016*** (0.005)	0.015*** (0.004)
Controls								
AGE				-0.010** (0.004)	0.000 (0.001)	-0.009** (0.004)	-0.016*** (0.005)	-0.012** (0.005)
SIZ				0.009** (0.004)	0.004 (0.005)	0.010*** (0.004)	0.011** (0.004)	0.014*** (0.004)
INT				0.008 (0.005)				
EXP					-0.004 (0.011)	-0.003 (0.008)		
TD				-0.083*** (0.011)				
LTD					-0.055*** (0.015)	-0.090*** (0.012)	-0.095*** (0.014)	-0.084*** (0.013)
STD					-0.050*** (0.015)	-0.076*** (0.012)	-0.085*** (0.014)	-0.073*** (0.014)
AGE_FF					-0.023** (0.009)			
SIZ_FF					0.016*** (0.005)			
EXP_FF					0.005 (0.018)			
LTD_FF					-0.092*** (0.024)			
STD_FF					-0.062** (0.025)			
Overall R²	**0.04**	**0.04**	**0.04**	**0.20**	**0.23**	**0.20**	**0.22**	**0.18**

Notes: Standard-deviations presented in brackets. * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: own study.

With the full specification the random-effects model results present a goodness of fit near 20%. Albeit not presented, the presence of foreign capital did not show a significant effect on performance. Since one of the objectives of this article is to test the presence of non-linear effects of *familiness* on performance, we alternatively test the variables FP, "family ownership" (FAME), "family presence" (FAMP) and their squares as independent variables (Table 4). Notice that results for FAME are not presented since they are not significant.

Table 3. Random-effects model results: FF and NFF sub-samples (ROA as dependent variable)

Variable	FF	NFF
C	-0.048 (0.048)	0.038 (0.039)
AGE	-0.021*** (0.007)	0.001 (0.005)
SIZ	0.024*** (0.006)	-0.001 (0.005)
EXP	0.001 (0.015)	-0.005 (0.010)
LTD	-0.146*** (0.020)	-0.059*** (0.014)
STD	-0.107*** (0.021)	-0.055*** (0.014)
Overall R^2	**0.27**	**0.09**

Notes: Standard-deviations presented in brackets.
* p < 0.10; ** p < 0.05; *** p < 0.01.
Source: own study.

Table 4. Random-effects model results: Testing the presence of non-linearities

Variable	ROA	REBITDA	REBIT	ROA	REBITDA	REBIT
C	0.000 (0.005)	0.047*** (0.007)	0.016** (0.006)	0.001 (0.005)	0.048*** (0.007)	0.017*** (0.006)
FP	-0.014 (0.041)	-0.041 (0.051)	-0.024 (0.047)			
FP^2	0.012 (0.020)	0.027 (0.026)	0.018 (0.024)			
FAMP				-0.206 (0.131)	-0.337*** (0.163)	-0.303** (0.151)
$FAMP^2$				0.226* (0.131)	0.361** (0.163)	0.324** (0.150)
Overall R^2	**0.04**	**0.05**	**0.04**	**0.02**	**0.07**	**0.06**

Notes: Standard-deviations presented in brackets. * p < 0.10; ** p < 0.05; *** p < 0.01.
Source: own study.

Discussion

We now analyse the results at the light of the different hypotheses. The first rows in Table 2 evidence that "family power" (ownership and presence in the board) seems to have a positive impact on performance thus confirming H1a and H1b and the results from Anderson and Reeb (2003), King and Santor (2008), De Messis *et al.* (2013) and Gama and Rodrigues (2013). Notice that albeit the results are not presented, the regressions were also run with FAME and FAMP instead of FP, yielding extremely similar results.

Regarding the possibility of a non-linear relationship, the results presented in Table 4 show that family presence in the board displays a significant U-shaped relation with performance. Figure 1 plots this important result, showing that, after obtaining decreasing profits as the firm board is increasingly opened to family members, higher performance is attained when the whole management team is made up of family members. The inflection point is

found for family presence values slightly lower than 47%, that is, firms where the board is more or less divided between family and non-family members. This result, which partially confirms H1c, evidences apotential negative influence on the performance of conflicts and misalignment of interests within the board. Beyond a certain point, the advantages coming from decreasing agency costs and stewardship outweigh the disadvantages of conflicts between board members and overlap between family and business interests.

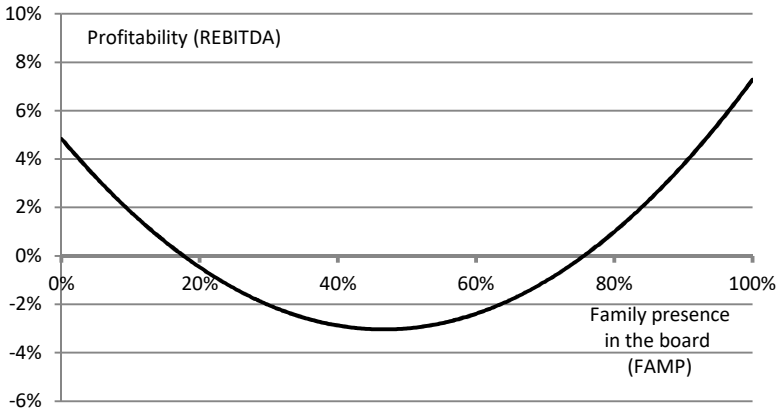

Figure 1. The effect of family presence in the board on performance
Source: own elaboration.

The quadratic nature of the relationship between family involvement in management and performance calls for major attention to these effects by FF owners who must acknowledge that family presence in the board brings dysfunctional consequences for firm performance, especially at intermediate levels of family involvement, where members external to the family could eventually have been selected based on personal contacts, disregarding personal managerial capabilities. So, it seems that in the wine sector family SMEs a robust and majority presence of the family in the board is value enhancing and promotes their financial performance.

Regarding the other hypotheses, the interaction terms are broadly significant, showing different impacts of AGE, SIZ, LTD and STD on performance for FF and NFF, which gives support to H3 and H5. Similarly to Vieira (2014) and Capasso *et al.* (2015), the firm's age seems to have a negative impact on performance, thus not confirming H2. Possibly, older firms are more likely to be in the maturity phase, with lower levels of growth opportunities and, consequently, lower financial performance levels. Also, the results for FF confirm H3, with larger firms presenting a better financial performance, possibly a result of the positive relationship between resources and performance. This evidence that bigger firms outperform smaller ones brings an important policy-making implication. Typically, wine firms in Portugal are micro or small firms, so policymakers should create an adequate set of incentives to foster mergers and acquisitions in the sector, as a way to improve the competitiveness of the entire wine sector. Contrary to Sciascia and Mazzola (2008), the results regarding the internationalisation degree are always not significant, whereas in terms of international diversification

or exports as a percentage of sales. Thus, H4 is not confirmed, suggesting that the wine sector's performance is not influenced by the degrees of international intensity and diversification. Notice that the literature about the influence of family ownership on internationalisation provides conflicting results, with Zahra (2003) and Chen *et al.* (2014) empirically supporting a positive influence, whereas Fernández and Nieto (2005; 2006) or Wach (2017) point to a negative relation. Finally, H5 is strongly confirmed for all firms, since more indebted firms are less profitable, independently of the maturity of the debt. This result, which is typically found in the literature, is in line with the predictions of the agency and pecking theories, since a high level of leverage imposes a fixed financial commitment on the firm, reducing the free cash flows available to management (Vieira, 2017). Specifically regarding FF, a negative relation could be explained by the family's concerns with increased levels of financial risk and fears of losing control (Zahra, 2005).

CONCLUSIONS

Management theories should not consider firms just as a value maximising entity regardless of its owners. Different owners and managers have different risk attitudes, face different incentives and bring different resources to the firm, so similar firms, pertaining to the same sector, could present different degrees of performance. To date, at the light of the agency and stewardship theories, little empirical research has been conducted to identify the variables that promote FF financial performance.

This exploratory article contributes to filling that gap by studying the differences between FF and NFF in terms of financial performance. The degree of family ownership and involvement showed a significant positive relationship with performance, meaning that those FF in which the owner family exerts tighter control tend to present higher measures of performance, thus confirming previous results. That non-linear relation indicates that firms willing to attain better performance should have boards either primarily composed of external managers, potentially more independent or, preferably, mostly composed of family members, with their interests fully aligned. One implication for FF owners, when the family does not have the majority in a mixed board, is the need to further reduce family presence in it, opening the board to non-family members whose skills and capabilities could add value to the firm. That difficult decision could prove more profitable than a further increase in the presence of family members in the board. However, the same is not true when the family has already a majority position in the board, since better financial performance is attained when the family totally controls the management team.

Regarding the main questions addressed in this article, we can answer that: i) compared to other firms, FF are more profitable, but ii) performance is negatively impacted by intermediate degrees of family presence in the board; iii) there is a significant positive relation between firm size and performance, a significant negative impact of firm age on performance and the degree of internationalisation is irrelevant to explain differences in performance; iv) and, finally, there is a significant negative relation between the level of debt and performance.

This article gives a twofold contribution to the literature about FF, studying if there are significant differences between FF and NFF in terms of performance and improving the limited literature on performance for FF in a specific sector. Nevertheless, some limitations of this study should be mentioned: i) in the first place, firms' performance is affected by

many variables that were not considered (e.g., managerial labour and product markets, political and economic factors or even the personality of shareholders and managers), meaning that the results should be treated with caution; ii) secondly, the concept of FF used in the literature is not homogeneous, being normally used a dichotomous characterisation. Other authors present different measures, possibly explaining some of the different results found; iii) third, the dataset comprises 117 firms, representing roughly one third of the Portuguese wine sector. Ideally, a larger number of observations and firms could result in more robust results. Notice that firms under analysis are the firms that survived a period of fierce competition, mergers and emergence of new players in the sector; iv) finally, a factor that can limit the generalisation of the results is that the study focuses only on the Portuguese wine sector. Also, the measures of performance used in the literature differ widely, leaving us with the question whether our results are dependent on the three measures used and on the specific context of the Portuguese wine firms. It would be interesting to study the presence of the U-shaped relation in other sectors, trying to unveil if it constitutes a particularity of the wine sector or not, a sector where firms traditionally cultivate a sense of commitment, social-emotional values and a long-term view among all stakeholders. Nevertheless, the limitations of the internal market and the small size of firms are characteristics also present in other wine-exporting countries, so our conclusions could perfectly be applied to other countries.

Analysing our main results through the light of the agency and stewardship theories, we can argue that increased family control silences any voices that could disrupt the necessary harmony to attain better performance. Nevertheless, our results call for further research, suggesting that firm performance depends heavily on other factors. So, further research should, inter alia, (i) introduce qualitative variables, for instance, consider internal factors such as succession issues, product positioning, marketing and brand management and the firm's specific resources, namely, the impact on performance of the family members' levels of social capital and education; (ii) further research into the relationship between performance and the ownership and control structure, covering a longer period and studying the wine sector in other European countries; iii) analyse in a case by case approach in order to identify the types of management practice currently being implemented by Portuguese wine firms that have a positive impact on performance.

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Formal and Informal Knowledge Sharing in Organisations from Slovakia and Hungary

Andrea Bencsik, Tímea Juhász, Ladislav Mura, Ágnes Csanádi

ABSTRACT

Objective: The purpose of the research is to investigate whether leaders deal with the impact of informal knowledge sharing (workplace gossip) on organisational performance or not.

Research Design & Methods: A quantitative survey (questionnaire survey) was conducted and SPSS was applied to evaluate the research results. The next phase of the research focused on preparing case studies, with a specific aim to identify the role and impact of workplace gossip.

Findings: The research results show that workplace gossip (informal knowledge sharing) has a significant impact on work, but the consequences of gossip are not addressed efficiently in theory and practice. Organisations recognize the need for knowledge management on a strategic level and they use the appropriate tools, but the gossip as an informal communication method is not accepted. Businesses are not concerned with the consequences of gossip; they never try to quantify its economic impacts.

Implications & Recommendations: Gossip is an essential part of the culture worldwide, even if the manifestation of it is different. The opposite result is achieved if workplace gossip is prohibited or punished by the management. The goal is to achieve positive benefits that will be visible when the economic impact of gossiping can be confirmed.

Contribution & Value Added: There is a lack of scientific work addressing the economic consequences of gossip in different situations in organisations. The economic effects of gossip can be calculated not only in KMSs, but might be applied for other processes in the organisation.

Article type:	research article
Keywords:	consequences of gossip at workplaces; gossip; informal knowledge; knowledge management; knowledge sharing
JEL codes:	M12, O15

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INTRODUCTION

The operation of knowledge management systems (KMS) – appreciation of knowledge and knowledge sharing in terms of organisational operation – is becoming more and more emphasized, not only in everyday life of organisations or management thinking but also the scientific literature is addressing the reader with new theoretical models, practical solutions, case studies and best practices.

The most critical issue both in theory and organisational practice is acquiring the right knowledge and sharing it in the organisation. There are several tools available to accomplish it, but the organisational culture as a prerequisite influences the choice of tools and their application in accordance with the objectives. Knowledge sharing is much more effective in this type of organisational culture (Lorincová, 2018; Volek & Novotná, 2016). Beside formal solutions, informal solutions play an essential role as well, if not even more efficient tools to meet the objective (Novotná & Volek, 2018).

This article does not provide possible solutions for knowledge management systems and knowledge sharing, but addresses the issue in general.

The research questions were formulated on the basis of earlier research and theoretical considerations.

- RQ1: How typical is formal and informal knowledge sharing in organisations?
- RQ2: Is gossip used as an informal tool of knowledge sharing?
- RQ3: Does the real content of information to be shared affect the use of gossip?
- RQ4: Do we transfer professional or non-professional content via gossiping?
- RQ5: How does workplace gossip affect organisational performance?
- RQ6: Do leaders at workplaces address the organisational impact of gossip?

Hypotheses were formulated to answer the research questions.

The addressed issue is important since gossip is an essential part of culture worldwide, even if the manifestation of it is different. The opposite result is achieved if gossip is prohibited or punished by the management. The goal is to achieve positive benefits that will be visible if the economic impact of gossiping can be confirmed.

There are not enough scientific papers focusing on models and methods of calculating the economic consequences of workplace gossip. This article is trying to address the issue. The economic effects of gossip can be calculated not only in knowledge management systems, but might be applied for other processes in the organisation.

At first, we review the scientific background that served as a basis to formulate the research hypotheses. This is followed by the presentation of the research method. The third chapter discusses the research results. Finally, a comparison to earlier data is provided, as well as the research results are summarised.

LITERATURE REVIEW

To clarify the issue of knowledge management (KM), the model of Probst *et al.* (2006) is presented, that illustrates the relationship between the elements of one of the most useful knowledge management systems and their logical interrelations. This model is very popular in the KM practice. The logic of our research is based on this model.

Building on the problematic nature of knowledge acquisition and knowledge sharing, the research focus was determined according to the phases of possible solutions. The research addressed workplace gossip as an informal tool of knowledge sharing. Based on the theoretical foundations of the issue, the research analysed everyday practice of organisations. We wanted to know whether managers of organisations address the issue of workplace gossip in economic terms. The results of a quantitative survey show that gossip has significant relevance and impact on work but the issue is not addressed either on the theoretical or the practical level. The consequences of workplace gossiping are not evaluated.

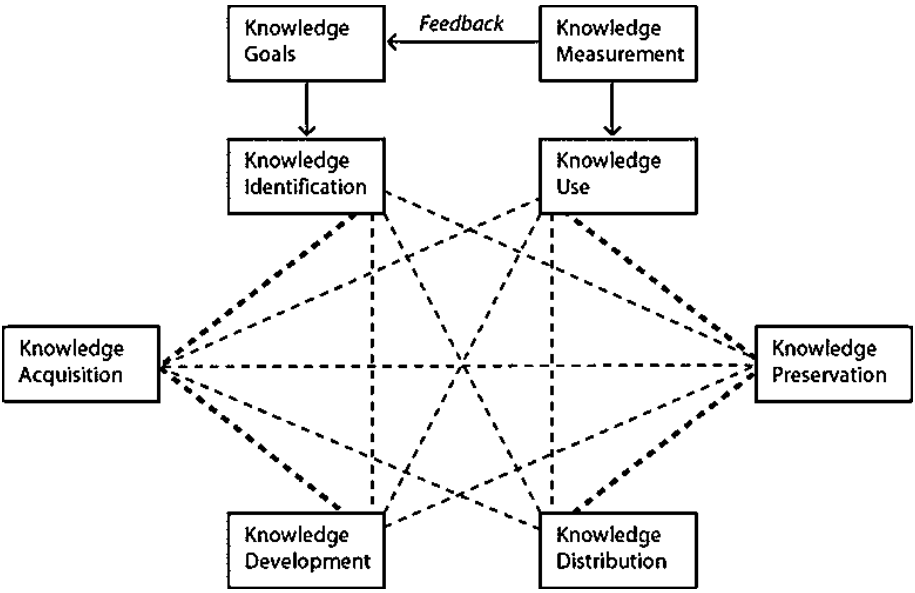

Figure 1. Probst model
Source: Probst *et al.*, 2006.

Informal Knowledge Sharing: Workplace Gossip

Gossip is a part of everyday life, but rarely is the phenomenon in the focus of research. The issue is primarily addressed by communication professionals, psychologists, sociologists and behaviourists. Only a few studies deal with the impact of workplace gossiping on the functioning of the organisation, as well as it is rarely considered to be an expected managerial task or a part of it.

Part of the research focuses on organisational interests in terms of market participation – gossips about the organisation (Cuervo-Cazurra & Ramamurti, 2014; Seilerová, 2019). Some of multinational companies monitor the news regularly and react immediately if they feel their activity and the company performance is threatened and the image of the organisation might be tarnished (Kiymaz, 2001). The fact supports the opinion that this form of informal knowledge sharing has economic consequences, pro and contra. At the same time, we have not found any research conducted that would specifically examine the consequences of workplace gossip (even in economic terms), although the importance of it is undisputable.

Only in those extreme cases we can read about the consequences of gossip (primarily negative in tabloid newspapers), when there is a significant organisational conflict or an economic problem (Babalola *et al.*, 2019). Although these cases are not clearly related to the consequence of gossip, they rather emerge as a consequence of complex problems in close association with workplace gossip.

Some definitions will be provided in terms of the professional perspective that will be an object of criticism below. According to the explanatory dictionary, gossip is "a casual or unconstrained conversation or reports about other people or their private life; an indiscrete, irresponsible information that is socially and ethically misleading." Negative characteristics are used when describing gossip, but the meaning of this term cannot be restricted to negative aspects (Michelson *et al.*, 2010; Grosser *et al.*, 2012; Georganta *et al.*, 2014).

Other researchers defined gossip as a kind of social information about the person who is not present (Grosser *et al.*, 2010). Gossip can be an important tool for people to get information about others or cope with social networks in their private life and workplaces as well (http://eletmod.transindex.ro/?hir=9458; Ellwardt *et al.*, 2012). This definition approaches the term "gossip" with more tolerance, less negative aspects of the meaning are reflected.

When gossiping, we talk about others and judge people who are not present (the message is not necessarily negative). This form of communication makes a significant part of our personal interactions. We generally associate pejorative feelings with gossiping, but according to research in the field of social science, gossip plays an essential role in ensuring social order, cooperation, as well as maintaining the social and organisational standards (Beersma & Van Kleef, 2012; Tassiel *et al.*, 2018).

For several centuries, gossip has been associated with an unconstrained conversation that undermines the reputation of others. According to some research, e.g. at University of California, gossiping has some advantages as well (Feinbert *et al.*, 2012). Based on the study of Feinbert and Willer "Gossip is an essential element to maintain the social order" (Feinbert & Willer, 2010). It is not only important to evaluate the positive effects, but considerations are made also in terms of health. Our heartbeat will speed up immediately we hear bad news, which will optimize if we have someone to share the news with. This is the way we can reduce the negative impact of bad news. This fact confirms the positive consequences of gossip. Our research addressed gossip in social terms. We might assume that the transfer of negative information has an individual and social benefit as well (http://mipszi.hu/hir/120503-pletyka-jotekony-hatasai).

If gossip is filled with negative content, the effect can be contra-productive. Gossiping will only have a beneficial effect until it becomes damaging, harmful and an obsession. We hope that such behaviour is not accepted in workplaces. some additional research results about the power of gossip are worth mentioning, especially how it might influence human behaviour and thinking (Hitka *et al.*, 2017; Bodnar, 2016).

Gossip has a manipulative power according to British authors who published their study in the scientific journal of the British Scientific Academy (http://eletmod.transindex.ro/?hir=9458). An experiment was made with the participation of young people, who were given money during the game and could pass it on to a player they wanted. The players were given different characteristics. The players showed willingness to pay less money to those with negative characteristics and more to those with positive features.

In the next phase of the research, the students were made aware of people's real decisions. They were also introduced to lies that contradict facts. In this case, the students showed more willingness to give money based on gossip rather than make a decision based on facts. These experiments also confirm the power of this type of information transfer (http://eletmod.transindex.ro/?hir=9458).

The above examples clearly show the impact of gossip on the behaviour of communities and provide an explanation for the relationship between individuals and the health of the individual.

Why do we gossip? Gossip provides information about the human environment. It is not certain if everybody will pass on the gossip. If they do, some modification of the content is detected. Passing on gossip is possible, if the appropriate person to pass on the gossip is found at the appropriate time. Further condition is to make the fake news acceptable by combining facts and unreal information. It should also be acceptable for the community. Trust plays an important role since we pass on the information to someone we trust (Lazányi & Fulop, 2017). At this point, a similarity can be detected in the case of research results connected with knowledge sharing. Knowledge transfer is successful if there is trust between the partners.

Nobody can question the existence of workplace gossip. Whether gossiping is harmful or supportive in terms of workplace performance and the relationship between employees might be disputable in the phase of knowledge acquisition and knowledge transfer (Vlacseková, 2019). Sometimes it is difficult to decide whether information exchange is a simple innocent chat, harmful gossiping or the transfer of positive news. While chat is a neutral activity, gossiping is negative and unpleasant to the person we are talking about. About 90% of human communication is considered to be gossip. It means that we are likely to initiate or/and listen to gossip. It is important to know that not only whispering in the corridor, but also 15% of the workplace correspondence can be considered gossip. Negative rumour occurs 2.7 times more in workplace correspondence than positive news (Chena & Ayoun, 2019).

It is of great importance to develop and maintain appropriate communication channels in the workplace that not only increase the workplace performance but have an impact on the behaviour and well-being of employees. In companies with weak formal internal communication channels, the importance of informal communication channels is stronger and fills the gap of adequate channels for information flow. News and gossip are easier accessible when applying informal communication channels. One of the most frequent cases when gossip starts in the organisation is the period of organisational changes. Inadequate information combined with fake news and gossip can start an avalanche in the organisation. Uncertainty associated with changes in the organisation might result in hunger for information. The role of leaders is to fill this gap with adequate information about the changes and facts before fake news generated by employees can spread in the organisation. If the leader shares information with subordinates, even if the information is unpleasant, it is less likely the employees turn to be victims of the workplace gossip. If the employees are regularly informed by the leader, the occurrence and impact of gossip will be minimised.

The impact of gossip addressing workplace problems can influence performance as a result of worsening personal relationships. Open communication of leaders and the be-

havioural pattern can minimise the occurrence and spread of gossip, referring to the undesirable nature of workplace conditions. The question is whether it is necessary to prevent workplace gossiping? As it was said above, gossip might have positive consequences on the workplace environment as well. According to the research conducted by Stanford University, gossip can stimulate cooperation and highlight the performance of good workforce. Gossiping can fulfil important functions in the community. Since numerous research proved pro and contra consequences of gossip in private life, not enough research results can we find about the importance of gossip in the workplace environment.

The appreciation of the importance of knowledge management systems also emphasizes the importance of knowledge acquisition and knowledge sharing. Both for knowledge acquisition and knowledge sharing, formal and informal methods of communication play an essential role. Thus, workplace gossiping as a form of informal knowledge sharing has a more prominent role than before. This fact contributed to the research examining the role of gossip as an informal tool of knowledge sharing.

To answer the research questions, based on theoretical background and personal experience, the following hypotheses were set:

H1: Employees prefer formal knowledge sharing in the workplace (Hitka *et al.*, 2017; Bodnar, 2016).

H2: When sharing professional information, employees pay attention to trustworthy content of the information, while it is less important for sharing personal information. (Lazányi & Fulop, 2017; Beersma & Van Kleef, 2012; Tassiel *et al.*, 2018).

H3: Gossiping has a negative impact on the organisation (Babalola *et al.*, 2019; Chena & Ayoun, 2019).

Gossip as a part of human nature is present in different cultures. The frequency of gossip and the characteristic features of sharing it, but also the possible consequences are influenced by cultural features. The characteristics of the two nations involved in the survey are very similar because respondents from Slovakia are fundamentally Hungarian people. They are Hungarians living in Slovakia. Their cultural characteristics are based on the same historical background. Behavioural differences can arise as a result of the social environment. The research sample was collected in both of the countries and joint evaluation of the achieved results was conducted.

MATERIAL AND METHODS

In 2018, a cross-national quantitative survey was conducted to find out what the opinion of respondents was about the economic significance of formal and informal knowledge sharing in organisations. The survey was conducted in Hungary and Slovakia in the form of online questionnaires (CAWI). We used snowball sampling and the same questionnaire was applied in both countries.

The research questions were closed, based on nominal and metric scales. The authors applied a 5-point Likert scale (1 = not characteristic at all, 5 = the most characteristic). The respondents were able to identify the given variable easily and realistically in reflection to their organisational practice. The authors used single-and multivariate statistical methods, e.g. frequency and average analysis, linear regression.

The survey was voluntary and anonymous. We applied four various question groups (Table 1).

Table 1. Questionnaire structure

Question group 1	Question group 2	Question group 3	Question group 4
Organisational specification	Formal and informal work-related information and knowledge sharing	Transfer of trustworthy and misleading information and knowledge	Gossiping
Location of the organisation, size, industry, ownership Assessing the importance of knowledge	Formal methods Informal methods Individuals sharing information Content of the information to be shared	Cases of transmitting professional vs non-professional, trustworthy and misleading information and knowledge	Definition of gossip Gossip content Professional and non-professional gossip Effects of gossip Perception of gossip

Source: own study.

Research Sample and Methodology

The snowball sampling method applied is neither transparent nor representative. The Slovak sample consisted of 435 and the Hungarian included 310 organisations (n = 745). The respondents in Slovakia were the Hungarian minority. The company specifications by countries are presented in Table 2.

Table 2. Specification of the examined companies by countries

Categories	Hungarian	Slovak
Number of respondents	310 (100%)	435 (100%)
Company size		
Micro	20.8%	26.3%
Small	19.5%	26.3%
Medium-sized	23.9%	26.8%
Large	35.8%	20.6%
Ownership		
Domestic	52.2%	64.6%
Mixed (domestic + foreign)	15.1%	21.5%
Foreign	27.7%	13.9%
The most typical activities		
8.2% Education 8.8% Health and social care 8.8% Processing industry 6.9% Construction industry 8.8% Trade. Repair		11.5% Trade. Repair 7.7% Construction industry 11% Education 7.2% Health and social care

Source: own study.

Variables used for the calculation can be seen in Table 3.

Table 3. The role and meaning of variables

Variables	Variables		Meaning of variables
	Independent	Dependent	
Professional knowledge*	X	X	Knowledge and information needed to do tasks in workplaces
Private information*	X	X	Personal information not connected with official tasks
Not real content*	X	X	Information is (probably) not true.
Real content*	X	X	Information is true
Gossiping *	X	X	A conversation with personal information content
Organisational performance*		X	Organisational performance reflects how successfully an organised group of people with a particular purpose performs a function

Source: own study.

RESULTS AND DISCUSSION

Research Results

In order to verify hypothesis H1, the first question the authors had to clarify was the extent to which formal and informal knowledge sharing is typical in the organisation. Formal transfer of knowledge was more typical, with an average of 3.5 being calculated for the overall sample, which means that this type of knowledge transfer is frequent. In the case of examining informal knowledge sharing, the average of the sample was lower than that of the formal type of information sharing (average: 3.34). Employees are more likely to choose a formal way of information transfer.

The researchers used linear regression analysis. In the case of formal knowledge sharing professional information transfer with real content was investigated. In the case of informal knowledge sharing, the professional and not professional knowledge transfer was analysed. In both cases, knowledge transfer was analysed when information had both real and unreal content. Gossip was also examined, whether it has or not influence on organisational performance. The path model is presented in Figure 3.

Table 4 shows the results using the path model. In the case of a formal style of information sharing, two variants were analysed by the authors: professional and non-professional information. They examined how the nature of information affects the formal knowledge sharing. The linear model was significant in both cases, which means a correlation can be detected between professional knowledge and the formal way of knowledge transfer. In the case of the correlation between the elements of thinking scheme, 23% is proved to be relatively high (Barna & Székelyi, 2008). In the case of non-professional information, the value of r^2 is lower than 1%. There is no linear relationship demonstrated.

As for the hypothesis H2, the respondents primarily share professional information, differences can be detected between the Hungarian and Slovak companies (t: 2.701 df: 743 sign.: 0.007 $p < 0.05$). It was more typical for the employees of the Hungarian companies (average: 3.57) than the Slovak ones (average: 3.37). In the case of informal knowledge transfer, the same variables were examined in terms of linearity. The explained ratio in the case of professional information was around 8%. It shows that the

linear line did not fit the scatter plot, the informal character of passing on professional information happens relatively slightly. A weaker fit can be detected in the case of non-professional information (r^2: 01). It means that the participants of the survey did not really share private information in this form.

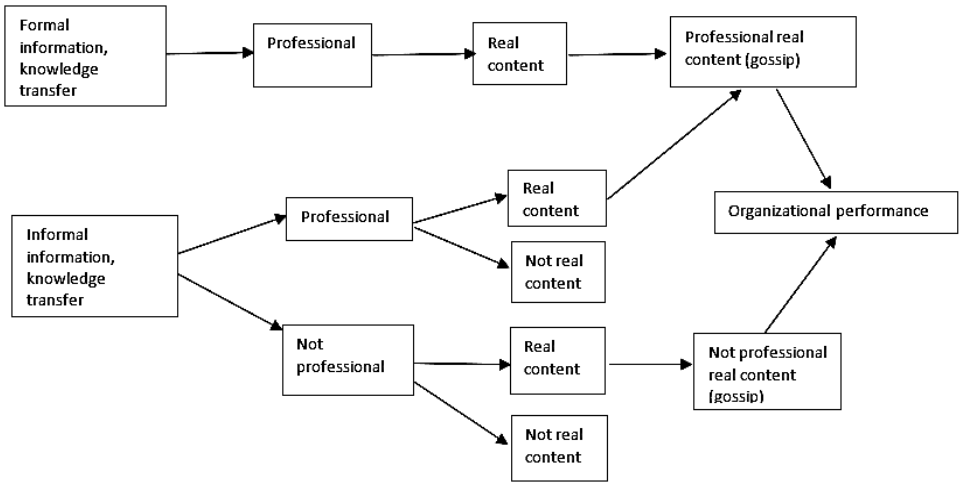

Figure 2. Path model
Source: own elaboration.

A question arouse whether we always pass on professional information, whether the willingness to share this type of information depends on the fact that the information to be communicated has real content or not.

Based on the content of the formally passed on professional information, if the real content of information was absent, the linear relationship could not be detected, while in the case of real content we could calculate with a high ratio (r^2: 0.38). We use a formal way to pass on professional information. There was relatively high willingness to share real content information in a formal way in both of the countries. (Hungarian average 3.65; Slovak average 3.43). The Hungarian respondents showed more significant willingness than the Slovak ones (t: 2.896 df: 0.743 sign.: 0.004 $p < 0.05$).

The formal transfer of private information was not examined by the researchers since it has not been proved that private information is transferred this way.

In the case of informal information sharing, the real content of professional information is transmitted (r^2: 0.42). Similar is the experience with sharing private information (r^2: 0.47). We are less likely to share private information with fake content (r^2: 0.20).

Participants of the research share professional knowledge informally. A significant number of Hungarian respondents follow the mentioned practice (Hungarian average: 3.26; Slovak average 3.08). Slovak employees proved to be motivated in transferring personal data (Hungarian average: 2.65; Slovak average: 2.68).

Respondents use gossip as a form of information sharing in case of real professional and non-professional content, while do not share unreal information this way. The authors examined the impact of gossiping on organisational performance. The results show that

information transfer based on real content gossiping has impact on performance, but its influence is minimal. The results are presented in Table 4.

Table 4. Results of Linear Regression p = 0.05

Parameters		Model Summary					Standardized Coefficients	Unstandardised Coefficients	
Independent	**Dependent**	**r^2**	**F**	**df1**	**df2**	**Sig.**	**Beta**	**Constant**	**b1**
Professional knowledge	Formal	0.226	216.751	1	743	0.000	0.475	1.849	0.459
Private information	Formal	0.004	3.019	1	743	0.083	0.064	2.287	0.060
Not real content	Formally/ Professional information	0.001	0.800	1	743	0.371	-0.033	2.020	-0.035
Real content	Formally/ Professional information	0.381	456.501	1	743	0.000	0.617	1.462	0.597
Professional knowledge	Informal	0.076	60.782	1	743	0.000	0.275	2.458	0.281
Private information	Informal	0.014	10.850	1	743	0.001	0.120	3.021	0.122
Not real content	Informal/Professional information	0.029	22.273	1	743	0.000	0.171	1.341	0.190
Real content	Informal/Professional information	0.415	527.298	1	743	0.000	0.644	1.176	0.662
Not real content	Informal/ Private information	0.204	190.372	1	743	0.000	0.452	0.568	0.473
Real content	Informal/ Private information	0.471	660.680	1	743	0.000	0.686	0.816	0.720
Gossiping	Formal /Professional information/ Not real content	0.005	3.817	1	743	0.051	0.071	3.398	-0.074
Gossiping	Formal /Professional information/ Real content	0.059	46.706	1	743	0.000	0.243	2.296	0.273
Gossiping	Informal/Professional information/ Not real content	0.003	1.869	1	743	0.172	0.050	3.356	-0.051
Gossiping	Informal/Professional information/ Real content	0.032	24.239	1	743	0.000	0.178	2.625	0.194
Gossiping	Informal/Private information/ Not real content	0.003	1.970	1	743	0.161	-0.151	3.358	-0.055

Parameters		Model Summary					Standardized Coefficients	Unstandardised Coefficients	
Independent	**Dependent**	**r^2**	**F**	**df1**	**df2**	**Sig.**	**Beta**	**Constant**	**b1**
Gossiping	Informal/Private information/ Real content	0.003	2.598	1	743	0.107	0.059	3.087	0.063
Organisational performance	Gossiping (trustworthy information, professional)	0.024	14.475	1	743	0.000	0.156	2.006	0.122
Organisational performance	Gossiping (trustworthy information, non-professional)	0.019	8.375	1	743	0.004	0.138	2.038	0.124

Source: own study.

The numerical results of the test model are presented in Figure 3.

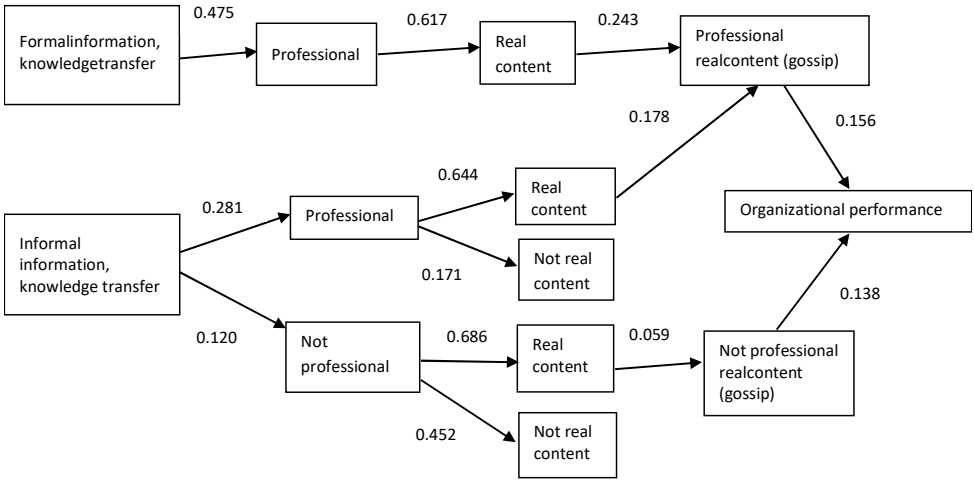

Figure 3. The Testing model
Source: own elaboration.

Respondents of the survey showed a great deal of willingness to share formal information, especially sharing information with professional content. Professional information is shared if it has real content but the willingness is not too high in this case. Professional and non-professional information is eagerly distributed in an informal way, independently of their real or non-real content. Only gossip with personal information and real content influences weakly organisational performance. The respondents share real content professional information in a formal way with the following groups in the following order: a colleague/friend in the same position, a colleague/friend in a higher position, line manager.

Real content professional information the respondent share in informal way with the same groups mentioned above: a colleague/friend in the same position, a colleague/friend in a higher position, line manager. Results can be seen in Table 5.

Table 5. Characteristics of sharing professional information in a formal and informal way (average)

Criteria	Formal	Informal
Colleague/friend in the same position	3.15	3.03
A non-friend colleague in a lower position	3.06	2.97
A non-friend colleague in a higher position	3.09	3.00
Colleague/friend in the same position	3.45	3.36
Colleague/friend in lower position	3.34	3.28
Colleague/friend in a higher position	3.40	3.32
Line managers	3.37	3.21
Higher position leaders	3.23	2.99
Owners	2.91	2.77
Friend not working at the same workplace	2.51	2.54
Acquaintance not working at the same workplace	2.38	2.45
Family	2.57	2.66
Nobody	2.04	2.03

Source: own study.

Personal information with real content is shared informally with a colleague/friend or colleague/friend working at the same level in the organisation.

Approximately 10% of the respondents reported that they used to exchange information this way, while every third of the respondents discuss the information this way occasionally. No significant difference between the surveyed nations was detected regarding the issue (t: 0.686 df: 743 sign.: 0.493 $p > 0.05$).

Gossiping is part of organisational life. The question is what kind of impact it has on everyday life of the organisation. The impact of shared information on different factors had to be evaluated on a 5-point scale by the respondents of the survey. The respondents had to choose the most appropriate answer, where 1 = gossiping results in conflict and 5 = gossiping is necessary. The averages obtained are presented in Table 6.

The results show that it is not possible to declare that workplace gossip has positive and added value to company performance, even real content information is passed on in the form of gossip. It is clearly reflected by the results that the real content of information can strengthen the positive attitude towards gossip within the organisation. At the same time, the results also indicate that the respondents do not completely reject gossip with fake content. There is no consensus among the respondents that gossip results in conflict. The table clearly shows that gossip can damage the organisational trust and teamwork, which are based on cooperation, communication and loyalty among the employees. The positive factors developed can go in the wrong direction. Although gossiping has no positive impact on the organisational culture, we do not avoid it. Approximately, a third of the respondents reported parallel gossiping in the organisation. How do the respondents feel about workplace gossip? 12% of the respondents felt positively about gossiping, while 34% expressed a negative opinion. 40% of the respondents morally rejected gossiping.

Table 6. The impact of gossip in organisations (average)

Factors	Real content, not professional	Real content, professional	Not real, not professional	Professional, not real content
Organisational culture	2.77	3.01	2.27	2.15
Teamwork	2.69	3.01	2.18	2.09
Employee career	2.72	2.98	2.35	2.24
Remuneration of employees	2.75	2.91	2.43	2.32
Organisational trust	2.74	2.97	2.28	2.19
Other methods of knowledge sharing	2.86	3.03	2.41	2.36
Internal communication	2.84	3.00	2.28	2.23
Employee performance	2.76	2.99	2.28	2.23
Performance efficiency of the organisation	2.76	3.05	2.39	2.29

Source: own study.

Discussion

The results show that the hypotheses formulated by the authors can be confirmed. Based on the research results, formal knowledge sharing seems to be more characteristic among employees than the informal one. Hypothesis H1 is confirmed. Regardless of the formal or informal knowledge sharing method, the real content of transferred information is very important to the respondents. This result is presented in the regression model (linear relationships between the features and content of information). It means that the respondents transfer real information first, especially in the case of professional knowledge. This way hypothesis H2 is confirmed. The impact of gossip on organisational operations is rather negative according to the research results. Both linear analysis (effects of gossip and organisational performance) and average investigations confirmed that gossip has a negative effect on organisational performance. It means that hypothesis H3 is confirmed.

Unfortunately, most of the organisations participating in the research do not address the issue of workplace gossip and do not deal with the consequences of it. On the theoretical level there is an overlap between the concepts of informal knowledge sharing, informal communication and the informal networks (Taminiau *et al.*, 2007), which indicates that further research is required in this field. Although the impact of gossip in organisational operations is a discussed issue, the researchers stop at defining the impact and declaring the existence of this phenomenon.

Werr and Sjernberg (2003) emphasize the importance of knowledge sharing in their research, especially the need to gain practical experience. This need is also confirmed in this research. The scientific literature provides evidence of the correlation of informal knowledge sharing and the operation of informal networks that explains the natural existence of workplace gossip (Awazu, 2004; Bresnen, 2003) (as cited in Wabwezi, 2011, p. 16). Further research has also confirmed the relevance of knowledge sharing and its occurrence in the form of gossip in practice, which is also proved by this research.

The research conducted by McEvily & Reagans (2003); Peracek, Noskova & Mucha (2017). proved that business relations between employees and friendships broaden the

opportunity of knowledge sharing, especially in an organisational culture based on trust. According to Krogh *et al.* (2000) the open organisational culture is a prerequisite of knowledge sharing, which later was confirmed by further studies. The authors achieved similar results in their earlier research that can confirm the fact similar to current results about the correlation of gossiping and trust. This can also be confirmed by the existing cultural differences. Keeping distance is at a lower level with Hungarian respondents, which benefits formal and informal knowledge sharing as well. Individualism is at a lower level with the Slovak respondents, which benefits more informal knowledge sharing. The strength of these correlations requires further analysis of a larger sample.

Truran (1998) claimed decades ago that knowledge sharing through ad hoc channels is undergoing a radical transformation, enabled by communication via mail and telephone. These channels provide a possibility for an increased presence of gossip, gaining an institutionalised form in organisations, Krogh *et al*. (2000) (as cited in Wabwezi, 2011, p. 16). This means that e-gossip is present as a natural phenomenon and its corporate impact is visible, but its characteristics have not been proved in this study. Perhaps, these issues have not been studied properly in the organisations involved in this research.

Based on their experience, Werr and Sjernberg (2003) concluded that the most important source of knowledge acquisition is the emergence of creative ideas through informal relationships. They emphasize that sharing experience is much more common through informal channels, e.g. spontaneous conversations during lunch or coffee break. This kind of experience proves the existence of tacit knowledge, which becomes explicit during communication with colleagues. This also underlines the importance of informal knowledge sharing that makes it easier to understand the knowledge sharing process (Werr & Sjernberg, 2003, p. 894, as cited in Wabwezi, 2011, pp. 16-17). In recent years, an important field of research is focusing on sharing tacit knowledge as well as demonstrating its practical significance, which also affects the workplace gossip. The leaders of organisations do not appreciate the importance of this behavior appropriately and consider it to be a harmful organisational feature rather than an exploitable possibility.

The opposite outcome is achieved when it is prohibited or punished by the management. The goal is to achieve positive benefits that will be visible when the economic impact of gossiping can be confirmed.

CONCLUSIONS

The current study presents some of the results of the survey conducted in 2018, which focused on the transfer of formal and informal knowledge/information. The hypotheses based on the results above were confirmed by the authors.

The survey also pointed out that we are more likely to share information with professional content than private information. However, the willingness to share it is determined by the content of the information.

Although formal information sharing is more popular than informal, gossiping is also a popular activity in workplaces. We practice it, even if we know that this form of informal information sharing has no positive effect on the organisation.

The results have shown that soft elements of the organisation can be damaged by gossiping, especially those factors that might take a lot of time to rebuild and can result in

a loss for the company. Despite the fact that gossiping does not necessarily have a positive influence, we cannot stop doing this activity.

Despite its damaging nature, most of people do not morally reject gossiping. This might be the reason why 60% of the organisations involved in the survey do not solve the consequences of workplace gossip on the management level. As an interesting result of the survey we can declare no significant differences between the countries in terms of their attitude towards formal and informal knowledge transfer and gossip. Cultural differences have an influence on these processes, but further research is required to address the issue in detail. Managers and leaders should participate in trainings to understand the significance of workplace gossip in order to gain experience and handle the situations effectively.

The research limitations are: (1) Sample size: We could not gather a large enough sample since the number of the respondents was limited. The chosen snowball sampling method did not prove to be transparent. It cannot ensure a representative sample. (2) The lack of prior research studies on the topic: We could not find any research dealing with the economic consequences of informal knowledge sharing or gossip. Therefore we could not compare our results with former research results. (3) Measuring the consequences of workplace gossip is difficult. Further research with a larger sample is required to examine positive and negative effects of workplace gossip.

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The Importance of Knowledge Management Processes for the Creation of Competitive Advantage by Companies of Varying Size

Marcin Soniewicki, Joanna Paliszkiewicz

ABSTRACT

Objective: This article analyses the intensity of knowledge management processes in companies of different size. It also examines the role of these processes in the formation of competitive advantage by these businesses. Company size is defined as the number of employees.

Research Design & Methods: This article is based on a quantitative study in which 1258 companies were examined. Several statistical tests were used to analyse the data, including the U Mann-Whitney test, linear regression and Pearson correlation.

Findings: It was found that the intensity of knowledge management processes was higher for bigger firms. The results also show that, regardless of the size, entities with more intensive knowledge management processes were relatively more competitive. Another finding is that knowledge management processes were regarded especially important for the competitiveness of large companies, with 250 employees or more.

Implications & Recommendations: The implications of this study can be valuable for managers preparing to execute knowledge management processes. Based on insights from the study managers can plan strategically and make informed decisions about what type of knowledge management initiatives to implement.

Contribution & Value Added: The size of an organisation is a factor that so far has been ignored in the study of the relationship between the intensity of knowledge management and competitive advantage. Specific characteristics of a company that result from its size determine its unique approach to knowledge management – the principles and rules that apply to large organisations cannot easily be scaled down and implemented in SMEs.

Article type: research article

Keywords: knowledge management; firm's size; competitive advantage; competitiveness

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INTRODUCTION

Knowledge is one of the key assets that needs to be properly managed (Jashapara, 2004). The awareness of the importance of company knowledge has been recognized and investigated in the field of strategic management; for example, the resource-based view regards knowledge as a basic source of competitive advantage (Kalpic & Bernus, 2006). The company's competitive strength is derived from the uniqueness of its capabilities, such as knowledge (Conner & Prahalad, 1996; Schultze, 2002). Knowledge management has been an important topic of research for many years (Nonaka & Takeuchi, 1995; Wiig, 1997; Davenport & Prusak, 1998; Easterby-Smith & Lyles, 2005; Jashapara, 2014; Liebowitz, 2012, 2016; Becerra-Fernandez & Sabherwal, 2014; Kim, Lee, Chun, & Benbasat, 2014; Birasnav, 2014; Bolisani & Handzic, 2015; Edwards, 2015; Chouikha, 2016; Massaro, Handley, Bagnoli, & Dumay, 2016; Mohapatra, Agrawal, & Satpathy, 2016; Inkinen, 2016; Centobelli, Cerchione, & Esposito, 2017; Koohang, Paliszkiewicz, & Gołuchowski, 2017; Vătămănescu & Pînzaru, 2017; Pandey, Dutta, & Nayak, 2018; Syed, Murray, Hislop, & Mouzughi, 2018; Mahdi, Nassar, & Almsafir, 2019). According to Kalpic and Bernus (2006), research knowledge management includes the recognition of how difficult it is to deal with complexity in the business environment; interest in core competencies, their communication, leverage and possible transfer; issues concerning the dissemination of company knowledge in worldwide distributed companies; rapid development and adoption of ICT; and company awareness of issues concerning individual's knowledge and its externalisation and formalisation.

Many organisations have a worldwide distributed organisation, and the intensity of knowledge management, which involves acquisition, dissemination, intensity and application processes, requires special attention and special management techniques to gain competitive advantage (Soniewicki, 2015).

The goal of this article is to analyse the intensity of knowledge management in companies of different size and examine its role in the formation of competitive advantage in particular types of these businesses. It is based on quantitative research conducted in Poland in which 1258 companies were examined. Series of statistical methods were applied, including Mann Whitney U test and linear regression.

The first part of the article is devoted to the presentation of different definitions of knowledge management, and the formulation of the research hypothesis. The second part contains a description of the methodology and a discussion of the results. The last part contains conclusions and directions for future research.

LITERATURE REVIEW

In the literature there are many definitions of knowledge management. For example, Knapp (1998, p. 3) describes it as 'a set of processes for transferring intellectual capital to value'. Davenport and Prusak (1998) explain knowledge management as a systematic process for acquiring, organising, sustaining, applying, sharing, and renewing both tacit and explicit knowledge from employees to improve organisational performance and create value. Holsapple and Joshi (2004, p. 596) define knowledge management as '… an entity's systematic and deliberate efforts to expand, cultivate and apply available knowledge in

ways that add value to the entity, in the sense of positive results in accomplishing its objectives or fulfilling its purpose'. According to Mack, Ravin, and Byrd (2001), knowledge management refers to the methods and tools for capturing, storing, organising, and making knowledge and expertise accessible within and across communities.

Various distinctions between different forms of knowledge are proposed (e.g. Blackler, 1995; Spender, 1996). For example, Nonaka and Takeuchi (1995) describe tacit and explicit knowledge. Tacit knowledge is the knowledge acquired through experience, which is hard to articulate and convert to text or drawings. In contrast, explicit knowledge is readily available for use and represents content that has been captured in some tangible form, such as words, audio recordings, or images. Wiig (2004) distinguishes between actionable and passive knowledge.

Ruggles and Holtshouse (1999) describe the following key characteristics of knowledge management: generating new knowledge; accessing valuable knowledge from outside sources; using accessible knowledge in decision making; embedding knowledge in processes, products, and/or services; representing knowledge in documents, databases, and software; facilitating knowledge growth through culture and incentives; transferring existing knowledge into other parts of the organisation; measuring the value of knowledge assets and/or impact of knowledge management.

Knowledge management provides benefits to individual employees and to the organisation itself. It 'helps people do their jobs and save time through better decision making and problem solving; it builds a sense of community bonds within the organization; it helps employees to keep up to date; it provides challenges and opportunities to contribute' (Dalkir, 2005, p. 20). For the organisation, knowledge management 'helps drive strategy; solves problems quickly; diffuses best practices; improves knowledge embedded in products and services; cross-fertilizes ideas and increases opportunities for innovation; enables organizations to stay ahead of the competition better; builds organizational memory' (Dalkir, 2005, p. 20).

As markets grow more complex and unpredictable, the capacity of organisations to improve performance depends increasingly on their competence to acquire and develop knowledge. Knowledge-intensive organisations have received a great deal of attention from scholars and practitioners (e.g. Gadrey & Gallouj, 2002; Miles, 2005; Miozzo & Grimshaw, 2006; Muller & Doloreux, 2009).

The term 'knowledge-intensive companies' (Alvesson, 1995; Robertson & Swan, 1998; Starbuck, 1992) refers to organisations where most work is said to be of an intellectual nature and where well-educated and qualified employees make up the majority of the workforce (Alvesson, 2001). In organisations of this kind, knowledge is considered to be the primary asset and is more important than other kinds of inputs or resources. Knowledge intensive organisations tend to strongly support the creation of knowledge. Many scholars believe that there is a unique link between knowledge creation and competitive advantage (Hitt, 1998; Hitt *et al*., 1999; Bijlsma-Frankema, Rosendaal, & Taminiau, 2006). For example, Drucker (1988) argues that knowledge is the most meaningful economic resource. Nonaka (1994) insists that in an economy where the only certainty is uncertainty, knowledge remains the only sure source of lasting competitive advantage. Many authors have argued that designing a framework for knowledge management is a central

task of management in an effort to gain competitive advantage (Starbuck, 1992; Quinn, Anderson, & Finkelstein, 1996; Choo, 1996; Brown & Duguid, 2001).

A review of previous research reveals that there is a great deal of academic literature on knowledge management and competitive advantage. Nevertheless, the size of an organisation is a factor that has been ignored so far in the study of the relationship between the intensity of knowledge management and competitive advantage. In the literature we can find studies which show relationship between size and organisational effectiveness (Amah, Daminabo-Weje, & Dosunmu, 2013), efficiency (Burton, Minton, & Obel, 1991), performance (Manojlović, 2016) and innovation (Forés & Camisón, 2016). The practice of knowledge management varies depending on the company size. Specific characteristics of a company that result from its size determine its unique approach to knowledge management; for example, the principles and rules that apply to large organisations cannot easily be scaled down and implemented in SMEs.

Therefore, the present study specifically focuses on the intensity of knowledge management and organisational competitiveness and develops the following hypotheses:

H1: Bigger companies tend to engage in more intensive knowledge management processes.

H2: Regardless of the size, companies which are more intensively engaged in knowledge management processes tend to have a higher competitive position.

MATERIAL AND METHODS

Sample and Questionnaire

The goal of this article is to analyse the intensity of knowledge management in companies of different size and examine its role in the formation of competitive advantage in particular types of these businesses. It is based on a survey which was conducted in Poland in 2012 and at the beginning of 2013. The sampling frame for the survey was the Kompass Poland database. It was a convenience sample as only such an option was offered by available databases. Data were collected using a paper questionnaire sent by post and as an online survey created with the help of a computer scientist. Over 1200 completed questionnaires were returned. Response rate in the case of questionnaires sent by post was 6.4% and in the case of online survey it was 3.5%.

The sample included companies of various sizes – Table 1. The biggest group consisted of small companies (10-49 employees), but micro companies (fewer than 10 employees) and medium-sized firms both made up considerable shares of the sample. The smallest group was composed of large companies (250 or more employees). The overall number of entities in the sample was 1283.

The sample consisted of companies from various industries – Table 2. Most of them operated in service and manufacturing industries. A considerable part of the sample included trading companies. Other sectors were represented in the sample included construction and building industry, mining or energy industry, and the other category selected by respondents who could not classify their company's activity into any of the industries listed in the questionnaire.

Table 1. Number of companies with particular employment level in the examined sample

Employment	*No. of companies in the sample*
Fewer than 10	300
10-49	540
50-249	327
250 or more	91
Total:	*1258*

Source: own study.

Table 2. Number of companies operating in a particular industry in the sample

Industry	*No. of companies in the sample*
Services	380
Manufacturing	333
Trade	240
Building construction	130
Mining or energy industry	32
Other	143
Total:	*1258*

Source: own study.

The survey questionnaire included other questions in addition to those related to knowledge management and competitive advantage of companies, which are the subject of this article. The questionnaire was created by Soniewicki (2015) on the basis of various literature sources – Appendix 1. The part which concerns knowledge management consists of four sections: intensity of knowledge acquisition, intensity of knowledge dissemination, ICT supporting knowledge management processes and intensity of knowledge application. Every section contains a number of questions. All of them were measured on a 5-point Likert scale, where particular answers always mean: 1 – negative, 3 – neutral and 5 – positive. In order to compare the overall intensity of knowledge management processes an aggregate measure was created – the Knowledge Management (KM) Index, which is the mean of the results obtained in the four questionnaire parts (Soniewicki, 2015) – Figure 1.

Measuring companies' competitiveness in a quantitative study is a very difficult task. There is no perfect and commonly used method of measuring competitiveness in this kind of research. Nevertheless, Fonfara (2012) proposes measuring competitive advantage in reference to the company's competitors. This approach was also adopted in the present study: the company's competitive position was measured using the Competitiveness Index. The measure was created by Fonfara (2012) and has been tested by many authors e.g. Ratajczak-Mrozek (2012). The index is based on four financial and non-financial variables: profit, the value of sales, return on investment (ROI) and the market share. These indicators are evaluated on a 5-point Likert scale relative to the company's closest competitors. In the actual survey, respondents were asked to evaluate the firm's position relative to their closest competitors, taking into account the four indicators. Answer options included: 1 – much worse (compared to the closest competitors), 2 – worse, 3 – more or less the same, 4 – better, 5 – much better. The Competitiveness Index is an arithmetic average of responses to these four questions.

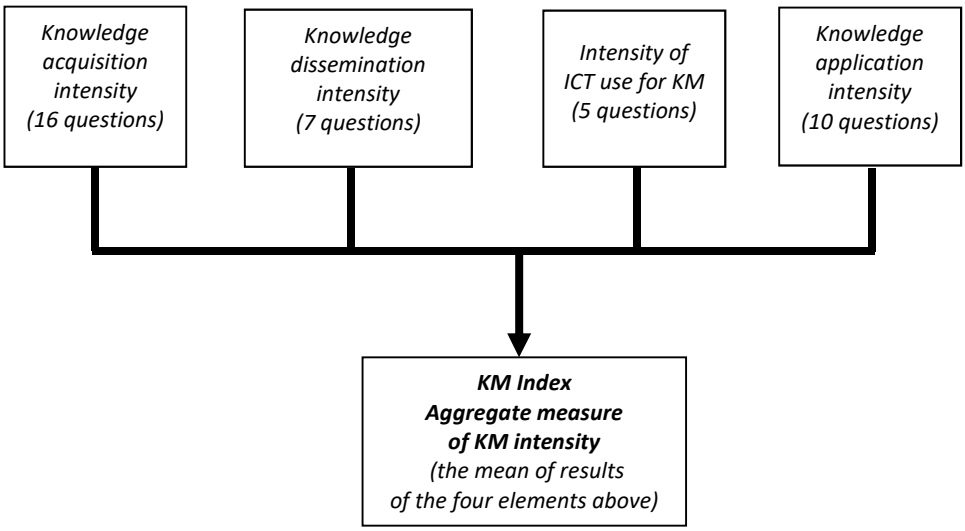

Figure 1. The design of KM Index
Source: Soniewicki (2015).

Establishing the Reliability of the Model

The reliability of the research tool was tested by means of Cronbach's alpha – Table 3. The statistic ranges from 0 to 1. In the literature it is widely accepted that α values higher than 0.7 mean that a research tool is reliable (Kainth & Verma 2011; Liu & Wohlsdorf-Arendt, 2016). As can be seen in Table 3, values of Cronbach's alpha for all the components of the research tool are appropriate.

Table 3. Results of Cronbach's alpha reliability test – KM Index and Competitiveness Index

Component		*Cronbach's alpha*	*Cronbach's α based on standardized items*	*No. of items*
KM Index	Knowledge acquisition intensity	0.828	0.829	16
	Knowledge dissemination intensity	0.840	0.843	7
	Intensity of ICT use for KM	0.777	0.767	5
	Knowledge application intensity	0.892	0.895	10
KM Index		0.789	0.798	4
Competitiveness Index		0.900	0.900	4

Source: own calculations prepared using SPSS software.

The statistical significance of the observed differences was verified using the Mann-Whitney U test. The test was conducted by means of IBM SPSS software *(Statistical Package for the Social Sciences)*. Four levels of statistical significance were distinguished: *p<0.1, **p<0.05, ***p<0.01, ****p<0.001. The correlation between the KM Index and the level of competitiveness of the analysed companies, including the possibility of predicting competitiveness on the basis of KM Index, was determined by applying linear regression.

RESULTS AND DISCUSSION

This part of the article is devoted to the presentation of results of the quantitative study. Table 4 shows the average intensity of knowledge management processes among companies of specific sizes.

Table 4. Average intensity of knowledge management in companies depending on the number of employees

No. of employees	*Knowledge Management intensity (KM Index)*	*Difference in relation to the previous category* (in terms of KM Index)	*p-value of Mann-Whitney test*
Fewer than 10	3.08	-	-
10-49	3.17	+0.09	**0.065***
50-249	3.29	+0.12	**0.001*****
250 or more	3.38	+0.10	**0.053***

Source: own calculations prepared using SPSS software.

Figures in Table 4 reveal a certain regularity – knowledge management processes intensify with an increasing company size. Moreover, Mann-Whitney U test results indicate that these differences are statistically significant. This tendency may be due to the fact that larger companies need more coordination to manage knowledge processes, which implies more advanced activities in the area of knowledge management. Nevertheless, knowledge management processes are only a tool used for creating companies' competitive advantage. That is why the following analyses concentrate on the competitiveness of enterprises. The next table is the only one where four groups of companies are analysed together. Further analyses concentrate on the performance of firms of a particular size and depending on the intensity of knowledge management processes.

Table 5. Competitiveness Index for all companies depending on the intensity of knowledge management

Knowledge Management intensity (KM Index)	*Competitiveness Index*	*Difference in relation to KM Index <=3* (in terms of Competitiveness Index)	*p-value of Mann-Whitney test*	*No. of companies*	*Share*
<=3	2.85	-	-	444	35%
>3	3.31	+0.46	**<0.001****	814	65%
			Total:	1258	100%
>3.5	3.51	+0.67	**<0.001****	362	29%
>4	3.79	+0.94	**<0.001****	81	6%

Source: own calculations prepared using SPSS software.

As can be seen from Table 5, for more than a third of companies in the sample (35%) the intensity of knowledge management processes is below the average level (KM Index <= 3). These firms evaluate themselves as less competitive than their closest competitors – Competitiveness Index = 2.85. The second group is characterised by KM Index > 3. These companies see themselves as more competitive than their competitors – Competitiveness Index = 3.31. We can note that competitiveness of companies with even more intensive knowledge

management processes (KM > 3.5 and KM > 4) is the highest – Competitiveness Index – 3.51 and 3.79, respectively. This confirms the tendency that competitiveness of enterprises increases with the growing intensity of their knowledge management processes. Moreover, the increases in competitiveness are considerable and all differences are statistically significant. The purpose of the following analysis is to test the importance of KM Index to predict competitiveness of all companies using linear regression – Tables 6, 7 and 8.

Table 6. Summary of the regression model – KM Index and Competitiveness Index – all companies

Model	*R*	*R squared*	*Adjusted R squared*	*Standard error of the estimate*
1	0.376	0.142	0.141	0.73094

Source: own calculations conducted using SPSS software.

Table 7. Anova – KM Index and Competitiveness Index – all companies

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Significance*
1	*Regression*	110.806	1	110.806	207.394	<0.001
	Residual	671.055	1256	0.534	-	-
	Total	781.861	1257	-	-	-

Source: own calculations conducted using SPSS software.

Table 8. Coefficients – KM Index and Competitiveness Index – all analysed companies

Model		*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Significance*
		B	*Standard error*	*Beta*		
1	*(Constant)*	1.398	0.123	-	11.370	<0.001
	KM Index	0.547	0.038	0.376	14.401	<0.001

Source: own calculations conducted using SPSS software.

As can be seen, Pearson correlation coefficient is 0.376, and the model predicts 14.2% of the variation in the competitiveness of a company. The p value of the F test is a lot lower than the standard value of 0.05, so the model is well fitted to the data. In general, the linear regression shows that a unit increase in KM Index is associated with an increase in competitiveness by 0.547.

The analyses presented in Tables 5, 6, 7 and 8 refer to companies of various sizes. The results shown in Table 4 indicate that the average intensity of knowledge management processes in companies depends on their size. This may suggest that this tool is more important for larger companies. That is why it was reasonable to analyse the impact of knowledge management on competitiveness separately for enterprises of a particular size. The results of these analyses are presented in the following tables – 9-24.

Table 9 shows competitiveness of micro companies (fewer than 10 employees) depending on the intensity of knowledge management. As can be seen, about 60% of micro companies are characterised by a higher than average intensity of knowledge management processes. However, these companies perceive themselves as only a bit more competitive than their closest competitors. Firms less intensively engaged in knowledge management activities rate themselves as much less competitive – Competitiveness Index = 2.74. One can note that competitiveness of micro companies also rises with the

growing intensity of knowledge management, but this growth is slower than for the entire sample containing firms of all sizes. Similarly, shares of companies with a higher than average (>3), high (>3.5) and very high (>4) intensity of knowledge management processes are smaller than in the case of the whole sample. This aspect was examined with the use of linear regression – Tables 10, 11 and 12.

Table 9. Competitiveness Index for micro companies (fewer than 10 employees) depending on the intensity of knowledge management

Knowledge Management intensity (KM Index)	***Competitiveness Index***	***Difference in relation to KM Index <=3*** *(in terms of Competitiveness Index)*	***p-value of Mann-Whitney test***	***No. of companies***	***Share*** *(in the group of micro companies)*
<=3	2.74	-	-	125	42%
>3	3.13	+0.39	**<0.001******	175	58%
			Total:	300	100%
>3.5	3.32	+0.58	**<0.001******	68	23%
>4	3.63	+0.89	**0.001*****	14	5%

Source: own calculations prepared using SPSS software.

Table 10. Summary of the regression model – KM Index and Competitiveness Index – micro companies (fewer than 10 employees)

Model	***R***	***R squared***	***Adjusted R squared***	***Standard error of the estimate***
1	0.311	0.096	0.093	0.78421

Source: own calculations conducted using SPSS software.

Table 11. Anova – KM Index and Competitiveness Index – micro companies (fewer than 10 employees)

Model		***Sum of squares***	***df***	***Mean square***	***F***	***Significance***
1	*Regression*	19.558	1	19.558	31.803	<0.001
	Residual	183.266	298	0.615	-	-
	Total	202.824	299	-	-	-

Source: own calculations conducted using SPSS software.

Table 12. Coefficients – KM Index and Competitiveness Index – micro companies (fewer than 10 employees)

Model		***Unstandardised coefficients***		***Standardised coefficients***	***t***	***Significance***
		B	***Standard error***	***Beta***		
1	*(Constant)*	1.605	0.246	-	6.528	<0.001
	KM Index	0.443	0.079	0.311	5.639	<0.001

Source: own calculations conducted using SPSS software.

The results of linear regression show that Pearson correlation coefficient is a bit lower than that calculated for all companies combined and amounts to 0.311. The model predicts less variation in the competitiveness level of micro companies – 9.6%. However, the p value of the F test is still a lot lower than the standard value of 0.05, so it can be inferred that the model is well fitted to the data. The linear regression shows that a unit increase

in KM Index is associated with a rise in competitiveness by 0.443, so less than the value obtained for all the companies combined.

The following tables – 13, 14, 15 and 16 – refer to small firms (10-49 employees).

The results in Table 13 show that there is a large difference in competitiveness between companies with a low intensity of knowledge management (<=3) and those with a higher than average intensity (>3). Just like in the case of micro companies, one can also see that a growing intensity of knowledge management processes in small firms is correlated with a rise in their competitiveness. Shares of companies with higher than average (>3) and high (>3.5) levels of KM Index are also larger than in the case of micro companies. Nevertheless, the share of companies with a very high intensity of knowledge management processes is smaller (4%) than that obtained for micro companies. This aspect is examined further by applying linear regression – Tables 14, 15 and 16.

Table 13. Competitiveness Index for small companies (10-49 employees) depending on the intensity of knowledge management

Knowledge Management intensity (KM Index)	***Competitiveness Index***	***Difference in relation to KM Index <=3*** *(in terms of Competitiveness Index)*	***p-value of Mann-Whitney test***	***No. of companies***	***Share*** *(in the group of small companies)*
<=3	2.83	-	-	202	37%
>3	3.28	+0.45	**<0.001******	338	63%
			Total:	540	100%
>3.5	3.48	+0.65	**<0.001******	138	26%
>4	3.75	+0.92	**<0.001******	22	4%

Source: own calculations prepared using SPSS software.

Table 14. Summary of the regression model – KM Index and Competitiveness Index – small companies (10-49 employees)

Model	***R***	***R squared***	***Adjusted R squared***	***Standard error of the estimate***
1	0.387	0.150	0.148	0.67992

Source: own calculations prepared using SPSS software.

Table 15. Anova – KM Index and Competitiveness Index – small companies (10-49 employees)

Model		***Sum of squares***	***df***	***Mean square***	***F***	***Significance***
1	*Regression*	43.774	1	43.774	94.688	<0.001
	Residual	248.716	538	0.462	-	-
	Total	292.490	539	-	-	-

Source: own calculations conducted using SPSS software.

Table 16. Coefficients – KM Index and Competitiveness Index – small companies (10-49 employees)

Model		***Unstandardized coefficients***		***Standardized coefficients***	***t***	***Significance***
		B	***Standard error***	***Beta***		
1	*(Constant)*	1.312	0.187	-	7.002	<0.001
	KM Index	0.569	0.058	0.387	9.731	<0.001

Source: own calculations conducted using SPSS software.

The results of linear regression show that Pearson correlation coefficient is 0.387 and is higher than the value obtained for micro companies. The model is also able to predict 15% of the variation in the Competitiveness Index of small companies, which is an improvement of 5.4 percentage points compared to the result obtained for micro companies. The p value of the F test is also very low, which means that the model is well fitted to the data. In other words, a unit increase in KM Index is associated with a growth in competitiveness by 0.569, considerably more than in the case of micro companies.

The following tables summarise the relationship between knowledge management and competitiveness for medium-sized companies (50-249 employees).

Table 17. Competitiveness Index for medium-sized companies (50-249 employees) depending on the intensity of knowledge management

Knowledge Management intensity (KM Index)	***Competitiveness Index***	***Difference in relation to KM Index <=3*** *(in terms of Competitiveness Index)*	***p-value of Mann-Whitney test***	***No. of companies***	***Share*** *(in the group of medium companies)*
<=3	2.99	-	-	92	28%
>3	3.37	+0.38	**<0.001******	235	72%
			Total:	327	100%
>3.5	3.57	+0.59	**<0.001******	121	37%
>4	3.69	+0.70	**<0.001******	27	8%

Source: own calculations conducted using SPSS software.

In the group of medium-sized companies, there is a bigger share of entities with a higher than average intensity of knowledge management – 72%. There are also more firms with high (>3.5) and very high (>4) levels of KM Index. Nevertheless, the rise in competitiveness associated with an increasing intensity of knowledge management processes is smaller than that observed for small companies. This issue is further explored by means of linear regression – Tables 18, 19 and 20.

Table 18. The summary of the regression model – KM Index and Competitiveness Index – medium-sized companies (50-249 employees)

Model	***R***	***R squared***	***Adjusted R squared***	***Standard error of the estimate***
1	0.317	0.100	0.097	0.73725

Source: own calculations prepared using SPSS software.

Table 19. Anova – KM Index and Competitiveness Index - medium companies (50-249 employees)

Model		***Sum of squares***	***df***	***Mean square***	***F***	***Significance***
1	*Regression*	19.674	1	19.674	36.197	<0.001
	Residual	176.652	325	0.544	-	-
	Total	196.326	326	-	-	-

Source: own calculations conducted using SPSS software.

As can be seen, Pearson correlation coefficient is 0.317, which is lower than the corresponding value for small companies, but a bit higher than that obtained for micro companies.

The model predicts 10% of the variation in the Competitiveness Index of medium-sized companies. The p value of the F test is very low, which means that the model is well fitted to the data. A unit increase in KM Index is associated with a rise in competitiveness by 0.467.

Table 20. Coefficients – KM Index and Competitiveness Index – medium-sized companies (50-249 employees)

Model		*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Significance*
		B	*Standard error*	*Beta*		
1	*(Constant)*	1.728	0.258	-	6.690	<0.001
	KM Index	0.467	0.078	0.317	6.016	<0.001

Source: own calculations conducted using SPSS software.

The final part of the analysis concerns the group of large companies (250 or more employees).

Table 21. Competitiveness Index for large companies (250 employees or more) depending on the intensity of knowledge management

Knowledge Management intensity (KM Index)	*Competitiveness Index*	*Difference in relation to KM Index <=3* (in terms of Competitiveness Index)	*p-value of Mann-Whitney test*	*No. of companies*	*Share* (in the group of large companies)
<=3	2.94	-	-	25	27%
>3	3.67	+0.73	**<0.001******	66	73%
			Total:	91	100%
>3.5	3.81	+0.87	**<0.001******	35	38%
>4	4.11	+1.17	**<0.001******	18	20%

Source: own calculations conducted using SPSS software.

In the group of large companies, an increasing intensity of knowledge management processes is associated with the highest growth in the self-reported level of competitiveness. The shares of entities with high (>3.5) and very high (>4) values of KM Index are also the biggest of all the groups considered so far. This is particularly evident in the case of firms with a very high intensity of knowledge management processes (>4), which account for 20% of all companies in this group. This share is around 2.5 times bigger than the corresponding share of medium-sized companies with the same intensity of knowledge management processes. Competitiveness of firms so intensively involved in knowledge management activities is much higher than that reported by companies with a lower intensity of these processes. This indicates particularly high importance of knowledge management in the creation of competitive advantage for large companies (250 or more employees). This correlation is probably because such companies crucially depend on knowledge management processes and tools to operate effectively. They need to gain, transfer and use knowledge, which needs to flow efficiently through their complex structures to finally reach the right place. The issue is analysed further using linear regression.

As can be seen, Pearson correlation coefficient for this group of companies is 0.492, which is the highest value of all the groups. In this case, the model predicts as much as 24.2% of the variation in the Competitiveness Index of large companies, which is, again,

much more than in the previous cases. The p value of the F test is a bit higher – 0.008, but is still much less than 0.05, so the model can be considered to be well fitted to the data. A unit increase in KM Index is associated with a rise in competitiveness by 0.678.

Table 22. The summary of the regression model – KM Index and Competitiveness Index – large companies (250 employees or more)

Model	*R*	*R squared*	*Adjusted R squared*	*Standard error of the estimate*
1	0.492	0.242	0.234	0.75094

Source: own calculations prepared using SPSS software.

Table 23. Anova – KM Index and Competitiveness Index – large companies (250 employees or more)

Model		*Sum of squares*	*df*	*Mean square*	*F*	*Significance*
1	*Regression*	16.041	1	16.041	28.445	<0.001
	Residual	50.189	89	0.564	-	-
	Total	66.229	90	-	-	-

Source: own calculations prepared using SPSS software.

Table 24. Coefficients – KM Index and Competitiveness Index – large companies (250 employees or more)

Model		*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Significance*
		B	*Standard error*	*Beta*		
1	*(Constant)*	1.177	0.437	-	2.695	0.008
	KM Index	0.678	0.127	0.492	5.333	<0.001

Source: own calculations conducted using SPSS software.

Table 25 shows values of Competitiveness Index for companies with a higher than average intensity of knowledge management processes (>3) depending on the company size.

Table 25. Comparison of Competitiveness Index for companies intensively involved in knowledge management (KM Index >3) depending on the company size

Employment	*Competitiveness Index for companies with KM Index > 3*
Fewer than 10	3.13
10-49	3.28
50-249	3.37
250 or more	3.67

Source: own study.

Based on the information presented in Table 25, it can be concluded that the importance of knowledge management for competitiveness increases with the increasing number of employees. This means that it is particularly important for larger enterprises to introduce advanced, well-planned knowledge management strategies and tools, in order to coordinate, use and develop their knowledge resources, which are crucial in the creation of competitive advantage.

CONCLUSIONS

This study makes two kinds of contributions to the existing body of knowledge in the area of knowledge management. The first kind is a theoretical contribution. The second kind is of practical nature. The study shows that the average intensity of knowledge management processes grows along with the number of employees in the company. The difference in the intensity of these processes is particularly notable for small (10-49 employees) and medium-sized companies (50-249 employees). This trend probably reflects bigger enterprises' need for more advanced knowledge management processes. This outcome confirms hypothesis 1. The study results also indicate that the company's competitiveness, regardless of its size, improves with the growing intensity of knowledge management processes. How much the intensity of these processes affects competitiveness varies depending on the size of an enterprise but the growing trend can be observed for all four size categories of enterprises. This means that firms, irrespective of the size, which are less intensively engaged in knowledge management processes perceive themselves as less competitive than their closest competitors. All the observed differences were found to be statistically significant, which provides additional support for the observed regularity. Moreover, the results of linear regression indicate that for companies of all sizes the intensity of knowledge management (measured by KM Index) was correlated with their perceived level of competitiveness (measured by Competitiveness Index), all of which confirms hypothesis 2. The studied sample contained a substantial number of companies characterised by a low intensity of knowledge management processes. These entities tended to evaluate themselves as less competitive than their closest competitors. There was, however, a small elite of companies that place a lot of emphasis on knowledge management, especially those with a very high intensity of these processes (KM Index > 4); those companies viewed themselves as the most competitive ones, comparatively speaking. Another conclusion is that the development of knowledge management is, in general, of most importance to large companies (250 or more employees). In this size category, the difference in competitiveness between companies with a low intensity (KM Index <=3) of knowledge management processes and a very high intensity (KM Index > 4) is particularly evident.

The implications of this research are likely to be valuable for managers intending to implement knowledge management processes. Managers could use insights from the study to make strategic plans and informed decisions about knowledge management initiatives to carry out. Such a preparation is crucial because managers make important investments in terms of time, money and personnel when they decide to get involved in knowledge management (Becerra-Falezernandez, Gonzalez, & Sabherwal, 2004; Parikh, 2001).

One of the limitations of this study which should be mentioned is the fact that both factors – knowledge management intensity and competitiveness might always be influenced by some another factor not examined here. Another limitation is the fact that the study is based on a convenience sample of companies. Although this is an acceptable approach to data collection (Garson, 2013), results based on a random sample would have been more generalisable. We recommend that future studies use random samples from different countries.

The study results indicate that this is a very interesting area of research and should be explored further, for example by means of qualitative methods. It would be particularly

useful to examine what sort of knowledge management processes are important for the competitiveness of companies of a particular size.

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Appendix A: Questions from the survey

Table A1. Knowledge acquisition

No.	*How intensively company is using particular knowledge sources (5-grade Likert scale)*	*Literature on which the question is based*
1.	External trainings and courses	Sparrow (2010); Darroch (2003); Probst, Raub and Romhardt (2004); Davenport and Probst (2002)
2.	Consulting companies	
3.	Scientific, journalistic and industry publications	
4.	Ordered expertise	
5.	Market research – ordered or commissioned	
6.	Internet	
7.	Knowledge and previous experience of new employees	
8.	Other subsidiaries or affiliates and related entities	
9.	Customers	
10.	Suppliers and subcontractors	
11.	Competitors	
12.	Strategic alliances	
13.	Industry organizations / networking clubs	
14.	Research institutions, universities	
15.	Government institutions	
16.	Own research and development activities	

Source: Soniewicki (2015).

Table A2. Knowledge dissemination

No.	*Question (5-grade Likert scale)*	*Literature on which the question is based*
1.	In our company there are conditions for joint meetings and exchange of experiences, for example social spaces or canteens	On the basis of: Wang, Hult, Ketchen and Ahmed, (2009) and Darroch (2003)
2.	Employees of various departments of our company often cooperate with each other – informally or formally	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
3.	All employees of our company and the management board most often have no problems in obtaining the information and knowledge they need at any given moment	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
4.	Best practices of other companies – for example competitors – are regularly disseminated in our company	On the basis of: Kohli, Jaworski and Kumar (1993); Narver and Slater (1990)
5.	Managers in our company – individually or in groups – often meet with employees	On the basis of: Darroch (2003)
6.	In our company, if it is possible, we introduce teamwork mode	On the basis of: Busch (2008)
7.	In our company, there are ongoing efforts to improve the flow of information and knowledge	Geisler and Wickramasinghe (2009)

Source: Soniewicki (2015).

Table A3. IT knowledge management systems

No.	*Please assess the intensity of use of particular information technology in your company (5-grade Likert scale)*	*Literature on which the question is based*
1.	Basic information technology (Internet, e-mail, text editors, spreadsheets)	On the basis of: Alavi and Tiwana (2006); Geisler and Wickramasinghe (2009)
2.	Data storage systems (for example: systems gathering, providing and managing documents and other data, CRM, data warehouses)	
3.	IT communication systems (for example: corporate portals, intranet, company forums or newsgroups)	
4.	Group collaboration systems (groupware/collaboration) (comprehensive support systems for collaborative work)	
5.	Decision support systems, expert systems (Business Intelligence, Executive Information Systems)	

Source: Soniewicki (2015).

Table A4. Knowledge implementation

No.	*Question (5-grade Likert scale)*	*Literature on which the question is based*
1.	Our company has specific goals and plans for the upcoming years, written and well-known to employees	On the basis of: Moorcroft (2006);Tagiuri and Davis (1992)
2.	From the perspective of our company's strategy, continuous development of new knowledge is the most important element of the competition	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
3.	Our company is constantly working on new products and / or services as well as organisational improvements	On the basis of: Pasher and Ronen (2011) and Darroch (2003)
4.	Our company is constantly identifying its shortcomings in the matter of information and knowledge	Pasher and Ronen (2011) and Probst, Raub and Romhardt (2004)
5.	Information and knowledge accumulated in our company are actively used in everyday business activities, especially in making decisions	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
6.	Many ideas, initiatives or improvements emerge in our company because of the efficient flow of information and knowledge	On the basis of: Busch (2008)
7.	Employees of our company often submit various ideas	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
8.	The process of evaluating (and possibly implementing) the ideas submitted by the employees is most often efficiently performed in our company	On the basis of: Wang, Hult, Ketchen and Ahmed (2009)
9.	In our company cooperation dominates over competition	Geisler and Wickramasinghe (2009) and Anantatmula (2008)
10.	We thoroughly analyse each of our failures to prevent similar events in the future	On the basis of: Wang, Hult, Ketchen and Ahmed (2009), Darroch (2003).

Source: Soniewicki (2015).

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Entrepreneurial Strategy Stimulating Value Creation: Conceptual Findings and Some Empirical Tests

Wojciech Dyduch

ABSTRACT

Objective: The objective of this article is to offer arguments for the strategic support of entrepreneurial processes that stimulate value creation. Recent findings show that firms concentrate mostly on outcomes and performance, neglecting the primary sources of value creation. As value is created largely from generating innovative ideas, it is important that firms strategically support the process of idea generation with the help of organisational design stimulating innovations, as well as strategic leadership.

Research Design & Methods: The quantitative research using classical theory testing was adopted. Data was collected from organisations in Poland with a questionnaire and PAPI interviews. The data was assessed with descriptive statistics, factor analysis and correlation analysis.

Findings: The research carried out identified four dimensions of the entrepreneurial strategy supporting value creation. The research indicated low but positive relations between strategic dimensions and subjective, non-financial measures of value creation and performance.

Implications & Recommendations: For a higher level of new idea generation and innovativeness it is important to focus on innovation-friendly organisational design and on strategic leadership that stimulates network building for the use of external resources.

Contribution & Value Added: The article offers arguments for the strategic support of innovativeness, it identifies empirical elements of entrepreneurial strategy, and indicates relations between them and non-financial assessment of value creation.

Article type: research article

Keywords: entrepreneurial strategy; value creation; entrepreneurship

JEL codes: L26, L10

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INTRODUCTION

The objective of this article is to focus on the role of the strategic support of entrepreneurial processes in organisations that potentially can stimulate value creation. It is argued that the majority of value created in entrepreneurial organisations takes place in the initial stage of innovativeness, i.e. at the level of generating or discovering new, useful, and valuable ideas that may be further turned into innovations and commercialised (Bilton & Cummings, 2010). Yet, efforts are seldom made to discuss creativity processes in organisations at the strategic level. What is more, firms focus on the final result of innovativeness, namely competitive advantage, value creation, financial outcomes and performance (Ronda-Puppo & Guerras-Martin, 2012). This article posits that in order to create more value and to reach above-average performance, organisational efforts could be made to support strategically the processes of generating creative ideas, specifically through the initial phases of innovativeness and strategic entrepreneurship. The article posits that the processes of supporting creative processes in organisations should be strongly connected with the strategy of the organisation. Structures and design, leadership, power in action and network building should be revolving around supporting new idea generation and discovery, selecting and commercialising the most promising ideas which could be potentially successful innovations that bring value both for the customer and for the organisations. This article looks at some key elements of value creating strategy of organisations. The focus is shifted on organisational design stimulating creative processes, strategic innovativeness that allows changing ideas into innovations; strategic entrepreneurship – understood both as strategic thinking in entrepreneurial processes, and as commercialisation of marketable innovations – and strategic leadership for strong strategy formulation on the one hand, as well as coopetitive network building and internationalisation that supports value capture on the other hand.

This study contributes to the strategic management literature by theoretically developing, and empirically operationalising dimensions of an entrepreneurial strategy that has a potential to stimulate value creation and value capture in organisations. At the same time, it has been found that subjective non-financial measures of value creation and performance offer an interesting alternative to financial, objective measures. Measuring both strategic issues and outcomes with subjective measures is the answer to the limitation of confronting current questionnaire data with financial data from the past.

This article is structured in the following way. First, some conceptual findings concerning various strategies of value creation are given. Next, on the basis of literature review, some key elements of the value creating strategy are identified: organisational design supporting new idea generation, strategic innovativeness, strategic entrepreneurship, and strategic leadership. In the research part the identified components are operationalised and empirically tested in organisations in Poland as an Eastern European region of intensive economic growth, high level of entrepreneurial opportunities exploitation, a shift to opportunity-based entrepreneurship, and steadily growing innovativeness index. Eventually, some research results are presented, identifying the empirical dimensions of entrepreneurial strategy, showing their level in post-accession economy, and testing the relations with financial and non-financial measures reflecting the value creation and performance. Concluding remarks are added in the final part of the article.

LITERATURE REVIEW

As Christensen (1999) points out, a contemporary source of problems, dysfunctions and pathologies in developing innovative products and services by organisations is often the lack of coherent strategy that would act as a guide in selecting valuable projects, economically assessing the feasibility of their success, as well as objectively rating their novelty, usefulness, and appropriateness for creating value. Vicari (1998, in: Leigh 2012, p. 45) offers a matrix with four normative strategies for stimulating creativity and innovativeness, where two in particular seem to translate into value creation: (a) the strategy of Japanese business model with long-term orientation and innovativeness development, and (b) the strategy of entrepreneurial organisations seeking and exploiting opportunities. Kuhn (1989, pp. 11-13), when analysing strategies of over a hundred organisations, indicated ten types of strategies stimulating value creation from innovations. A closer look at the proposed framework shows that these strategies refer to value chain and concentrate on actions and goals, stimulating entrepreneurship, know-how of the sector and its trends, or focusing on a flexible and creative approach towards planning the budget. However, to create as much value as possible, firms need to be entrepreneurial and to take strategic actions at the same time. This requires integrating the necessary entrepreneurial activities and strategic thinking into strategic entrepreneurship and focusing, among others, on external and international networks and alliances, resources for opportunity exploitation, organisational learning and continuous innovation (Hitt *et al*., 2001).

When formulating the value creating strategy on Porter's value chain, the question arises how much value is being created when implementing a certain strategy. Recent research carried out among 169 European companies shows that while no significant differences are found in the creation of value for shareholders, companies implementing differentiation rather than cost leadership strategies generate a considerably higher value for all the stakeholder groups (Teti, Perrini, & Tirapelle, 2014). This brings the argument of stakeholders into discussion. Generating value from innovation has been traditionally seen as a "pie" that needs to be divided among stakeholder groups. However, it is argued that multiple potential sources of value creation exist for all stakeholder groups, therefore it is possible to use the stakeholder synergy perspective, assuming that a single strategic action can create value for different stakeholders simultaneously and does not reduce the total value already created. What is more, taking strategic actions based on the stakeholder synergy perspective attracts key stakeholders and helps obtain their increasing effort and commitment in the long run (Tantalo & Priem, 2016). The stakeholder perspective focuses on an important fact that creating value from innovations generally requires resources from other players on the market, therefore entering into partnerships helps the firm create value. It has been found that on the one hand firms are aware of having corporate partners and cultivate the relations, on the other hand they do not always take the full advantage of the resources available through the networks, e.g. when partnering with universities (Lubik *et al*., 2013).

Looking for and using necessary resources pushes companies, even competing ones, towards entering the strategy of collaboration. Coopetition among firms becomes a natural strategic choice for higher value creation and value capture, which coexist simultaneously. However, there are differences on the firm-level and the relationship-level as to how coopeting companies should create and divide value. The research carried out among

four Finnish manufacturing firm shows that relational- and firm-level coopetition strategies differ considerably as far as value creation and value capture are concerned, and that they also evolve over time (Ritala & Tidström, 2014). Therefore, when formulating a value-creating strategy, it is vital to take into consideration not only the firm-level value creation objectives, but also the relational-level ones.

In addition to the network perspective, it is important to look at the value-creating strategy through the marketing lens. In the marketing literature the notion of customer value may be found (Woodruff, 1997), concentrating on value for the customer (how customers perceive value from the attributes of products and services), as well as the value for the firm (value of the customer for the company, Band, 1991; Woodall, 2003). The former may reflect the functional/instrumental value, experiential/hedonic value, symbolic/expressive value, and cost/sacrifice value (Smith & Colgate, 2007). The creation of value for customers is a particularly critical construct for marketers when developing new products or services, namely when commercialising innovations. From the organisational perspective, the value for the firm is more critical, reflecting how many of the firm's products or services the customer will buy, and for how long (customer lifetime value; Smith & Colgate, 2007). Firm strategies that improve consumer perceptions and – as a result – benefits, can create more value by increasing consumer payments to an entire value system, including not only the firm level but the relational level as well (Priem, 2007). At the same time, the research shows that both the project marketing processes for the customer and a proper purchasing strategy for the buyer increase the value creation (Ahola *et al*., 2008).

Specific value creation strategies may be formulated for specific sectors or markets. A value creation strategy framework has been offered for the electronic markets, embracing critical elements such as ecosystems, alliances, knowledge, and e-systems (Hackney, Burn, & Salazar, 2004). The model, focusing on the one hand on continuous innovation and the development of dynamic capabilities, at the same time stresses the co-evolutionary approach to value creation and the long-term management of change, making it possible to reconcile the paradox of building current competitive advantage vs. building long-term strategic competences for the future.

It has been suggested that the nature of strategy stimulating value creation lies in supporting creativity, innovativeness and entrepreneurship (Bilton & Cummings, 2010). The concept of strategy supporting creativity assumes that increasing value coming from innovative ideas is possible by reconciling paradoxes in four key dimensions of creative strategy: (a) strategic innovativeness, that is supporting organisational processes that will result in innovations based on creative ideas, (b) strategic entrepreneurship, that is turning the innovations into marketable products and services (commercialisation), (c) strategic leadership, which promotes creativity and entrepreneurship, (d) strategic design of a creative organisation, which stimulates the processes of creativity, innovativeness and entrepreneurship. Strategic innovativeness, generally speaking, concentrates on exploiting a creative idea in order to generate value, while strategic entrepreneurship builds a bridge between the art of innovation and the real market outside the organisation. Strategic leadership focuses on consolidating, sustaining and developing innovative projects in organisations, as well as supporting all the processes of creative strategy: creativity, innovativeness, and entrepreneurship. Strategic design concentrates on generating proper structures, processes and organisational features that will unleash creativity throughout the whole organisation.

Taking into consideration the stakeholder perspective, coopetitive network building, the concept of strategic entrepreneurship, and strategy supporting creativity, the following section will offer some constructs viewed as key components of the entrepreneurial strategy oriented towards value creation: organisational design supporting creative idea generation, strategic innovativeness understood as preparing innovations on the basis of new ideas; strategic entrepreneurship understood as commercialising innovations with the support of flexible strategic shift and necessary resources orchestration; strategic leadership understood as building strong entrepreneurial strategy, as well as coopetitive networks outside the organisation.

Organising to Generate Value-Creating Ideas

As it was stated before, most of value is created in the initial stage of the entrepreneurial process, namely when new and useful ideas are being generated. Hence, stimulating the generation of new and useful ideas that may be translated into innovations require a proper organisational design that boils down to creating and developing such a structure, together with other vital features of the organisation, where the processes of creativity and innovativeness will be stimulated for value creation. A proper organisational design should offer an organisational context, where strategic potential and effectively orchestrated resources will result in desired outcomes, such as a higher level of organisational creativity and an increase in value creation. The organisational context stimulating creativity requires both tight and loose structures, as well as balancing between concentration time and leisure time (Bilton & Cummings, 2010). Tight, centralised, bureaucratic structures facilitate the implementation of the strategic plan, whereas loose, organic, decentralised structures allow bottom-up experimentation, the occurrence of ideas, and innovative approaches to problem solving. Concentrated work time, with proper intensity of actions and behaviours will result in complying with the requirements expected in the strategic plan. Leisure will make it possible for organisation members to think and reflect on new ideas and facilitate the "eureka" effect. What is more, organisational design stimulating creativity and value creation should feature certain attributes that will unleash creativity within and outside the organisational structures.

According to recent propositions, the strategic design of a creative and value-creating organisation needs to encompass the following features (2010, p. 207): (a) strong but adaptative organisational culture, that on the one hand integrates and unifies the organisation around common values and beliefs, but on the other hand allows it to adopt to environmental changes and experiment with innovative ideas; (b) proper organisational climate, where promising value-creating ideas are assessed objectively and promoted depending on their value, regardless where they come from and by whom they are introduced; (c) knowledge management environment that leaves room for idea exchange between both experts, specialists and naive enthusiasts, (d) intrapreneurship processes (Pinchot, 1985), with new idea generation both inside and outside of the organisation, (e) multitasking, adopting contradicting perspectives in thinking, (f) ambidexterity (Tushman, Anderson, & O'Reilly, 1997), (g) evolutionary approach towards introducing change; avoiding change only for the sake of changing, and changing these elements of organisations that are necessary to change.

Strategic innovativeness

Among many ideas generated within the optimal organisational design only few will be prepared as innovations, hence the process of strategic innovativeness comes into play. Strategic innovativeness is a combination of innovations that are developed by and inside organisations, (Miller, 1983) with strategic thinking (Graetz, 2002, p. 456). It is defined as reorienting the strategy of the organisation, aiming at creating new value for customers and the organisation itself (Johnston Jr. & Bate 2007, p. 4). Strategic innovativeness is a long-term process of introducing innovations, which makes it possible to fulfil goals on the organisation's strategic level. It embraces a set of coordinated actions and efforts, starting with preparing and developing the idea, its assessment, filtering, approval and dissemination. These processes require planning, bottom-up ideas, skills, tacit and explicit knowledge, information flow, knowledge sharing, as well as securing funds for commercialisation. The level of strategic innovativeness depends on the nature of the organisation, sector of activity, age, size and other control variables, as innovations are differentiated, uncertain, and require cooperation and support from functional teams (Pavitt, 1991). Companies that develop strategic innovativeness strengthen their structures and infrastructure (Pycraft, Singh, & Phihlela, 1997, p. 169). They can be flexible in the short term and deal seamlessly with threats from competitors; they are also capable of introducing new products and ideas in a relatively short time, as the strategic level of innovativeness strengthens the organisational culture and creates certain routines.

Van de Ven (1988) indicates certain challenges connected with managing innovations in organisations, among which the most important are: (a) proper management of organisational members' attention that will make them focus on developing new ideas, (b) managing social and political dynamics of innovation; focusing on social aspects of management and the processes of organisational politicking, (c) managing the processes of creating proper organisational infrastructure that will be a strong driver for innovations. Organisations treating innovativeness as a strategic process can result in a number of positive outcomes (Alsaaty, 2011, p. 3): (a) organisational and strategic renewal, (b) increasing performance in the long term, (c) increasing productivity and decreasing costs, (d) dominant position in the market, (e) securing assets with sustained and constant access to them, (f) exploiting opportunities (g) increasing market value, (h) competitive advantage.

Strategic Entrepreneurship

Strategic entrepreneurship is understood as commercialising the innovation, or – in other words – turning the selected and promising innovations based on creative ideas into marketable products and services as an integration of the required entrepreneurial activity and strategic thinking (Hitt *et al*., 2001). Strategic entrepreneurship is therefore connected with implementing large-scale or important innovations into the market, which will create value for customers and organisations (Moris, Kuratko, & Covin, 2008). Strategic entrepreneurship processes can also result in innovations that appear in the strategy itself, offered products, serviced markets, modes of organising and in business models. Therefore, different forms of strategic entrepreneurship can be recognized: strategic renewal, constant regeneration, re-definition of the domain of activity, rejuvenation, or reconstructing the business model.

Strategic management concentrates more and more on the entrepreneurial activities of the organisation (Hitt *et al*., 2011). Integration of strategic management and corporate entrepreneurship processes builds foundations for strategic entrepreneurship that focuses on exploiting organisational capabilities and competences in the process of seeking, identifying, exploiting and commercialising opportunities (Shane, 2003). In order to strengthen these value-creating processes, scholars indicate a number of managerial activities that help to stimulate strategic entrepreneurship (Morris & Kuratko, 2008, p. 161): (a) formulating entrepreneurial vision, (b) strengthening the perception of opportunities, (c) institutionalising change, (d) strong motivation for developing innovative behaviours, (e) investing in human resources, (f) sharing responsibility, risk, and rewards, (g) accepting failure, and learning from mistakes.

If we accept the understanding of strategic entrepreneurship as a process of turning innovations into marketable ideas five phases of the process are identified (Bilton & Cummings, 2010, p. 112): (a) the phase of identification, based on realizing that a certain idea has a potential for commercialisation, (b) the phase of development, focusing on the preparation for turning the innovation into products or services, (c) the phase of assessment, which answers the question if the innovation is worth further development and whereas it will create any amount of value, (d) the phase of preparing new products or services, (e) the implementation phase – launching the product and selling it with value creation and value capture processes. The five phases create a complete cycle of strategic entrepreneurship, where the first two are associated with dilettante attitude and spontaneity, while the last two are connected with diligence and hard work. As a further development of this conceptualisation of strategic entrepreneurship, Hitt, Ireland, Simon and Trahms (2011) offered a dynamic, multilevel, input-output framework, where creativity is treated both as an individual and organisational resource. The proposed framework describes three important elements of strategic entrepreneurship: resources and organisational features, environmental factors (environmental wealth; resource richness), processes of resource orchestration, and organisational outcomes. It is important to notice that this framework focuses on how resources are used by the organisation in order to commercialise innovations.

Strategic Leadership and Network Building for Value Creation and Value Capture

The processes of value creation and value capture in organisations, as well as outside of them, cannot be effective without the support on the strategic level. The task of strategic leadership is to consolidate, sustain, and develop business projects and ventures, as well as to coordinate and inspire the processes of innovativeness. Scholars find it difficult to define the scope of strategic leadership (Guillot, 2003, p. 67). Canella and Monroe (1999) point out that research concerning strategic entrepreneurship focuses predominantly on the CEO perspective, which confirms the common belief that strategic entrepreneurship is directly connected with leaders on the top level of company structure. In this stream of research, certain attributes and behaviours of leaders are indicated as a source of strategic success, such as hard work, leadership and interpersonal skills, motivating, ability of learning, a skilful combination of strategic planning and strategy implementation, innovation management and organisational change (Charlton, 1993, p. 13). In a more extensive approach, strategic leadership is understood as a combination of two perspectives: orientation on people on the top level of management, with concentrating on their actions and strategic choices (Canella, 2001, p. 40).

As long as leadership concerns influencing people, strategic leadership concerns the organisation as a whole, as a higher level of analysis. Strategic theories of leadership discuss the problems of leading the organisation in a holistic way, with regard to co-evolution and changing goals and capabilities (Boal & Hooijberg, 2000, p. 516). From this perspective it is vital to understand the organisation as a unity, with the task environment (Louw & Venter, 2006). To-date, it is accepted that strategic leadership in organisations is shaped by six key elements (Ireland & Hitt, 1999, p. 47): (a) formulating vision and mission, (b) exploiting and sustaining core competences by knowledge and intellectual capital development, (c) developing human capital and investing in it, (d) developing strong organisational culture, (e) sustaining ethical practices across the organisation, (f) balancing financial control with strategic control.

Today, when companies do not act alone but operate in networks, there is a specific task for strategic leaders to be highlighted. On the one hand, strategic leaders build a strong vision for operating as entrepreneurial companies. On the other hand, they need to build networks outside organisations, as coopetition among firms becomes a natural strategic choice for better value creation and value capture. As there are differences on the firm-level and the relationship-level concerning how coopeting companies should create and divide value among them, it is vital for strategic leaders to face managerial challenges present in the coopetition networks. In order to increase the value created, and to respond to customer needs, companies depend on effective competing, but also on cooperating with their competitors (Powell, 1990). Strategic activities of companies and their stakeholders translate into the success or failure of value creation in the whole network (Gomes-Casseres, 1994). Developing intraorganisational social capital by strategic leaders can stimulate synergic value creation, while competitive actions undertaken by stakeholders determine value distribution or "pie division" (Blyler & Coff, 2003).

Incomplete network relations between organisations operating in the same sector can increase the purchasing power and value capture of certain firms in such a network (Chatain, 2010). In order to analyse the value capture processes, the Value Network Map has been offered, as it attempts to answer vital questions concerning value creation and value capture (Ryall, 2013): (a) what portion of value is possible to be captured, (b) who belongs to the cooperating or coopeting network of the firm's stakeholders, (c) who belongs to the value-competing network peripherals, (d) what is the ratio of competition-based value created to overall value created. In other words, coopetition leads to maximising the value created in order to compete for its biggest portion when it is created. Strategic leaders need not only to build effective value-creating networks but use these networks for complementary resources available by the stakeholders (Afuah, 2000). Strategic leadership is a continuous process: creating value and competitive advantage seldom goes hand in hand with continuous value capture (Ryall & Sorenson, 2007).

MATERIAL AND METHODS

The key dimensions of strategy stimulating value creation depicted in the theoretical section of the article may be presented in the following research framework (Figure 1). Basing on the research model, the following hypotheses were formulated:

H1: The construct of value-creating strategy is composed of four dimensions: value-creating organisational design, strategic innovativeness, strategic entrepreneurship, strategic leadership.

H2: There are positive relations between entrepreneurial strategy dimensions and value creation.

The research data was collected by means of a survey. The dimensions of the researched entrepreneurial strategy and value measures were operationalised as items assessed by statements in the questionnaire with 7-point Likert scale. The dimension of strategic innovativeness was described by ten statements, strategic entrepreneurship by seven statements, strategic leadership by six statements, and creative design by nine statements. In the last part of the questionnaire value creation measures were operationalised, based both on objective, financial measures (e.g. the return on sales) as well as non-financial ones were used. The questionnaire was used in PAPI interviews carried out among top managers dealing with strategic issues within business organisations operating in Poland. The companies were randomly selected from all sectors of activity. The choice of the transition economy organisations is justified by the drive towards innovation, a relatively high speed of change, orientation to creativity and opportunity exploitation. 606 questionnaires qualifying for further empirical analyses were obtained.

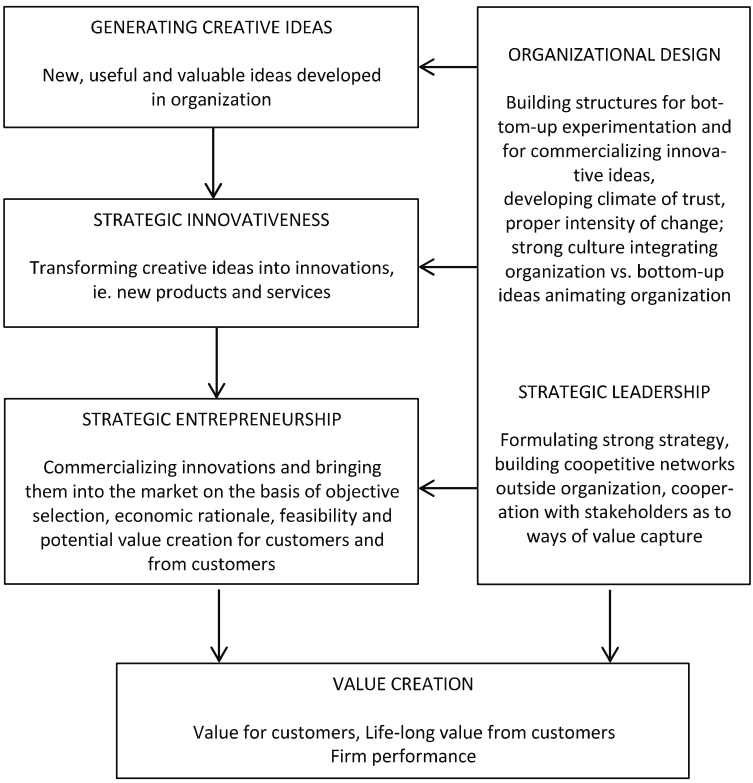

Figure 1. The concept of entrepreneurial strategy stimulating value creation
Source: own elaboration.

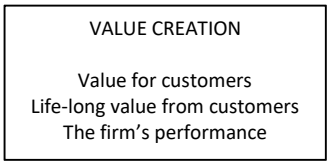

Figure 2. Value creation
Source: own elaboration.

The choice of the transition economy organisations is justified by the drive towards innovation, a relatively high speed of change, orientation to creativity and opportunity exploitation. 606 questionnaires qualifying for further empirical analyses were obtained. 50.5% of organisations were small, 16.1% medium-sized, and 33.4% were large corporations. 18.2% of the researched organisations operate in services, 16% in trade, 11.1% are involved in production, 10.7% operate in the building and constructions sector, 9.7% deal with finance and insurance. The remaining branches represented less than 10%. For data analysis IBM SPSS 20 was used.

RESULTS AND DISCUSSION

In order to empirically test the dimensions of entrepreneurial strategy stimulating value creation, the factor analysis was used (Table 1). The results of factor analysis show that the empirical dimensions of the researched strategy fit theoretical categories quite well. All dimensions, when analysed separately, could be described by the statements included in the questionnaire. The values of Cronbach's alphas are high, which means that the proposed operationalisation of the strategy stimulating value creation is proper, and that certain dimensions can be described by variables proposed in the questionnaire. For the sake of curiosity, however, the factor analysis for all the indicated dimensions of strategy was carried out and rotated all the items. The results of factor analysis that took into consideration all items in the measurement scale, indicates that there is a possibility to define four dimensions of the strategy stimulating value creation, which – according to the statements in the questionnaire – can be labelled as follows: 1) strategic innovativeness and entrepreneurship, 2) organisational design based on diligent venture planning, 3) entrepreneurial leadership based on strong vision, network building, learning from mistakes and adopting best practices from the coopetitive network, 4) organisational team support based on building the climate of trust. What is interesting, according to this analysis strategic innovativeness and strategic entrepreneurship were linked together as one dimension. This could mean that innovativeness itself is not a standalone strategic choice. The process of turning creative ideas into innovations has to be followed by proper opportunity recognition, idea evaluation and commercialisation. Following this reasoning, innovativeness itself does not necessarily have a strategic meaning, when it is not supported by processes of transformation into the marketable, economically feasible ideas that create value. What is more, the strategic leadership dimension was extended by some variables describing innovativeness and entrepreneurship. It could suggest that there is a certain level of importance as far as the entrepreneurial style of leadership is required when stimulating value creation processes

in organisations. Leadership that supports opportunity exploitation should also be extended by learning processes, adopting good practices present in the market, and realized by competitors within the coopetition networks. It is also important to build relations with key stakeholders, both inside and outside organisations, on the regional and international level. The autonomy of creative workers, intrapreneurship, learning and looking for best practices inside and outside of the organisation were also highlighted.

Table 1. Factor analysis of the whole scale measuring entrepreneurial strategy

Item	Factor 1	Factor 2	Factor 3	Factor 4
Strategic Innovativeness				
New idea generation	**0.716**	0.221	0.134	0.094
Idea discovery and adaptation	**0.728**	0.216	0.224	0.057
New methods of problem solving	**0.663**	0.170	0.350	0.117
Preparing the innovation	**0.630**	0.158	0.343	-0.003
Openness to unexpected ideas	**0.638**	0.212	0.343	0.171
Questioning expert knowledge	**0.633**	0.044	0.078	0.271
Learning from mistakes	0.361	0.107	**0.623**	0.153
Scanning environment for best practices	0.527	0.085	**0.531**	0.292
Identifying organisational best practices	**0.557**	0.184	0.457	0.228
Creating new best practices	**0.664**	0.268	0.151	0.233
Strategic Entrepreneurship				
Opportunity exploitation	**0.654**	0.330	-0.052	0.070
Preparing innovation for the market	**0.631**	0.472	0.176	0.036
Searching for the idea-market link	**0.615**	0.479	0.230	0.028
Developing the exploited opportunity	**0.558**	0.468	0.193	0.098
Feasibility of commercialisation	**0.506**	0.499	0.321	-0.055
Diligent business planning	0.442	**0.445**	0.399	-0.003
New venture creation	0.436	0.390	**0.466**	0.016
Strategic leadership				
Developing strong vision and unique strategy	0.122	0.325	**0.597**	0.059
Building coopetitive networks	0.102	0.223	**0.739**	0.115
Building relations with stakeholders	0.142	0.230	**0.649**	-0.028
Strategising valuable resources in/out of the firm	0.195	0.255	**0.486**	0.397
Building the climate of trust	0.169	0.314	0.264	**0.577**
Communicating the value creation strategy	0.154	0.200	0.015	**0.776**
Organisational design				
Centralised, formal structures	0.254	**0.405**	0.370	0.065
Autonomous organic structures	0.380	**0.491**	0.197	0.166
Organisational culture	0.335	**0.512**	0.364	0.269
Meritocratic climate	0.307	**0.522**	0.446	0.170
Learning and knowledge management	0.288	**0.605**	0.294	0.265
Intrapreneurship stimulation	0.290	**0.594**	0.292	0.045
Multitasking and holistic thinking	0.200	**0.679**	0.261	0.139
Places of work stimulating idea generation	0.158	**0.656**	0.131	0.150
Change management	0.122	**0.694**	0.122	0.291
Explained variance	6.801	5.144	4.345	1.805
%	0.213	0.161	0.136	0.056

Source: own study.

A new factor was revealed here, based on building the climate of trust, as well as visualising strategy for organisation members. To sum up, the factor analysis of the identified dimensions of the value-creating strategy confirmed the four theoretical dimensions. However, the factor analysis of the whole scale indicated some reconfigurations between the theoretical dimensions, with the values of Cronbach's alphas of the original items still high.

In order to assess the level of dimensions of the value-creating strategy, descriptive statistics was used, and average values indicated on the Likert scale were compared (Table 2).

Table 2. Descriptive statistics for the identified strategic dimensions

Entrepreneurial strategy dimension	Average	Std. Dev.	Median	Q25	Q75	Std. error
Innovativeness	4.23	0.93	4.30	3.70	4.90	0.04
Entrepreneurship	4.21	0.99	4.29	3.71	4.71	0.04
Leadership	4.49	1.10	4.50	3.75	5.25	0.04
Design	4.29	0.92	4.33	3.78	4.89	0.04

Source: own study.

The descriptive statistics indicate that the average levels of the strategy dimensions represent similar values and are close to '4'. On average, strategic leadership scored highest, while strategic entrepreneurship obtained the lowest value. Innovativeness and creative design indicate similar values. Interpreting the data, one can say, that the researched organisations represent a good level of innovativeness (in the subjective opinions of top management), while commercialisation of these ideas was assessed slightly lower. Leadership is perceived as good, but it seems that not always it is effective, as the entrepreneurship dimension scored relatively lower. When controlled for age, size, and sector of analysis, the researched organisations did not show statistically significant differences in the level of their value-creating strategy. This could mean that the indicated empirical dimensions of strategy stimulating value creation might be universal for all types of business organisations.

This part of the research results showed that there is no basis to reject hypothesis 1 stating that the key elements of value-creating strategy are: strategic innovativeness, strategic entrepreneurship, strategic leadership, and proper organisational design. Of course, there are some reconfigurations between theoretical dimensions but when analysed separately the theoretical categories were confirmed.

The dimensions of entrepreneurial strategy and value creation

In order to assess the relations between the identified strategic dimensions and value creation, Kendall's Tau and Pearson correlation measures were used. For assessing VC, the return on sales (ROS), the return on assets (ROA) and the return on equity (ROE) were used. Additionally, subjective, non-financial meta-measure of value creation, based on the questionnaire developed by Antoncic and Hisrich (2003) was included to assess subjective, non-financial value creating processes. The obtained values of correlations between entrepreneurial strategy dimensions and value creation are presented in Table 3. Statistically significant correlations were marked bold. According to the results, one can say that generally there is no correlation between the identified strategic dimensions and the value created measured with financial measures. There is a negative, low, and statistically significant value of the relation between strategic leadership and financial measures, meaning that with the level of leadership increasing, the sales figures generally go down.

Table 3. Correlations between entrepreneurial strategy dimensions and value

Kendall tau correlations				
	Innovativeness	Entrepreneurship	Leadership	Org. design
ROS	-0.04, p = 0.260	-0.04, p = 0.160	**-0.09, p = 0.018**	-0.06, p = 0.107
ROA	0.04, p = 0.322	0.01, p = 0.691	-0.01, p = 0.852	-0.01, p = 0.825
ROE	-0.03, p = 0.524	-0.03, p = 0.536	-0.04, p = 0.254	-0.05, p = 0.265
SUB	**0.24 , p = 0.000**	**0.22, p = 0.000**	**0.19, p = 0.000**	**0.22, p = 0.000**
Pearson's correlations				
	Innovativeness	Entrepreneurship	Leadership	Creative design
ROS	0.01, p = 0.846	-0.00, p = 0.960	**-0.16, p = 0.004**	-0.04, p = 0.483
ROA	0.04, p = 0.440	0.03, p = 0.562	-0.04, p = 0.475	-0.02, p = 0.673
ROE	-0.01, p = 0.961	0.01, p = 0.672	-0.03, p = 0.524	-0.03, p = 0.788
SUB	**0.38, p = 0.000**	**0.35, p = 0.000**	**0.31, p = 0.000**	**0.36, p = 0.000**

Source: own study.

Quite different results were obtained in the case of subjective, non-financial measures. Generally speaking, with the increase in the level of strategic dimensions, value creation measured with subjective measures increases, though the correlations are not high (Cohen, 1988, pp. 109-115). The results are surprising, as they do not confirm theoretically found relations between strategic dimensions and tangible outcomes of the organisations. The explanation can be four-fold.

First, the researched organisations reluctantly present their financial results, being aware of the competitors. They also use different methods of accounting and booking the value, in order to sometimes influence the results in the short-term. The subjective assessment faces these obstacles. Second, the performance is influenced by many factors, not just strategic dimensions. The analyses showed that the strategic dimensions explain the value measures only in 18% of the variance. Third, the dimensions of entrepreneurial strategy are the pictures of dynamic processes taking place in organisations at present, while financial results are the static picture of the recent past. Using the same method (a survey) for both strategic issues and value creation addresses these differences.

The above analysis partially rejects the hypothesis about relations between the dimensions of entrepreneurial strategy and processes creating value. There are statistically significant but low correlations between strategic dimensions and value creation measured with subjective, non-financial measures. Therefore, elaborating the non-financial measures of value creation and value capture might be suggested for the future research confronting strategic dimensions with value-creation dimensions.

CONCLUSIONS

This article attempted to look at the problem of building a strategy that stimulates value creation processes in organisations. As contemporary organisations create value mostly from innovative products or services they introduce to the market, the sequence of creativity-innovation-entrepreneurship was used as a basis of the theoretical framework. The research used the construct of creative strategy offered by Bilton and Cummings (2010),

with strategic leadership and organisational design supporting the generation of new ideas; the concept of strategic entrepreneurship (Hitt *et al.*, 2011) with some insights from the stakeholder, coopetition and marketing views. The article posited that the value from innovations is created in the initial phase of the entrepreneurial process, by experimenting with new, useful and valuable ideas. It is therefore important to support, on the strategic level, the processes of generating ideas that will be prepared as innovations and further commercialised. Following this reasoning, I tried to describe and theoretically develop the dimensions of strategy that supports creative and innovative ideas, as well as operationalise them, test them empirically and link them with the firm's performance. Instead of concentrating on the innovations themselves, organisations could analyse innovations as part of the more comprehensive strategic sequence that comprise a selection of creative ideas, transforming promising ideas into innovations, and commercialising most marketable innovations through the process of strategic entrepreneurship. This focus shift, somehow naturally, would result in better value creation and performance. The proposed sequence has to be supported by proper strategic leadership with networks building allowing organisations to use complementary resources beyond their control, and organisational design stimulating creativity at the organisational level.

The research carried out indicates that the nature of entrepreneurial strategy supporting value creation boils down to four dimensions: strategic innovativeness, strategic entrepreneurship, strategic leadership, and creative design of the organisation. Factor analysis of the complete measurement scale that was developed did not reduce any of the four dimensions, offered, however, some reconfigurations. Strategic innovativeness and strategic entrepreneurship dimensions formed one factor, which means that turning creative ideas into innovations and commercialising them on the market through exploring opportunities makes one solid sequence. It is compliant with the idea of corporate or strategic entrepreneurship (e.g. Hitt *et al.*, 2001). It was interesting to see the emerging factor of teamwork building, which is based on building the climate of trust. It also seems that for the effective value creation, diligent planning and precise preparation of ventures and business projects is more important than uncoordinated and improvised looking for opportunities.

The level of entrepreneurial strategic dimensions is on the similar level in the researched organisations. Strategic leadership obtained the highest score, while strategic entrepreneurship scored lowest. It seems that the level of entrepreneurial strategy dimensions does not depend on age, size or sector of activity, which makes the construct universal for all business organisations. The research also shows that generally speaking, there are no relations between the dimensions of entrepreneurial strategy and value creation measured with financial measures. Only strategic leadership indicated some low negative relations with the return on sales. There are, however, low but positive relations between strategic dimensions and subjective, non-financial measures. Of course, the set of measures used must be indicated as a limitation of this research and should be expanded in the future.

For the research purpose, this study addresses various theoretical challenges that await those seeking to apply the strategic management theory to the field of new idea generation, thus linking it to organisational creativity. The efforts presented here contribute to the literature in the following ways. First, the research extends the organisational creativity theory by exploring the possibility of linking strategic management and the construct of creativity. Second, the insights developed here advance strategic management

literature by operationalising the construct of entrepreneurial strategy. The general idea was to build a concept of strategy that does not forget about individuals as a source of creativity, which is the main focus of psychology. In this sense, the perspective is more comprehensive than approaches used in prior studies mostly carried out from the psychological and social viewpoint, while the lenses of strategic management and corporate entrepreneurship were largely ignored.

For practitioners, this article has a very clear message: concentrating on new idea generation as a source of value creation matters and framing the creativity into the strategic sequence is vital. It is important to look for new ideas, instead of focusing on outcomes and performance in the first place. What is more, entrepreneurial organisations demand large investment commitments that people have to tolerate, as well as supportive resources, processes, and capabilities to be set. Nevertheless, further empirical research is needed to support these recommendations better. The main task of strategic management is looking for the sources of value. The focus on performance, value creation, competitive advantage is natural. This article does not argue that the dependent variables are unimportant. It only posits that focusing more on the new idea generation can be more synergetic and can result in value creation and performance in the long run.

This study has some limitations. The sample limitation is quite obvious. Similar research carried out in a different country, with different entrepreneurial culture would show other results. The organisations chosen for this research also create a vast sample. There are measurement limitations as well. I only used a few rentability measures as a reflection of value creation. Further research could concentrate on the subjective measures of value creation, as they showed statistically significant and relatively important relations. The research could be repeated in order to see if the elements of entrepreneurial strategy can be generalised. Eventually, the operationalisation of entrepreneurial strategy uses only a few conceptualisations present in the literature. It would be interesting to extend the conceptual framework in the future and formulate some more hypotheses.

Despite its limitations, this analysis takes stock of what is known, answers some questions in the organisational creativity and strategic management literature, and points out directions for future research. We believe that, for all the depth and scope of the literature, researchers have only begun to explore the challenges related to organisational creativity and its performance implications. Having further mapped the domain of organisational creativity, we hope future researchers will study the dynamics associated with key relationships.

In conclusion, the present research takes a step forward and sheds some interesting light on the strategic elements that can potentially increase the value creation in organisations. This research offers several key contributions, however, there are also a number of limitations and most of them highlight opportunities for further inquiry: the sample limitations suggest researching other organisations, as well as other countries; method limitations require elaborating on the survey; measures limitations address the lack of consistency in measuring value creation and the firm's performance with financial and non-financial measures. The idea of strategic innovativeness and strategic entrepreneurship could be further developed, as processes that potentially create value. The influence of coopetition, building networks for using external complementary resources for commercialising innovation on value creation and value capture processes could also be addressed in future research.

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Entrepreneurial Orientation in South African Social Enterprises

Daniella Teles, Chris Schachtebeck

ABSTRACT

Objective: The objective of this study was to investigate to what extent an Entrepreneurial Orientation (EO) exists within social enterprises in South Africa.

Research Design & Methods: The study was quantitative in nature and used a descriptive research design, utilising an adapted measuring instrument to measure five dimensions of EO. A simple random sampling approach was followed, with resulting data analysed in SPSS by means of descriptive statistics, factor analysis, and ANOVA.

Findings: We found that four dimensions of EO exist within social enterprises to a moderate extent, namely risk-taking, innovation, proactiveness, and autonomy. Findings indicated low levels of competitive aggressiveness.

Implications & Recommendations: The article intends to fill the gap in literature that exists regarding EO within social enterprises in South Africa. The study provides insights into the existence of EO in South African social enterprises, allowing for policy and managerial interventions to be made to improve EO levels.

Contribution & Value Added: The main contribution of the study provides an indication of the existence of an EO in South African social enterprises, thereby establishing the basis for further research in this under-researched area.

Article type: research article

Keywords: entrepreneurship; entrepreneurial orientation; social enterprises; South Africa

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INTRODUCTION

Social enterprises in South Africa have been a topic of discussion over the years as the country attempts to commit to economic, social, and political transformation owing to the imbalances caused during the Apartheid era (Littlewood & Holt, 2015). Organisations with a social purpose i.e. social enterprises, have been touted as one manner in which these imbalances can be addressed. Social enterprises exist as a way of addressing a societal issue that causes damage to members of society. South Africa is regarded as a highly unequal country according to the Gini coefficient (World Bank, 2018). Secondly, the country faces major socio-economic challenges with high levels of unemployment, estimated at 27.6% (Statistics South Africa, 2017a). Thirdly, South Africa faces a high degree of poverty, with 29.7% of the population in the Gauteng province living without any income (Statistics South Africa, 2016). This being said, social enterprises are regarded as facilitators in countering these societal issues, however these social enterprises experience low survival rates, owing to a lack of entrepreneurial spirit (Kusa, 2016). The lack of entrepreneurial spirit can be determined by investigating levels of entrepreneurial orientation (EO; Austin, Stevenson, & Wei-Skillern, 2006). Therefore, we should determine if social enterprises possess an EO, owing to the direct link to entrepreneurial spirit. Many developed countries have recognised the importance of social enterprises, it is therefore beneficial to conduct similar studies within their home countries (Kusa, 2016).

The problem that this study addresses is the lack of research on EO in South African social enterprises. Moreover, it remains unclear whether social enterprises in South Africa are purely social in nature or if they exhibit entrepreneurial characteristics. To deduce this, we should determine the level of EO (Austin, Stevenson, & Wei-Skillern, 2006). This view is supported by Abaho *et al*. (2017) who stress the importance of determining EO in social enterprises in developing economies where contextual differences play a significant role. Linked to this notion is the fact that currently no purpose-built measuring instrument exists to accurately measure EO within South African social enterprises. A lack of a well-established, modified EO scale for social enterprises was noted by authors such as Alarifi, Robson, & Kromidha (2019).

Therefore, the primary objective of this study is to determine to what extent EO exists in social enterprises in South Africa. Other objectives include developing an appropriate adapted measuring instrument, but also comparing EO in different types of social enterprises.

LITERATURE REVIEW

The sections below present a literary discussion on prominent dimensions of Entrepreneurial Orientation (EO), as well as exploring existing research on social enterprises.

Social Enterprises

A tremendous growth of social enterprises has been observed, particularly as the term 'social enterprise' has been used interchangeably with terms such as "'civil society', 'voluntary sector', 'social sector', 'third sector', 'independent sector', 'mission-based sector', 'non-profit sector' and 'non-government sector'" (Trivedi & Stokols, 2011, p. 3). The term social enterprise has also been associated with social entrepreneurship, although there

exist stark differences. Firstly, a social enterprise is aimed at addressing imbalances in the social, structural, and political system through forcing social change. Therefore, social enterprises assume the role of social change agents, which differentiates them from social entrepreneurs who are usually independent business individuals who use innovative practices to bring about social change by means of recognising an opportunity in the marketplace. Hence, social entrepreneurs are much more closely related to traditional forms of entrepreneurship than social enterprises (Best, 2018). Furthermore, while social enterprises are often regarded as NPOs and NGOs, a distinct difference exists as (i) NPOs do not necessarily aim for social change (Dees, 2001; Martin & Osberg, 2007) and (ii) social enterprises aim to solve long-standing social issues, while NPOs aim to address social issues regardless of their time of existence (Alter, 2004; Mair & Martí, 2006; Martin & Osberg, 2007). A social enterprise is regarded as an organisation that focuses mainly on the creation of social value rather than the creation of monetary wealth or use value, a further differentiating factor from traditional NGOs (Trivedi & Stokols, 2011). A social enterprise generates revenue through activities that are predominantly social in nature (Chell, 2007; Kerlin, 2012). While social enterprises primarily rely on governmental funding, in South Africa they can be classified according to their primary funding source (Patel, 2012). The first type of social enterprise is an enterprise formally registered with the National Council of Social Services (NACOSS). These enterprises follow strict procedures whilst heavily relying on governmental funding. The second type of social enterprise is known as donor-funded enterprises, which are formally registered but can customise the enterprise to better suit the services it delivers. The third type of social enterprise is known as religious bodies, which are also formally registered. Finally, community based social enterprises (CBOs) are most prevalent in South Africa. These enterprises are usually not formally registered and have a restricted access to required funding or skills.

Whilst formal classifications exist, social enterprises can also be classified according to their central purpose, which usually provides better insight into their modus operandi and, thus, EO. Social enterprises are usually classified as mission-centric, commercialising social services, or providing social services unrelated to their mission. The mission-centric model has a strong focus on its social mission with the aim of using a self-financing. Secondly, the enterprise that commercialises social services has a social mission at its core but generates economic value, which is used to subsidise its social initiatives. The third type of social enterprise is detached from its mission. This enterprise focuses on using social programmes to make a profit, with no intention to actively pursue the social mission (Alter, 2007).

However, we should determine the prevalence of social enterprises in South Africa. Although no current data exists on these enterprises in South Africa, past studies found that social enterprises in South Africa employ an estimated 645,000 full time employees and 1.5 million volunteers (Patel, 2012). Social enterprises can legally register as any form of for-profit company, such as sole proprietorship, partnership, private company, trust, or cooperative. However, many social enterprises assume a non-profit legal form, such as non-profit company, voluntary association, or non-profit trust. At the time of registration, the memorandum of incorporation or constitution outlines the social nature of the enterprise (Bertha Centre, 2016). Other than formal legal registration, many social enterprises register with NACOSS, which requires such information as contact, trading name, main aim of organisation, declaration of affiliation, geographic extent of services, transformation plan, and legal

registration status with a company registration number (NACOSS, 2019). However, to be regarded as a Non-Profit Organisation (NPO) and Public Benefit Organisation (PBO), a social enterprise often needs accreditation. The NPO Directorate requires organisations to submit financial records and activities. Obtaining PBO status requires them to submit the same documentation to the South African tax authorities (Bertha Centre, 2016). NACOSS states that registered social enterprises mainly support the elderly, youth, children, and families. Most of the social enterprises exist in the Western Cape and Gauteng provinces in South Africa due to the dearth of services in these areas (Patel, 2012).

While no accurate measures of social enterprise activity exist in South Africa, a related study on social entrepreneurial activity (SEA) in South Africa estimates SEA to be 1.9% for Black Africans, 1.9% for the White population, 1.6% for the Indian population and 1.4% for the mixed-race population (Herrington, Kew, & Kew, 2010). These authors also estimate that male SEA is far higher than female SEA, by 1.3% and 0.5% respectively. In terms of education, 47% of these social entrepreneurs have a school-leaving certificate, whilst 8% possess a post-matric qualification, and only 4% possess some sort of tertiary education. This may be viewed as problematic, because research indicated correlation between higher levels of education and improved levels of entrepreneurship (Shane, 2003; Nicolaides, 2011; Byun *et al*. 2018; Singer, Herrington, & Menipaz, 2018).

Social enterprises face several challenges that contribute to their high failure rates (Littlewood & Holt, 2015). The three main challenges that these enterprises face include the areas of funding, market, and human resources. Funding challenges are mainly related to the lack of adequate government funding. Although each province receives funds from the national government (Statistics South Africa, 2017a), this funding is regarded as inadequate; suffice to consider that, in 2008, the national government spent more on social services than in 2018. Imbalances in funding allocation to various provinces are also problematic as discrepancies between available funds and needs rise (Patel, 2012; Statistics South Africa, 2017a). Human resources pose a further issue to social enterprises, as it is often difficult to find individuals with relevant skills required in the social sector (Smith & Darko, 2014; Brzozowska, Bordean, & Borza, 2015). However, it is imperative that social enterprises employ people with the requisite skills to ensure maximum resource utilisation. Low levels of compensation due to the lack of funding result in unattractive salaries and low levels of employee retention. Milkovich, Newman, and Gerhart (2011) along with Bussin (2012) nevertheless argue that factors such as employee empowerment, leadership, and other forms of remuneration can strengthen employee retention. Finally, markets pose another challenge as social enterprises often lack the ability to determine their target market and market offering (Dolnicar & Lazarevski, 2009). Social enterprises also struggle with differentiating themselves from similar commercial enterprises. This can be attributed to a lack of marketing expertise to aid differentiation, which undesirably affects profitability (Smith & Darko, 2014; Wu, Wu, & Wu, 2018).

Despite these challenges, there are many opportunities for social enterprises to access requisite support services (Myres *et al.*, 2018). Private funding for these social enterprises often assumes the form of angel investment, mostly from individuals with capital in search for an unlikely investment opportunity (Murnieks *et al.*, 2016). Microfinance institutions exist to provide funding to individuals who do not have a credit record and seek funding

(Mersland & Storm, 2010). Moreover, co-operative financial institutions (CFI) exist to provide funding to co-operatives, and they are usually owned and controlled by their members, which creates a shared bond (Sauli, 2018). Stokvels and community savings groups are another source of financing. These South African savings or investment societies, Stokvels are a way in which individuals can save informally. Stokvels are vital to employment creation and promoting social and economic activity in South Africa (Verhoef, 2001; James, 2015). As a source of funding, friends and family also are a viable option to social enterprises, as they often demand no stringent repayment procedures. Social impact bonds (SIBs) are social programs that seek to attract private investors willing to invest in social enterprises and develop communities (Social Finance, 2011; OECD, 2016). Finally, crowdfunding can act as a source of capital, whereby social enterprises request donations in exchange for a reward that may support social initiatives (Kleemann, Vo, & Rieder, 2008).

Entrepreneurial Orientation

We define Entrepreneurial Orientation (EO) as entrepreneurial actions and decisions that are based on policies and procedures within existing enterprises (Rauch, Wiklund, Lumpkin, & Frese, 2009). Many authors (Lumpkin & Dess, 1996; Zahra & Neubaum, 1998; Fatoki, 2012; Shehu & Mahmood, 2014) explore the conceptual nature of EO, yet the commonality that exists between the various definitions lies in viewing EO as a strategy-making process. While EO received significant attention, it still requires further research (Rauch *et al.*, 2009).

Khandwalla (1977) originally conceptualised an EO scale, most prominently utilised by Covin and Slevin (1989) to develop a measuring instrument that covers three dimensions of EO, namely risk-taking, innovativeness, and proactiveness. These dimensions are based on the seminal works of Miller (1983), who proposed them as unidimensional, assuming that an EO can only exist when these dimensions appear concurrently. Later, Lumpkin and Dess (1996) proposed the inclusion of two additional dimensions to the EO construct – competitive aggressiveness and autonomy – and postulated, contrary to Miller (1983) along with Covin and Slevin (1989), that EO is a multidimensional construct that can contain any combination of the five EO dimensions. Lumpkin and Dess (1996) also note that only some of the EO dimensions require a presence in an organisation for it to engage in successful new market entry.

These dimensions include *innovativeness,* widely regarded as one of the most important components of EO (Parkman, Holloway, & Sebastian, 2012). This confirms findings by Schumpeter (1942), who argues that if the other dimensions were to exist without the presence of innovation, these dimensions would be without real value. We may regard innovation as the willingness to engage in new practices with the intention of mastering them (Sankowska, 2013). Thus, we may consider *proactiveness* as the willingness to anticipate future problems with a forward-looking, rather than reactive mindset (Miller & Friesen, 1978). Intrinsic to proactiveness is the first-mover advantage that an organisation aims to possess. As a strategic approach, proactiveness allows organisations to capitalise on market opportunities as heightened opportunity recognition becomes more intrinsic to decision-making (Liberman & Montgomery, 1988; Tang & Hull, 2012; Wang *et al*., 2015). Furthermore, as noted by Miller (1983), proactiveness in an organisation can create a first-mover advantage, as products and services are created in anticipation of market needs (Jaensson, Shayo, & Kapaya, 2018).

Risk-taking is the willingness of managers to commit resources, whilst facing the prospects of a costly failure (Miller & Friesen, 1978). A high degree of risk-taking has been linked to higher levels of EO. We may attribute this to organisations who commit to new levels of indebtedness with the expectation of retaining profits by better seeking market opportunities (Baker & Sinkula, 2009; Eggers *et al*., 2013). However, organisations need to consider that all activities tend to have risks attached to them. However, the levels of acceptable risk must be determined by the organisations (Liberman & Montgomery, 1988), as a risk-averse stance can lead to lost opportunities, often considered a risk in itself (Borison & Hamm, 2010; Nishimura, 2019). Risk-taking must be differentiated between individual and organisational risk-taking. Risks taken by the organisation are not always attributable to a particular individual, who could be risk-averse, and can lead to conflict (Liberman & Montgomery, 1988).

Competitive aggressiveness can be described as the manner in which an organisation challenges its competitors to achieve a superior market standing (Lumpkin & Dess, 1996). Some studies suggest that new organisations tend not to act in an aggressive manner as the 'liability of newness' results in industry intimidation (Liberman & Montgomery, 1988). However, organisations should also respond to competitor challenges in a resilient and offensive manner whilst ensuring that any market penetration efforts are performed competitively (Lumpkin & Dess, 2001; Chen, Lai, & Wen, 2006). Organisations must consider speed of new market entry, as a fast-follower followed when goods and services are brought to the market in an aggressive manner (Liberman & Montgomery, 1988). Finally, some studies suggest that mergers or strategic alliances increase synergies and result in higher returns, thereby raising the level of competitive aggressiveness (Harrison, Hitt, Hoskisson, & Ireland, 1991).

Finally, *autonomy* can be described as an idea of an individual or a team that reaches phases of completion, with these individuals seen to be independently-minded and not subjecting themselves to inhabitation by organisational superiors, instead ensuring that new ideas transform into a new venture (Lumpkin & Dess, 1996). In general, autonomy refers to individuals that take a stance to see through their own opportunities. However, in an organisation, entrepreneurship and innovation are continuously promoted by managers, if there exists some level of autonomy (Ireland, Kuratko, & Morris, 2006). Lastly, Miller (1983) suggests that autonomous leadership and higher levels of entrepreneurship are intrinsically linked, while higher levels of decentralisation result in a heightened sense of autonomy. Although organisational structure plays a role in granting autonomy, it is important that individuals in autonomous positions exercise this behaviour as this promotes innovation and creativity (Lumpkin & Dess, 1996; Eder, 2007; Burns, 2013). Krauss *et al*. (2005) agree with this view, and they find that the elimination of stringent guidelines ensures employee motivation and increases innovation efforts.

With regard to EO in social enterprises, a study by Lumpkin *et al*. (2013) explores the extent to which EO can be measured within a social enterprise in the United States of America, using a framework developed for commercial enterprises. Their study finds that the majority of processes used in commercial businesses are also used in social enterprises, although EO may differ in the social context (Lumpkin *et al*., 2013). Therefore, the first hypothesis of the current study is:

H1: Social enterprises in South Africa exhibit an entrepreneurial orientation.

Authors such as Kusa (2016) observe that social enterprises have a different attitude towards risk, as the underlying motivation differs, which primarily aims for alleviating a social ill. The underlying motivation for existence, such as mission-centrism, commercialisation of social service, or activity unrelated to mission, is referred to as the type of social enterprise. The second hypothesis for the current study is that:

H2: The type of social enterprise affects entrepreneurial orientation.

In terms of innovativeness and proactiveness, Kiruki (2016) concurs that this dimension is low across all social enterprises, because these enterprises tend to ignore the exploitation of trends in the industry, thereby not acting proactively. The lack of innovation in environmental changes note Lumpkin *et al*. (2013). Autonomy and competitive aggressiveness are the factors of EO that are most impacted in the social context, as the need for assertiveness is present ahead of other social enterprises, although Lumpkin *et al*. (2013) argue that problems can be solved by working with competitors. Scholars who conducted EO-related studies with all five dimensions find moderate to high levels of EO (Syrja *et al*., 2019), while others suggest the use of the original three-factor model (Alarifi, Robson, & Kromidha, 2019). Therefore, the current study proposes another hypothesis:

H3: The full five EO factors can be found in South African social enterprises.

This sentiment is shared by Abaho *et al*. (2017), who stress the importance of developing evidence in support of EO in social enterprises located in developing economies, as contextual evidence is of the utmost importance.

MATERIAL AND METHODS

The paradigm of a study can be defined as "the whole system of thinking" (Neuman, 2011, p. 94). This study follows the positivist approach, because the research can be classified as objective, as we ensured that interaction with respondents was kept to a minimum. The replicable nature of our positivist approach will allow future studies to repeat and verify the obtained results (Johnson & Onwuegbuzie, 2004). The population of the study was defined as all owners and employees in social enterprises in South Africa. To be included in the sample, the social enterprise had to enjoy full legal registration status, be classified as a NPO or PBO, operate in South Africa, and could contain either employees, owners, or stakeholders.

We conducted an empirical study with the use of quantitative research approach, as the aim of the research was to generalise the findings and describe a phenomenon numerically. The study used an adapted measuring instrument in the form of a self-administered questionnaire, utilising a five-point Likert scale and closed-ended questions. Questionnaire items were adapted from the prominent Miller, Covin, and Slevin (1989) scale, but also a scale by Hughes and Morgan (2007). Section A of the measuring instrument contained demographic-related questions, while Section B was structured according to the five EO dimensions mentioned in the literature review above. The questionnaire was distributed electronically via e-mail and hosted on Google Forms. As a result of no consolidated and comprehensive database of social enterprises existing in South Africa, we selected a variety of prominent databases such as Enactus, University of Johannesburg Centre for Entrepreneurship, RainbowNation.co.za, Char-

itySA.co.za, and Code South Africa Data Portal. These databases contained the details of registered social enterprises. However, the primary mission of the social enterprise was not stated in these databases, so it was included as an item in Section A of the measuring instrument. A total of 1 764 respondents were contacted, resulting in 342 responses, thereby recording a response rate of 19.4%. While we selected databases on the basis of convenience and accessibility, we followed a random sampling approach in distributing the questionnaire to the social enterprises. Data comes from December 2018 to January 2019.

Data was analysed by means of descriptive and inferential statistics. Descriptive statistics included standard deviations, individual item means, and average dimension means. Inferential statistics involved one-way ANOVA in order to determine if the level of EO in a social enterprise was dependant on the type of social enterprise. Two assumptions of ANOVA include (i) that the response variable follows a normal distribution within groups, and (ii) an appropriate scale is used. While the 5-point Likert scale can be viewed as a weak strength ordinal scale, some authors suggest it is acceptable for ANOVA, as it can be used as an interval scale (Bertram, 2009; Wu, 2017). An exploratory factor analysis (EFA) was conducted due to the newness of the measuring instrument. To determine the suitability of the EFA, we used the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy along with Bartlett's test of sphericity. The KMO indicated 0.845, which was above the required value of 0.6, while Bartlett's test showed 0.000, which was below the required value of 0.05. This foregrounds that the data was suitable for structure detection. While the study originally included five dimensions of EO, the EFA extracted six factors with an eigenvalue of greater than 1. The risk-taking factor split into managerial and employee risk-taking. Furthermore, factor extraction was also performed and the 24 items in the questionnaire converged into six iterations. The five original dimensions were loaded under the same variables as the original framework. All values in the factor rotation demonstrated a commonality of above 0.3, signalled that there is a satisfactory fit of all the items in each component.

Ethical clearance for this study was granted by the College of Businesses and Economics at the University of Johannesburg. The cover page of the questionnaire outlined the rights of respondents, such as the option to provide consent to partake in the study, but also the right of non-participation and anonymity.

RESULTS AND DISCUSSION

In terms of demographics, of the 342 respondents, most respondents were female (65.8%), with 34.2% being male. The majority of respondents were older than 50 years of age (39.8%), followed by the ages of 30-39 years (26.9%) and 40-49 years (21.9%). The minority of respondents was between 18-29 years of age (11.4%). In terms of ethnicity, most respondents were from the white population (57.3%), whilst respondents of Black, mixed race, Indian, and Asian ethnicity constituted 22.5%, 16.7%, 2.3% and 0.3%, respectively. In terms of education, most respondents indicated possessing a postgraduate qualification (42.7%), while 24.3% and 23.1% held either a bachelor's degree or a diploma-level qualification, respectively. The remainder of these respondents held a school-leaving certificate (8.2%), or a Grade 11 and lower (1.8%). Next, most respondents were South African citizens (89.25%), whilst the remainder held other nationalities. Whilst responses were received from all nine South African provinces, most of the responses received were from social enterprises based in the Western Cape (52%) and Gauteng province (29.2%). Following this was KwaZulu-Natal

(7.6%), Eastern Cape (3.5%), Free State (2.3%), North West (2%), and Limpopo (1.5%). The two remaining provinces made up approximately 2% of responses. In terms of the classification of the social enterprise, most respondents (57%) described their social enterprises as purely social in nature, while 35.1% believed their enterprise offered mainly commercial services and, finally, 7.9% of respondents believed that their social enterprise was unrelated to their mission. Finally, most respondents (56.7%) indicated that they were the owner of the enterprise, whilst 32.7% and 10.5% were employees or external partners, respectively. All responses were received from enterprises identifying themselves as registered social enterprises who operate in South Africa, regardless of primary mission.

Reliability Analysis

The reliability of the measuring instrument was tested in terms of Cronbach's Alpha. The results reveal that the measuring instrument can be classified as reliable, because all five dimensions of the study indicated a reliability of $\alpha > 0.7$. While the risk dimensions split into managerial and employee risk-taking in the factor analysis, both dimensions recorded a Cronbach Alpha of 0.704 and 0.803, respectively. Innovation, proactiveness, competitive aggressiveness, and autonomy recorded reliability values of 0.799, 0.815, 0.725 and 0.847 respectively. Therefore, we may deem the instrument reliable.

Descriptive Statistics

Table 1 indicates the descriptive statistics for the study in the form of the average mean per dimension and the average standard deviation per dimension.

Table 1. Average mean of each EO dimension

Dimensions	Mean	Std. Dev.	Observations
Managerial risk-taking	3.47	1.086	342
Employee risk-taking	3.64	1.055	342
Innovation	3.54	1.126	342
Proactiveness	3.13	1.071	342
Competitive aggressiveness	2.83	1.201	342
Autonomy	3.68	0.974	342
Overall EO	3.38		

Source: own study.

The means in Table 1 indicate that the risk-taking, proactiveness, innovation and autonomy dimensions showed some agreement, albeit low, thereby demonstrating the presence of EO in social enterprises. However, competitive aggressiveness tended towards slight disagreement, albeit low, showing a lack of competitive aggressiveness in social enterprises. H3 is therefore not confirmed, as only four dimensions were present. Finally, according to the overall EO mean (3.38), this reveals that low levels of agreement exist, which indicates that EO is present in social enterprises, albeit at a very weak level, thus confirming H1. However, when delving deeper into each dimension, we found that certain dimensions are in fact present. In particular, respondents agreed with item R3 under managerial risk-taking: "When decision-making involves uncertainty, my organisation proceeds with caution, so costly mistakes aren't made" (3.87). This demonstrates that respondents believe that decision-making must be done with caution. Bezuidenhout (2017) agrees with such conclusion, as the nature

of the social enterprise is to proceed with caution to ensure that their markets are not over-promised and then under-delivered. The employee risk-taking dimension signalled strong agreement in relation to item R6 – "Exploring and experimenting opportunities are allowed in my organisation" (4.03) – which showed that the exploration of opportunities is apparent in a social enterprise. Llopis *et al*. (2013) revealed that risk-taking and innovation in terms of opportunities can enhance the performance and survival of an organisation. The innovation dimension demonstrated strong agreement in relation to item I5 – "My organisation is creative in the way it does things" (4.01) – which evinces that social enterprises are regarded as creative organisations. This agrees with previous studies, as businesses have a requirement of being creative, even more so in the non-profit sector (Barrett, Balloun, & Weinstein, 2005). However, respondents also showed disagreement in terms of proactiveness and competitive aggressiveness. They especially signalled disagreement in proactiveness dimension in relation to item P6: "My organisation enjoys competitive clashes with competitors" (2.46). This demonstrates that social enterprises tend not to enjoy competitive clashes as the nature of a social enterprise is to collaborate to save costs and share expertise, which is seen as more beneficial, as also revealed in previous studies by Randle, Leisch, and Dolnicar (2013). However, the mean indicates that there was disagreement about the existence of competitive aggressiveness within social enterprises. This is confirmed by Karlsson and Wiberg (2017), as social enterprises are once again seen to collaborate in order to help each other grow.

Inferential Statistics

We employed analysis of variance (ANOVA) to determine if the type of social enterprise affected the observed level of EO. As group sizes were unequal, the harmonic mean of the group sizes is used. Levene's test of homogeneity was conducted to determine which dimensions violated the homogeneity of variances. Managerial risk-taking, employee risk-taking, innovation, proactiveness, competitive aggressiveness and autonomy dimensions indicated values of 0.978, 0.176, 0.348, 0.589, 0.133 and 0.104 respectively. This ascertains that no dimensions violated the homogeneity of variances as they were above $p > 0.05$.

Table 2. Analysis of Variance

Dimension	Sig. Value	Observations
Managerial risk-taking	0.296	342
Employee risk-taking	0.005	342
Innovation	0.000	342
Proactiveness	0.009	342
Competitive aggressiveness	0.000	342
Autonomy	0.084	342

Source: own study.

Table 2 indicates that – for managerial risk-taking and – autonomy no statistically significant difference exists between the type of social enterprise and these dimensions. However, employee risk-taking, innovation, proactiveness, and competitive aggressiveness dimensions were below $p < 0.05$, which demonstrates that a statistically significant difference exists between the type of social enterprise and these four dimensions. The statistically significant differences amongst the three types of social enterprises were further explored using Post Hoc Tables, which indicated where the difference was between the groups. We

found that employee risk-taking differed between a mission-centric organisation and a social enterprise, which focuses on the commercialisation of social services (0.011). This concurs with Blumberg (2008) and Henry (2016), who find that different enterprises tend to offer different activities to its employees. However, social goals are often placed above financial returns in social enterprises, which impacts personal risk-taking (Haughton, 2008). In this way, it is imperative to ensure that employees are not harmed in any way. Hence, social enterprises develop programs for risk management. In terms of innovation, a statistically significant difference was found between a mission-centric organisation and one focused on the commercialisation of social services (0.001). Morris, Webb, and Franklin (2011) agree with that conclusion and state that, when organisations have different missions, the existing innovation tends to differ. We may attribute this to the entrepreneurial or non-entrepreneurial nature of the enterprise and its leadership (Helm & Andersson, 2010). A statistically significant difference was also found between the level of EO and the proactiveness dimension between the mission-centric organisation and the one focused on the commercialisation of social services (0.019). This agrees with Morris, Webb, and Franklin (2011), as the level to which an enterprise will support proactiveness depends on the level of social innovations. Finally, a statistically significant difference was found between the level of EO and the competitive aggressiveness dimension, between the mission-centric organisation and the one focused on the commercialisation of social services (0.004), but also between the mission-centric organisation and the social enterprise unrelated to its mission (0.000). H2 is therefore confirmed in that only some dimensions of EO are affected by the type of social enterprise. The difference found is classified as a moderate effect in terms of effect size, which refers to the mission-centric organisation and the social enterprise unrelated to its mission. According to Austin *et al*. (2006), social enterprises prefer collaborating instead of competing. This also aids them in building market legitimacy by inter-organisational collaboration (Alarifi, Robson, & Kromidha, 2019).

CONCLUSIONS

South Africa is home to many societal issues, such as poverty, unemployment, and crime. In the quest to combat these troubles, social enterprises attempt at providing products and services to help the individuals affected by such societal issues. However, combatting these issues is only one of the struggles that social enterprises face, as these enterprises often fail due to their inability to exercise entrepreneurial behaviour necessary to succeed and grow. In order to determine the level of social enterprises entrepreneurial behaviour, the current study attempted to determine the level of entrepreneurial orientation (EO) present in these organisations. The study reveals that EO does in fact exist within social enterprises in South Africa, but only four of the five EO dimensions appear and at low levels. These dimensions include *risk-taking, innovation, proactiveness, and autonomy.*

The study faced certain limitations, most prominently in terms of cross-sectional design. Furthermore, due to the fact that no comprehensive database on social enterprises exists in South Africa, several publicly available databases were utilised which contained some outdated information. Lastly, some respondents experienced difficulties answering the questionnaire as English was not their first language.

Future research in this field could include furthering a qualitative study instead of a quantitative study in order to obtain a more in-depth look into social enterprises, as qualitative research would require interviews rather than just close-ended survey questions. Furthermore, future researchers could conduct a comparative study of EO in a for-profit organisation versus a not-for profit organisation. This would then reveal the exact difference that exists between the levels of EO in these two organisations. Finally, future researchers could analyse the strategies apparent in different types of enterprises in terms of employee risk-taking, innovation, proactiveness, and competitive aggressiveness due to the fact that it was revealed in our findings that these dimensions differ based on the type of social enterprise.

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The Performance of High-Growers and Regional Entrepreneurial Ecosystems: A Research Framework

Marta Gancarczyk

ABSTRACT

Objective: The objective of this research is to elaborate a framework that explores the relationships between the performance of high-growth enterprises and the characteristics of regional entrepreneurial ecosystems (EEs).

Research Design & Methods: This conceptual article adopts a multidimensional and profiling approach to the characteristics of EEs. The methodology is based on the combined narrative and systematic literature reviews.

Findings: Five propositions as to the relationship between growth and performance of firms in the regional context, as well as to the impact of various regional profiles on the growth and profitability of firms were elaborated. The final outcome of this synthesis is a research framework.

Implications & Recommendations: The implication of the proposed framework includes the development of testable hypotheses for further empirical investigation. The recommendation is to adopt a profiling method of assessing the effect of EEs.

Contribution & Value Added: The research contributes by setting out a direction for empirical studies that would test the impact of EE profiles and result in their quantitative taxonomies. The value added consists in reflecting the heterogeneity of EEs and their output evaluation rather than input characteristics.

Article type: conceptual article

Keywords: entrepreneurial ecosystem; region; firm growth

JEL codes: L25, L26, L38, L52, L53

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INTRODUCTION

There is rich evidence of the economic contribution of high-growth firms toemployment, value-added, and innovation (Birch, Haggerty, & Parsons, 1995; Coad, 2009; Stam *et al.*, 2006; Acs, Parsons, & Tracy, 2008; OECD, 2007; 2010; Wach, 2012). This input is one of the rationales for the on-going shift in industrial and entrepreneurship policies, from the focus on start-ups and general entrepreneurial activity to performance and productive entrepreneurship, i.e. quality ventures that turn to scale-ups, high-growers or unicorns (Baumol, 1996; Mason & Brown, 2014; Isenberg & Brown, 2014; Acs *et al.*, 2017; Stam, 2015; 2017).

Within the extensive research on high-growth enterprises, the importance of performance as profitability vs growth as size increase is rarely investigated (Davidsson, Steffen, & Fitzsimmons, 2009; Steffen, Davidsson, & Fitzsimmons, 2009; Zbierowski, 2012). Nevertheless, both theory and practice point to the difference between growth as size increase and performance as economic efficiency (Brown & Mawson, 2016; Brown, Mawson, & Mason, 2017; Achtenhagen, Naldi, & Melin, 2010; Bolek, 2018; Marris, 1964). Expansion is measured by revenue, employment, asset value or value-added dynamics, and performance denotes economic efficiency, measured by profitability dynamics (Brown *et al.*, 2017; Achtenhagen, Naldi, & Melin, 2010; Nicholls-Nixon, 2005; Marris, 1964). Moreover, growth is rather a means to increase economic efficiency than the ultimate objective of enterprises (Achtenhagen, Naldi, & Melin, 2010). Moreover, profitability is conducive both for survival and sustainable growth (Davidsson, Steffen, & Fitzsimmons, 2009; Mogos, Davis, & Baptista, 2015). Beside firm- and entrepreneur-specific characteristics, it is recognized that environmental conditions affect growth and performance of firms (Brown, Mawson, & Mason, 2017; Capozza, Salomone, & Somma, 2018; Wiklund, Patzelt, & Shepherd, 2009). However, the environmental factors are under-researched causes of firm expansion relative to capability factors (Brown & Mason, 2017; Welter, 2011; Zahra & Wright, 2011).

Recently, the role of contextual, environmental conditions has gained importance in the entrepreneurship research focused on venture creation and expansion (Chandler, McKelvie, & Davidsson, 2009; Wach, 2008; Lisowska, 2012; Welter, 2011; Zahra & Wright, 2011). This context is often presented as entrepreneurial ecosystems (EEs) that involve interrelations among industrial, social, and institutional conditions in specific territorial units (Mason & Brown, 2014; Isenberg, 2010). The idea of EEs emerged as a response to the shift in economic policy toward productive entrepreneurship and from its inception it has been centred around firm growth (Stam & Spigel, 2016; Mason & Brown, 2014; Stam, 2017; Acs *et al.*, 2017). The major research and policy problem of the EE literature is how EEs can enhance the growth and performance of firms.

Considering the interrelated fields of firm growth and EEs, research on the impact of EEs on firms' expansion is scarce (Acs *et al.*, 2017; e.g., Auerswald & Dani, 2017; Thomas, Sharapov, & Autio, 2018). Particularly, there is a gap in investigating EEs' impact on profitable and thus sustainable growth. Consequently, the objective of this article is to develop a research framework that explores the relationships between the performance of high-growth enterprises and the characteristics of regional entrepreneurial ecosystems.

The article is conceptual in nature and adopts the method of combined narrative and systematic literature reviews, as justified by the underexplored research on the growth-

profitability nexus and by the initial stage of EE studies. Moreover, integrating these two streams into one research problem is also in the inception phase of investigation.

Our article addresses research gaps, i) in the area of the role of entrepreneurial ecosystems in the performance of high-growers, ii) in the area of interdependencies between growth and performance of enterprises. Consequently, this study intends to provide three contributions. First, it advances the literature on entrepreneurial ecosystems, by proposing how different profiles of EEs contribute to firms' growth and performance. Second, it adds to the studies on entrepreneurial growth, by proposing how the performance of high-growers is conditioned by the context. Third, it enables knowledge accumulation by proposing the research framework that integrates firm growth and EE studies.

After the introduction, in the Material and Methods section, we present a methodological background of the study. The Literature Review and Theory Development section proposes a research framework for studying the impact of EE characteristics on the performance of high-growers. The Discussion section synthesizes the research in relation to extant literature, as well as explains its contribution. Conclusions, limitations, and implications for further investigations, entrepreneurial practice, and policy follow in the last section.

MATERIAL AND METHODS

The article combines two interrelated research streams, namely, (1) studies on firm growth and (2) studies on the entrepreneurial ecosystems, thus seeking knowledge accumulation and advancements in the both streams. This approach is justified by the interrelated research gaps that are present in those streams, and that can be resolved by the formulation of the integrative problem. We adopt a conceptual approach, with the use of narrative literature review as a major method and systematic literature review as a complementary method. Both methods are subordinated to the expected outcome of developing a research framework.

Therefore, the research procedure involved two major phases.

(i) Narrative literature review.

Narrative literature review is justified by the breadth and early development stages of the fields under study (Collins & Fauser, 2005). The two research fields of growth-profitability nexus and EEs are initial and underexplored, while their combination makes the search broad. As an outcome, narrative reviews are expected to identify specific research questions or propositions (Green, Johnson, & Adams, 2006). Relative to systematic literature review, this type of research involves a subjective component. However, the selection procedure and choices need to be explained (Green, Johnson, & Adams, 2006).

The search was performed predominantly in the databases of Web of Science, Scopus, and Proquest, as well as monographs filtered through Google Books. We screened primarily peer reviewed leading journals on entrepreneurship and regional development, indexed in Web of Science and/or Scopus. The focus was on the theoretical and empirical papers in the area of:

- firm growth, particularly the performance of high-growers and the role of regional environment in this regard,
- entrepreneurial ecosystems, particularly their essence and impact on the growth and performance of firms.

The final sample counted more than 70 academic peer-reviewed papers and monographs. The outcomes of the narrative literature review were as follows:

- the identification of the major gaps in the two interrelated fields of firm growth and EEs and the formulation of the major, integrated research problem,
- the acknowledgement of the drawbacks of extant methodological approaches to the quantitative evaluation of the EE impact,
- the choice of a profiling approach to synthesize the findings from the literature reviewed and to guide the final framework.

Extant conceptual approaches to EES have identified sets of actors and factors that combine to generate productive entrepreneurship. However, little is known about the governance mechanisms, i.e. how relationships among EE components are coordinated (Stam & Spigel, 2016; Brown & Mason, 2017; Stam, 2017; Colombo *et al.*, 2019; Audretsch & Link, 2019; Colombelli & Paolucci, 2019). This prevents reflecting the systemic nature of EEs (Brown & Mason, 2017). In order to address this deficiency, we adopted extant models of governance and innovation that put stress on causal relationships among systemic components (Acs *et al.*, 2017; Brown & Mason, 2017).

Moreover, extant methodologies focus on input characteristics of EEs, such as institutional density, venture capital activity or patents (GC, 2018; Stangler & Ben-Masterson, 2015). Although the attention to outputs is recommended, the evidence of EE outcomes in terms of the performance of growth firms and scale-ups remains limited (Acs *et al.*, 2017; Stam, 2017; Nicotra *et al.*, 2018). In response to this gap, we evaluate the effect of EEs on the growth and performance of regional enterprises.

Although the case-based empirical evidence on EEs is developing (e.g., Auerswald & Dani, 2017; Cunningham, Menter, & Wirsching, 2019; Thomas, Sharapov, & Autio, 2018), quantitative studies are still scarce and largely unsuccessful in confirming the impact of EEs on the performance of regions and firms (Bruns *et al.*, 2017; Acs *et al.*, 2017). The cause might be unique characteristics of each territory (Acs *et al.*, 2017; Mason & Brown, 2013; Martin & Sunley, 2003), while extant methodologies tested sets of factors expected to bring similar effects in heterogeneous locations. Following the recommendation by Acs *et al.* (2017) as well as Brown & Mason (2017), we adopted extant models of regional governance as canvas to identify various profiles of regional EEs (Markusen, 1996; Sturgeon, 2003; Guerrieri & Pietrobelli, 2004; Simsek, Heavey, & Fox, 2017; Law *et al.*, 1998). The models were revisited and evaluated based on the advancements in the regional development literature. To synthesize these advancements, the systematic literature review was performed in the next step of the research.

(ii) Systematic literature review in the area of the impact of regional environment on firms' growth and profitability.

The systematic review was to explore a more strictly defined topic that emerged as a result of the narrative literature review (Green, Johnson, & Adams, 2006). The review was focused on the impact of regional environment on firms' growth and profitability.

The investigation was performed in the Scopus and Web of Science databases. The search phrase combined the key words of "firm*/compan*y growth" or "high grow*th" and region* or "region* al environment," to be found in titles, abstracts, or key words. The Scopus database produced more than 2500 and Web of Science more than 600 results in the

first phase. However, after limiting the investigation to the fields of economics, business, social science and economic geography, Scopus revealed 276 results. The focus was on the English language articles published starting from 2000, to reflect the knowledge development after the considered models of regional innovation and governance were published (Markusen, 1996; Sturgeon, 2003; Guerrieri & Pietrobelli, 2004). Another criterion was the journal's interest and competence in the field, confirmed by at least four publications within the topics under research for Scopus and two publications for Web of Science, due to the latter being more selective. The next step included screening the abstracts according to the paper's relevance for the research, which resulted in 43 articles combined from both databases. The limited number of relevant papers reflects an underexplored nature of the area under study. Considering this nature, we followed the recommendation by Hoon (2013) to perform an additional manual search. The investigation was exercised in the area of industrial district and regional cluster literature to expand the evidence by 32 papers. The literature in this area is considered particularly relevant for understanding the development of productive entrepreneurship in the region (Isenberg, 2010; Brown & Mason, 2017).

When reviewing the final sample of papers, we particularly focused on the characteristics of regional environments that had an effect on the growth and performance of firms. These characteristics were grouped according to the structural elements derived from the regional governance and innovation models (Markusen, 1996; Sturgeon, 2003; Guerrieri & Pietrobelli, 2004).

LITERATURE REVIEW AND THEORY DEVELOPMENT

The Growth-Performance Relationship in the Regional Context

There is an increasing recognition that the economic importance of entrepreneurial activity depends on quality enterprises or productive entrepreneurship (Baumol, 1996; Birch *et al.*, 1995; Coad, 2009; Stam *et al.*, 2006; Acs *et al.*, 2008; OECD, 2007; 2010). These are high growth-oriented firms that innovate based on the investment in R&D, and expand into new products, processes, and markets applying technological advancements (OECD, 2010). The contribution of high-growers to employment, value-added and innovation is disproportionally large relative to their small representation in the population of enterprises (Birch *et al.*, 1995; Coad, 2009; Stam *et al.*, 2006; Acs *et al.*, 2008). The remaining, predominant population expands only incrementally or does not grow at all, maintaining a stable base for the economy, however, with a limited contribution to its dynamics (Coad, 2009). The firm's high-growth is predominantly defined as considerable size increase within a short time, which is associated with qualitative upgrading of capabilities (Penrose, 1959; Moreno & Casillas, 2007). It is often assumed that rapid expansion features at least doubling the initial size, as measured by sales, employment, asset value or value-added, within 3-5 years (Moreno & Casillas, 2007; Birch *et al.*, 1995; Smallbone *et al.*, 1995; Acs, Parsons, & Tracy, 2008; OECD, 2007; 2010). The investigation of performance is the more compelling that high growth involves risk and even uncertainty, due to considerable investment in technological innovations and new markets (OECD, 2010). Such an intensive investment is challenged by uncertainty, as well as low levels of liquidity and solvency, which raises concerns regarding the growth-performance relationship (Oliveira & Fortunato, 2006).

The extant studies on firm growth determinants are largely inconclusive as to the consistent set of growth and profitability determinants (Shepherd & Wiklund, 2009). These studies are predominantly focused on the resource-based factors, such as entrepreneurs' and firms' characteristics, with limited attention to the impact of environmental context (Chandler, McKelvie, & Davidsson, 2009; Brown & Mason, 2017). However, the environmental influences are increasingly recognized as considerable explanatory factors of entrepreneurial choices (Brown & Mason, 2017; Welter, 2011; Welter, Baker, & Wirsching, 2019; Zahra & Wright, 2011; Lipińska, 2018). They are also promising in resolving the ambiguity of findings as to expansion determinants (Chandler, McKelvie, & Davidsson, 2009; Brown & Mason, 2017).

The few studies that explore the relationships between growth and profitability focus on such characteristics of firms pursuing growth as age and earlier growth and profitability (Wiklund, 1999; Garnsey *et al.*, 2006; Steffens *et al.*, 2009; Glancey, 1998; Bolek, 2018). Earlier growth affects future prospects of growth and profitability (Wiklund, 1999; Garnsey *et al.*, 2006; Steffens *et al.*, 2009; Botazzi & Secchi, 2006; Coad, 2009). Growth is cumulative and self-reinforcing, i.e., prior expansion produces growth and efficiency due to dynamic increasing returns to growth (economies of scale, scope, network, and experience) (Botazzi & Secchi, 2006; Coad, 2009). However, it was also found that profitable low-growers are more likely to accomplish both future high growth and high profitability (Garnsey *et al.*, 2006; Davidsson, Steffen, & Fitzsimmons, 2009). Compared to high-growth but low-profitability firms, profitable low-growers are also less exposed to the threat of future low growth and low performance (Davidsson, Steffen, & Fitzsimmons, 2009). Other studies indicate a trade-off between growth and profitability due to time compression diseconomies, when the faster the expansion, the higher the expansion cost, and due to several management problems (Davidsson *et al.*, 2008; Dierickx & Cool, 1989; Steffens *et al.*, 2009; Markman & Gartner, 2002; Hambrick & Crozier, 1985; Nicholls-Nixon, 2005). The above research evidences the relationship between growth and profitability dynamics, however, it remains inconclusive whether the nature of this relationship as positive or negative, and regarding what moderates this relationship.

The unexplained variance in growth and venture creation determinants attracted the attention to the role of differing entrepreneurial contexts, including regional environments (Brown *et al.*, 2014; Capozza *et al.*, 2018; Chandler *et al.*, 2009; Welter, 2011; Zahra & Wright, 2011). This view resonates with the earlier growth-of-the-fitter assumption stating that expansion is accomplished by those who best adapt to and most efficiently exploit the environment (Nelson & Winter, 1982; Alchian, 1950; Downie, 1958; Aldrich, 1999, Dosi & Grazzi, 2006; David, 2006). The importance of environmental niches is emphasized, where necessary resources can be exploited (Hannan & Freeman, 1977; Hannan, 2005; Geroski, 2001).

Consequently, firms featuring the same regional context might experience similar growth and profitability patterns (Brown *et al.*, 2014; Capozza *et al.*, 2018; Dosi & Grazzi, 2006; Chandler, McKelvie, & Davidsson, 2009; Coad, 2009; Lumpkin & Dess, 1996). The extant findings prove the importance of favourable context conditions (resource munificence, financial and institutional support) for firm growth and profitability (Bruns *et al.*, 2017; Barbosa & Eiriz, 2011). Environments differ in resource munificence and can support growth and profitability by the access to financing (Wiklund, 1999; Wiklund & Shepherd, 2003;

Chandler *et al.*, 2009; Gagliardi, 2009; Colombo & Grilli, 2005) and institutional support (Janssen, 2009; Baughn *et al.*, 2010; Corrente *et al.*, 2019). Moreover, territorial units feature different levels of GDP, market, and innovation dynamics that affects firms' growth and performance (Wiklund & Shepherd, 2003; Coad, 2009; Kangasharju, 2000; Lumpkin & Dess, 1996; Corrente *et al.* 2019). Based on the evidence that various regional environments differently affect the growth and performance of firms, we formulate the first proposition.

Proposition 1: The relationship between growth and profitability of enterprises is moderated by the regional context.

The Characteristics of Regional EEs and the Performance of High-Growers

The EE concept recognizes the importance of territorial environments for productive entrepreneurship that is best reflected in high-growers and scale-ups or unicorns (Mason & Brown, 2014; Brown & Mason, 2017; Stam, 2017; Spigel, 2016; Dominiak, Wasilczuk, & Starnawska, 2016). The EE concept focuses on the performance of firms and territorial units, especially local and regional settings, however, countries and world regions are also considered (Bruns *et al.*, 2017). It emerged as a policy measure to support quality start-ups and firm growth rather than entrepreneurship at large. As such, EEs are one of the markers of the new industrial policy that acknowledges an uneven contribution of entrepreneurial activity and focuses on the enterprises that provide the largest and most sustainable outcomes in terms of employment and value added (Brown & Mason, 2017).
Entrepreneurial ecosystems are presented as sets of interrelated actors and factors that generate productive entrepreneurship in specific territorial units (Stam, 2017; Stam & Spigel, 2016). Although broad, this definition captures the core of EEs as focused on the performance of firms and regions within spatial, geographical boundaries (Mason & Brown, 2014; Brown & Mason, 2017; Acs *et al.*, 2017). Other definitions are more focused on the components of EEs, emphasizing types of actors, factors and dimensions that constitute this phenomenon (Mason & Brown, 2014; Brown & Mason, 2017; Spigel, 2017; Nicotra *et al.*, 2018). The composition of actors and factors is unique to the location considered, however, the frameworks of EEs propose some most relevant and universal components (Brown & Mason, 2017). The actors may include ambitious entrepreneurs (high-growth, innovative or productive entrepreneurs), innovative, highly qualified employees, as well as different levels of government (Mason & Brown, 2014; Stam, 2017; Stam & Spigel, 2016). The major dimensions have been structured into framework conditions, macro-economic conditions and region-specific conditions, suggesting the breadth of the phenomenon under study (Stam, 2017; Stam & Spigel, 2016). The analysis needs to cover both business-level factors, region-specific, socio-cultural factors, including human and social capital factors, and institutional arrangements among local, regional, and central governments (Brown & Mason, 2017; Acs *et al.*, 2017). Moreover, the links with external, international environment need to be considered as the expansion of high-growers and unicorns cannot be encapsulated within one territorial unit (Acs *et al.*, 2017).

Particular locations or regions demonstrate unique elements and governance mechanisms, therefore, "one size fits all" solutions do not apply for the purpose of research and policy (Mason & Brown, 2014; Brown & Mason, 2017; Capozza *et al.*, 2018). It is instrumental to identify some alternative models or frameworks that reflect the variety of territorial EEs, instead of promoting one universal model for all locations (Baker &

Powell, 2019; Hermann, 2019). The alternative models might serve as canvas to understand the nature and implications of a particular EE and to address it with tailored policy measures (Colombelli & Paolucci, 2019).

The EE concept builds on and subsumes the earlier concepts of regional environment (Stam, 2017; Mason & Brown, 2014; Isenberg, 2010). The theorists of EEs emphasize strong linkages between this concept and the earlier conceptualisations of the entrepreneurial context, such as clusters, industrial districts, and regional innovation systems (Stam, 2017; Mason & Brown, 2014; Isenberg, 2010). The EE concept adds to these accomplishments and differentiates from them by focusing on the entrepreneur as the outcome and major driver of the EE governance and dynamics (Acs *et al.*, 2017; Fernández-Serrano, Martínez-Román, & Romero, 2018; Isenberg, 2010).

Brown and Mason (2017) synthesize and delimit the concept of EEs taking the spatial agglomeration phenomenon and industrial district literature as a starting point. The extant models of regional innovation networks point not only to actors and factors, but also to their causal logics (Markusen, 1996; Guerrieri & Pietrobelli, 2004; Sturgeon, 2002). Markusen (1996) followed by Guerrieri and Pietrobelli (2004), as well as Sturgeon (2003) adopt an industrial district and governance perspective on the regional environment. However, the industrial perspective is not limited to one industry only, but it is rather a nexus of related industries resembling a regional specialised diversification or smart specialisation (Markusen, 1996; Foray, 2013; 2014; 2017). Industrial districts represent "sticky places" that make it difficult for smaller firms to leave, encouraging them to stay and expand, and attracting newcomers into the region (Markusen, 1996). They can be perceived as regional ecosystems comprising actors, with the leading role of firms interacting with human resources, local and central government, and resources, such as knowledge and technical support, as well as financing.

We derive the EE profiles from Markusen's typology (1996), combined with later insights from Guerrieri and Pietrobelli (2004) and Sturgeon (2002) that put stress on the role of industry technological advancement and on the importance of EEs' insertion into global value chains (Sturgeon, 2002). Following these insights, EEs can be categorised into four types,[1] namely SME-dominated ecosystems, large and small firms' ecosystems, external investment-based ecosystems, and government-backed ecosystems (Markusen, 1996; Guerrieri & Pietrobelli; Sturgeon, 2002). Each of these frameworks differentiates by structural features in the area of dominant firms (size, location of ownership and investment decisions), types of relationships (the strength duration of contracts) and collaboration culture, level of qualifications and mobility of personnel among firms, type of competitive strategy, stabilising mechanisms of sharing risk and innovation, as well as the role of local and central government. The breadth of actors and factors largely covers the dimensions of EE concepts (Mason & Brown, 2014; Brown & Mason, 2017; Spigel, 2017; Stam, 2017). Each type differs in implications for firms' performance and growth, as well as the sustainability of enterprises and the entire regional ecosystem. They are networked governance systems centred around and driven by the type of firms, particularly their size and ownership.

An SME-dominated regional EE is based on the population of small and medium-sized enterprises (SMEs) with local owners and thus investment decisions determined locally

[1] The original types of regional environments in Markusen's (1996) work were called "Marshallian," "Italianate," "hub and spokes," "satellite," and "state-anchored" districts.

(Pahnke & Welter, 2019). The strong and long-term cooperation among SMEs as well as the culture of mutuality and trust, generate stabilising mechanisms of sharing risk and innovation within joint projects (Litzel, 2017; Schröder, 2013; Malizia & Motoyama, 2019). SME networks generate positive scale and scope economies, and knowledge externalities (Grillitsch & Nilsson, 2019; Saxenian, 2000). The sources of financing and technical advice are accessible as business support institutions, e.g. business incubators, technology parks, seed funds, venture capitalist (Cumming, Werth, & Zhang, 2019;). High qualifications of human resources and their mobility among firms enable knowledge spillovers and creativity (Bhawe & Zahra, 2019; Hodges & Link, 2019; Lehmann, Schenkenhofer, & Wirsching, 2019). Consequently, the basis for competitive advantage are differentiation and product innovations rather than scale economies (Hodges & Link, 2019; Schröder, 2013). The role of local and regional governments is more important than the role of central government. This type of regional governance is considered as providing good prospects for stable and profitable growth of firms and the entire territorial unit. It is based on strong local entrepreneurship, innovation, and investment decisions made by local owners (Markusen, 1996; Malizia & Motoyama, 2019). However, the SME-based ecosystem has limited access to international markets and technologies, due to insufficient capacity of SMEs to organise foreign expansion (Gancarczyk & Gancarczyk, 2018; Felzenstein *et al.*, 2015; Francioni, Musso, & Vardiabasis, 2013; Guerrieri & Pietrobelli, 2004; Brown & Mawson, 2016). Moreover, the growth of small firms is random and featured by discontinuity relative to the growth of large firms. The latter expand in a more persistent and predictable way, thus stabilising the regional economy (Brown & Mason, 2017; Coad, 2009). Considering the lack of complementarity between small and large firms and a limited international reach of this ecosystem (Hermann, 2019), we formulate the following proposition.

Proposition 2.1: SME-dominated regional EEs are associated with moderate rates of enterprise growth and profitability relative to other types of EEs.

This type of EE can be more open to the international environment if the regional industrial base represents higher levels of technology advancement and R&D intensity, as well as technological and market newness (Sussan & Acs, 2017; Boix & Trullén, 2007; Agostino *et al.*, 2015; Aslesen & Harirchi, 2015; Massini, Perm-Ajchariyawong, & Lewin, 2010; Cusmano, Mancusi, & Morrison, 2011; Kuratko *et al.*, 2017). Moreover, regional knowledge transfer institutions, such as universities, can play a vital role in opening an EE to global value chains (Cunningham, Menter, & Wirsching, 2019; Ghio, Guerini, & Rossi-Lamastra, 2019; Meoli, Paleari, & Vismara, 2019; Miller & Acs, 2017; Duschl *et al.*, 2014; 2015; Głodek, 2018). Proposition 2.2. assumes moderating roles of technology advancement and knowledge transfer institutions in SME-dominated EEs.

Proposition 2.2: The growth and performance of enterprises in an SME-dominated EE is strengthened provided that the industrial focus of this EE is high-technology and supported by knowledge-transfer institutions.

The large and small firms' ecosystems are centred around large enterprises (LEs) with headquarters located in the region where the major investment decisions are determined. LEs as focal firms and hubs pursue strong and long-term cooperation links with local SMEs, acting as sources of financing and technology transfer to regional enterprises (Giunta, Nifo, & Scalera, 2012; Brown & Mason, 2017; Pahnke & Welter, 2019; Schröder, 2013). They are

also a source of spin-offs, spin-outs, and business group affiliations that may strengthen the growth and performance of local enterprises (Sornn-Friese & Sørensen, 2005; Klepper, 2006; Kalantaridis *et al.*, 2012; Bamiatzi, 2014). These large "block-buster" or scale-up entrepreneurs bring knowledge spillovers by launching corporate accelerator programmes, by mentoring, board membership, and advisory (Colombo *et al.*, 2019; Mason & Brown, 2014). They also act as serial entrepreneurs, angel investors, and venture capitalists (Colombo *et al.*, 2019; Malipiero, Munari, & Sobrero, 2005; Munari, Sobrero & Malipiero, 2011). Thus LEs substitute for external business support institutions and collaborative initiatives among small firms, typical of SME-dominated EEs (Koch & Strotmann, 2006). Moreover, LEs form strong relationships with the cross-regional and international environment, being global pipelines and gate-openers to foreign markets and sources of technology for local entrepreneurs (Brown & Mason, 2017; Schröder, 2013; Broome, Moore, & Alleyne, 2018; Gilbert, McDougall, & Audretsch, 2008). In this ecosystem, there is a larger fraction of human resources with lower qualifications to perform standardised manufacturing tasks. The preference for working conditions in LEs lowers the personnel mobility between SMEs and large enterprises (Markusen, 1996). The basis for competitive advantage are scale economies and process innovations as required by the strategies of LEs. Central government becomes a key partner to LEs, diminishing the role of regional government (Gereffi & Lee, 2016). The large and small firms' ecosystem ensures stability and efficiency for local entrepreneurship and the entire territorial unit. This premise is based on the strength of focal firms. These are embedded in the region but with international sourcing opportunities that might turn to so called "genetic" proximity to other growing business environments (Colombo *et al.*, 2019; Chaudry & Ikram, 2015; Rice *et al.*, 2012; Munari, Sobrero, & Malipiero, 2011). The collaboration culture of this EE is hierarchical due to subcontracting, dependent position of SMEs (Gancarczyk & Gancarczyk, 2016). This might lower their profitability, however, the advantage of market channels and knowledge spillovers from LEs outweigh these limitations (Brown & Mawson, 2016; Brown & Mason, 2017; Grillitsch & Nilsson, 2019). Moreover, LEs demonstrate more predictable and persistent growth than small firms, thus stabilising the regional economy and acting as the source of growth of SMEs subcontractors (Brown & Mason, 2017; Coad, 2009). Therefore, we formulate Proposition 3.1.

Proposition 3.1: Large and small firms' regional EEs are associated with higher rates of enterprise growth and profitability relative to other types of EEs.

The positive evaluation of this ecosystem may be weakened if we consider a moderating role of technology. In a lower-technology EE, the infusion of knowledge to small firms is limited and cost pressures are strong, due to more standardised activities outsourced by LEs (Stevenson, Kuratko, & Eutsler, 2019; Robson & Obeng, 2008). This observation leads us to Proposition 3.2.

Proposition 3.2: The growth and performance of enterprises in a large and small firms' EE is weakened if the industrial profile of this EE demonstrates lower technology.

An external investment ecosystem depends on large subsidiaries of transnational corporations (TNCs) with headquarters, major investment decisions, and sources of finance and technology out of the region (Markusen, 1996; Guerrieri & Pietrobelli, 2004; Sturgeon,

2002). Local SME population is weak, featuring limited and short-term business collaboration, financing or knowledge transfer from TNC subsidiaries (Ernst, 2004; Pavlínek, 2012, Rugraf, 2010; Pisoni *et al.*, 2013; Filippov & Duysters, 2011). The latter form strong linkages with corporate headquarters and other subsidiaries out of the region. The collaborative culture is weak and SMEs have minor opportunities for absorbing knowledge and finance through transacting with subsidiaries (Gauselmann, Knell, & Stephan, 2011). Moreover, external financing and technical support are limited for SMEs and they feature hierarchical relations with TNC branches that impose cost cuts and lower margins (Biggiero, 2006). Regional SMEs do not establish joint initiatives to share risk and innovation through business associations or chambers of commerce. Subsidiaries compete on scale economies with limited commitment to innovative activities except for non-technological innovations (Gauselmann, Knell, & Stephan, 2011; De Marchi, Giuliani, & Rabellotti, 2017). The FDI-based regional economy is unstable, due to volatility of TNCs' investment that can easily move to more attractive regions. Moreover, the excessive focus of the regional economy on the TNC's specialisation crowds out innovations and firms in other areas (Pathak, Laplum, & Xavier Oliveira, 2015; Brown & Mason, 2017; Mason & Brown, 2013; Feeny, Iamsiraroj, & McGillivray, 2014). Therefore, the characteristics of external investment ecosystems are in general less favourable for stability and profitability of regional entrepreneurship.

Proposition 4.1: External investment regional EEs are associated with lower rates of enterprise growth and profitability relative to other types of EEs.

The impact of these ecosystems is moderated by the level of technology dominating in the region (Duschl *et al.*, 2014; 2015; Cusmano, Mancusi, & Morrison, 2010; Agostino, 2015; Boix & Trullén, 2007). Knowledge-intensive and high-technology regional specialisations, as well as embedded relationships with the TNC branches can result in upgrading, growth and enhanced performance of local firms (Gorynia *et al.*, 2007; Larimo & Arslan, 2013; Ivarsson & Alvstam, 2011; Lee & Saxenian, 2008; Kodama & Shibata, 2013; Simms & Trott, 2014; Yan, Chiang, & Chien, 2014). Higher technology manufacturing and service sector FDI might foster the growth and performance of local firms (Hart & McGuinness, 2003; Gancarczyk, Gancarczyk, & Bohatkiewicz, 2017).

Moreover, embedding subsidiaries by the regional government can enable local enterprises to reap benefits from FDI (Dziemianowicz, Łukomska, & Ambroziak, 2018). The establishment of collaborations and technology transfer depends also on absorptive capacity, such as human resource qualifications and capabilities of regional enterprises (Bhawe & Zahra, 2019; Fernández-Serrano, Martínez-Román, & Romero, 2018, Gancarczyk & Bohatkiewicz, 2018).

Proposition 4.2: The growth and performance of enterprises in an external investment regional EE are strengthened if the industrial focus of this EE is high-technology, regional absorptive capacity is high, and regional government is active in embedding subsidiaries.

A government-backed regional EE is built on publicly-owned institutions or firms that establish predominantly short-term and weak collaborations with local entrepreneurs (Markusen, 1996). Therefore, the enterprise population is rather modest and passive in creating joint stabilising instruments within business associations (Sternberg & Wennekers, 2005). This ecosystem suffers from the shortages of external finance and knowledge sources

that impede the growth of firms (Donati & Sarno, 2015). Lower-skilled labour demonstrates a weak capacity to absorb and benefit from public funding in the area of R&D (Tingvall & Videnord, 2018). Economies of scale in the public sector dominate as a method to compete. The government-backed ecosystems are dependent on the investment decisions of central government, which follows political cycles and budget constraints (Humphrey *et al.*, 2018). This prevents the stability of local entrepreneurship and the entire territorial unit.

Proposition 5.1: Government-backed regional EEs are associated with lower rates of enterprise growth and profitability relative to other types of EEs.

The type of innovative output in a government-backed EE depends on the type of major entities, i.e. whether they are "large and small firms" or "SME-dominated," or they are branches of government institutions that are headquartered out of the region ("external investment" ecosystem) (Arauzo-Carod, Segarra-Blasco, & Teruel, 2018). The preferred EE profile would be based on the complementarity of LEs such as large, government-owned institutions or enterprises, and SMEs. Larger entities collaborating with SMEs might be helpful in implementing regional innovation policy and specialisation (Foray, 2014; Gancarczyk & Bohatkiewicz, 2018), and in integrating the regional EE with global value chains (Pietrobelli & Rabellotti, 2011; Gereffi & Lee, 2016; Lema, Rabellotti, & Sampath, 2018; European Commission, 2016).

An alternative advantageous profile would be formed by a vibrant SME community, such as the one centred around a technology park (Markusen, 1996; PIetrobelli & Rabellotti, 2011; Arauzo-Carod, Segarra-Blasco, & Teruel, 2018). In this case, central and regional government policies may be conducive to the occurrence of firms' growth and the type of growth (Jankowska, Gotz, & Głowka, 2017; Corrente *et al.*, 2019). The examples are taxation and SME support policies that often raise the preference for business group formation instead of scaling up an individual company (Iacobucci, 2002). As a consequence, the SME-dominated structures emerge.

Proposition 5.2: The growth and performance of enterprises in the government-backed regional EE is strengthened if it assumes the large and small firms' or SME-dominated characteristics.

The Framework

The synthesis of the above literature review is a framework that explores the relationships between the performance of high-growth enterprises and the characteristics of regional entrepreneurial ecosystems.

The logics of this framework is based on the premise that EEs are heterogeneous and we need to capture this variety as alternative profiles rather than as one model only. CEEs can be categorised into types according to a set of structural characteristics, and then quantitatively investigated with the use of taxonomical approaches. These characteristics include the dominant entities in the EE, their ownership, as well as the level and type of relationships and collaboration culture, type of competitive advantage and innovation, human resource qualifications, the sources of external financing and technical advice, as well as the role of regional and central government. Propositions 1, 2, 3, 4, and 5 express the

impact of regional context on the growth and performance of enterprises. Figure 1 presents how particular EE profiles affect the growth and performance of enterprises, indicating possible dynamics due to moderating factors.

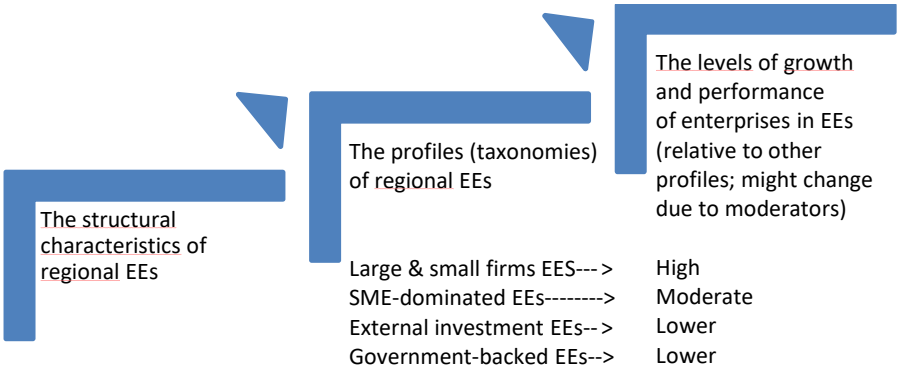

Figure 1. The framework of relationships between the performance of high-growth enterprises and the characteristics of regional entrepreneurial ecosystems
Source: own elaboration.

The prospective empirical research based on this framework would involve three phases as depicted in Figure 1. In the first phase, the structural characteristics of regional EEs need to be described. In the second phase, the profiles or taxonomies of regional EEs are identified. In the third phase, five hypotheses can be tested as to how particular profiles of EEs affect the growth and performance of enterprises. The research can confirm extant hypotheses and thus maintain the proposed typology, or it can reject or modify the profiles derived from the theory. The same refers to growth and performance implications of specific ecosystem types.

DISCUSSION

This study has integrated the research streams of firm growth and entrepreneurial ecosystems and thus it offers the following contributions.

(i) It advances the literature on entrepreneurial ecosystems, by proposing how different profiles of EEs contribute to firms' growth and performance.

The study responds to the heterogeneous nature of regional environments by offering the profiling approach rather than one ideal model of the entrepreneurial ecosystem (Acs *et al.*, 2017; Simsek *et al.*, 2017; Law *et al.*, 1998). By capturing a variety of possible solutions, we avoid the "one-size fits all" approach (Mason & Brown, 2013; Martin & Sunley, 2003; Capozza *et al.*, 2018). In our propositions, we point to a number of variants that are different but some of them are also alternative and equifinal if moderators are considered. As recommended by EE researchers (Brown & Mason, 2017; Acs *et al.*, 2017; Stam, 2017), we drew upon extant models of spatial agglomeration, particularly, industrial district and cluster literature, to ensure knowledge accumulation regarding regional

environment (Markusen, 1996; Sturgeon, 2003; Guerrieri & Pietrobelli, 2004). The input from this study consists in refreshing these models based on later developments in entrepreneurship and regional studies, and in focusing them on the issue of enterprise growth and performance. Although the idea of Markusen's (1996) regional governance types was earlier adopted by Brown & Mason (2017), we have deepened and nuanced their findings. Brown & Mason come up with only two profiles of EEs, which raises doubts whether it can be claimed a taxonomical approach that captures a variety of existing EE types. Their framework is parsimonious in identifying only embryonic (far from ideal) EEs and scale up (ideal) EEs, and thus giving a clear directions for benchmarking and improvements. On the other hand, it leaves a number of other variants unaddressed. The embryonic-scale up opposition ranges from an extremely limited number of high-quality locations that generate unicorns and global high-growers, to low-quality and underdeveloped territories. The framework proposed in this research may be treated as complementary and more nuanced approach to better capture idiosyncrasy as well as substitutability of EE resources and institutions.

Moreover, we address the current criticisms of the EE concept, such as static approach, insufficient recognition of the governance mechanisms and relationships among actors and factors, as well as input instead of output orientation in the evaluation of EEs. The extant models emphasize the components and dimensions of EEs, however, they rarely point to causal relations that would be centred around enterprises and business relationships (Stam & Spigel, 2016; Colombo *et al.*, 2019; Audretsch & Link, 2019; Colombelli & Paolucci, 2019). We propose testing the profiles of EEs – causal relations among actors and factors rather than sets of isolated determinants. The alternative profiles suggest the dynamism and evolutionary considerations, namely, transformation of the extant EE profiles to more developed ones (Guerrieri & Pietrobelli, 2004; Pietrobelli & Rabellotti, 2011; Lee & Saxenian, 2007). Moreover, we clearly emphasize the outcomes of EEs in terms of productive entrepreneurship, by underlining the importance of studying not only size increases (growth), but also the performance of high-growers (Davidsson *et al.*, 2009; Steffen *et al.*, 2009; Nicotra *et al.*, 2019).

(ii) This article advances the studies in the entrepreneurial growth, by proposing how the performance of high-growers is conditioned by the context.

In the studies on firm growth, the issues of performance are underexplored and current results are inconclusive regarding the relationships between expansion as size increase and performance as economic efficiency (Davidsson, Steffen, & Fitzsimmons, 2009; Steffen, Davidsson, & Fitzsimmons, 2009). The article proposes that this inconsistency is resolved by the inclusion of regional environment as a moderator of this relationship (Kangasharju, 2000; Lumpkin & Dess, 1996; Corrente *et al.*, 2019). We also identify how particular regional ecosystems might influence the performance of high-growers.

(iii) Finally, the proposed research framework integrates firm growth and EE studies thus enabling knowledge accumulation (Isenberg, 2010; Stam, 2017).

This integrative study enabled to formulate the advanced research problem that addresses the gaps in both study areas. We responded to this problem by acknowledging the findings and achievements of these areas, with results mutually benefitting them, as stated in points (i) and (ii) above. This enhances the upgraded theory and joint efforts

of research communities that have acted separately to date. It can also lead to more informed and comprehensive results for public policy and business practice.

CONCLUSIONS

This research has accomplished the aim to develop a framework exploring the relationships between the characteristics of entrepreneurial ecosystems and the performance of high-growth enterprises. The propositions address the research problem of how different profiles of EEs affect firms' growth and profitability. Our framework brings the implications for further research, as well as for entrepreneurial practice and policy.

First, the framework raises direct implications for further conceptual and empirical studies. This framework was accomplished with the use of a conceptual approach and based on the review of literature in the area of entrepreneurship and regional development. Due to the emerging and underexplored nature as well as integrative and broad topics, narrative review was determined as the major method (Collins & Fauser, 2005). Narrative review by nature involves subjectivity of literature choices, use of heuristics and stylised approach to a larger extent than systematic literature review does (Green *et al.*, 2006). This weakens the article's argument. Systematic search was added as a complementary method, however, we cannot claim the overall systematic approach.

The arguments in favour of combining narrative and systematic literature reviews are the quality of results and the validity of findings. Complementing the narrative review with the systematic review supports the article's contribution. The propositions and the resulting framework would be less valid, if not backed by broader evidence (Leavitt *et al.*, 2010). Moreover, combining narrative and systematic reviews is recommended to alleviate the weaknesses of each method (Hoon, 2013). The subjectivity of narrative reviews can be alleviated by systematic reviews. On the other hand, systematic reviews, although more objective than narrative ones, might still be inaccurate due to incomplete databases and technical errors. Thus, manual search and narrative reviews help to resolve this bias.
This study forms a ground for further conceptual and theoretical papers that would focus on specific questions and tackle them with systematic literature reviews (Green *et al.*, 2006; Hoon, 2013). Possible themes include policy interventions in ecosystems, evolution and upgrading of EEs, or in-depth exploration of individual dimensions of EEs, such as the collaboration patterns, leading actors, and EEs in global value chains.

Our propositions as to the impact of various EEs on firms' growth and performance were not directly derived from the models used as canvas in this study. They were formulated based on the inference from the findings of regional development and entrepreneurship studies that explored similar actors and factors. This indirect inference limits the validity of the causal relations proposed and calls for verification in empirical research (Hoon, 2013). Upon our framework and propositions, testable hypothesis can be developed to either confirm or verify the proposed causal relations and their moderators.

When formulating propositions, this research focused on identifying the major constructs rather than specific variables and their measurement. The latter should be the task for future research, when propositions need to be converted into testable hypotheses, i.e., the assumptions as to relationships among measurable variables. However, the operationalisation of the research framework and the development of testable hypotheses will be

a challenging task, and it needs to be acknowledged as a limitation of our research results. This is due to the complexity and multiple dimensions of EEs that need to be decomposed for the purpose of operationalisation (Stam, 2015). Moreover, the variety of growth measures and the role of time in measuring growth-profitability interdependencies still remain unresolved in research on firm expansion. When reviewing the literature, we found similar difficulties as already identified in the literature, namely a variety of measures applied in the sample of the reviewed papers (Achtenhagen, Naldi, & Melin, 2010). The sampled studies rarely reported the time lag effect between growth and profitability (Wiklund, 1999; Garnsey *et al.*, 2006; Steffens *et al.*, 2009; Glancey, 1998; Bolek, 2018). Considering a broad array of dimensions and constructs describing the profiles of EEs, it would not be possible to identify any patterns of growth measures relating to the EE profiles or dimensions. This aspect calls for future studies that would acknowledge the importance of expansion measures and the role of time in studying enterprise growth in regional contexts.

The findings of this article demonstrate also implications for entrepreneurial practice and policies. Entrepreneurs can recognize the influence of contextual factors on their prospects for growth and profitability, and thus understand opportunities and threats from the regional environment (Chandler, McKelvie, & Davidsson, 2009; Wach, 2008; Lisowska, 2012; Welter, 2011). Policy-makers are encouraged to consider EEs' implications for regional entrepreneurship and to plan measures tailored to their territorial units in promoting productive entrepreneurship (Stam & Spigel, 2016). Thinking in terms of alternative solutions and equifinality is stimulated this way (Baker & Powell, 2019). Moreover, the implications for policy-makers include the evolution and transformation of their territorial units towards more advanced, scale up EEs (Guerrieri & Pietrobelli, 2004; Pietrobelli & Rabellotti, 2011; Colombo *et al.*, 2019). When looking for stimulants that might drive this evolution, they can consider moderators suggested in the propositions, such as embedding FDIs, input from scientific institutions, building on the industrial base of knowledge-intensive and high-technology industries, and type of public entities established in lagged regions to foster their entrepreneurial performance.

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Human Capital and the Internationalisation of SMEs: A Systemic Literature Review

Monika Buzavaite, Renata Korsakiene

ABSTRACT

Objective: The article aims to systematise the literature on human capital for the internationalisation of SMEs.

Research Design & Methods: The research adopts the quantitative and qualitative analysis of scientific papers. Quantitatively, the study is grounded on the classification approach of prevailing literature. Qualitatively, the study adopted a content analysis of scientific papers.

Findings: The classification of scientific literature on human capital and the internationalisation of SMEs has led to the framework of prevailing studies and future research agenda.

Implications & Recommendations: The obtained results indicate that additional studies are needed on human capital and the internationalisation of SMEs, especially in the context of developing and emerging countries. There is an opportunity to investigate service sectors, especially technology-intensive firms. Future studies have to consider the organisational level human capital and include the variables capturing all aspects of human capital. There is an opportunity to investigate the contribution of on-the-job training to the development of human capital and consequently the internationalisation of firms. Finally, the application of case studies and/or interviews and qualitative methods are needed for deeper understanding of human capital and the internationalisation of SMEs.

Contribution & Value Added: The research contributes to the scientific perception of consolidation between human capital and the internationalisation of SMEs by reviewing systematically papers published in the period of 26 years and included in Clarivate analytics/Web of Science and Scopus databases.

Article type:	research article
Keywords:	human capital; internationalisation; SMEs; literature review; Clarivate analytics/Web of Science; Scopus
JEL codes:	M13, M12, M19

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INTRODUCTION

Literature on international entrepreneurship considers human capital theory as a significant theory in explaining the internationalisation of small and medium-sized firms (SMEs). The smallness and newness of these firms appear to be a major restriction, limiting the international expansion of small firms. While playing an important role in the economies of countries, SMEs are lagging behind multinational firms in the accumulation and development of human resources. An increasing number of studies in recent years highlights these issues from both academic and managerial perspectives.

International activities of firms require appropriate resources and competencies. Human capital appears to be an important resource, impacting the identification and exploitation of international opportunities. While human capital is assumed to be an important determinant of internationalisation, studies demonstrate mixed results. Some studies revealed the significance of individuals' human capital on the internationalisation of SMEs (Mozas-Moral *et al.*, 2016; Pickernell *et al.*, 2016). Meanwhile, other studies disclosed that human capital did not significantly predict the propensity to export (Omri & Becuwe, 2014). Furthermore, the studies considered only some elements of human capital. Some studies applied formal education as a proxy of human capital (Javalgi & Todd, 2011; Falk & Hagsten, 2015; Fernandez-Ortiz, Ortiz & Emeterio, 2015; Mozas-Moral *et al.*, 2016). Meanwhile, other studies focused on knowledge and experience in export markets (Freeman & Styles 2013) or previous work experience and business management experience (Jiang *et al.*, 2016). Thus, a solid foundation for future investigations is needed. The article aims to systematise the extant scientific knowledge on human capital for the internationalisation of SMEs. More specifically, the article focuses on the identification of papers which adopted human capital theory, classifying and codifying these papers and developing a framework how to address the research gaps. The increasing amount of research in other fields demonstrates the popularity of literature analysis and the bibliometric technique (Jabbour, 2013; Kampen, Akkerman, & van Donk, 2012). Thus, the article fills the literature gap on the systematic analysis of human capital and internationalisation in the small business context by identifying less investigated areas and developing fruitful recommendations for future investigations.

The article is organised as follows. Firstly, materials and methods are presented. The next section presents literature review and theory development. In the fourth section the research results are discussed. Conclusions are presented in the final section.

MATERIAL AND METHODS

The literature review appears to be the most common way to investigate various attitudes toward a particular topic (Lage & Godinho, 2010). Thus, aiming to systematise extant scientific knowledge and assess the research gaps on human capital and the internationalisation of SMEs, quantitative and qualitative analyses are applied. Quantitatively, the article is grounded in the classification approach which provides useful insights into the extant literature. The data were collected between March and June 2018. Considering the approach, suggested by Jabbour (2013), the process of literature analysis was split into sequential steps.

Firstly, a set of pre-established keywords was selected (Table 1). Corresponding to the search settings of the database, the stream of keywords was supplemented by words which could possibly refer to the same aspects in the articles (e.g. human capital, human resources). Therefore, the final stream of keywords was developed as follows: ((TS = (human capital OR human resource* AND internationalisation) AND TS = (SME* OR small firm* OR small business* OR small and medium enterprise)).

Table 1. Keywords used in search

	A N D		
O R	SME*	human capital*	internationalisation
	small firm*		
	small business*	human resource	
	small and medium enterprise		

Source: own study.

Considering the database, we selected Clarivate analytics/Web of Science (WoS) and Scopus databases. These databases are the most significant bibliographic databases and provide a journal classification system. Thus, the search in the selected databases led to the improved research accuracy (Wang & Waltman, 2016).

Aiming to get more relevant articles, the search focused on more specific criteria, such as language, document type, category and timespan. We selected the following criteria: language – English, document type – article, refined by categories – management or economics or business, timespan – 1990-2017. This search resulted in the total of 856 articles from both Web of Science and Scopus databases.

Secondly, the abstracts of articles were carefully analysed and only those matching our interest were selected. Some articles did not refer to internationalisation, human capital/human resources and SMEs. For example, if some articles focused on the human capital of SMEs and did not consider internationalisation, those articles were excluded. Thus, 65 articles from WoS and Scopus databases which precisely matched our interest were selected for further investigations (Table 2).

Table 2. Number of selected papers from Clarivate analytics/Web of Science and Scopus databases in 1990-2017

Criteria of selection	Number of papers (WoS & Scopus)
Articles resulted by key words in the search engine	856 (100%)
Articles after abstracts review	65 (7.6%)

Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculations.

Thirdly, a classification system of the research object was developed. The classification approach was grounded on the framework suggested by Amui *et al.* (2017). The framework considered the national context (coded as developed countries, developing countries, emerging and not applicable (Niebel, 2018)), the sector of analysis (coded as production, services, cross-sectional), the location from which the research came (Africa, America, Asia, Central & Eastern Europe, Oceania, Western Europe), the level of analysis (coded as individual or organisational), research methods (case studies and/or interviews, conceptual studies and/or reviews, surveys, the combination of quantitative and qualitative

methods). The final step of the classification approach led to the analysis of the obtained results and the identification of the main gaps. The adopted procedure let us apply quantitative methods and, consequently, to gain insights into the theory development. Finally, the article adopted the qualitative analysis of the papers. This approach led to the analysis of current research, the obtained results and future research questions.

LITERATURE REVIEW

In this section the review of literature on human capital for internationalisation of SMEs is presented. First, the concept of human capital is discussed and interrelations with internationalisation studies are presented. Next, the section presents the analysis of selected scientific papers according to the adopted classification scheme comprising the national context, sector, location, the level of analysis and research methods.

The Role of Human Capital in the Internationalisation of SMEs

The concept *Human capital* originated in the field of economics and was suggested by Gary Becker (1964). While initially criticised by some scholars due to allusions with slavery, later on the concept became one of the most popular topics and attracted researchers from various fields (Tan, 2014). The concept refers to any knowledge or the acquired characteristics of a person which contribute to his or her economic productivity (Garibaldi, 2006). Human capital is assumed to be a significant element of the economic growth theory which emphasizes knowledge as a significant source for increasing returns to scale and consequently for long-run growth (Storper & Scott, 2009). Thus, the growth theory focuses on knowledge ingrained in better educated and productive individuals (Lucas, 1988). The proponents of human capital theory assumed that the value of individuals' learning capacities is similar to other resources. From this perspective, scholars set to investigate investments into human resources and gains from education and training (Nafukho, Hairston, & Brooks, 2004). The investigations suggest that better educated labour force contributes to productivity of organisations and thus encourages growth on both the national and international level. Though some scholars challenged human capital theory and disclosed prevailing shortcomings, recent studies emphasized the insightfulness of human capital theory (for a more comprehensive discussion see Tan, 2014).

The studies performed at the micro and macro organisational levels demonstrated a positive relationship of human capital and the firm-level performance (Crook *et al.*, 2011; Wen-Tsung, Hsiang-Lan, & Chia-Yi, 2013; Cingano & Pinotti, 2016). It appears that human capital available to an organisation has potentially important performance implications (Bilgin, Marco, & Demir 2012; Celec, Globocnik, & Kruse, 2014; Chandran, Gopi Krishnan, & Devadason, 2017; Diaz-Chao, Sainz-Gonzalez, & Torrent-Sellens, 2015). Meanwhile, the development of resource-based theory revealed the significance of human capital as the main determinant which explains why some firms outperform others. While valuable, rare, inimitable, and non-substitutable resources influence the competitive advantage of the firm, the accumulation of appropriate human resources leads to long-term survival and growth. Hence, scholars adopted the resource-based perspective and suggested considering training, experience, relationships, and insights of individuals (Barney, 1991, p. 101). The overall competencies and know-how skills residing in the personnel support the performance of firms. Meanwhile, some scholars argue that human capital is created and

managed through the organisational system and thus the HR system is assumed to be the most important asset (Becker & Huselid, 2006).

The international expansion appears to be significant for the firm's growth and thus studies acknowledged the impact of managers' human capital on the international performance of firms (Denicolai, Hagen, & Pisoni, 2015; Hamid, 2017; Ismail, 2013; Korsakiene, *et al.*, 2017; Ruzzier, *et al.*, 2007). It is agreed that individuals with a higher level of human capital are able to identify and exploit more international opportunities. A stream of studies, focused on large companies, adopted the upper-echelons theory (Hambrick & Mason, 1984) and assumed that the strategic choices and performance of firms are determined by values and cognitive characteristics of top managers. On the other hand, demographic characteristics and experiences of top managers influence their cognitive characteristics and knowledge, which subsequently shapes decision making. The theory was grounded on the assumption that top managers face cognitive limitations and thus are boundedly rational. Meanwhile, studies in the small business context emphasized the significance of an entrepreneur in the international expansion of the firm and aimed to investigate the elements of human capital, contributing to the international performance (Lafuente, Stoian, & Rialp, 2015; Lin, Mercier-Suissa, & Salloum, 2016; Lucchella, Palamara, & Denicolai, 2007; Urban & Shree, 2012). The emphasis was put on knowledge, skills, talent and experience of entrepreneurs, contributing to strategic choices and consequently value of the firm (Javalgi & Todd, 2011). The review of selected papers revealed some dominant elements, related to internationalisation, which will be discussed in detail.

Individual versus Organisational Human Capital

Considering the individual versus the organisational level of analysis, the investigation revealed that majority of articles focused on the individual level (Figure 1). Only few articles considered organisational human capital. Meanwhile, twelve articles are classified as conceptual and case studies or reviews. These articles apply secondary data and thus do not specify the level of analysis.

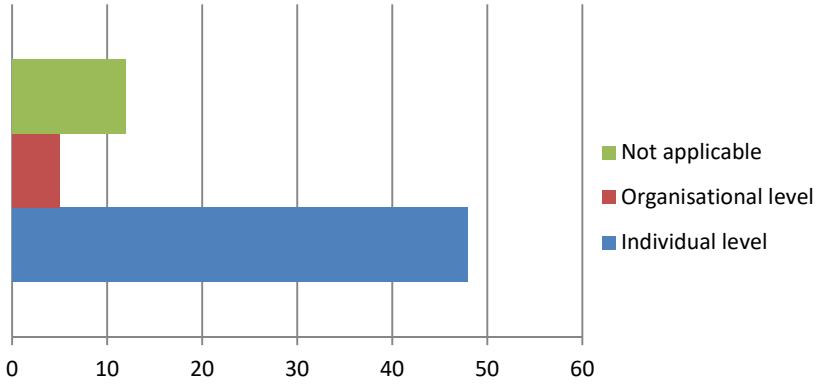

Figure 1. Distribution of selected articles according to the fifth criterion – individual vs. organisation human capital

Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculation.

The individual-level investigations revealed significant characteristics of managers and owners. Education appears to be an important factor affecting the internationalisation of firms. Considering the education level, the studies suggest that university education impact decisions to export (Mozas-Moral *et al.*, 2016; Pickernell *et al.*, 2016). Work experience, attributed to the specific human capital, is often investigated in the studies. For instance, international experience of managers has a positive impact on international commitment (Fernandez *et al.*, 2015) and propensity to internationalise after the start-up (Reuber & Fisher, 1997). Thus, managers with export-oriented skills are assumed to be a driving force of the export performance (Freeman & Styles, 2014). Though cognitive abilities are less investigated as the dimensions of human capital, some studies revealed that entrepreneurs' characteristics, such as self-efficacy and risk avoidance did not impact the level of export (Evald, Klyver, & Christensen, 2011). However, our review reveals some contradicting patterns related to general human capital. Stucki (2016) investigated Swiss start-ups and used two different proxies as the measures of general human capital, i.e. the education level of founders and the average years of work experience. While general human capital impacted propensity to export, the impact on the intensity of export was not significant (Stucki 2016). The investigation of UK high-tech firms revealed that general experience of entrepreneurs did not have a significant effect on export propensity (Ganotakis & Love, 2012). On the other hand, general education and general experience had a positive impact on export intensity. A similar pattern was observed considering specific education. While specific education (business and technical) did not impact export propensity, the impact on export intensity was significant.

The organisational-level studies of human capital attracted less attention of scholars (Thangavelu & Neak, 2017). Though owners and managers significantly impact the internationalisation of firms, human capital of employees plays an important role in the expansion of firms. Apparently, education was used as the proxy of human capital in the scientific studies. For instance, some studies which measured human capital as the ratio between the number of graduate employees and the total number of employees concluded that firm-level human capital impacts export propensity and intensity (Cerrato & Piva, 2012). Meanwhile, Onkelinx, Manolova & Edelman (2016a) applied other measurements of the organisational-level human capital, i.e. the index of the weighted average education level of newly hired employees and the average wage level of all employees. The investigation of Belgian firms disclosed that added human capital of firms with gradual internationalisation, contrary to accelerated internationalisation, did not lead to higher export intensity (Onkelinx *et al.* 2016a). Thus, firms with accelerated internationalisation experience a positive effect of investments in employee human capital (Onkelinx, Manolova, & Edelman, 2016b). While the internationalisation of SMEs requires a higher level of employees' skills, the studies confirm that skills intensity of employees is related to export probability (Falk & Hagsten, 2015).

The National Context

The national context is an important factor to be investigated. It appears that developed countries outperform developing and emerging countries in terms of the quality of capital (Tan, 2014; Niebel, 2018). Therefore, studies were dedicated to understanding countries' peculiarities. The results indicated that developed countries were investigated more intensively as compared to developing countries (Figure 2). While some studies were performed in one country's context (e.g. Jiang *et al.*, 2016; Clavel *et al.*, 2017; Wadhwa, McCormick, &

Musteen, 2017), other studies were carried out in several countries (e.g. Jin, Woo & Chung, 2015; Musteen, Ahsan, & Park, 2017). Eight articles did not indicate the national context (Musteen & Ahsan, 2013; Demir, Wennberg, & McKelvie, 2017; Tegtmeier & Classen, 2017; Francioni, Pagano, & Castellani, 2016; Terjesen, Hessels, & Li, 2016; Ashourizadeh *et al.*, 2014; Prijcker *et al.*, 2012; Evald, Klyver, & Christensen, 2011). The papers to which the national context was not applicable were conceptual papers.

The higher level of human capital in developed countries suggests that individuals are better prepared to internationalisation. Meanwhile, the studies performed in the context of developing and emerging countries revealed that a lack of international experience, managerial skills and business know-how were human capital constraints, hindering possibilities of firms to initiate early internationalisation (Gittins *et al.*, 2015; Ketkar, 2014). On the contrary, some studies did not disclose a significant difference between emerging and developed countries (Nowinski & Rialp, 2013). However, scholars suggest that firms from emerging and developing countries as compared to their foreign competitors tend to adopt a "catching up" position due to a lower level of human capital (Jardon & Molodchik, 2017). A stream of studies focused on return migrant entrepreneurs revealed that externally acquired human capital was transferred to new ventures and consequently influenced the internationalisation of SMEs from emerging countries (Gittins *et al.*, 2015; Gittins & Fink, 2015; Vinogradov & Jørgensen, 2017).

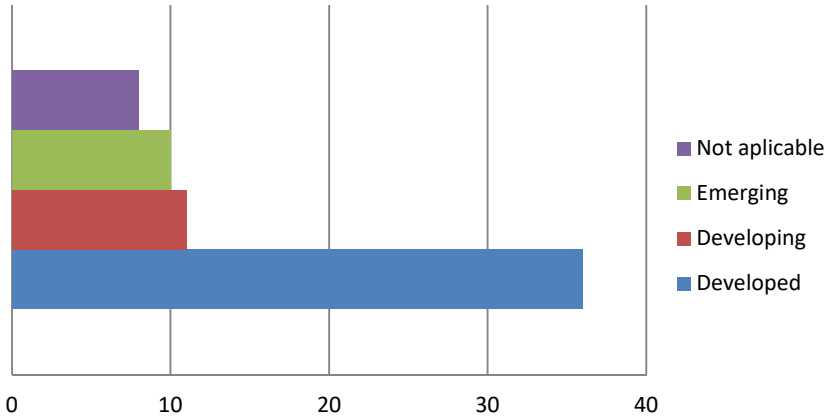

Figure 2. Distribution of selected articles according to the first criterion – the national context
Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculation.

Economic Sector

The investigation of the manufacturing sector versus the service sector reveals some differences (Gunasekaran & Gallear, 2012). Thus, the articles were analysed considering the economic sector (manufacturing and service). The data revealed that majority of articles did not focus on a specific economic sector and investigated cross-sectional SMEs (Figure 3).

Though some studies investigated both less knowledge-intensive and more knowledge-intensive manufacturing industries (Wadhwa *et al.*, 2017), a number of studies were focused on traditional industries, such as textiles, agribusiness and chemicals (Mozas-Moral *et al.*, 2016; Pena-Vinces *et al.*, 2017), apparel and food manufacturing

(Bernhardt & Dickenson-Jones, 2017; Kungwansupaphan & Siengthai, 2014; Trapczynsky *et al.*, 2016). Meanwhile, only few articles focused on services: IT, administrative and technical work. Ng & Hamilton (2015) investigated the information and communication technology industry in New Zealand. Reuber & Fischer (1997) investigated Canadian software product firms. Falk & Hagsten (2015) study was based on SMEs operating in Swedish computer and business service industries.

The investigation revealed a few patterns. First, highly skilled employees determine the internationalisation of SMEs in all economic sectors. Second, the increasing significance of knowledge intensive sectors requires further investigations. The studies disclosed that internationally experienced management teams were a resource leading to a higher degree of internationalisation (Reuber & Fischer, 1997). Furthermore, a set of advantageous skills of managers in the internationalisation process was emphasized (Ng & Hamilton, 2015). However, the investigations demonstrate that micro enterprises and other small and medium-sized firms differ in the importance of human capital even in knowledge intensive sectors (Falk & Hagsten, 2015; Xiao, Larson, & North, 2013; Pena-Vinces, Cepeda-Carrion, & Chin, 2012). Finally, the studies suggest that the development of firm's human resources in relation to internationalisation strategy is more an imperative for service firms rather than manufacturing ones (Raymond *et al.*, 2014).

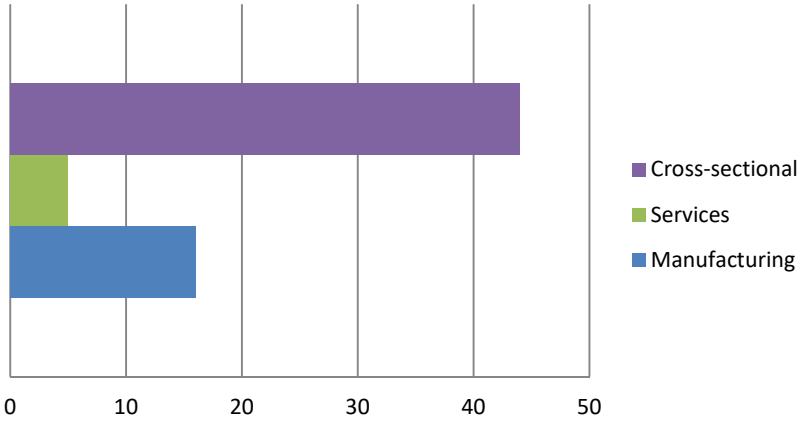

Figure 3. Distribution of selected articles according to the third criterion – economic sector
Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculation

Geographical location

While the country context remains an important factor of human capital investigations (Dakhli & De Clercq, 2004), a close look should be taken at the geographical location. Majority of articles were from Central & Eastern Europe and Asia (Figure 4). A lower number of articles was from Western Europe and Oceania. Even fewer articles presented the cases of America and Africa (five and four articles, respectively). Meanwhile, nine articles investigated and compared several continents (Musteen *et al.*, 2017; Raymond *et al.*, 2014). Ketkar (2014) investigated data from 57 developing countries, while Prijcker *et al.* (2012) combined data from five different European countries, Evald *et al.* (2011) – from forty-five countries.

The investigations of countries from several continents let the scholars better capture the variations across the markets (Ketkar, 2014). For instance, the investigation of low-income locations in Latin America, Europe, Africa and Asia revealed that domestic firms with higher levels of human capital gained benefit from reduced corruption in their home countries and engage in global activities (Ketkar, 2014). Meanwhile, the investigation of industrialised countries such as the US and South Korea demonstrated that SMEs tended to adopt offshoring as an entrepreneurial solution to overcome the challenges of lower human capital (Musteen *et al.*, 2017). The investigation of forty-five countries from the Global Entrepreneurship Monitor revealed that human capital affected the level of intended exports (Evald *et al.*, 2011). Finally, the study of SMEs from Canada and France let the scholars to conclude that developing human capital constitutes a necessary yet insufficient condition for SMEs to be successful internationally (Raymond *et al.*, 2014).

A close look at the collaboration of scholars revealed a tendency of joint efforts from the same countries (e.g. the USA, Spain and the UK). It appears that scholars from the UK, Spain, Austria, Italy and the USA tend to collaborate with researchers from other countries.

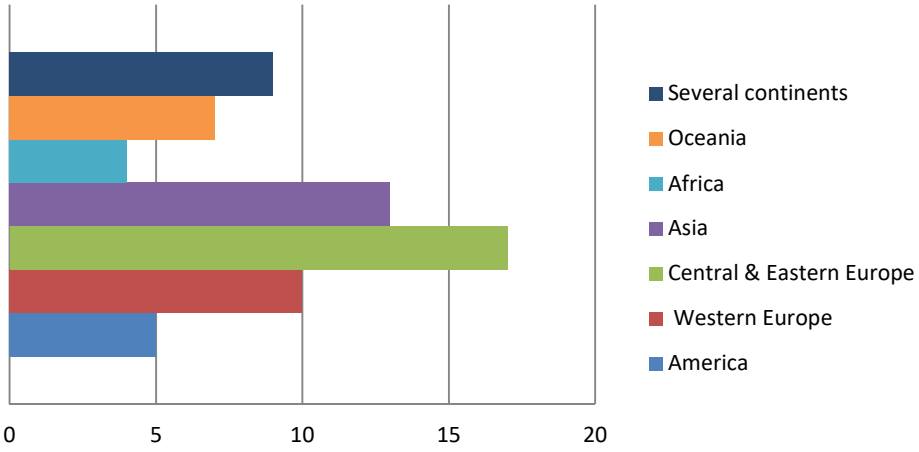

Figure 4. Distribution of selected articles according to the fourth criterion – geographical location
Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculation.

Research Methods

The most popular research method among the selected articles was the quantitative method usually associated with a survey. Meanwhile, qualitative studies, usually associated with the case study approach or interviews, were adopted in five articles. The application of several research methods appears to be limited (Figure 5). Only five articles combined Only five articles combined quantitative and qualitative methods (Mozas-Moral *et al.*, 2016; Trapczynsky *et al.*, 2016; Ng & Hamilton, 2015; Colapinto *et al.*, 2015; Arte, 2017). In addition, eight articles presented conceptual studies or reviews.

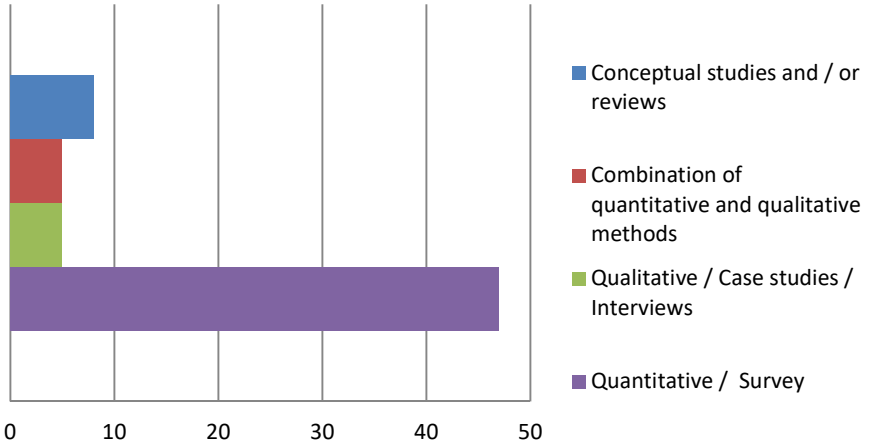

Figure 5. Distribution of selected articles according to the sixth criterion – research methods
Source: Clarivate analytics/Web of Science (2018); Scopus (2018). Own calculation.

Though case studies are an appropriate method to answer the questions "how" and "why" (Nowinski & Rialp, 2013), such studies are far from being representative (Arte, 2017). Case studies rely on a small number of cases and thus, the longitudinal approach (Duarte Alonso, & Austin, 2016) or a greater sample size (Gittins & Fink, 2015) are recommended. Meanwhile, survey methods let scholars involve a higher number of respondents into the research and obtain statistical validity of the results. Thus, the application of both quantitative and qualitative methods is needed for the theory development and empirical validations.

RESULTS AND DISCUSSION

The analysis, based on the quantitative and qualitative investigation of scientific papers, provides interesting insights into future investigations. Thus, the framework how to address the research gaps is presented.

The analysis let us observe that human capital of key employees appears to be an important determinant of internationalisation. Therefore, the investigation of such elements of human capital as education, work experience, skills requires further attention and refinement in line with the development of internationalisation studies. While different studies demonstrate contradicting results (Ganotakis & Love, 2012; Stucki, 2016), future investigations are needed considering propensity and intensity of internationalisation. Furthermore, the elaboration on diverse experience of key employees (Freeman & Styles, 2014; Fernandez *et al.*, 2015) is seen as a promising area for future investigations. While human capital of owners and managers attracted vast attention of scholars, the research disclosed a lack of organisational level studies (e.g. Cerrato & Piva, 2012; Onkelinx *et al.*, 2016a; Onkelinx *et al.*, 2016b). Furthermore, a number of studies used education as the proxy of human capital. Human capital is assumed to be a multifaceted construct and thus it is important to investigate the variables, capturing all aspects of human capital (e.g. international experience, internationalisation-related skills of employees, etc.). Apparently, there is a need to investigate the determinants impacting the human capital of

SMEs. For instance, the informal learning which occurs through on-the-job training may contribute to the development of human capital. Thus, it would be useful to investigate the interrelationships of informal training, human capital development and internationalisation of small firms. Finally, the investigation how the controlling effect of owners/managers' characteristics influence the firm's internationalisation is needed.

The cultural differences between nations influence the international behaviour of small firms (D'Angelo *et al.*, 2013; Obeng, Robson, & Haugh, 2014; Tse, Yu, & Zhu, 2017). The literature review demonstrates that considering the national context there are opportunities to investigate developing and emerging countries. Furthermore, the comparison of several countries appears to be a promising venue for future investigations (Nowinski & Rialp, 2013). Comparative studies call for a need to join the efforts of scholars from different countries. Furthermore, considering the geographical location, there is an opportunity to focus on less investigated continents (e.g. Africa, Oceania).

The peculiarities of industries significantly differentiate the internationalisation of firms. However, the majority of articles investigated cross-sectional firms. Thus, considering the economic sector there is a new opportunity to focus on service sectors. More specifically, the increasing significance of technology intensive sectors call for a need to investigate technology intensive firms (Ruzzier & Ruzzier, 2015; Devins *et al.*, 2016; Gomezelj & Antončič, 2015). On the other hand, the comparison of technology intensive industries and more traditional industries would be beneficial, aiming to understand the early internationalisation of small firms. The investigation how technological intensity and competitive intensity moderate the relationship between human capital and internationalisation appears to be an interesting research area. Finally, the investigation of research methods revealed that case studies and/or interviews and the combination of both qualitative and quantitative methods are less applied in the scientific studies.

CONCLUSIONS

The article investigated extant scientific knowledge and assessed the research gaps on human capital and the internationalisation of SMEs. The classification of scientific literature on human capital and the internationalisation of SMEs has led to the framework of future research agenda.

The research contributes to our understanding of human capital and the internationalisation of SMEs by reviewing systematically papers published in the period of 26 years and included in WoS and Scopus databases. However, this study is not without limitations. Firstly, the literature review was grounded on a set of pre-established keywords and analysis of the abstracts. Thus, the future investigations have to consider other approaches to the literature analysis. For example, bibliometric data can be analysed by applying "VOSviewer" software, etc. Secondly, the research did not attempt to focus on the articles which adopted other theories relevant to human resources (e.g. the upper-echelons theory). Finally, the challenges of human capital development shape the directions for future investigations. Thus, future studies can be grounded on the dimensions contributing to human capital development in firms (e.g. work-based training, etc.).

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The International Movements of Capital and Labour: A Study of Foreign Direct Investment and Migration Flows

Antonio Mihi-Ramirez, Jesús Arteaga-Ortíz, Sara Ojeda-González

ABSTRACT

Objective: The study seeks to analyse the interaction of foreign direct investment, emigration, and immigration before and after the great economic recession.

Research Design & Methods: We used the Linear Mixed Model (LMM) to analyse interaction of foreign direct in-vestment (FDI), emigration, and immigration for 112 countries with which Spain has closely interconnected migratory and investment chains, and we focused on the analy-sis of both the pre-crisis 1998-2007 and post-crisis 2008-2016 periods.

Findings: The results show that the higher number of immigrants in Spain is related to an overall higher Spanish FDI flows toward the immigrants' origin countries. This relation between migration and FDI might be sustained in the long run as opposed to what was often raised in classical approaches. In fact, migration and FDI act like two sides of the same coin.

Implications & Recommendations: Based on our results, we propose more proactive migration policies that support inte-gration in host countries, migrants' return to home countries, and also trade agree-ments as an instrument that endorses selective FDI flow to more productive and criti-cal sectors in home countries. Moreover, our results show that lower FDI is usually associated with a higher volume of emigration from Spain.

Contribution & Value Added: In a sense, FDI and migration may be considered a risk aversion strategy.

Article type: research paper

Keywords: emigration; immigration; foreign direct investment; linear mixed model

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INTRODUCTION

The contemporary global economy is characterised by international movements of capital and labour (Phyo *et al.*, 2019; Comolli, 2018; Xu & Sylwester, 2016). Dicken (2003; see also Wallerstein 1974) addresses the relevance of international flows (movements) of capital. In turn, Portes (1997) and later Castles and Miller (2009) highlight the importance of international labour flows. Both movements – foreign direct investment (FDI) and migration – intertwine with each other, being directly implicated in the development of the global economy (Le & Tran-Nam, 2018) and economic convergence (Gandolfi *et al.*, 2017). In any case, they are both deemed to be means of production (Phyo *et al.*, 2019; Sanderson & Kentor, 2008; Mallampally & Sauvant, 1999).

Migration and FDI are crucial mechanisms for any economy at any time (Metelski & Mihi-Ramirez, 2015; Bijak, 2010; Schiff, 1994), but more recently FDI and migratory flows are becoming increasingly important to the economy and enterprises due to intense worldwide changes (Xu & Sylwester, 2016).

The first decade of the twenty-first century, up till now, is very indicative of the upward trend in mobility factors; i.e. workers, capital. In general, migration flows in OECD countries has increased since the early 1990s, continuing their trend that had already began in rich countries in the early 1980s (Sanderson & Kentor, 2008). The upward trend of labour migration worldwide is also evident. So is the increasing FDI trend (Mallampally & Sauvant, 1999).

Therefore, the study of the implications and interactions that arise from the international mobility of workers and capital is always useful, especially in times of major changes in the economy, companies, and society (Xu & Sylwester, 2016).

As indicated by Sanderson and Kentor (2009), capital flows not only trend upward – similarly to labour flows – but the trend also shows its very pronounced nature. Only in the last two decades of the twentieth century, capital flows increased by almost a thousand per cent (UNCTAD, 2005).

Migration flow arises from the existence of certain links between countries of destination and origin. Castles and Miller (2009) highlight colonial ties, foreign trade exchange, and FDI as potential links of this type.

Combes *et al.* (2005) observe that, when the number of immigrants increases in the country of destination, it is also accompanied by an increase in the inflow of FDI to that country. Buch *et al.* (2006) and later Javorcik *et al.* (2011) note that, when immigration increases, the inflow of FDI to the countries of origin of these immigrants also increases. Aubry *et al.* (2012) show that the growing level of FDI is the cause of immigration to the investor's country. Here, FDI and immigration can be perceived as substitutes. Let us note that Metelski and Mihi-Ramirez (2015) foreground the bidirectionality of labour and capital flows, so that an "investor country" also is a sending country, especially when migrants manage to create networks over time, facilitating the flow of information about business opportunities in their countries of origin while reducing transnational costs (Cuadros *et al.*, 2016; Jayet & Marchal, 2016; Simone & Manchin, 2012; Flisi & Murat, 2011; Docquier & Lodigiani, 2010).

In our analysis, we noted the following issue that leads to the key question whether there is a variable relationship between sending and receiving countries in the field of immigration, emigration, and FDI. Therefore, the scientific problem of our research is to ex-

amine the relationship between emigration, immigration, and FDI when economic conditions of sending and receiving countries change over time. We based on the case of Spain, a well-developed country with well-established migration and capital relations with other countries, severely affected by the recent recession. Thus, we expect answers to the following questions: Does an increase in the number of immigrants in Spain translate into an increase in the inflow of FDI to the countries of origin? Do Spanish immigrants choose mainly those destination countries where Spain's FDI is traditionally higher?

The relevance of the raised problem can be better understood by a larger exploration of issues and limitations previously addressed by other scholars. They can be briefly summarised as follows:

- Although the importance of the topic is undeniable, there are few theoretical explanations of the relationship between emigration, immigration, and FDI. Some researchers note that the inflow of FDI to migrants' countries of origin affects emigration only at the initial stage (Javorcik *et al.*, 2011; Buch *et al.*, 2006). Other authors indicate that FDI is significant in the second stage when it reduces differences in wages between countries, also by having a negative or small impact on migration (Gandolfi *et al.*, 2017; Aroca & Maloney, 2005). Moreover, some studies indicate that there is a two-way relationship between FDI and migration flows, which may be either complementary (Comolli, 2018; Docquier & Lodigiani, 2010; Schiff, 1994) or substitutive (Sanderson & Kentor, 2008). However, what happens when the migration process has already started, and FDI is reduced due to economic recession, supply shock, or demand shock?
- Out of many recent theoretical approaches to the matter, none brings any significant confirmation of the link between emigration, immigration, and FDI.
- As Sanderson and Kentor (2008) show, the conceptual and empirical link between international migration and international capital flows remains relatively unexplored. There is usually a two-way interaction between migration and capital flows (Sanderson & Kentor, 2008). One of them is related to the direct impact of capital flows on the labour market. The latter may result from the impact of FDI on growth, which leads to a significant change in migration flows in the form of indirect impact (Xu & Silvester, 2016). However, what happens when both FDI and economic growth weaken?

The aim of this scientific paper is to examine the relationship between international emigration, immigration, and foreign direct investment – before and after significant changes – in the context of economic recession.

The study is based on the Linear Mixed Model and aims to test the links between immigration, emigration, and FDI between 1998 and 2016. This method is useful for analysing repetitive measurements over time and for taking into account the correlation of responses within the different thematic categories. The results of the research will enable the verification of the hypothesis presented below and will facilitate the drawing of appropriate conclusions and the formulation of practical recommendations.

As for the novelty and theoretical significance of this study, it provides an in-depth review of literature on migration, but it also identifies the most relevant theoretical approaches and issues related to migration and FDI.

The aforementioned overview is the key issue of this paper because knowledge on migration is very fragmented. There are several theories that cover different approaches:

microeconomics, macroeconomics, sociology, geography, and many others. On the other hand, the relationship between migration and FDI so far received but partial exploration.

For example, there are numerous studies that concern, for instance, the impact of immigration on the economic and social situation of individual countries or the impact of FDI on net migration. However, we should not overlook that there is a lack of studies that would measure migration and FDI by taking into account different theoretical perspectives. On the contrary, our analysis is based on a number of scientific approaches, such as the network migration theory, the world-systems theory, the Heckscher-Ohlin model, the push-pull theory, the migration systems theory, the neoclassical theory, the new economics of migration theory, the theory of motivation for migration decisions, and the theory of cumulative causation.

Existing literature mainly focuses on FDI and immigration for one or more countries and usually only refers to a limited period of time, like one specific year, especially when FDI is growing (Grogger & Hanson, 2011; Clark & Pearson, 2007). With this in mind, our empirical study differs in that it examines immigration and emigration in many countries (112 countries) by paying particular attention to changes in immigration, emigration, and FDI processes over time, from 1998 to 2016. This allows us to take into account a much larger number of factors specific to the destination countries by identifying the impact of the analysed variables before and after the recent global economic crisis.

Finally, this article complies with the criteria for a typical structure of scientific research, because it consists of an introduction, background, methodology, discussion, conclusions, and a reference list.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Capital mobility is the key driver of migration. In this respect, the world-systems theory explains migration processes in terms of interactions between different societies or countries. It argues that migration plays a key role in changing the entire society. The world-systems theory defines migration flows from a global perspective. Flows of mobility factors (i.e. FDI), which are part of international interactions between different countries, tend to cause some disparities in their economic conditions. Consequently, countries with more prosperous economies attract migrants from less dynamic economies (Massey *et al.*, 1993).

Another important current of studies on migration explores the relationship between FDI and migrant networks (Cuadros *et al*., 2016; Javorcik *et al*., 2011; Docquier & Lodigiani, 2010; Buch *et al*., 2006; Schiff, 1994), which highlights the growing relationship between these variables over time. The network migration theory addresses the key role of personal relationships between immigrants and non-immigrants. In other words, migration flows result from the existence of certain links between destination countries and countries of origin (Simone & Manchin, 2012). In this sense, Castles and Miller (2009) refer to colonial ties, trade, and FDI as probable links. Burns and Mohapatra (2008) argue that – similarly to international migration – FDI is an important channel for the transfer of technology and knowledge. Moreover, Flisi and Murat (2011, p. 797) show that the impact of immigrants on FDI from less developed countries is as strong as that of immigrants from richer economies. FDI is attracted by networks but not the other way around (Flisi & Murat, 2011).

Certain explanations regarding the role of the flow of capital investments and its association with migration processes provides the world-systems theory (Wallerstein, 1974),

which posits that migration is a natural consequence of the evolutions of capitalism and advances of the global market (Bijak, 2010). The demand for basic resources in developed countries causes a flow of capital to less developed countries, but also a higher migration in the opposite way (Massey *et al*., 1993). However, this approach does not necessarily explain what happens when demand falls in more developed and advanced economies.

FDI, trade, and migration are considered substitutes in the context of the Heckscher-Ohlin conceptual framework (Markusen, 1983; Mundell, 1957). Mundell (1957, p. 4) argues that the movement of goods "is at least to some extent a substitute for movement of factors of production." However, despite the great progress made with this approach, Heckscher-Ohlin's view on the flow of international mobility factors – i.e. FDI, trade, remittances, and migration – is controversial, although many scientists claim that this flow may limit migration between rich and poor countries in the long run. It can be argued that rich countries import labour-intensive goods, which results in an increase in the employment of unskilled workers in poor countries. This also implies some direct investment in these poor countries, primarily to adjust their production capacity to the growing demand for goods (Schiff, 1994). As it turns out, higher demand for goods and higher FDI usually lead to a decrease in the outflow of migrant workers. However, Schiff's results (1994) confirm an increase in international migration in the long term – for both sending and receiving countries – which may be interpreted ambiguously. Moreover, Russell and Teitelbaum (1992) along with Gheasi *et al*. (2013) show that migration and FDI can complement each other. Moreover, more recently, Metelski and Mihi-Ramirez (2015) confirm that the substitutability of migration and FDI occurs only in certain specific circumstances. In turn, Jayet and Marchal (2016) note that this substitutability or complementarity depends on the country's endowments.

According to some neoclassical models – i.e. models based on the basic assumption of the open economy – different channels are often considered substitutes. Some say that the movement of mobility factors like FDI may lead to price equalisation (Gandolfi *et al.*, 2017; Burda, 2004). However, there are also models assuming that such integration factors are complementary; e.g. the Ricardian model.

D'Agosto *et al*. (2006) study the relationship between FDI inflows and migration flows from developing countries. They find direct and indirect channels of labour demand through which two factors of economic mobility turned out to be substitutes: incoming FDI and migration flows from developing countries. However, let us note that their study yields different results depending on the method used to analyse the aforementioned relationship. In fact, cross-sectional analysis provides arguments for complementarity – which is a positive link – while longitudinal analysis supports FDI and migration substitutability, which is a negative relation.

Breitenfellner and Cuaresma (2008) assess the economic impact of the 2004 and 2007 enlargements of the European Union , in particular the increase in the flow of cross-border mobility factors; i.e. labour and capital). In this respect, Tanaka (2017) studies the potential negative impact of immigration on the Japanese labour market (2001-2007) as a consequence of higher FDI. His research shows the emergence of temporary workers at an early stage but, in the long term, their activity began to inch down.

Tomohara (2017) shows that, over time, immigration began to have a negative impact on FDI flows into the country of origin; this was particularly the case for short-term but larger immigration stocks, but also for ethnic networks that generally stimulate FDI flows.

All in all, several studies show the relationship between FDI in less developed economies and migration flows, but the topic of migration requires a more in-depth analysis of migration and immigration, with particular emphasis on the dynamics of these processes and flows, so researchers must answer the key question: What is the relationship between immigration and FDI over time? And, of course, we should raise a similar question with regard to the relationship between emigration and FDI.

When it comes to the link between immigration and FDI, Gould (1994) shows that higher emigration rate from any sending country usually leads to a higher inbound FDI, which we may substantiate with such reasons as networking, social links, or lower communication costs (Le & Tran-Nam, 2018; Cuadros *et al*., 2016; Simone & Manchin, 2012; Combes *et al*., 2005).

Buch *et al*. (2006) examine the relationship between migration and FDI in Germany. Their particular interest is to answer whether and how migration and FDI are associated with each other. Apparently, the stock of inward FDI and that of immigrants can be explained with similar determinants. Higher stocks of inbound FDI are reported in any country that actually hosts a larger foreign population from the same origin country. In other words, if a country receives numerous migrants from any particular country, chances are that it also entails higher capital flows to the sending country. This phenomenon is better known as "the agglomeration effect" (Buch *et al*., 2006).

Moreover, Schiff (1994) notices that immigrants typically provide their hosts with information about investment opportunities in the source countries, on laws and regulations in these countries, differences in culture and ways of doing businesses, including business contacts, which facilitate the association of business partners. Of course, this is expected to result in an increase in FDI.

More recently, Javorcik *et al*. (2011) study the impact of immigrants on foreign direct investment (FDI). Their results are similar to those of Buch et al.'s (2006). In a nutshell, the presence of immigrants can stimulate FDI by promoting information flows across international borders. Javorcik *et al*. (2011) examine the link between the presence of migrants in the USA and US FDI in the countries of origin, taking into account the potential endogeneity concerns. The results show that outward US FDI is positively correlated with the presence of migrants from the host country in the US. In this sense, Cuadros *et al*. (2016) find that migrants can reduce cross-border investment barriers, especially the effect of financial constraints.

Phyo *et al*. (2019) show a connection between inward FDI and immigration according to the country's level of development.

Taking into account the earlier considerations, we propose hypothesis 1:

H1: Immigration is positively associated with FDI in countries behind this FDI flows.

Regarding emigration and FDI, Aroca and Maloney (2005) investigate Mexican exposure to inward FDI, and its response in terms of migration flows. Their findings indicate that greater exposure to FDI attenuates the effect of emigration. The intention of Aroca and Maloney's (2005) study is to provide a quantifiable empirical measurement of the impact of increased FDI on migration processes between Mexico and the USA. They find that – on average – an increase of FDI flow toward Mexico by 100 per cent leads to a decline of emigration by 1.5 to 2%.

Aubry *et al.* (2012) show that FDI stimulates migration to host countries at an initial stage, yet later, an equalisation of salaries in sending countries reduces labour market pressures to migrate.

Moreover, others observe that the dynamics of international flows are usually bidirectional (Metelski & Mihi-Ramirez, 2015), which is why FDI can over time lead both to a higher level of development in sending countries and greater business opportunities for foreign investors. Consequently, foreign workers can migrate much more easily because of the existence of multinational subsidiaries, also due to new business creation opportunities that facilitate establishing businesses, transaction costs reduction, or better knowledge and diffusion of information, associated with migrants' networks in the host country (Munemo, 2017; Simone & Manchin, 2012). In this case, migration shall result in complementing rather than substituting FDI.

Wang *et al*. (2013) along with Xu and Sylwester (2016) observe that, in the long run, FDI acts as a deterrent to emigration as it also leads to an increase of domestic incomes. Wang *et al.* (2013) find that inward FDI in non-OECD countries influences high skill emigration from OECD countries that originates investments. Xu and Sylwester (2016) also show that FDI increases emigration, among other reasons, because of the role played by multinational corporations, i.e. they facilitate information about less developed countries. FDI also reduces transaction costs for potential emigrants. Such FDI would then act as a pull factor, which draws emigrants towards less developed countries.

In turn, the cumulative causation theory indicates several causes for the emergence of different stages of migration waves. One of them is the growing disparity in living standards between re-migrants (returnees) and non-migrants, which is once again contributing to the re-migration of returnees. Yet another cause is the decrease in the de-mand for rural land due to excessive land purchases made mainly by re-migrants. Moreover, re-migrants rarely themselves cultivate purchased land and much rather treat it as an investment of capital or lease it out to professional farmers, which usually leads to increased competition in farm labour through intensified agricultural operations. As a result, smallholder peasants move away in search of sources of additional income because they can no longer cope with competition (Massey *et al*., 1993). The third cause is the desire to maintain higher standards of living by returnees, which further encourages them to re-migrate. The fourth cause is the development of networks that facilitate migration even in the case of less entrepreneurial people, who are initially unwilling to undertake migration and leave their places of residence. The last migration cause is the stigmatization of some commercial activities in receiving countries, which induces employers to search for workers in other countries (Massey *et al*., 1993).

De Haas (2010) notes that circular cumulative causation theory and migration systems theory have very much in common. They both view the origin and destination as constituent parts of one societal and developmental context. In that sense, both sending and receiving ends contribute to the dynamics of migration.

Phyo *et al*. (2019) indicate the positive association between inward FDI and emigration flows in the case of relatively less-developed countries.

The above considerations make us propose another hypothesis:

H2: FDI and emigration from investment origin countries (FDI) are negatively associated.

MATERIAL AND METHODS

This section explains the empirical analysis to test our hypotheses. Table 1 summarizes the methodology.

Table 1. Description of empirical analysis

Vabiables	FDI/Emigration/Immigration
Method	Linear Mixed Models (LMMs); (R Core team, 2017; West *et al.* 2007); 5% significance level and 95% confidence intervals were obtained foe the estimates.
Sources	Migration data was collected from National Statistics of Spain. INE. "Residential Variation Statistics" and data about FDI by the Ministry of Economy and Finance of Spain. Datainvex (2018).
Sample	112 countries with which Spain has more closely interconnected migratory and investment chains.
Period	We focused on pre-crisis 1998-207 and post-crisis 2008-2016 reriods.

Source: own study.

The models applied to the data were Linear Mixed Models (LMMs), as an appropriate statistical tool to analyse repeated measures over time and to take into account the correlation of responses among subjects (Gardiner *et al*., 2009). Alternatively, models with and without random effects for each period were checked and discarded as appropriate, based on the goodness of fit measures such as the likelihood ratio test. When comparing Linear Mixed Models (LMMs) with other statistical tools for modelling repeated data, such as Generalised Estimation Equations (GEE) or ANOVA, we preferred to employ the LMM statistical model, which contains both fixed effects and random effects that deal with missing values (West *et al*., 2007).

For the analysis of how emigration and immigration respond to variations in the FDI, we assumed that there are n independent observations. For each individual i, there is a response variable Yi and p covariates xi = (xi1,..., xip)t, where xi is a vector column of dimension p<n. In the classical linear model, it is assumed that Yi = xtiβ+εi, (1) where β is a vector column with p parameters, while εi satisfies that εii.i.d.∼N(0,σ2), in which "i.i.d." means "independently and identically distributed." The above equation assumes the regression model as follows:

Y = (a Fixed + a Random_by_site) + (b Fixed + b Random_by_site) x it means $y =$ *(fixed-effect intercept + by-Site random variation in the intercept) +(fixed-effect slope + by-Site random variation in the slope) × x.*

The sample focuses on data on emigration and immigration between countries with which Spain has large migratory and trade exchanges. According to the statistical series of the Spanish National Statistics Institute, INE, "Residential Variations Statistics" cover approximately 112 countries.[1] The variables analysed are:

[1] Albania, Algeria, Andorra, Angola, Argentina, Armenia, Australia, Austria, Bangladesh, Belgium, Benin, Belarus, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chile, China, Colombia, Congo (Republic of), Cyprus, Congo (Democratic Republic of the), Congo (Democratic Republic of the), Germany, Saudi Arabia, Korea (Republic of), Côte d'Ivoire, Costa Rica, Croatia, Cuba, Denmark, Dominica, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gambia, Georgia, Ghana, Greece, Guatemala, Guinea, Guinea, Philippines, Equatorial Guinea, Guinea-Bissau, Honduras, Hungary, India, Slovenia, United States, Iceland, Indonesia,

1. Emigration from Spain to other countries;
2. Immigration from other countries to Spain;
3. FDI from Spain to the countries of the immigrants.

The variables (emigration, immigration, FDI) were cautiously selected by taking into account various migration theories and conceptual frameworks. FDI reflects "the objective of obtaining a lasting interest by an investor in one economy in an enterprise resident in another economy" (Eurostat, 2019, p. 1). Typically, there is a lack of a single and unanimous definition with respect to the migration phenomenon (Mihi-Ramírez *et al*., 2013).The most frequently referred definitions of immigration and emigration are provided by the *Official Journal of the European Union* (OJEU, 2007, p. 1), which defines emigration/migration (EM) as "the action by which a person, having previously been usually resident in the territory of a Member State, ceases to have his or her usual residence in that Member State country for a period that is, or is expected to be, of at least 12 months."

The migration flows data (for the purpose of this research) were collected from National Statistics of Spain, INE, and data about FDI from the Ministry of Economy and Finance of Spain, Datainvex (2018), spanning the period from 1998 to 2016.[2]

The statistical analysis was conducted by means of the R-project Statistical Software (R Core Team, 2017).

For the statistical evaluation of the data, we used standard measures that describe variables, such as mean, standard deviation, median, minimum, and maximum per country. Appendix 1 shows the full data of 112 countries. Next, we explain the development of the methodology to test each hypothesis and also show the obtained parameters.

Association of Immigrants with FDI from Spain to Their Home Countries

Figure 1 shows the trends that reflect FDI values and the number of emigrants/immigrants over the years. This figure reveals how the higher number of immigrants is related to overall higher FDI values. In 2000-2007, the number of immigrants continued to rise and reached its peak in 2007. Moreover, FDI reached its highest overall value in 2007. From 2007, we observe a decline in the number of immigrants, along with a decrease in the value of FDI.

To check whether the variation of FDI is relevantly influenced by immigrants, the appropriate linear mixed model (LMM) was calibrated to fit the FDI values. The model specification was determined by the inclusion of intra-country random effect and adjusted by the use of a polynomial function of time and the immigrants' absolute number. A statistically significant association between immigrants and FDI was found (p-value=0.0054). It appears that the increase in the number of immigrants also leads to an increase in FDI values. In general, we may say that an increase in the absolute number of immigrants by one unit results in the simultaneous increase in FDI of $12.7 (3.7, 21.6).

Iraq, Iran, Ireland, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Latvia, Lebanon, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia (Former Yugoslav Republic of), Mali, Malta, Mauritania, Mexico, Morocco, Moldova, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Paraguay, Peru, Poland, Portugal, Czech Republic, Slovak Republic, Romania, Russia, Senegal, Serbia, Sierra Leone, South Africa, Syria, Sweden, United Kingdom, Switzerland, Thailand, Togo, Tunisia, Turkey, Ukraine, Uruguay, Venezuela, Vietnam.

[2] We focused on the analysis of both the pre-crisis 1998-2007 and post-crisis 2008-2016 periods.

The marginal R-squared amounted to 0.012 and the conditional R-squared to 0.285. Marginal R2 represents the variance explained by fixed factors, while Conditional R2 is interpreted as the variance explained by both fixed and random factors.

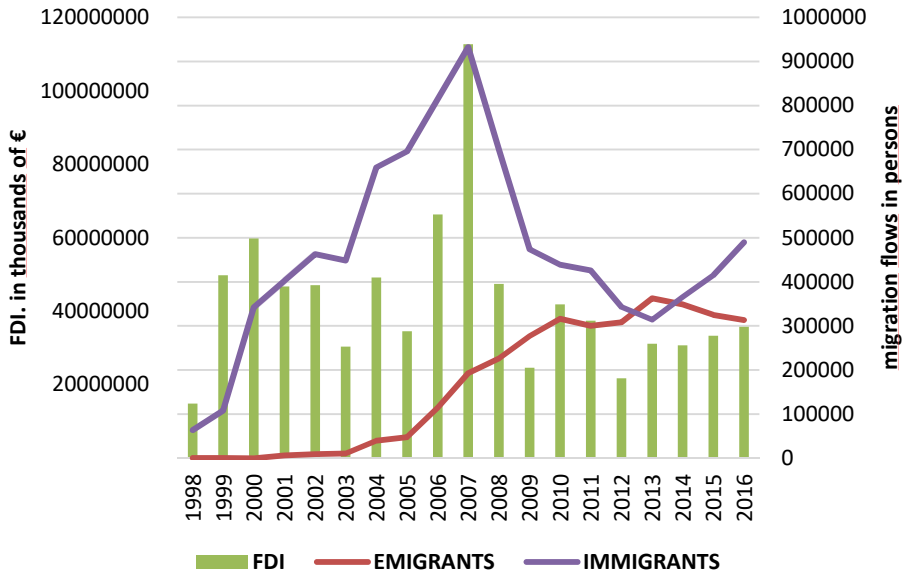

Figure 1. Changes in emigration, immigration, and FDI in Spain in 1998-2016
Source: National Statistics of Spain. INE and the Ministry of Economy and Finance of Spain.

Association of Spanish Emigration and FDI from Spain to Their Host Countries

Figure 1 also shows that the number of emigrants from Spain increases over time and that lower values are spotted when the FDI flows towards host countries. An overall increase in the number of emigrants was noticed after 2008 when there was a decline in FDI values. Therefore, we may conclude that, when the FDI was lower, there was a much higher number of emigrants. As years go by, one observes a general increase in the number of emigrants and a decrease in the value of foreign direct investment.

In order to test for a significant association of the number of emigrants and FDI, a linear mixed model was calibrated with an intra-country random effect and a fixed effect for FDI, adjusted by the polynomial function of time. The interaction term between the year and FDI emerged as significant (p-value < 0.001).

In general, for every $100,000 of additional FDI, there was a drop in the number of migrants by 73 (-94, -52) per year, yet the effect of FDI on migrants every year has been reduced by 10 (7, 13) migrants (in absolute terms). Therefore, the same increase of $100,000 – although already seven years later – had no impact on emigrants, while ten years later, when FDI decrease was spotted, the number of emigrants increased yet by 30 (in absolute terms).

In other words, we recognised how the impact of FDI on emigration changes over the years and, noteworthy, this impact was initially positive, while changing to negative in the last few years. The marginal R-squared amounted to 0.14 and the conditional R-squared to 0.69.

RESULTS AND DISCUSSION

As regards immigration and FDI, a significant and positive association was found, which concurrently confirms hypothesis 1. In a nutshell, this means that more immigration into Spain goes hand in hand with more Spanish FDI in the sending countries. Noteworthy, Spain received a very large number of immigrants in 1998-2007 (Mihi-Ramirez, 2013). Moreover, Spanish international FDI flow towards migrants' origin countries increased progressively, especially during the economic expansion (Datainvex, 2018). However, since the time of the great economic recession, this trend has been reversed, meaning that immigration sharply decreased and FDI also followed suit. This whole process repeated itself in the same way, yet with less intensity, as soon as the first signs of economic improvement emerged (see Figure 1). The results confirm that migration and FDI are complementary, which agrees with earlier results presented by Russell and Teitelbaum (1992), Docquier and Lodigiani (2010), Gheasi *et al.* (2013), Metelski and Mihi-Ramirez (2015), Jayet and Marchal (2016), and Comolli (2018). However, our study brings additional empirical evidence to support the existence of the impact of immigration on FDI, which is based on a wide international sample for different economic phases of the last economic cycle. Furthermore, our study confirms that immigration and FDI between Spain and recipient countries of Spanish FDI does not necessarily fail to withstand the test of time. In other words, the above-mentioned relation between migration and FDI might be sustained in the long run, as opposed to what was often raised in classical approaches (e.g. Neoclassical, Push-Pull, World-Systems, or Heckscher-Ohlin).

Referring to both the literature on migration and our results, we can say that immigration and FDI are two sides of the same coin.

Perhaps in some cases, the main objective of FDI is to ensure initial production capacity in less developed countries, mainly in order to allow the proper flow of supplies. However, we should not overlook that immigration links with sending countries (countries of origin) also encourage FDI inflows into these countries, which in the long run are beneficial for both sending and receiving countries, for at least several reasons. That is, because of the sharing of technology and knowledge, because of cost reductions and new business opportunities, and because of increased market participation and access to more skilled human capital (Mihi-Ramirez, 2013; Castles & Miller, 2009; Burns & Mohapatra, 2008).

In this sense, if we consider the evolution of migration policy in Spain, it consists essentially of several regularisation programmes over the years, according to domestic demand for labour and the specificity of the labour market (Mihi-Ramirez, 2013), but the impact of immigration on FDI has been barely taken into account in the design of such policies. A number of initiatives have emerged at the European level to encourage the integration of migrants but – after the fiscal pressures of the recession – the integration processes weakened.

Therefore, we propose the promotion of a more proactive migration policy that supports not only migrants' integration in host countries but also their return to home countries in order to ensure that these countries have sufficient qualified human capital to support new technologies, knowledge, and innovation. There are some successful examples

of building and implementing a strategy for international students, which ensure their return to their home countries, such as the agreement between China and Australia, Canada, or the USA; to name but a few (Hawthorne, 2010).

Moreover, we should also encourage FDI inflows into sending countries. In this sense, trade agreements are an excellent tool, whether or not they involve selective FDI in more productive and critical sectors – especially at the European level, as in the case of Spain – to take advantage of the huge interconnections of the European Union. Furthermore, such agreements would be more effective if they covered free movement programmes and facilitated business initiatives.

In relation to FDI and emigration from the investing countries, we observed a certain negative phenomenon, which actually confirms hypothesis 2. Migration has traditionally been understood as the movement of people from less developed countries to more developed countries, but we should also remember that the economic situation is never static and constantly changing, depending on socio-economic conditions, as demonstrated, for example, by the case of Spain during the recent major recession, which led to internal devaluation. Moreover, it has worsened the situation of FDI and migration from Spain to countries with Spanish FDI.

With regard to the concept known in the literature as the new economics of labour migration, traditional migration from sending countries can be explained in terms of collective actions, but also from the perspective of diversification of income through remittances sent abroad by family members (Stark, 1991). However, the countries responsible for FDI may consider migration as a good strategy for risk aversion, asset accumulation, and diversification of investments in different countries, which helps companies and countries in difficult times. Moreover, migration also creates new opportunities and ties with host countries, which makes such countries attractive to Spanish migrants in the event of economic disruptions.

Furthermore, we may combine this approach with the migration decision-making theory (Sell & DeJong, 1978). De Jong and Gardner (1981) argue that people tend to move to the places where the benefits of the below factors are the greatest. Migration decision-making theory shows that greater benefits depend on a multiplicative interaction of four variables: (1) availability, (2) motive, (3) expectancy, and (4) incentive. We can extend this approach to companies and governments' decisions on FDI:

- Availability (this applies especially to the cognitive and physical possibility to invest or migrate);
- Motive (it evaluates firms and country circumstances related to the decision-making process, e.g. economic situation);
- Expectancy (evaluation of the probability of the achievement of defined objectives);
- Incentive (relates to the determinants that positively and negatively affect the change of behaviour).

FDI should be directed primarily to those places where the potential interaction between the above-mentioned four factors is the greatest. In fact, migrants are already choosing the destinations that offer the most benefits from these factors. It is conceivable that this would allow businesses and governments to interact even more with each other and better control their investment and labour mobility.

CONCLUSIONS

This paper examines the interaction of modern international migration and FDI with particular regard to the situation before and after the great recession. It takes into account the different approaches to migration and mobility factors found in the literature. We also performed a separate analysis of emigration and immigration in order to obtain more specific and precise results by using relatively new data that cover the period 1998-2016 in 112 countries.

Our study confirms the existence of a relationship between sending and receiving countries in terms of immigration, emigration, and FDI. This link changes over time in the same economic conditions. In a way, Spain is an excellent example here, since it went from a state of great expansion to a very drastic recession, which caused a serious damage to the economy.

We raised the question whether an increase in the number of immigrants in Spain leads to an increase in FDI flows towards origin countries (i.e. sending migrants). Our results show that, in the period before the economic crisis, the huge wave of immigration to Spain was also accompanied by a larger Spanish FDI in the countries of immigrants' origin. However, when the recession began, immigration to Spain suddenly ceased, and the same happened to Spanish FDI in the countries of origin.

It means that immigration and FDI are complementary. Our work provides empirical evidence based on a multinational statistical sample and shows that immigration affects FDI in today's economy. Furthermore, our study confirms that the association between immigration and FDI persist in the long run, withstanding the test of time.

As opposed to classical approaches (e.g. Neoclassical, Push-Pull, World-Systems, or Heckscher-Ohlin), international migration and FDI flows never cease to exist, yet their progress and benefits may vary according to the socio-economic situation. Therefore, our proposal is to create and implement more proactive migration policies that would facilitate migrants' integration into host countries, but that would also have a positive impact on migrants' returns home, so that a sufficient stock of skilled human capital is maintained in origin countries to absorb and leverage the benefits of received FDI. Another practical recommendation is the use of trade agreements reinforced by free movement programmes and entrepreneurship initiatives, particularly in critical and productive sectors. In this context, it is important to recall the growing problem of labour market ageing in developed countries. Migration could increase labour market participation in these countries.

We also formulated the question whether Spanish emigrants choose those countries as their migration destinations where Spanish FDI is traditionally higher. Indeed, our results show that migration from Spain increases when FDI falls.

Economic growth is changing over time and even developed economies must provide an appropriate risk aversion strategy for their investments (in other countries) and encourage their citizens to invest in origin countries so that they can possibly maximise their return on capital from such investments.

Therefore, we propose that – in their FDI decisions – companies and governments use a method that results from the (factored in) migration decision-making theory in order to concentrate FDI in these locations where the sum of benefits is the greatest for migrants, companies, and governments.

Limitations and Future Research Lines

With regard to FDI, the literature distinguishes between "vertical" and "horizontal" foreign investments models. This paper does not make such a distinction so as to cover several theoretical approaches to the subject and also because we focus exclusively on the case of Spain. At the same time, we propose this as a future line of research, which could boil down to analysing a sample of a subgroup by relying on relative factor endowment differences and similarities in migrants' origin countries.

Another important distinction in the literature on migration concerns the level of education. Studies so far have shown that an analysis of this level could produce more precise results, thus showing significant differences. Therefore, as another future line of research, we propose to study the level of educational achievements.

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Appendix A: Table 2

Table 2. Description of the FDI. Immigrants from each country and emigrants to each country. N-Number of years with information. Mean of the results

Country	N(Mean)			Country	N(Mean)		
	FDI	Immigrants	Emigrants		FDI	Immigrants	Emigrants
ALBANIA	6 (236.4)	19 (236.4)	15 (126.2)	IRELAND	19 (725633.4)	19 (1259.4)	15 (566.07)
GERMANY	19 (1905720.2)	19 (10859.2)	15 (5639.93)	ICELAND	12 (15802.5)	19 (122.6)	15 (63.27)
ANDORRA	19 (17344.9)	19 (265.3)	15 (130.13)	ISRAEL	19 (5252.6)	19 (281.7)	15 (169.2)
ANGOLA	13 (1763.7)	19 (281)	15 (194.67)	ITALY	19 (1261328.2)	19 (8729.7)	15 (3332.2)
SAUDI ARABIA	14 (40303.5)	19 (129.6)	15 (90.4)	JAPAN	18 (186238.6)	19 (641.7)	15 (466.87)
ALGERIA	18 (19949.8)	19 (5433.4)	15 (3207.2)	JORDAN	14 (5382.6)	19 (140.4)	15 (82.2)
ARGENTINA	19 (2480283.7)	19 (17845.8)	15 (9401.6)	KAZAJSTAN	12 (959.4)	19 (191.7)	15 (74.53)
ARMENIA	5 (1)	19 (997.6)	15 (502.47)	KENYA	15 (174.7)	19 (116.5)	15 (47.27)
AUSTRALIA	19 (158163)	19 (382.7)	15 (233.33)	LATVIA	15 (283.6)	19 (368.9)	15 (162.8)
AUSTRIA	19 (228102.1)	19 (648.3)	15 (347.93)	LEBANON	12 (707.9)	19 (236.8)	15 (130.33)
BANGLADESH	12 (538.3)	19 (1397.1)	15 (864.6)	LIBERIA	14 (2953)	19 (63.1)	15 (38.6)
BELGIUM	19 (418241.7)	19 (2460.4)	15 (1036.13)	LIETCHTENSTEIN	15 (5749.6)	19 (6.6)	15 (2.8)
BENIN	9 (1.5)	19 (39.3)	15 (24.87)	LITHUANIA	12 (693.3)	19 (1560.1)	15 (920.47)
BELARUS	6 (3.3)	19 (372.3)	15 (152.67)	LUXEMBOURG	19 (2382130.6)	19 (66.9)	15 (33.67)
BOLIVIA	19 (37999.3)	19 (17320.4)	15 (10382.53)	MKD	10 (23.9)	19 (65.1)	15 (39.47)
BIH	13 (426.8)	19 (129.6)	15 (88.4)	MALI	11 (1.9)	19 (2144.1)	15 (1234.47)
BOURKINA_FASO	9 (7.4)	19 (106.7)	15 (50.27)	MALT	15 (56305.3)	19 (23.3)	15 (11)
BRAZIL	19 (3444184.6)	19 (13605.1)	15 (9035.73)	MOROCCO	19 (195196.4)	19 (49423.8)	15 (23561.4)
BULGARIA	19 (12788.8)	19 (11660.5)	15 (5344.93)	MAURITANIA	18 (342)	19 (1016.6)	15 (726.47)
CAMEROON	8 (353.5)	19 (586.3)	15 (343.2)	MEXICO	19 (2242827.2)	19 (4612.9)	15 (2876.6)
GLEN	19 (837084.7)	19 (518.7)	15 (322.07)	MOLDOVA	13 (3722.7)	19 (1480.8)	15 (625.87)
CHILE	19 (1150509.3)	19 (4854.8)	15 (3267.2)	NEPAL	5 (0)	19 (379.3)	15 (192.67)
CHINA	19 (247921.8)	19 (13393.5)	15 (6466.47)	NICARAGUA	19 (11370.2)	19 (2151.6)	15 (642.8)
CYPRUS	16 (5899.7)	19 (30.6)	15 (13.07)	NIGERIA	11 (1357.9)	19 (3430.6)	15 (2081.2)
COLOMBIA	19 (433411.8)	19 (26188)	15 (10544.93)	NORWAY	19 (125160)	19 (1327.4)	15 (624)
SOUTH KOREA	19 (31824.1)	19 (434.9)	15 (310.4)	NEW ZEALAND	13 (5766.9)	19 (115.7)	15 (78.07)
IVORY COAST	15 (3911.5)	19 (311.7)	15 (168.67)	NETHERLANDS	19 (4704613.7)	19 (3219.4)	15 (1591.67)
COSTA RICA	19 (79438.9)	19 (369.3)	15 (210.27)	PAKISTAN	10 (124.8)	19 (8533.5)	15 (5826.13)
CROATIA	17 (4312.8)	19 (195.3)	15 (117.8)	PANAMA	19 (123050.8)	19 (382.1)	15 (238.67)
CUBA	19 (47094.6)	19 (8216)	15 (2427.07)	PARAGUAY	18 (13806.9)	19 (8583.2)	15 (4783.33)
DENMARK	19 (253198.3)	19 (762.9)	15 (402.13)	PERU	19 (535663.8)	19 (12815.9)	15 (5412.73)
DOMINICA	1 (0)	19 (66.8)	15 (15.33)	POLAND	19 (405720.5)	19 (5373.8)	15 (2989.33)
ECUADOR	19 (98405.6)	19 (29610.2)	15 (13566.53)	PORTUGAL	19 (1243393.6)	19 (7814.8)	15 (4875.27)
EGYPT	18 (54606)	19 (444.4)	15 (268.4)	UNITED KINGDOM	19 (6741949.7)	19 (22736.1)	15 (9471.33)
THE SAVIOR	19 (47253.3)	19 (916.7)	15 (336.87)	CZECH REPUBLIC	19 (245102.6)	19 (733.6)	15 (390.93)
SLOVENIA	17 (575.7)	19 (137.9)	15 (57.73)	COD	2 (30.3)	19 (177.4)	15 (109.93)
USES	19 (3909515.9)	19 (4124.4)	15 (2630.2)	DRC (ZAIRE)	5 (618.1)	19 (90.4)	15 (60.8)
ESTONIA	11 (1288.2)	19 (186.1)	15 (65.33)	SUN	19 (81052.8)	19 (10261.9)	15 (3393.13)
ETHIOPIA	6 (41.4)	19 (226.1)	15 (45.13)	SVK	17 (10516.9)	19 (582.9)	15 (329.47)
PHILIPPINES	19 (51376.9)	19 (2519.8)	15 (977.07)	ROMANIA	19 (57432.4)	19 (58654.1)	15 (25749.47)
FINLAND	18 (21614.2)	19 (909.5)	15 (362.07)	RUSSIA	19 (107627.3)	19 (6842.8)	15 (2864)
FRANCE	19 (1732079.1)	19 (8082.1)	15 (4497.07)	SENEGAL	16 (1915.3)	19 (5079.8)	15 (2347.87)
GAMBIA	11 (1231.7)	19 (1547.1)	15 (872.47)	SCG	6 (778.1)	19 (365.5)	15 (210)
GEORGIA	4 (92.4)	19 (1171.2)	15 (621.93)	SIERRA LEONE	10 (7556.6)	19 (109.9)	15 (50.6)
GHANA	16 (2991.2)	19 (1499.5)	15 (941.47)	SYRIA	11 (61.1)	19 (476.7)	15 (191.6)
GREECE	19 (203603.1)	19 (397.4)	15 (224.33)	SOUTH AFRICA	19 (42852.9)	19 (202.4)	15 (97.6)
GUATEMALA	19 (63040.1)	19 (719)	15 (337.93)	SWEDEN	19 (134404.6)	19 (1515.2)	15 (813.93)
GUINEA	10 (2407.1)	19 (1042.6)	15 (667.2)	SWITZERLAND	19 (894530.7)	19 (1667.9)	15 (908)
E.G.	13 (234.9)	19 (1712.6)	15 (1118.87)	THAILAND	19 (20200.7)	19 (190.8)	15 (70.13)
GUINEA-BISSAU	2 (457)	19 (608.9)	15 (410.93)	TOGO	11 (1567.4)	19 (47)	15 (26.87)
HONDURAS	19 (7217.9)	19 (4584.3)	15 (1386)	TUNISIA	19 (24618.9)	19 (230.5)	15 (130.87)
HUNGARY	19 (1018940.3)	19 (842.6)	15 (368.27)	TURKEY	19 (527487.4)	19 (477.2)	15 (277.93)
INDIA	19 (53000.5)	19 (3590.9)	15 (1982.8)	UKRAINE	18 (3315.6)	19 (7589)	15 (2925.6)
INDONESIA	19 (3659.8)	19 (173.7)	15 (91.13)	URUGUAY	19 (326925.2)	19 (5148.6)	15 (2571.4)
IRAN	11 (2474.6)	19 (470.7)	15 (231.73)	VENEZUELA	19 (358362.9)	19 (12243.1)	15 (4523.6)
IRAQ	5 (9173.8)	19 (172.1)	15 (86.67)	VIETNAM	11 (762.9)	19 (142.6)	15 (49.87)

BIH: Bosnia-Herzegovina, USA: United States of America, E.G.: Equatorial Guinea, MKD: Republic of Macedonia, COD: Republic of the Congo, DRC (Zaire): Democratic Republic of Congo (Zaire), DOM: Dominican Republic, SVK: Slovak Republic, SCG: Serbia and Montenegro.

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Entrepreneurial Technology Opportunism and Its Impact on Business Sustainability with the Moderation of Government Regulations

Shoaib Asim, Cai Li, Habib Ur Rahman Makhdoom, Zuhaib Zafar

ABSTRACT

Objective: This article aims to examine the direct relationship between technological opportunism (TO) and business sustainability (BS). The study examines the relation through the moderation of government regulations (GR) between TO and BS. The objectives of this research were to establish TO as an important antecedent for the sustainability of small and medium-sized enterprises (SMEs), assess the interaction of TO with GR and establish relations with regard to how Pakistani SMEs focus on their business sustainability through government regulations.

Research Design & Methods: This empirical study is based on 480 key informants which belong to the SME sector of Pakistan. Structural Equation Modelling analysis was applied to analyse the research hypothesis by using Smart PLS.

Findings: Our analysis shows that TO and GR have a significant positive impact on BS of Pakistani SMEs. However, the interaction of TO and GR is also found to have a significant impact on BS but it is negative.

Implications & Recommendations: Furthermore, the study offers insights and implications for policy makers, regulators and academics that TO is the most important factor for business sustainability of SMEs.

Contribution & Value Added: The findings of this study bridge the gap between the entrepreneurial technological opportunism and business sustainability literature by establishing TO as an important antecedent of BS.

Article type:	research article
Keywords:	technology opportunism; government regulations; business sustainability; SMEs; Pakistan
JEL codes:	L26, Q55, Q56, O38

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INTRODUCTION

Firm's sustainability has been established through innovations, in particular technological innovations, and these are major drivers of the firm to sustain its business (Cefis & Ciccarelli, 2005; Geroski, Machin, & Van Reenen, 1993; Roberts, 1999). The importance of sustainable business practices is already recognized around the business world. (Patzelt & Shepherd, 2011b). Environmental, economic and social factors are the three important aspects which prop up sustainability (Agu Igwe, Ituma, & Madichie, 2018; Gimenez, Sierra, & Rodon, 2012). The sustainability concept is actually of versatile nature and has been studied in engineering, environmental sciences and particularly in business and management fields (Gimenez *et al.*, 2012). Government policies and regulatory implementations are one of the key drivers of the industry's environmentally responsible performance (Battisti, 2008; Clayton, Spinardi, & Williams, 1999; Vollebergh & Van der Werf, 2014). According to (Luken & Van Rompaey, 2008), high production costs, current environmental legislations and expected future environmental rules are the three important drivers of sustainable development in developing countries.

As developing countries such as India, China, and Africa are rapidly industrialising, it is important for them to develop and adopt technologies right from the design stage of new projects. However, developing countries like Pakistan and most of the other South Asian countries have been moving towards industrialisation since the announcement of China Pakistan Economic Corridor (CPEC). Moreover, there is a lot of industrial development taking place in Pakistan and therefore it is important that the government of Paksitan should design policies for business sustainability and adopt technological opportunities which should be economical and eco-friendly as well. Industries of developing countries are improving their major achievements in the environmental performances since the Rio Conference of 1992.[1] Developing countries are the ones to get most affected by the climate change; in particular, the below poverty line population will suffer most because of their inability to sufficiently adapt to the change (World Bank Report, 2013).[2] Pakistan's first comprehensive piece of legislation on the environment came out in 1983 as Pakistan Environmental Protection Ordinance (PEPO). Therefore, the climate change opens new opportunities for developing countries so that they could formulate their own strategy to promote cleaner local industries that can lead to economic, social and environmental benefits.

In the past, much of the research observed the impact of innovative technologies on the firm's ability to get perfection in sustainability. However, this article demonstrates the concepts of entrepreneurial technology opportunism in the context of Pakistan, particularly and in general the role of technological opportunism in the sustainability of small and medium-sized enterprises (SMEs) by using the structure equation modelling (SEM) methodology which can define the general aspect of this article with a randomly selected sample of 480 SMEs in Pakistan. Technological opportunism makes an impact on business sustainability, and the interactions between government regulations and entrepreneurial technology opportunism foster the SME's sustainability. Therefore, the objective of this study is to assess the impact of entrepreneurial technological opportunism on business

[1] Available at: https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf
[2] Accessed from: http://projects-beta.worldbank.org/en/results/2013/04/13/climate-change-results-profile

sustainability of Pakistani SMEs with the moderation role of government regulations. This leads us to formulate a key research question. How can SMEs improve their sustainability by using entrepreneurial technology opportunism with the interaction of government regulations? This research question is answered in this empirical study. However, in the past, only few researchers studied the sustainability of Pakistani SMEs but in a different way e.g., supply chain, SME financing, CSR practices, etc. (Awan, Kraslawski, & Huiskonen, 2017; Dasanayaka, 2008; Jamali & Mirshak, 2007; Jamshed Raza, 2016; Qureshi, 2012).

In this article, both commercial and technical sides of technological innovation are considered and mainly focus on the entrepreneurial mechanism. Through technological senses and response capability, recognition and exploitation of technological opportunities concern the identification of technological opportunism. Drawing upon previous studies (Assessment, 1969; Casson, 1982; Kirzner, 1997; Srinivasan, Lilien, & Rangaswamy, 2002; Venkataraman & Sarasvathy, 2001; Yoon & Magee, 2018; Żur, 2015), this study defines technology-based entrepreneurial opportunities or technological opportunities as one of the prospects to design new products, which are originated from the divergence of beliefs towards the future value of previously unexploited technologies. The opportunities which are based on technological entrepreneurship plan to produce new products. Business sustainability, in the context of this article, can be described as the combination of social performance, environmental performance, and economic performance (Drexhage & Murphy, 2010; Kwarteng, Dadzie, & Famiyeh, 2016). In the past, there was abundant literature that considered the relationship between business sustainability and entrepreneurial technology opportunism which captured more difference in Pakistan than in other countries (Agyemang & Ansong, 2017; Kraus & Britzelmaier, 2012; Kwarteng *et al.*, 2016; Velte & Stawinoga, 2017; Venkatraman & Nayak, 2015). However, the predecessors poorly developed and understood sustainability (Hahn, Pinkse, Preuss, & Figge, 2015). A firm can sustain only by considering all three factors i.e., social, environmental and economic, rather than focusing on only one factor. A firm may sustain its economic goals through assuming environmental and social responsibilities.

As per (Shane & Venkataraman, 2000), entrepreneurial opportunities are defined as "situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at more than their cost of production." However, entrepreneurial ability is basically to recognize and exploit the technological opportunity to initiate a new business or set up a new product because novel products and services are produced to fill the gap in the market needs and make the efficient use of available resources. Therefore, entrepreneurs develop plans for the development of a new product by considering the needs of the market in order to sustain their business growth.

This rest of the article is divided into 4 sections. The hypothesis development and relevant literature with some strong theoretical background are considered under Section 2. Following this, the research framework and methodology are presented in Section 3. Section 4 contains results concerning the measurement model, structural measures and discussion. Finally, conclusions, implications and limitations are presented in Section 5.

LITERATURE REVIEW

This study examines the direct relation between entrepreneurial technology opportunism, technological opportunities recognition, and execution to business sustainability that emphasizes eco-systematic thinking. Also, it examines the same effect with the interaction of

government regulations. To explore this relation, this study is based on Stevenson's conceptualisation of entrepreneurship in an opportunity context and on Resource-Based View (RBV) theory. The chosen framework is suitable to highlight the relation of entrepreneurial technology opportunism and business sustainability in the context of Pakistani SMEs.

Stevenson's conceptualisation of entrepreneurship, based on the initial concept defined in 1983, provides a valuable foundation in this regard (Brown, Davidsson, & Wiklund, 2001; Fellnhofer, 2017; Stevenson & Carlos Jarrillo-Mossi, 1986; Stevenson & Jarillo, 2007). Nowadays, it is easier for entrepreneurs to consider all the critical aspects of entrepreneurship to promote the behaviour which is needed to recognize innovative opportunities and exploit them to sustain their business (Todeschini, Cortimiglia, Callegaro-de-Menezes, & Ghezzi, 2017). As defined by the World Commission on Environment and Development (WCED), 'sustainability' is the ability to fulfill your current demands but without restraining the ability to meet the future needs defined by WCED (1987). Normally, business contemplates economic benefits but business sustainability in addition to economic benefits is concerned with social values and measurable ecological values (Boons & Lüdeke-Freund, 2013).

Stevenson defines entrepreneurship as a managerial approach with a focus on the exploitation of opportunities (Stevenson, 1983). Based on his statement, entrepreneurial management is an opportunity-based behaviour (Brown *et al.*, 2001; Gonzalez-Perez, Velez-Ocampo, & Herrera-Cano, 2018) which is critical to the long term vitality of the economy (Stevenson, 1983). Therefore, this study investigates the impact of technological entrepreneurial opportunity-based behaviour with the focus on business sustainability.

The exploitation of opportunities is an important aspect to boost up innovation which actually drives sustainable businesses. In the past, Stevenson's explained the features of the conception of sustainability (Kamaludin, Saad, & Aziz). Stevenson's mechanism on more than 1,200 cases of diversified firms for examining the entrepreneurial theme has been pragmatically indorsed (Brown *et al.*, 2001) and therefore, the reliability of the current study is supported by Stevenson's mechanism.

RBV was initially introduced by Wernerfelt (1984). In his study he examines organisational resources and summits those resources and capabilities to generate a competent business. Innovation is a key driver to unite all resources and capabilities, and together these forces generate a more competent business (Bakar & Ahmad, 2010; Ndubisi, Dayan, Yeniaras, & Al-hawari, 2019). However, research on the role of normative or moral values is still in its early stages, and their actual relation to entrepreneurial technological opportunism for sustainable development is slurred. Therefore, new explorative empirical research could provide valuable insights into two questions. According to Dean and McMullen (2007), Muñoz and Dimov (2015), and Patzelt and Shepherd (2011b), the first question deals with the key elements of entrepreneurial technological opportunism, which are technological sense and response capabilities. Both elements are further divided into sub-elements, such as technological opportunities, threats, exploitation and execution of new technologies and what their impact on business sustainability is, while the second question is: what differences could be made on SMEs sustainability with the moderation of government regulations? It is evident that technological opportunities are essential for business sustainability. On a firm level, there is an enormous deficiency of capacity enhancement, designs models and experts, which are effective for sustainability

(Koefoed & Buckley, 2008; Tukker, 2000). However, the shortage of funds, lack of technical expertise, low research & development (R&D), expenditure and stringent government regulations – these are all barriers for SMEs as compared to large firms to achieving technological innovations (Freel, 2000; Hadjimanolis, 1999).

In other words, developing countries face more obstacles with low infrastructure facilities. Insufficient government support, lack of formal bank credits, lack of information regarding technology and low human capital are major hurdles to SMEs' performance (Al-Maskari, Al-Maskari, Alqanoobi, & Kunjumuhammed, 2019; Dar, Ahmed, & Raziq, 2017; Hadjimanolis, 1999; Radas & Božić, 2009; Rehman, 2016). This previous literature is related to testing and adjustment of the scale, supported reliability and feasibility of application concepts with a focus on business sustainability (Brown *et al.*, 2001). Outcomes point out the sustainability dimensions, emphasize a high discriminating efficiency and moderate to high reliability. Also, aspects dedicated to entrepreneurship have been researched (Kamaludin *et al.*, 2012).

Ecology is a necessary component (El-Kassar & Singh, 2018), it is an essential factor that makes the environment sound. Those countries which keep their environment clean and sound are greener than those which do not (Song & Wang, 2018). During the last four decades, regulations have been the most important policy instrument related to the environmental behaviours of the entire sector of economy (Montalvo & Moghayer, 2011). Despite the fact that eco-innovation can leverage service innovation capability and business sustainability, successful implementation of ecology is closely related to government regulations (Song & Wang, 2018; Vazquez-Brust, Smith, & Sarkis, 2014).

Currently, the majority of empirical research shows that the role of regulations concerning innovation and competitiveness at the firm level is positive (Montalvo, 2012; Wagner & Llerena, 2011). Regulations have been created to encourage firms to adopt sustainability strategies and thus improve their sustainable business performance, which includes economic, social, and environmental performance (Pusavec, Krajnik, & Kopac, 2010). Increasing institutional pressures are being faced by SMEs to adopt sustainable business practices and reduce environmental pollution (Hillary, 2017; Melville, 2010). For this challenge, SMEs are trying to measure, with the help of a variety of green tools, to achieve sustainable business practice, such as environmental management systems (Singh, Brueckner, & Padhy, 2015). The innovation is an important driver of business sustainability (Cai & Li, 2018; Katila & Shane, 2005; Leskovar-Spacapan & Bastic, 2007). Not every stakeholder puts pressure on firms to implement practices related to the environment because their influences are not always equal. However, primary stakeholders, customers, clients and authorities have the ability to put their influence on environmental pressure. To adopt sustaining initiatives into their operations, government regulations are considered to be the most important driving force (Liu, Kasturiratne, & Moizer, 2012). Moreover, Awan (2017) highlighted that for achieving high effectiveness of sustainability initiatives, the regulatory governance may be an important external pressure. Local environmental regulatory agencies face lack of issues to enforce and monitor the true implementation of Pakistan national environmental standards. They also have challenges related to the capacity and monitoring equipment (Afzal, 2006). Non-governmental organizations' pressure is also a substantial factor to sustain the firm. In developing countries, most of the studies are being conducted to investigate the sway of regulatory pressure on the empathy of environmental norms and to adopt technologies for

the sustainability of business. The innovation-based strategies and opportunity-based strategies are assumed to facilitate firms which are sustainability-oriented (Anthony, Eyring, & Gibson, 2006; Govindarajan & Ramamurti, 2011; Huizingh, 2011). Entrepreneurial firms have enhanced innovative and sustainable ideas (Larson, 2000; Zhao, 2005), hence innovative and sustainability-focused firms take benefit from value creation by exploiting opportunities.

Technology Opportunism and Business Sustainability

Entrepreneurial technology opportunism has been described as a system, a process, a capability, a strategy, and an individual attribute which is related to the discovery, threats, recognition, and creation of new technologies and their exploitation (Abetti, 1992; Badzińska, 2016; Dorf, 2011; Gans & Stern, 2003; Hindle & Yencken, 2004; Shane & Venkataraman, 2003; Srinivasan *et al.*, 2002). Considering previous studies (Casson, 1982; Kirzner, 1997; Petti & Zhang, 2013; Sarasvathy & Venkataraman, 2011; Schmidt, Müller, Ibert, & Brinks, 2018; Shane & Venkataraman, 2000), technological opportunities can be defined as the possibilities to create new products. Introducing these products into the market and selling them at a price higher than the cost of their production. Business sustainability refers to social, economic, and environmental performance. Sustainable competitiveness as an integrating concept bridging current understanding of sustainable development and encompassing the aspects of economic, social and environmental sustainability (Doyle & Perez-Alaniz, 2017). Distinctly, for this research, sustainability is "meeting the necessities of present without compromising the aptitude of future generations to meet their own needs" (Brundtland, Khalid, & Agnelli, 1987; Hale, Legun, Campbell, & Carolan, 2019). Sustainable development of long-term market commitment focuses on those technologies and products which are constructive for the environment (Hart & Milstein, 2003). SMEs have the responsibility to do things for the betterment of environment and society with their keen objective of retaining their profit (Bos-Brouwers, 2010; Radziwon & Bogers, 2018; Walker & Preuss, 2008).

In fact, Schumpeter (1942) argued that the external constituencies make the markets disappointed whenever the sustainable developments put strain on the adoption of sustainable practices, and it actually provides chances to entrepreneurs to make markets normal and resolve the market disappointments (Cohen & Winn, 2007; Hockerts & Wüstenhagen, 2010). Entrepreneurship is highlighted by academics and therefore the literature as a decisive strategy for businesses in the emerging economy, and it is likely to boost businesses above the threshold of sustainability (Hull, Caisy Hung, Hair, Perotti, & DeMartino, 2007; Scheepers, Hough, & Bloom, 2007; White, 2009; Zahra, 2015). The process is disrupted and made obsolete for those organisations which fail to innovate risk, and that is famously described by (Schumpeter, 1942) as "the perennial gale of creative destruction." However, the need for entrepreneurship has always been real and it has been emphasized in recent years due to the engagement of economic changes and worldwide growing competition. The literature discloses that the innovative sustainability strategy is closely linked to the entrepreneurial business strategy for improvement in extremely competitive situations (Hull *et al*., 2007; Ligthelm, 2010; Raymond, Bergeron, Croteau, & St-Pierre, 2015; Singh, Bhowmick, Eesley, & Sindhav, 2019; White, 2009; Zhang & Dhaliwal, 2009).

In the current era of rapidly increasing state of the business environment, innovativeness is a crucial element for the success of entrepreneurial firms. Although recognition and exploitation of technological innovativeness are not the same, for the entrepreneurial

firm the detection of both recognition and exploitation of technological opportunities is required (Schumpeter & Fels, 1939; Short, Ketchen Jr, Shook, & Ireland, 2010). In the same context, it is closely related to the fact that innovative new ventures are based on the design of technological opportunities, more precisely on whether they are discovered or created (Alvarez & Barney, 2010; 2012). Following these two diverse academic assumptions, the opportunity process is executed and exploited under different contexts which are dynamic to the innovation and entrepreneurial processes (Alvarez, Audretsch, & Link, 2016; Baron, 2008; Shane & Venkataraman, 2000) and to our understanding of how nascent ideas and businesses are formed and developed (Hmieleski, Carr, & Baron, 2015).

In the context of the global marketplace, the need for greater sustainability is a topic which presents opportunities for innovators by rewarding a competitive edge to those adopting more sustainable practices (Konar & Cohen, 2001; Lee *et al.*, 2018) and those offering more sustainable products to their customers (Kiron, Kruschwitz, Reeves, & Goh, 2013; Nicholls & Opal, 2005). A business could sustain from the surprising low or high level economic, social and environmental challenges through innovative decisions (Kuratko, Hornsby, & Covin, 2014). Previously, Patzelt and Shepherd (2011a) described a model for sustainability developments in business which is actually based on the combination of prior knowledge of entrepreneurship and the environment that can create technological opportunities for firms to sustain on the market. Thus, we pose our first hypothesis.

H1: Entrepreneurial technology opportunism has a significant impact on business sustainability.

Government Regulations and Business Sustainability

Sustainability does not deal with right policies, decisions and methods to get more current capital, it is a responsibility to take for the distribution of risks and sacrifices equally between poor and rich, non-human and human, and present and future generations (Blok, Gremmen, & Wesselink, 2016). We are describing the model for sustainability developments in business which is based on the combination of prior knowledge of entrepreneurship and the environment that can create technological opportunities for firms to sustain on the market. Thus, we pose our first hypothesis.

In Pakistan, the regulatory authority, Securities Exchange Commission of Pakistan (SECP), issued guidelines on voluntary social responsibilities. Similarly, other institutes, for example Corporate Social Responsibility Association of Pakistan (CSRAP), Responsible Business Initiative Pakistan (RBIP), National Forum for Environment and Health (NFEH), Corporate Social Responsibility Centre Pakistan (CSRCP), Triple Bottom Line Pakistan (TBLP), Sustainable Development Policy Institute (SDPI), Non-government Organisations (NGOs) and other supporting groups etc., are endorsing the need for business and the government to promote social responsibility awareness and cultural practices among Pakistan.

Previously it was described that governmental acts as a driver to adopt that kind of technologies which are efficient sustain the business. In Carlos Montalvo (2008) survey one key finding was that the government policies are one of the key elements leading to business sustainability. The framework by Sangle (2011) fetches together the stakeholder, technology, and the firm for proactive business sustainability for cleaner technology adoption. The role of SMEs played in the region's sustainable development cannot be ignored. For poverty mitigation, economic development and employment generation, SMEs are the

main sources (Raza & Majid, 2016). On the one hand, many studies reported a significant role of appropriate policies for sustainability in business (Agan, Acar, & Borodin, 2013; Carroll & Buchholtz, 2014; Epstein, 2018) while on the other hand, some studies from different markets show that there is an insignificant impact of environmental policies or government regulations and their interaction with technology on business sustainability (Adeoti, 2002; Satapathy, Sangle, & Unnikrishnan, 2017). However, based on the above arguments, we pose our second and third hypotheses.

H1: Government regulations have a significant positive impact on business sustainability.

H2: Government regulations are the moderation between technological entrepreneurship and business sustainability.

MATERIAL AND METHODS

Research Framework

Based on the literature and the hypothesis development, our framework for this study is given below:

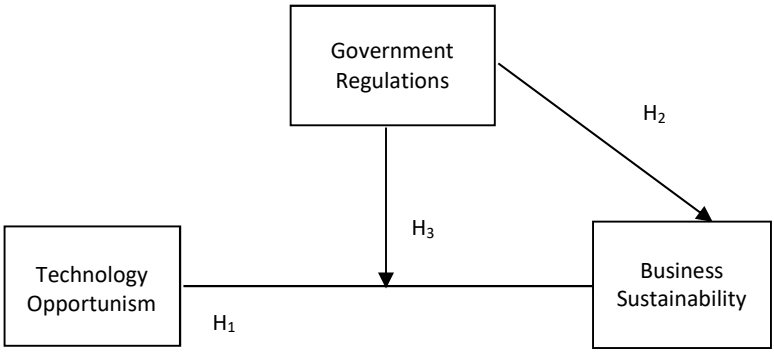

Figure 1. Research framework
Source: own elaboration.

Sample and Data Collection

The SME sector is generally considered not responsible in terms of its operations for the environmental and social system. For the collection of data, we use random sampling technique and we have targeted the SME sector of Pakistan and focused on big cities: Karachi, Lahore, Sialkot, Faisalabad and Multan, which have their industrial zones. Moreover, the sample size is selected on the basis of the previous studies (Ali, Dey, & Filieri, 2015; An & Noh, 2009; Archana & Subha, 2012; Farooq & Markovic, 2017). The questionnaire is developed and distributed physically and through emails. It was intended that the sample population consisted of working individuals. The survey was conducted among 750 key informants, through convenient sampling technique, their confidentiality was assured. The questionnaires which were unanswered and had missing values were deleted, and in total, we received back 480 considerable questionnaires.

Demographic Information

For technological opportunism and business sustainability, here is the compressed demographic information with responses of 480, the target population was small and medium-sized enterprises, and distributed questionnaires were (N = 750), questionnaires with missing values and suspicious responses were deleted. In return, the total responses were (N = 480) with 64% rate. 139 respondents (29%) were between 18-25 years of age, 168 respondents (35%) were between 26-35 years of age, 91 respondents (19%) were between 36-45 years of age, 63 respondents (13%) were between 46-55 years of age and 19 respondents (4%) of the total sample population were over 55 years of age, as mentioned in Table 1. The rate of respondents according to their firm's location includes 23% Karachi, Sialkot 26%, Lahore 18%, Faisalabad 20%, and Multan 13%.

Table 1. Demographic Information

Variables	Items	Frequency	(%)
Gender	Male	413	86
	Female	67	14
Age of respondents	18-25	139	29
	26-35	168	35
	36-45	91	19
	46-55	63	13
	Above 55	19	4
Qualifications	Secondary education	110	22.9
	Intermediate or equal	140	29.1
	Bachelors or equal	93	19.37
	Masters or equal	82	17.08
	Other technical education	55	11.55
Respondents	Owners	348	72.5
	Key informants	132	27.5
Regions	Karachi	110	23
	Lahore	86	18
	Faisalabad	96	20
	Multan	63	13
	Sialkot	125	26
No. of employees	1-100	376	78.4
	101-250	104	21.6
Years in the business	1-10	190	39.58
	11-20	224	46.67
	Above 20	66	13.75

Source: own study.

Measurements

All the constructs were measured on a seven point Likert-scale, strongly disagree = 1 to strongly agree = 7. The dependent variable business sustainability was measured in terms of the environmental, economic and social performance and this is the adaption of

(Maignan & Ferrell, 2000; Turker, 2009). The questionnaire items used for this measurement were based on those used in (Raderbauer, 2011).

Technological opportunism came into existence by sensing and responding to technological capabilities (Srinivasan *et al.*, 2002). By using 8 item scales, we measured technological opportunism on the basis of behaviours related to the organisation with respect to new technologies. The regulation was assessed using four items: compliance with regulation, penalties imposed, inspection and attainment (Fernando, Jabbour, & Wah, 2019).

Analytical Methods

The data was analysed using Smart PLS version 3.2.7 (Ringle, Wende, & Becker, 2017). The PLS-SEM approach was adopted, because it can handle reflectively and formatively both types of measurement models which are involved in the proposed model of study. A recent study (Farooq *et al.*, 2017) for validating his UTAUT3 model (i.e. an extended version of the unified theory of acceptance and use of technology) also used PLS-SEM. In addition, the selection of PLS-SEM is based on its ability to simultaneously estimate causal interactions between all potential constructs, while addressing measurement errors in the structural model (Farooq *et al.*, 2017; Hair, Hult, Ringle, & Sarstedt, 2017). Furthermore, our study is descriptive in nature; therefore, PLS-SEM is best for this study (Farooq & Markovic, 2017). The measurement model was evaluated separately before evaluating the structural equation model (Hair *et al.*, 2017). Before performing PLS-SEM analysis several tests were performed, like validity and reliability of the data by using the quality of data and consistency of the structural model.

RESULTS AND DISCUSSION

The Measurement Model

Individual item reliability: Following previous studies (Duarte & Raposo, 2010; Hair Jr., Sarstedt, Hopkins, & Kuppelwieser, 2014; Hulland, 1999), an individual item reliability is assessed by observing the outer loadings of each item of each construct. For researchers, there is a rule to follow that the values of outer loading should be retained 0.4 to 0.70 (Hair Jr. *et al.*, 2014). In Figure 2, loading factors are drawn for each of the indicators in the research model. Moreover, this study met the standardised criterion of individual item reliability.

Internal consistency reliability: for measuring the internal consistency reliability, it is a rule of thumb as for composite reliability, and Cronbach's alpha must be 0.70 or above (Bagozzi & Yi, 1988; Hair Jr. *et al.*, 2014).This study met the criterion of composite reliability (CR) and Cronbach's alpha (CA) successfully, and all variables are between 0.826 to 0.927 as CR and 0.720 to 0.913 as CA.

Convergent Validity: for measuring the convergent validity with average variance extracted (AVE), (Fornell & Larcker, 1981). AVE should be 0.5 or more to prove the convergent validity of a particular construct. Moreover, this study achieved the threshold of AVE (Chin, 1998). All the above-described reliabilities and validities are mentioned in Table 2.

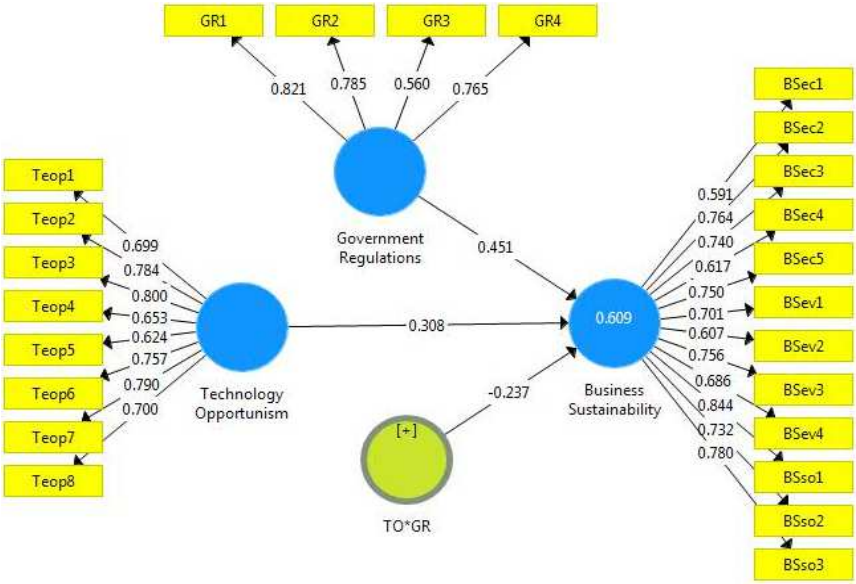

Figure 2. Factor loadings and structural factors influence
Source: own elaboration.

Table 2. Reliabilities and validates

Latent variables	Outer Loadings	AVE	CR	CA
Business Sustainability		0.515	0.927	0.913
BSec1	0.591			
BSec2	0.764			
BSec3	0.740			
BSec4	0.617			
BSec5	0.750			
BSev1	0.701			
BSev2	0.607			
BSev3	0.756			
BSev4	0.686			
BSso1	0.844			
BSso2	0.732			
BSso3	0.780			
Government Regulations		0.547	0.826	0.720
Gps1	0.821			
Gps2	0.785			
Gps3	0.560			
Gps4	0.765			
Technology Opportunism		0.531	0.900	0.872
Teop1	0.699			
Teop2	0.784			
Teop3	0.800			
Teop4	0.653			

Teop5	0.624			
Teop6	0.757			
Teop7	0.790			
Teop8	0.700			

Source: own study.

Discriminant Validity: Fornell and Larker standardise the discriminant validity by using AVE with a higher value of 0.50 and took the square root of AVE of the latent variables, and it must be higher than the correlation among the variables (Fornell & Larcker, 1981), as shown in Table 3.

Table 3. Discriminant validities of variables

Variable	Mean	SD	BS	GR	TO
BS	5.6809	0.80779	***0.718***		
GR	5.7094	0.81857	0.652	***0.740***	
TO	5.8590	0.64586	0.660	0.568	***0.729***

Notes: TO =Technology Opportunism, GR = Government Regulations, BS = Business Sustainability.
Source: own study.

Structural Measures

This study used the standard bootstrapping procedure with 500 bootstrap samples, 480 samples to determine the significance of the path coefficients (Hair Jr *et al.*, 2014; Henseler, Ringle & Sarstedt, 2015; Henseler, Ringle & Sinkovics, 2009). Full results of the structural measures of our model are demonstrated in Table 4. Where technology opportunism (TO) has a significant positive (β = 0.309, t-value = 7.871 and p-value < 0.000) relationship with business sustainability (BS) as we expected. So it supports H1. Government regulations (GR) have a significant positive impact (β = 0.447, t-value = 8.126, p-value < 0.000) on business sustainability (BS) as we expected. This supports H2. The interaction coefficient (TO*GR) between technology opportunism (TO) and government regulations (GR) is negative and significant (β = -0.237, t-value = 7.256, p-value = 0.000) indicating that GR moderate negatively between TO and BS. This supports H3. However, the moderating role of GR in explaining the relationship between TO and BS is also supported by Figure 4, which is used to plot the moderating role of GR between TO and BS.

Table 4. Path coefficients

Hypothesis Relationship			Beta	SD	t-value	p value	Decision
H1	TO	→ BS	0.309	0.039	7.871***	0.000	Supported
H2	GR	→ BS	0.447	0.063	8.126***	0.000	Supported
H3	TO*GR	→ BS	-0.237	0.034	7.256***	0.000	Supported

Notes: TO =Technology Opportunism, GR = Government Regulations, BS = Business Sustainability. ***p < 0.01.
Source: own study.

PLS-SEM structural model assesses for overall explanatory power of constructs through R^2; this R^2 value is also called coefficient of determination (Hair Jr. *et al.*, 2014; Henseler *et al.*, 2009). R^2 value is acceptable at 0.10 (Falk & Miller, 1992). According to Chin (1998) in PLS-SEM, R^2 is significant at 0.60, moderate at 0.33 and weak at 0.19. With

respect to the values in Figure 3, R^2 is 0.609 for latent variables i.e., technology opportuneism (TO), government regulations (GR) and business sustainability (BS), therefore it can be explained that latent exogenous variables have a significant impact on the latent endogenous variable. In this study, TO and GR together explain the 61% of the variance in BS.

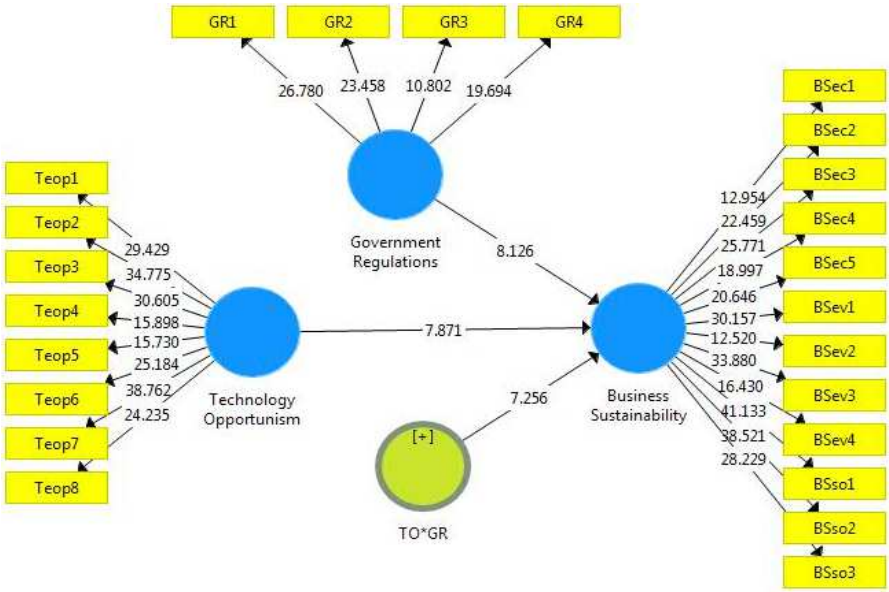

Figure 3. Model loadings with the t values of variables
Source: own elaboration.

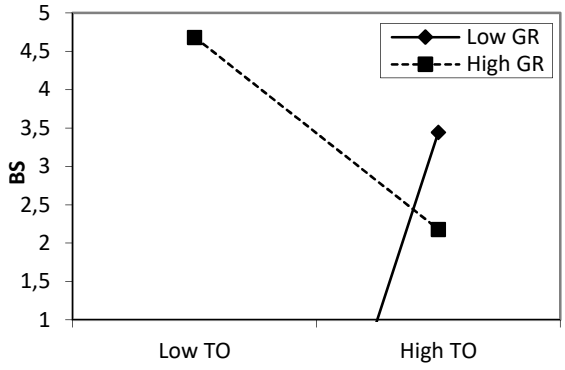

Figure 4. Interaction of Technology Opportunism and Government Regulations on Business Sustainability
Source: own elaboration.

Discussion

Initially, this research reveals the relation of entrepreneurial technology opportunism and regulations with business sustainability by using two complementary theories of Stevenson's conceptualisation of entrepreneurship in an opportunity context and Resource-

Based View (RBV). The framework which has been developed based on these theories creates better understanding of the relationship of entrepreneurial technology opportunism and business sustainability. These two theories are correlated with each other in favour of SMEs' resources based on capabilities and abilities to create, adapt, execute, and exploit new technological opportunities, and also empower SMEs for the business sustainability which leads them among business competitors. RBV and Stevenson's concept can be used to support the role of regulations as a moderator between technological opportunism and business sustainability by measuring the impact of the interaction between technological opportunism and government regulations on business sustainability (economy, society, and environment). By using the PLS-SEM, the results show positive and significant effects of technological opportunism and government regulations on business sustainability, which supports the proposed hypothesis. Moreover, the impacts of the interaction of technological opportunism and regulations are significant but negative on the dependent variable. Also the central question of this research, namely how can SMEs improve their sustainability by using entrepreneurial technology opportunism with the interaction of government regulations, is answered in the following way: exploiting new technologies and overcoming the threats related to adopting new technologies has a positive impact on business sustainability of the SME sector (Jenkins, 2009; Meijer, Huijben, van Boxstael, & Romme, 2019; Niaki, Torabi, & Nonino, 2019), specifically of Pakistani SMEs (Jasra, Hunjra, Rehman, Azam, & Khan, 2011). SMEs should focus on sustainability in the context of technology; in this competitive technological era firms cannot be staying on the market without focusing on the exploitations and adoption of technological opportunities. Government regulations also have a positive impact on business sustainability (Porter & Kramer, 2019) and the government should make supportive regulations and environmental policies, which should be essential to follow by SMEs, as these can lead to business sustainability (Chams & García-Blandón, 2019; Matinaro, Liu, Lee, & Poesche, 2019; Parker, Redmond, & Simpson, 2009). The interaction of technological opportunism and government regulations has a significant but negative impact on business sustainability, which rejects the previous study (Satapathy *et al.*, 2017). In Pakistan's perspective, this study reveals that government regulations as a moderator makes a significant impact on technology and business sustainability, but the sum of both predictors which are government regulations and technology opportunism produces negative interaction coefficient.

CONCLUSIONS

This study fills the literature gap with theoretically developed and empirically tested model based on previous studies. The empirical testing for the model shows a strong influence of technology opportunism and government regulations on sustainable business practices. The hypothesis of the study suggested that technological opportunism can increase the performance of business sustainability in the SME sector of Pakistan. Adopting new technologies and changing technologies with time is effective for a safe environment. Top management, policymakers should take an efficient and effective decision for the environment and social contribution because many of the previous studies say firms cannot exist longer if they focus on or attain only their economic goals. Government regulations which are direct and positively related to business sustainability show that the government regulates environmental policies and imposes penalties on those firms which do not take adequate

measures to protect the environment and society. Overall, the results of this study suggest that technological opportunism and government regulations both contribute to achieving the environmental, social and economic performance of the SME sector of Pakistan. This study suggests that technological opportunism, adoption of technology, exploitation of technology and effective government regulations are essential for the environmental, social and economic performance of SMEs. The conclusion signifies that technological opportunism and government regulations can play an important role in achieving business sustainability for Pakistani SMEs.

The results of this study expand the concepts by suggesting that practices on technological opportunism and successive government environmental regulations could have a unique strategic advantage in enhancing business sustainability concerning the environment, the social and economic performance of firms. This proposes that managers should recognize the stature of their firm capabilities.

The findings of this study may imply that technological opportunism and government regulations related to environmental policies for SMEs may increase the ability of firms to take initiatives for the practices in their operations which lead toward business sustainability. Managers should develop internal capabilities proactively to focus on technological opportunism and follow technological changes which happen to meet the requirements for achieving social, environmental and economic goals. However, we suggest the government should create some strict environmental policies and ensure the implementations of those policies by routine inspection. The government should arrange seminars, conferences, and technology-based sustainability workshops to create awareness among managers. To enhance business sustainability, in technological opportunism, firms from all sectors have to put more focus on all the three – environmental, social and economic sustainability-related practices together. The study suggests to the managers that a firm's sustainability is strengthened by developing capabilities to attain technological opportunism to improve the environment, society, and economic performance.

Government regulations also affect the adoption of technological opportunism for firms. In emerging economies like Pakistan, the SME sector needs to realize the importance and benefits of technological opportunism that can have an impact on their firms, economy, society, and environment at large. In Pakistan, managers should set their the environment and community standards following local culture and adhere to the law. Regulatory stakeholders should understand the importance of the technology partner pressure and must set regulations and policies to encourage SMEs to enhance their societal safety and promote their wellbeing by providing an easy path, directions, expertise knowledge and financial support in adopting the technological opportunism practices. Besides this, regulatory stakeholders can develop sustainability standards, offer technical assistance, pieces of training, introduce new technologies, pollution prevention techniques and support SMEs to adopt new technologies to attain more sustainability in the world market. In Pakistan, companies have made themselves more socially responsible for training and educating themselves about technical opportunism. The study suggests and identifies the importance of technological opportunities and ecological elements (e.g., environmental, social and economic) for the SME sector of Pakistan and it also suggests that government regulations play a dynamic role between both latent variables.

The study identified several limitations, ranging from data collected from 480 SMEs of Pakistan which are limited and these SMEs are randomly selected, a small number of industries and a limited time frame. With the rapid growth of sustainability practices in developing countries, there is a need for a cross-industry comparison of sustainability practices by measuring their impact on business sustainability performance in developing and developed countries in the future. The governance mechanism can interpret and predict performance outcomes for different cultural and individual differences; it affects relationships and performance outcomes. We recommend that future research should be conducted on how the cultural competence of employees can improve the effectiveness of contract and relationship of governance in adopting a technical opportunism with the context to enhance social sustainability, In future research the sample size can also be increased and data could be collected through systematically selected SMEs of Pakistan. Another future research opportunity is that researchers could explore and provide a detailed investigation of social issues at the technological level in SMEs because SMEs often lack capabilities and resources to deal with social issues and they may not be able to meet emergent social standards. Compared with large data sets, future research can test the motivation of SMEs to adopt technical opportunism. There are some problems in improving the governance mechanism for social issues in developing countries.

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Factors Affecting Startup Performance of Small and Medium-Sized Enterprises in Danang City

Tan Le Trinh

ABSTRACT

Objective: The aim of the study is to examine the factors such as government policy, financial capital, cultural factors, social factors, and human capital that influence SMEs business success.

Research Design & Methods: By observing many factors that affect businesses, this study applies structural equation modeling using partial least squares (PLS-SEM) to provide an understanding on how people may start their business. These factors help to reduce risks of failure and in-crease chances of success.

Findings: The results of testing indicate the suitability of the research model with data's re-search. Along with the acceptance of hypotheses, this research model shows the prac-tical meaning of startup performance.

Implications & Recommendations: For a sustainable startup, there should be suitable legal policies, including incentive policies on taxes in the first 3-5 years, when new businesses are established. Moreover, we should focus on policies such as credit, guarantee, and loan assistance for startup enterprises in their initial stages to solve their problems.

Contribution & Value Added: Many young people in Danang are entrepreneurs. The government also supports these activities and readily assists startup project effectiveness. Therefore, this study helps to understand the factors that affect startup performance.

Article type: research article

Keywords: structural equation model; partial least squares; startup performance; small and medium sized enterprises; business environment

JEL codes: C12, L26

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INTRODUCTION

This study aims to identify the factors that affect startup performance of small and medium-sized enterprises (SMEs) in Danang city and to test the relationships among these factors. All previous studies addressed whether there are any clear characteristics, which detect small business barriers to find out which ones are more important for policy makers to help them. The question remains why some of them can lead to success but many cannot survive in competitive markets. These situations caused great concerns for researchers, because market economy relies on developing startup of substantial business numbers and the growth of such firms. Moreover, building those businesses creates more job opportunities for people in Danang, so the current study may help policymakers. In order to achieve this objective, this study employs a qualitative method of focus group discussion with chief executive officers of SMEs in Danang city to identify factors affecting startup performance and corresponding measure items. Furthermore, this study applies a quantitative method with PLS-SEM to construct an equation about factors that affect successful startup performance. There are five sections in this study (i) The *Introduction* section shows the essence and importance of this study; (ii) In order to construct the conceptual model, the numerous prior research and studies relating to entrepreneurship were reviewed and discussed in the *Literature Review* section; (iii) Besides, this study offers statistics analyzing and steps in a research process in the *Material and Method* section; (iv) what is more the empirical results are followed with the discussion, and the *Results and Discussion* section gives overview of the statistics results; (v) Finally, conclusions are drawn and recommendations are proposed.

LITERATURE REVIEW

Startup Ecosystem (SE)

The concept of startup ecosystem is widely used in the context of innovation and entrepreneurship. Although there is no single official definition for a startup ecosystem and the term is used in different ways, it typically refers to a specific geographic area with high density of startup companies and entrepreneurs. Herrmann *et al.* (2015), Ács, Autio, and Szerb (2013), but also Mason and Brown (2014) highlight the important role of entrepreneurs within the ecosystem and introduce the concept of entrepreneurial ecosystem in place of startup ecosystem. Those authors define that 'entrepreneurial ecosystem is a set of interconnected entrepreneurial actors, both potential and existing, entrepreneurial organization such as firms, venture capitalists, business angels, banks, institutions, and entrepreneurial processes like the business birth rate, the number of high-growth firms, the level of "blockbuster entrepreneurship," the number of serial entrepreneurs, the degree of sellout mentality among firms, and the level of entrepreneurial ambition. These elements formally and informally coalesce to connect, mediate, and govern the performance in the local entrepreneurial environment.' According to Mitchell (2002), entrepreneurial startups are measured by such groups of factors as relevance (the satisfaction of internal and external customer management, the involvement of human resource management in the process of implementing a strategic plan, other parts involved in human resource management), effectiveness (in leadership style, strategic management, relationship between the efficiency of profit and labor growth, and between business growth and labor cost),

financial availability (the investment in infrastructure and technology, the investment in human resources), organizational culture, workforce size, training, and retraining. These groups of factors are influenced by internal and external business environment.

Another approach to the success factors of ecosystems is provided by Isenberg (2011) who identifies six different domains of entrepreneurship ecosystems: the policy of leadership and government, finance (financial capital), culture (success stories, societal norms), supportive factors (infrastructure, support professions, nongovernmental institutions), human capital (labor, educational institutions), and market networks.

Tsujimoto *et al.* (2017) present an integrated model of the existing literature. Furthermore, those authors propose an original definition of the ecosystem and the concept of a coherent ecosystem. This coherence is the core concept that underlies the explanation of dynamic evolution or extinction of the ecosystem. This is why we propose the following hypotheses:

H3: Entrepreneurial ecosystem is positively associated with startup ecosystem.

H4b: Human capital is positively associated with startup ecosystem.

H5b: Financial capital is positively associated with startup ecosystem.

H6b: Cultural factors are positively associated with startup ecosystem.

H7b: Social factor is positively associated with startup ecosystem.

H8b: Government policy is positively associated with startup ecosystem.

Startup Performance (SP)

A startup is a new business venture designed to effectively develop and validate a scalable business model (Katila, Chen, & Piezunka, 2012). This is particularly the case of SMEs focused on providing products and services through startup performance. Startup performance by creating new businesses is a driving force for economic development. International studies by Radas and Bozic (2009) and Zain and Kassim (2012) show that there is a close relationship between business startups and regional and local economic growth.

According to Audretsch and Keilbach (2004), there are four effective factors among business startups: material capital, human capital, knowledge, and entrepreneurial capital that affects business performance.

International expertise shows that – among the many proposed solutions – business incubation seems to be one of the most effective means for assisting entrepreneurs in starting a new business, as it nurtures young enterprises and helps them survive during the vulnerable startup period (Szabó, 2006).

According to Radas and Bozic (2009), Zain and Kassim (2012), as well as Audretsch and Keilbach (2004), there are two main factors that include entrepreneurial ecosystem startup ecosystem into SMEs startup performance in the Central Region of Vietnam in terms of spatial dimension. This is why we propose the following hypotheses:

H1: Entrepreneurial ecosystem is positively associated with startup ecosystem.

H2: Human capital is positively associated with startup ecosystem.

Entrepreneurial Ecosystem (EE)

In recent years, the fields of entrepreneurship studies, economic geography, urban economics, and the economics of entrepreneurship have moved closer to each other through research on the context of entrepreneurship (Ucbasaran, Westhead, & Wright,

2001; Welter, 2011). According to Erik and Ben (2016), entrepreneurial ecosystems are a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory. The World Economic Forum (2013, pp. 6-7) shows that there are some key factors in successful ecosystems like human capital or finance, and supportive factors like entrepreneurs' talent, form of government, regulatory framework, informal institutions that enable entrepreneurship, and finally, domestic and foreign markets. Besides, Isenberg (2011) offers four defining characteristics for the entrepreneurship ecosystem:

- The entrepreneurship ecosystem consists of six domains that include (i) a conducive culture, (ii) enabling policies and leadership, (iii) availability of appropriate finance, (iv) quality human capital, (v) venture-friendly markets for products, and (vi) a range of institutional and infrastructural supports;
- Each entrepreneurship ecosystem is unique;
- Specifying generic root causes that the entrepreneurship ecosystem has limited practical value;
- Entrepreneurship ecosystems become (relatively) self-sustaining. An ecosystem is not complete and whatever available is in infancy stage.

Challenges remain for the effective intervention at strategic, institutional, and enterprise levels to streamline and trigger entrepreneurship development. However, there are huge opportunities and the government reforms are happening (Rahatullah, 2013). Zimmerman (2008) found a strong acceptance of entrepreneurship as an addition to the curriculum of business schools, resulting in increases in courses, faculty, endowed chairs, and publications in the field.

Neeraj (2018) offers a theory of entrepreneurial ecosystems that predict the initial funding of a startup based on the education, gender, and experience of the founder that funds the startup, which ultimately helps to improve the efficiency of entrepreneurial ecosystem. Therefore, I select some dominant factors that affect the entrepreneurial ecosystem in case of Danang province.

Hypothesis 4a (H4a): Human Capital is positively associated with Entrepreneurial ecosystem.

Hypothesis 5a (H5a): Financial Capital is positively associated with Entrepreneurial ecosystem.

Hypothesis 6a (H6a): Cultural Factors is positively associated with Entrepreneurial ecosystem.

Hypothesis 7a (H7a): Social Factor is positively associated with Entrepreneurial ecosystem.

Hypothesis 8a (H8a): Government Policy is positively associated with Entrepreneurial ecosystem.

Human Capital (HC)

For many years now, there are studies into factors that affect startup performance (Elfring & Hulsink, 2007; Gilbert, McDougall, & Audretsch, 2006). The most prominent of these studies scrutinizes the role of human capital in the development of enterprises, in particular SMEs (Coleman, 2007). Moreover, based on resource-based theory, Ahmad and Hoffman (2008) argue that human resources can create competitive advantage for startups. On the other

hand, Samad (2013) defines human capital as the ability to manage a business and argues that a firm that has and uses its management skills effectively will stay in business. In short, human capital contributes significantly to improving startup performance.

Similarly, recent research by Hisrich and Drnovsek (2002) shows that management capacity, expressed by education level, management experience, entrepreneurial experience, and the knowledge of business, positively impact the performance of newly established SMEs. In contrast, some studies provide no evidence of a positive relationship between human capital and performance (Appuhami, 2007). Moreover, Subramony *et al.* (2018) and Schwarz (2017) agree that human capital is a direct factor affecting the business performance of enterprises.

Financial Capital (FC)

The financial capital of a startup company usually comes from credit or from own company (Marshall & Samal, 2006). However, SMEs or businesses in the agricultural sector have limited access to finance from financial organizations. Therefore, the financial capital of these enterprises is mainly based on debt and equity (Van Praag, 2003). Pretorius and Shaw (2004) divide financial resources into internal and external. The majority of SMEs' financial capital depends on internal resources, but this source is often not enough for the business to survive and develop, especially as it faces fierce competition in the global market. Therefore, external financing becomes very necessary for SMEs. Bollingtoft *et al.* (2003) along with Wiklund and Shepherd (2005) argue that financial shortfalls are one of the major causes of failure in the operation of SMEs. In general, most of the research argues that financial capital plays a very important role in fostering startup performance, especially in the case of SMEs.

Cultural Factors (CF)

According to Gudmundson, Tower, and Hartman (2003), culture has a profound impact on the success of a company or organization. Possession of positive cultural characteristics provides organizations with necessary ingredients. Culture has several elements that may serve to enhance or inhibit startup performance. Moreover, according to another recent research (Körner, 2015), there exists a strong positive correlation between participative management practices and cultural factors in small companies. Hurley and Hult (1998) emphasize the critical role of culture in improving the ability of a successful firm. Cultural factors can encourage or discourage a variety of behaviors and decisions, including those related to startup performance.

Social Factors (SF)

Although there are many different studies about social capital, researchers advocate the benefits of this funding for startup business success. One of the reasons given by Florin, Lubatkin, and Schulze (2003) is that high levels of social capital base on good reputation, professional experience, and direct personal relationships. In addition to these benefits, social capital also facilitates the development of other resources and thus the survival of the enterprise (Brüderl & Preisendorfer, 1998). Compared to large-scale businesses, SMEs are more likely to develop social capital as they are closer to their customers. Thus, SMEs gain more direct and rapid knowledge (Wong & Aspinwall, 2004). Okten and Osili (2004) empirical results show the positive impact of social capital on the development of SMEs, especially on

their relationships with other firms. Similarly, Hayer, and Ibeh (2006) show that social capital is one of the important factors that facilitate SMEs in their internationalization.

Głodowska, Wach, and Pera (2016) find that pull factors have a positive influence on the level of internationalization of examined businesses. Production companies are the main beneficiaries of the internationalization process and Polish born globals take advantage of their adjustments to the environment.

Government Policy (GP)

Scholars established that entrepreneurship is the vital ingredient of job creation along with economic development, as the success of income generation for the majority of both rural and urban inhabitants without recognized paid job highly depends on entrepreneurship (Ihugba, Odii, & Njoku, 2014).

Kumar and Liu (2005) reveal that entrepreneurial sector's contribution to employment and GDP increases. For this reason, governments should minimize constraints on entrepreneurship. In the case of government support policies, Kumar and Liu (2005) assume that government leads entrepreneurial development. Such resources include the provision of an environment conducive to business that will greatly promote entrepreneurship. In this context, government policy is any course of action that aims at regulating and improving the conditions of SMEs in terms of support, implementation, and funding policies. Based on government policy as it relates to entrepreneurial practice through encouraging entrepreneurship by making a favourable environment for the entrepreneurs (entrepreneurial environment, environment for entrepreneurship). Furthermore, government needs to enact policies that would be user friendly to entrepreneurs. Pals (2006) argues that – in order to achieve the goals of, often lacking, guidelines – there is a need for government policies that support the successful implementation of entrepreneurship irrespective of which administration is in power. Governments of most countries – especially developing countries – in the past invested much effort and resources in establishing policies intended to uplift startup performance (Oni & Daniya, 2012).

Maciejewski and Wach (2019) show that the number of born globals – i.e. businesses that are international from their inception – among Polish companies is growing, while their activity is mainly restricted to the European Union.

MATERIAL AND METHODS

Research Process

This study combined qualitative and quantitative research methods. Qualitative research method was conducted in focus group discussions with ten chief executive officers of SMEs in Danang city at the meeting room of Statistics Offices that have experience in the field of entrepreneurship. The purpose of this phase was to consider the process of assessing startup performance with open questions, but also to modify observational variables that used to measure the research concepts. All items were measured on a five point Likert scale, on which 1 meant "strongly disagree" and 5 "strongly agree." Based on the measurement items used in prior studies, the interviewer will be asked to clarify the meaning of the question for designing the appropriate questionnaire and to choose the appropriate variables. Variables of a concept were selected according to the principle that most observable variables are

selected. Observed variables with no choice or few users will not be included in the scale. The result has shown that entrepreneurial performance concept is measured by 02 variables including entrepreneurial ecosystem and startup ecosystem. Moreover, both of them are affected by five variables that include government policy, financial capital, cultural factors, social factors, and human capital. Specifically: (1) Startup performance (4 indicators); (2) Entrepreneurial ecosystem (4 indicators); (3) Startup ecosystem (4 indicators); (4) Human capital (4 indicators); (5) Financial capital (5 indicators); (6) Cultural factor (4 indicators); Social factor (4 indicators); Government policy (5 indicators).

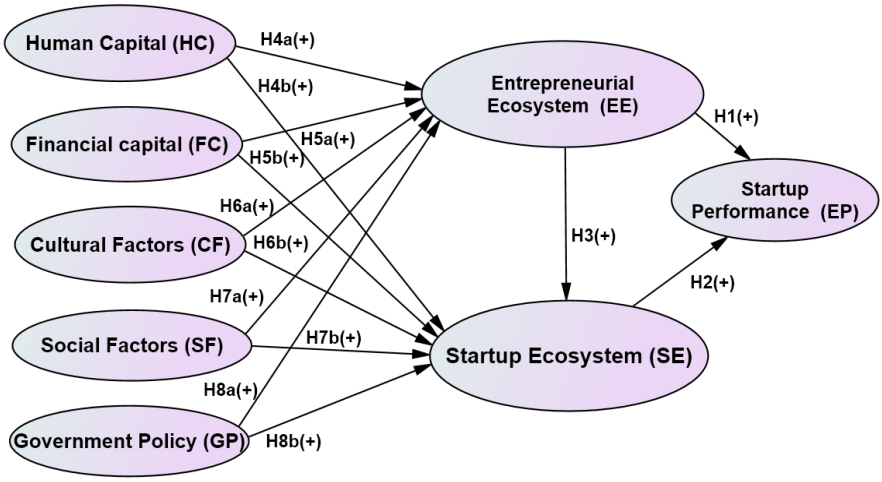

Figure 1. Conceptual model of the factors affecting startup performence
Source: own elaboration.

Quantitative research has been conducted through direct interviews (face-to-face interviews) based on a random sample of 320 SMEs in Vietnam, collected from June 2018 to August 2018 with a detailed questionnaire to test model and research hypotheses.

In order to measure a concept in marketing and management research, researchers often do not measure what they want to measure directly (Blumberg, Cooper, & Schindler, 2014). Moreover, they do not simply measure a concept through a question or a statement. The use of multiple observation variables is more accurate in measuring of a concept (Zikmund, Carr, Griffin, & Babin, 2013). According to Henseler and Chin (2010), the research model is evaluated in two steps, including the measurement model and structural model. First, we assess the validity of reflective measurement models with the following tools: indicator reliability, internal consistency reliability, convergent reliability, and discriminant validity.

In order to measure the relevance of the model, the reliability of observed variables must have an outer loading factor greater than or equal to 0.5, which satisfies the reliability requirement, while composite reliability must be greater than or equal to 0.7 (Hulland, 1999).

Convergent validity is used to evaluate the stability of the scale. According to Fornell and Larcker (1981), the average variance extracted (AVE) coefficient must be greater than or equal to 0.5, which will confirm the convergence value. The load factor of each observation variable is greater than or equal to 0.7 and indicates the reliability of the scales.

Discriminant validity helps to ensure the difference. There is no correlation between the factors used to measure them. To measure discriminant validity, the square root of AVE is greater than the latent variable correlations between the factor and other factors that indicate the degree of discrimination and reliability of the factor (Fornell & Larcker, 1981).

Table 1. Testing measurement model

Validity Type	Criterion	Description	Literature
Internal Consistency	Reliability Cronbach Alpha	Should be greater than 0.70 to achieve the reliable of measurement model	Nunally (1978)
Internal Consistency	Reliability Composite Reliability	Alternative to Cronbach Alpha that attempt to measure the sum of an LV's factor loadings relative to the sum of the factor loadings plus error variances	Nunally and Bernstein (1994)
Indicator Reliability	Indicator Loadings	Measures how much of the indicator's variance is explained by corresponding latent variables.	Chin (1998)
Convergent Validity	Average Variance Extracted (AVE)	Proposed threshold value for AVE should be higher than 0.50	Bagozzi and Yi (1988)
Discriminant Validity	AVE numbers and Latent Variable Correlations	Fornell and Larcker (1981) suggest that the "square root" of AVE of each latent variable should be greater than the correlations among the latent variables	Fornell and Larcker (1981)

Source: own study.

Next, the structural model is used to test whether the relationship between the concepts. With t-value > 1.96, the test is statistically significant at 5%. The outer weights are the criteria for the relative contribution of each indicator. In the structural model, the outer weights are usually lower than the outer loading factor (Hair *et al*., 2014).

According to Hair, Anderson, Tathham, and Black (1998) if the Maximization Likelihood estimation method is a minimum sample size of 100-150. Moreover, the sample size for the estimation method used in the linear structure (SEM) model is three small sample ≤ 100, medium sample of 100-200, and large sample of ≥ 200. The sample size of this study is 320 suitable for the requirements of the analytical method.

RESULTS AND DISCUSSION

Description of the Research Sample

Data is used by PLS-SEM software 3.0 with 320 valid respondents with 91.5% in all questionnaires of 350 respondents. According to Table 1, there are three main types of surveyed entrepreneurs selected, including limited liability companies with 69.7%, private companies with 13.4%, and other with 16.9%. Moreover, the fields of commerce and service businesses gather the majority of total respondents in Table 2.

These types of surveyed entrepreneurs are appropriate, because Danang is a developing city with a strategic direction in tourism and high technology industry. Until now, the number of large-scale business accounts in Danang city (ca. 90%) belong to SMEs. Therefore, the sample is suitable for this study.

Table 2. Types of surveyed entrepreneurs

Types	Frequency	Percent	Valid Percent	Cumulative Percent
Limited Liability Company	223	69.7	69.7	69.7
Private company	43	13.4	13.4	83.1
Other	54	16.9	16.9	–
Total	320	100.0	100.0	–

Source: own study.

Table 3. Fields of Business

Fields	Frequency	Percent	Valid Percent	Cumulative Percent
Commerce	122	38.1	38.1	38.1
Service	100	31.3	31.3	69.4
Tourism	28	8.8	8.8	78.1
Other	70	21.9	21.9	–
Total	320	100.0	100.0	–

Source: own study.

Table 4. Results of the construct reliability and validity

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
CF	0.8377	0.8914	0.6724
EE	0.8619	0.9061	0.7071
EP	0.8684	0.9101	0.7169
FC	0.8657	0.9029	0.6504
GP	0.8328	0.8818	0.5987
HC	0.8046	0.8711	0.6286
SE	0.8466	0.8970	0.6856
GP	0.8409	0.8933	0.6768

Source: own study.

Reliability is tested by measuring the composite reliability and Cronbach's alpha, complemented with indicator loadings. These tests are necessary to make sure there is internal consistency. As Table 4 shows, all scores are above > 0.8, so they meet the standard of internal consistency. Construct reliability measures the extent of internal consistency of measures used, while the results presented in Table 4 show that the observed variables and independent variables used to measure startup performance concepts are satisfied with Cronbach's Alpha coefficient because they are greater than 0.70, which achieves a reliable measurement model (Nunally, 1978).

Next I checked indicator reliability (see Table 5). One may clearly see here that all indicators have individual indicator reliability values that are much larger than the minimum acceptable level of 0.4 and close to the preferred level of 0.7. Table 5 represents the outer loadings and shows that all scores are above > 0.7, so they meet the standards as well.

Fornell Larcker, Cross loadings, and the heterotrait-monotrait ratio (HTMT) are assessment factors to test discriminant validity (Fornell-Larcker, 1981). One assesses discriminant validity through convergent validity and discriminant validity. The criterion of Fornell-Larcker (1981) is commonly used to assess the degree of shared variance between latent

variables of a model. According to this criterion, the convergent validity of the measurement model can be assessed by the Average Variance Extracted (AVE) and Composite Reliability (CR). According to the Fornell-Larcker criterion and the cross-loadings (Table 6), the constructs' discriminant validity has been established: (1) the square root of each construct's AVE is higher than its correlation with another construct, and (2) each item loads highest on its associated construct.

Table 5. The results of outer loadings

Variable	CF	EE	EP	FC	GP	HC	SE	SF
CF1	0.8067							
CF2	0.8230							
CF3	0.8315							
CF4	0.8185							
EE1		0.8220						
EE2		0.8333						
EE3		0.8637						
EE4		0.8441						
EP1			0.8377					
EP2			0.8735					
EP3			0.8370					
EP4			0.8380					
FC1				0.7818				
FC2				0.8142				
FC3				0.8185				
FC4				0.7929				
FC5				0.8242				
GP1					0.7778			
GP2					0.7561			
GP3					0.7889			
GP4					0.7912			
GP5					0.7541			
HC1						0.8140		
HC2						0.8055		
HC3						0.7454		
HC4						0.8044		
SE1							0.8597	
SE2							0.7939	
SE3							0.8577	
SE4							0.7983	
SF1								0.8077
SF2								0.8227
SF3								0.8098
SF4								0.8497

Source: own study.

Convergent validity can be assessed through construct factor (item) loadings in AVEs – or cross loadings in PLS – that should have the minimum loading of 0.5 and composite reliability (CR) with the acceptable minimum of 0.70 (Fornell & Larcker, 1981). Table 5

shows that factor loadings of items to their respective constructs are stronger than they load on other constructs, which provides evidence in support of convergent validity of derived measures. Discriminant validity was considered adequate, since the AVEs are greater than their respective inter-construct correlations, as visible in Table 6. Fornell-Larcker matrix also shows in Table 6 that the top coefficient is greater than the coefficients in the same column. Given that construct reliability and validity conditions of the measurement model are acceptable, we proceed to assess the structural model.

Table 6. The results of Fornell-Larcker Criterion

	CF	EE	EP	FC	GP	HC	SE_	SF
CF	0.8200							
EE	0.3643	0.8409						
EP	0.4475	0.5545	0.8467					
FC	0.1991	0.4114	0.4773	0.8065				
GP	0.1210	0.2971	0.3414	0.2434	0.7738			
HC	0.2031	0.3557	0.4265	0.1911	0.1130	0.7928		
SE	0.4052	0.5892	0.7144	0.4923	0.3806	0.3929	0.8280	
SF	0.2671	0.4208	0.4804	0.2646	0.2713	0.2403	0.4701	0.8227

Source: own study.

Table 7. Heterotrait-Monotrait Ratio (HTMT)

	CF	EE	EP	FC	GP	HC	SE
EE	0.4282						
EP	0.5212	0.6368					
FC	0.2332	0.4743	0.5493				
GP	0.1427	0.3474	0.3993	0.2804			
HC	0.2516	0.4213	0.5063	0.2196	0.1380		
SE_	0.4768	0.6881	0.8310	0.5727	0.4516	0.4643	
SF	0.3138	0.4923	0.5595	0.3112	0.3225	0.2832	0.5549

Source: own study.

HTMT values close to 1 indicate the lack of discriminant validity, while values close to 0.85 indicate threshold values. To assess discriminant validity, the heterotrait-monotrait ratio of correlations (HTMT) is tested. In order to secure discriminant validity, all values must be < 0.85. Therefore, the results of Table 7 are satisfied with the discriminant validity in the measurement model.

The Results of the Structural (Inner) Model

After testing the outer models, the inner model is tested by measuring multicollinearity and path coefficients. SmartPLS generates T-statistics for significant tests of both the inner and outer model, using a procedure called bootstrapping. In this procedure, a large number of subsamples (e.g., 5000) are taken from the original sample with a replacement to give bootstrap standard errors, which in turn gives approximate T-values for significance testing of the structural path. Bootstrapping results approximate the normality of data. Multicollinearity is tested by using Variance Inflation Factors (VIF). VIFs values must be lower than 5. As Table 8 shows, there is no collinearity in the model.

Table 8. Inner VIFs' values

	CF	EE	EP	FC	GP	HC	SE_	SF
CF	0.0000	1.1180	0.0000	0.0000	0.0000	0.0000	1.2918	0.0000
EE	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.6731	0.0000
EP	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.1752	0.0000
FC	0.0000	1.1472	0.0000	0.0000	0.0000	0.0000	1.3622	0.0000
GP	0.0000	1.1191	0.0000	0.0000	0.0000	0.0000	1.1814	0.0000
HC	0.0000	1.1012	0.0000	0.0000	0.0000	0.0000	1.2618	0.0000
SE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SF	0.0000	1.2171	0.0000	0.0000	0.0000	0.0000	1.3788	0.0000

Source: own study.

The significance of the path coefficients are measured by executing the Bootstrap method using 5.000 single performances. The results show significant relationship between vartiables in the model (p values < 0.05).

Table 9. Path coefficients

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV)	P Values
CF -> EE	0.2007	0.1971	0.0475	4.2253	0.0000
CF -> SE	0.0804	0.0797	0.0384	2.0949	0.0367
EE -> EP	0.5545	0.5545	0.0370	14.9766	0.0000
EE -> SE	0.1805	0.1792	0.0432	4.1820	0.0000
EP -> SE	0.3871	0.3858	0.0511	7.5716	0.0000
FC -> EE	0.2431	0.2431	0.0462	5.2562	0.0000
FC -> SE	0.1482	0.1477	0.0420	3.5286	0.0005
GP -> EE	0.1316	0.1330	0.0447	2.9404	0.0034
GP -> SE	0.1134	0.1141	0.0412	2.7540	0.0061
HC -> EE	0.2010	0.2001	0.0472	4.2554	0.0000
HC -> SE	0.0829	0.0850	0.0373	2.2226	0.0267
SF -> EE	0.2188	0.2178	0.0463	4.7288	0.0000
SF -> SE	0.0968	0.0980	0.0413	2.3404	0.0197

Source: own study.

As Table 9 reveals, the original sample and sample mean of bootstrapping results from 5000 are in the 95% confidence interval. Thus, we may conclude the estimates in the model as reliable. The conceptual model and its path coefficients (including P values) appear in Table 9.

Figure 2 and Table 9 confirm thirteen hypotheses of this study (H1, H2, H3, H4a, H4b, H5a, H5b, H6A, H6B, H7A,H7B, H8A, H8B), because of the statistical value t > 1.96 (or P-value < 5%).

The results of testing indicate the suitability of the research model with data's research, while the acceptance of the hypotheses in this research model show the practical meaning for startup performance. Thus, this research determined the impact of every factor that constitutes the entrepreneurial ecosystem and startup ecosystem on startup performance of SMEs in Danang city. The equation (1) shows the affection on SE and EE to EP:

$$\mathbf{EP} = 0.594\ \mathbf{SE} + 0.204\ \mathbf{EE} \quad (1)$$

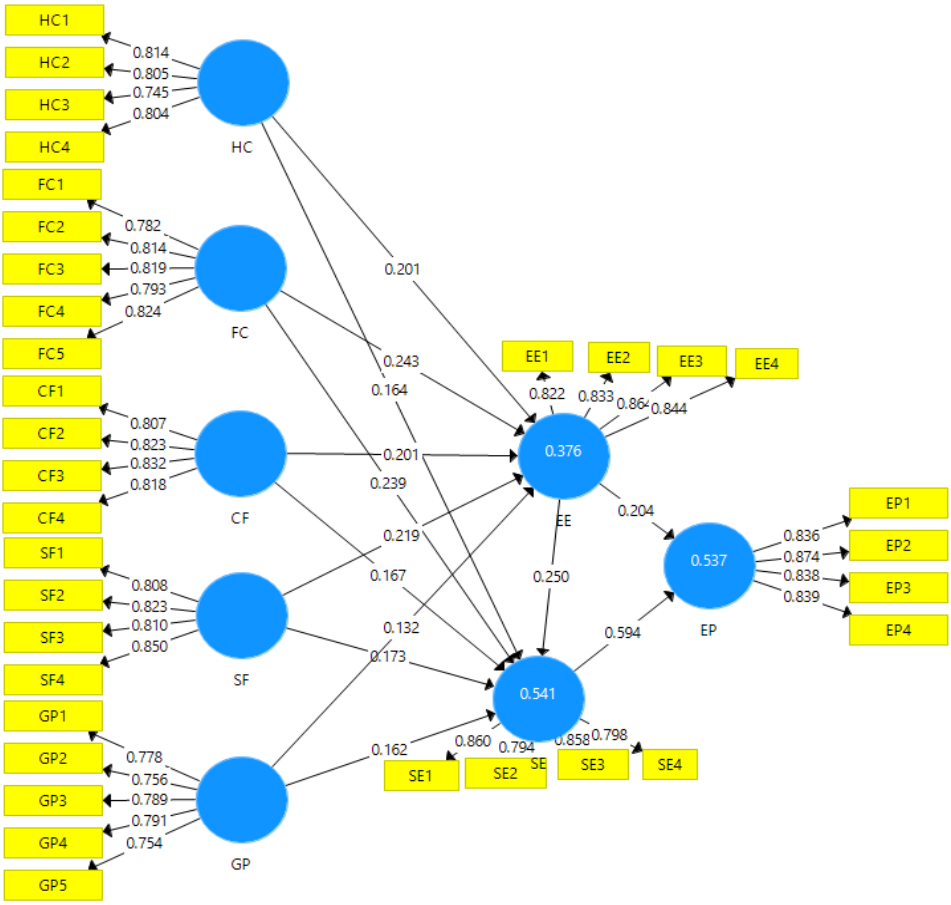

Figure 2. Results of applied the PLS-SEM model
Source: own elaboration.

As in the above equation (1), SE affects EP the strongest because it has the highest coefficient of 0.594. The results identify the priority of factors in the research model. Specifically, financial capital and human capital emerge as the strongest factors that affect the entrepreneurial ecosystem. For a sustainable startup, there should be suitable legal policies that include tax incentives in the first 3-5 years, when new businesses are established. Moreover, focus on policies such as credit guarantees and loan assistance for startup enterprises in the initial stage would ease their problems. Furthermore, governments should assist incentive loans to boost SMEs. It is important to invest in human resources and cultural factors. The government should have specific education programs for startups at high schools. The education system needs to adjust in the direction of linking theory with practice, thus linking education with practical activities to promote entrepreneurial culture. Moreover, the education programs must expand in many other ways to enhance people's

startup interest. There are many studies on entrepreneurship but most treat startup performance in a vague and abstract manner, as they focus on researching entrepreneurship ecosystem (Rahatullah, 2013) or describe the characteristics of entrepreneurship ecosystem (Isenberg, 2011). Besides, other studies evaluate startup environment by analyzing startup ecosystem (Neeraj, 2018) and international factors (Maciejewski & Wach, 2019) Therefore, we should switch to a more detailed action-oriented form to achieve a successful startup performance. This research study shows the relationship of entrepreneurial ecosystem, startup ecosystem, and startup performance.

CONCLUSIONS

The research results help policy makers understand important factors affecting startup performance, This study contributes to the testing of the measurement scale of startup performance to start a business in developing countries like Danang, Vietnam. These results will help researchers have suggestions about the measurement system of startup performance which can evaluate success of SMEs in the given market (Danang city). In addition, this scale system can be used as a basis to form a unified scale system in multi studies of startup performance for regions similar to Danang.

This study has its limitations. It only investigates startup performance of SMEs in Danang, not all Vietnam. The convenient non-probability sampling method was applied, this means the ability to generalize is not high. In order to generalize startup performance for all SMEs in Vietnam, researchers should begin with the results from this study. Based on empirical results the following implication for practice should be drawn. For a sustainable startup, there should be suitable legal policies, including incentive policies on taxes in the first 3-5 years, when new businesses are established. Moreover, we should focus on policies such as credit, guarantee, and loan assistance for startup enterprises in their initial stages to solve their problems.

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Digital Marketing Communication from the Perspective of Individual Consumers: A Cross-Country Comparison

Małgorzata Bartosik-Purgat

ABSTRACT

Objective: The main objective of this article is to identify social media (SM) usage in communication between individual consumers and producers in different countries. The considerations in the article are focused on consumers' perspective.

Research Design & Methods: The article takes a deductive approach and the aim is to answer two research questions: For what purpose do consumers communicate with companies via SM? Does the frequency of using the most popular SM in the researched countries influence the range of using them in marketing communication? Three research techniques were used in the exploratory empirical study: FGI (pilot study), PAPI and CAWI (main study). The analysis is based on both literature studies and empirical data, collected in several countries (China, Poland, Turkey, the United States).

Findings: Results of the exploratory study showed that consumers from the researched countries communicate via SM with producers for different purposes. Some of them look for discounts and information about a product or brand, whilst others also take into account adverts presented by companies on SM, as well as information about company events.

Implications & Recommendations: As a result, the findings can be utilised by numerous different groups of stakeholders (such as companies and institutions), in particular companies using SM for marketing communication in foreign markets. The results showed the way of using social media by consumers and that is why they can be advice for producers how to use them in the communication with their customers.

Contribution & Value Added: The content of the article is significant, up to date, and original due to the fact that it focuses on current marketing communication issues.

Article type: research article

Keywords: communication; social media; consumers; cross-cultural comparison

JEL codes: M31, M37, M21

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INTRODUCTION

New technologies – in particular the growth of the Internet – are the greatest and the fastest determinants of change in the way both individuals and companies act and interact in today`s world (Ghezzi & Dramitinos, 2016).

The development of the Internet and the tools it has given rise to offer a host of possibilities for fast and efficient communication, as well as expanding relations between individuals and companies around the world. The Internet also gives the possibility of freely expressing one's opinions about other people, companies, or products (Kucukemiroglu & Kara, 2015; Erkan & Evans, 2016; Wang, Yeh, Chen, & Tsydypov, 2016; Gvili & Levy, 2018). The wide use of online communication tools contributes to the transition from traditional face-to-face communication to Internet communication. The *Social Presence Theory* (SPT) has been replaced (Short, Williams, & Christie, 1976) by the *Computer Mediated Communication Theory* (CMCT) (Walther, 1996). In the computer mediated communication the tools of the Internet allow users to conduct a dialogue between themselves and other users. This dialogue is possible not only between individual persons but also between individuals and companies. Previously, communication between companies and their potential customers was associated mainly with a monologue prepared by firms through the use of marketing communications tools (e.g. adverts, sales promotions, etc.). Nowadays, the Internet allows individuals to talk to companies directly and vice versa, in doing so, the characteristic of marketing communication has changed from being a one-way to becoming a two-way process.

A significant breakthrough in using the Internet and changes in the communication has been the development of social media (SM) (Barreto, 2014; Duffett, 2017), which to an even greater extent make users engaged in 'being' and functioning online. Social media allow users not only to maintain contact with friends, but also to gather information about the world events, and share information about products (brands, enterprises) and services, etc. (Chu & Kim, 2011; Floreddu & Cabiddu, 2016; Gvili & Levy; 2018). Indeed, they are now the main instruments used to develop communication and conduct a dialogue between consumers (individual SM users) and companies (institutional SM users). Consumers are able to communicate with companies via Facebook for different purposes. Sometimes, they look for information about products and brands, including opinions from other users of Facebook (Ho, 2014; Kucukemiroglu & Kara, 2015; Davies, Musango, & Brent, 2016). In other situations they themselves give opinions about the products they have bought. What is more, individual customers very often share also their negative experiences about brands and in a matter of seconds such information can reach millions of consumers around the world (Bachleda & Berrada-Fathi, 2016; Wijaya, 2017). This can negatively influence the reputation and credibility of a given product to a significant degree (Ho, 2014; Floreddu & Cabiddu, 2016; Rochlin, 2017).

Information about the diversity of social Internet tools in the international marketplace is very valuable for companies that want to use those platforms in the communication with their current or future customer (Tafesse & Wien, 2018). The usage of SM in the international context differs due to various determinants. One of the main reasons is associated with different preferences and habits of SM users in different countries and cultures (Ruleman, 2012; Floreddu & Cabiddu, 2016). The second one is connected with the

legal and political restrictions on SM usage in particular countries. In some countries there are strict controls on the usage of foreign SM (i.e. Facebook in China), but people can communicate via regional SM, which are sometimes the equivalent of international ones. One of the most popular and international social platforms is Facebook (Kemp, 2018), which is the medium with the greatest number of global active users, and plays an important role in the social market. It is a very significant tool in the development of communication for both individual and institutional users. However, as mentioned above, the world's regions differ in terms of the popularity and use of SM and Facebook is not the dominant platform in every country (Kemp, 2018). For example, in Asian countries where, instead of Facebook, Qzone is one of the most popular SM platforms.

In taking into account the continuous development of the digitalisation process and changes in marketing communication, the main purpose of this article is to identify the SM usage in communication between individual consumers and producers in different countries.

Three research techniques were used in the empirical (both qualitative and quantitative) research: FGI (*Focus Group Interview*) in the pilot study, PAPI (*Paper and Pen Personal Interview*) and CAWI (*Computer Assisted Web Interview*) in the main study. The analysis is based on both literature studies and empirical data, collected in several countries in order to identify similarities and differences among them (China, Poland, Turkey, the United States). The countries were chosen to identify a 'bridge' from East to West with regard to digital marketing communication.

The article is structured as follows: the first part of the article includes a short description of business models associated with digitalisation processes. Following this, marketing communication in the context of Social Presence Theory (SPT) and the Computer Mediated Communication Theory (CMCT) is presented, after which an overview of the literature on social media usage and its cultural context is given. Next, research methods and the results of the empirical study are described and analysed. Conclusions and implications are then presented and finally, study limitations and suggestions for future research are explained.

LITERATURE REVIEW AND THEORY DEVELOPMENT

Business Models in the Context of Digitalization

Technological development, in particular the digitalisation process, has had a large impact on business relations between market actors – both individual and institutional. Nowadays not only can the division into B2B (Business-to-Business) and B2C (Business-to-Consumer) markets be observed, but also two more models of relations C2B (Consumer-to-Business) and C2C (Consumer-to-Consumer) continue to develop. They are, then, the end products of continued trends and the economic dimensions of digitalisation (Hüther, 2016) (Figure 1). These models impact different types of relations that already exist among market participants. For example, the B2B model forms the relationship and cooperation between businesses (companies) and, with regard to Industry 4.0, with real-time redesign of value chain, etc. SM development impacts the communication process between individual business representatives by making it faster, more efficient, and less expensive (Taiminen & Karjaluoto, 2015; Valos, Habibi, Casidy, Driesener, & Maplestone, 2016).

The B2C model is mainly associated with marketing communication between institutional and individual actors, where the message sender is a company (usually a producer

of goods). The usage of mainstream marketing tools, like TV or press advertising, means that communication is one-way (Smith & Zook, 2016). However, the advent of SM transformed this process into two-way communication. In other words, SM platforms are tools which help both the individual and institutional users to conduct a dialogue; individuals can not only receive a message, but also respond to it instantly (Floreddu & Cabiddu, 2016; Ludwig & De Ruyter, 2016). What is more, digital consumers very often participate in the production process via SM, thus becoming a prosumer (an active consumer in the production process) (Chandler & Chen, 2015; Hofacker, Malthouse, & Sultan, 2016). Hüther (2016) states also that the B2C model is associated with smart living and smart-homes, networking and social media, real time information, etc. (He, Wang, & Akula, 2017). In turn, the C2C model pertains to developments of, for example, prosumer trends among consumers and sharing economy activities (Cabosky, 2016; Chung, 2017). Constant access to the Internet and its tools enable these new activities to develop among consumers. Finally, the C2B model includes mainly Big Data analytics. This model focuses on consumers who provide information to companies about their needs, preferences, and behaviour. For this article, I concentrate on the B2C model in the context of changes in marketing communication caused by the digitalisation developments.

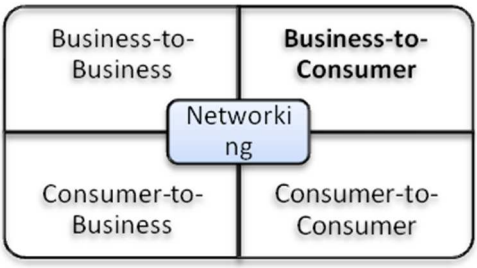

Figure 1. Business models as an effect of digitalisation
Source: Hüther (2016).

Marketing Communication in the Light of Digitalisation and Communication Theory

Computer Mediated Communication (CMC) Theory was created on the basis of socio-cultural changes and innovations related to the development of the Internet and its tools, as well as new Information and Communication Technologies (ICT), including the development of mobile telephony (Kim, Lin, & Sung, 2013). The evolution and intensification of CMC are also connected with a continuous increase in the number of new media (Internet media) users around the world (Kemp, 2018). Communication has become faster and cheaper, making it more possible on a larger scale (numerically and geographically) in the era of rapid growth, and allowing for the creation and use of new solutions in the form of mobile devices and Internet tools (Kemp, 2017; 2018). The use of the Internet enables the selection and application of many tools that provide a relatively easy access to a relevant segment of receivers (potential customers). One of the most popular instruments that operates via the Internet are social media platforms (e.g. Facebook, Instagram, Snapchat, LinkedIn, Google+, YouTube, Pinterest, Qzone, VKontakte) and Internet communicators (e.g. WhatsApp, Viber, Messenger, WeChat). The wide usage of the Internet communication tools contributes to the conversion of communication from face-to-face to Internet. As a result, *Social Presence*

Theory, as presented by Short, Williams and Christie (1976), is being replaced by *Computer Mediated Communication Theory* (Walther, 1996). According to SPT the media differ in their social presence, which is interpreted as visual, verbal, and physical presence of the participant (Short *et al*., 1976). The authors claim that various communication media enable different levels of social presence experience for people who are involved in the communication process. In other words, the level of the social presence experience is related to the quality of the medium, for example, the number of different social signals or active non-verbal channels (Short *et al*., 1976). Face to face (f2f) communication is characterised by the highest level of 'social presence' (involvement in the communication process), while it is much lower in the concept of CMC theory. The Internet and its tools (e.g. SM) play the role of the communication medium here (Walther, 1996; Haythornthwaite, Wellmani, & Garton, 1998). CMC participants can transfer a message quickly, without direct cost, and to many receivers at the same time (Smith & Zook, 2016). In CMC theory the use of SM reduces personal influences and their effects on the communication process because it is not direct (not f2f), but rather via the Internet (Walther, 1996; Lin & Lu, 2015).

In relation to the context of this article and CMC theory, both the sender and the receiver of the communication process are SM users, who communicate with one another regarding to information about products, brands, and services. Thus, here CMC theory is used as a background for a further literature review concerning the content of SM users' dialogue and discussion about goods and companies. In the traditional concept of marketing communication, the place of the sender is taken by a company (producer) and the receiver of the information is the audience (potential customers) (Smith & Zook, 2016; Finne & Grönroos, 2017). Within the context of CMC theory, the marketing communication process is connected with a dialogue, usually between a company – the producer of goods (institutional participant) – and individual SM users. Companies use Internet marketing communication tools as the equivalent of instruments of mainstream marketing (e.g. profiles on SM, adverts on SM, etc.) and increased SM usage has led to a proliferation of digital tools in the marketing communication, e.g. social advertising.

Social Media Usage and Cross Country Perspective

The SM market is extremely large, and diversified. One of the latest reports on the topic, *Digital in 2018 report: We Are Social,* shows that over 42% of people are active SM users (Kemp, 2018). A SM platform choice is dependent on the communication/entertainment needs of individual users. Referring to the uses and gratification theory, Whiting and Williams (2013), identified ten most common uses and gratifications of SM, which are: 'social interaction, information seeking, pass time, entertainment, relaxation, communicatory utility, convenience utility, expression of opinion, information sharing, and surveillance/knowledge about others' (p. 368). When it comes to communication, individuals use SM for various purposes and these can be divided into interpersonal and marketing communication (Floreddu & Cabiddu, 2016; Ludwig & De Ruyter, 2016). For example, communicating with friends and relatives (Cabosky, 2016); conveying information about products among their users (Chu & Kim, 2011); gathering information about products, brands, etc. before purchasing (e.g. Kucukemiroglu & Kara, 2015; Erkan & Evans, 2016); sharing an opinion about goods, primarily when they appeared to be low quality (e.g. Balaji, Khong, & Chong, 2016), making contact with companies (via SM profiles) (Wang *et al*., 2016; Ludwig & De Ruyter, 2016; Floreddu & Cabiddu, 2016); and

belonging to fan groups (through SM profiles) of a particular company (Floreddu & Cabiddu, 2016; Finne & Grönroos, 2017; Mazurek, Korzyński, & Górska, 2019), etc.

SMs with the largest number of active users around the world include: Facebook, YouTube, Instagram, Tumblr, Qzone, and Sina Weibo (Kemp, 2018). Possibilities of using them by developing ever newer functions maintains their popularity. Facebook makes it possible to convey different message formats, such as texts, photos, and videos, which can be accessed by friends or followers of a particular user (both individual and institutional) (Chu & Kim, 2011; Khan & Vong, 2014; Davies *et al*., 2016; Niedermeier, Wang & Zhang, 2016). YouTube, Instagram, or blogs enable users to express themselves in the form of the written word, a video recording, or photos (Kim*,* Sin, & Tsai*,* 2014; Khan & Vong, 2014; Hamid, Waycott, Kurnia, & Chang, 2015; Kusumasondjaja, 2018). The growing popularity of YouTube and the 'vlogosphere' is associated with changing trends, especially among younger generation, who prefer watching, listening or recording to writing or reading (Chiang & Hsiao, 2015).

However, the popularity and the degree of use of particular social platforms differ around the world and in part this is a consequence of political or legal limitations in the usage of so called international social services. For example, a high ranking of Qzone in the world ranking of SM is largely down to its usage in Asia as a legal alternative to the global market leader, Facebook – which is banned in China (Kemp, 2018). As such, due to the specificity of a particular SM and the researched area of their use in relation to communication processes, in the empirical part of the article Qzone in the Chinese group and Facebook in the other countries (Poland, Turkey and the United States) will be analysed.

Cross-country differences impact the way that people use the Internet and SM for the communication purposes (Furner & George, 2012; Kusumasondjaja, 2018). This is caused by different needs and values of people around the world. However, there are not many studies on how cultural distinctness influences perception and use of SM, as well as the attitude towards them (Suzuki & Takemura, 2013). More studies have been conducted in a similar area, related to interdependencies between different cultures and the ways and purposes of using the Internet. For example, research by Chau, Cole, Massey, Montoya-Weiss and O'Keefe (2002) show differences between Americans and Hong Kong citizens as far as the purpose of using the Internet is concerned. They found that Americans mainly use the Internet to search for information, whereas Hong Kong citizens used it to communicate socially and cultivate hobbies. Similar results were obtained in the research by Ko, Roberts and Cho (2006), where the influence of cultural differences on the motivation for using the Internet was measured. In that study, the American group valued motivators connected with comfort and searching for information highly, while for Korean respondents social interactions, as motivators for using the Internet, were more valuable. One of the few studies that looked into the issue of SM and cultural differences (Kim, Sohn, & Choi, 2011) found that in cultures emphasizing individualistic values (e.g. the USA), SM are only used as entertainment and a way of spending free time, while in more collectivistic cultures (e.g. Korea) a tendency to receive a social support from social relations based on SM could be observed. Hsu, Tien, Lin and Chang (2015) researched the SM usage intention in five culturally distinct countries: Australia, Austria, Japan, Taiwan and the US. The results showed that for users from individualistic countries SM are mainly a source of information, while for the people from the collectivistic countries, socialisation and self-presentation were the main motivators.

MATERIAL AND METHODS

Measurement Development and Data Collection

Methodologically, this article takes a deductive approach and the aim is to answer the research questions arising from the literature study:

1. For what purpose do consumers communicate with companies via SM?

This question was asked during the first stage of the research procedure, in particular during the pilot study which had a qualitative dimension. Participants were asked to indicate the most frequent communication activities via SM.

2. Does the frequency of using the most popular SM in the researched countries (Facebook in many countries, Qzone in China) influence the range of using them in marketing communication?

In the relation to the second RQ and on the basis of the literature review the research hypothesis was formulated:

H1: The frequency of using SM is related to the range of their usage in the marketing communication.

In the empirical study the author used three research techniques (both qualitative and quantitative) under the interview method: FGI (Focus Group Interview) in the pilot study, CAWI (*Computer Assisted Web Interview*) and PAPI (*Paper and Pen Personal Interview*) in the main study. During the FGI the author gathered the qualitative data regarding to the most frequent communication activities via SM among the participants. In the first measurement stage of main research, the response rate of CAWI was very low (3.5%) so the decision was taken to use the PAPI method instead. The measurement instrument was a standardised questionnaire prepared for the purpose of this research. The element differentiating the research questionnaire in particular markets was the language. In the preparation of the different language versions of the questionnaire a back translation procedure was used in order to eliminate any mistakes stemming from linguistic, lexical, or context differences (Craig & Douglas, 2006).

The empirical data was gathered in 2016 from a total of 1216 respondents from four countries: China (n=295), Poland (n=296), Turkey (n=395), and the United States (n=260). Regarding the sampling method the random selection was used in the part of the research with CAWI. But, the in part where PAPI was used the non-random sampling method was chosen. Designated research assistants gathered the questionnaires from the respondents in each market. Consequently, the sampling method applied influenced the interpretation of the results obtained and so in this case, they should not be fully generalised (see section on limitations of study, below).

Respondent Profile

People who participated in the research were Internet and SM users (Facebook users in Poland, Turkey, the US and Qzone users in China). With regard to gender, in the Chinese and Polish group women made up the majority of respondents and accounted for circa 65%. In the American and Turkish groups no clear predominance of any gender was observed. Age-wise, the majority of respondents in each country fell in 21-30 years old range.

Operationalization of Variables

The measures used in the study were developed on the basis of a pilot research project conducted by the author among SM users. Variables were operationalised in two ways. Firstly, in order to identify the frequency of SM usage, an analysis of the indicators of the structure of the respondents, who use it on an everyday basis, was conducted (*at least once a week, at least once a month; have account but do not use it or do not use that medium at all*). Cronbach Alpha results -0.78 – confirmed that the proposed scale was a reliable tool for measurement.

Secondly, in order to identify the relation between the frequency of using the most popular SM for communication purposes was made with the use of Spearman's rank correlation coefficient. This is applied in order to examine the strength of correlation between quantitative characteristics in the case of a small number of observations. The calculation was made separately for every studied group because of their distinctness as well, as the intention to identify differences between them. In order to identify the areas of communication activity via SM, the respondents were asked to determine the frequency of the behaviour by indicating the category – *very often, often, from time to time, rarely, very rarely, never*. Cronbach Alpha results -0.689 – confirmed that the proposed scale was a reliable tool for measurement.

RESULTS AND DISCUSSION

The most popular communication activities via SM were identified during the pilot study, and then they were used in the main study. 34 SM users aged 21-30 participated in the pilot study, which was conducted in Poland, China, Turkey, and the United States. The author conducted two focus groups interviews (FGI) in Poland with a total of 14 participants, Skype conversations in the United States and Turkey (7 people in each country) and WeChat conversations in China with 6 people. Those focus groups and conversations (qualitative data) helped to identify the fifteen most frequent communication activities among participants. These are presented in Table 1 and coded as C_1 … C_{15}. Following this, the main research (with the use of CAWI and PAPI) participants were asked to indicate the frequencies of their communication activities via SM. The indicated reasons for using SM can be divided into two groups: interpersonal communication among individuals (C_1,…,C_7) and participation in marketing communication of individuals with companies (C_8,…,C_{15}).

The results, demonstrating relations between the frequency of using SM (Facebook in Poland, Turkey and the United States; Qzone in China) and communication activities, are presented be means of Spearman's correlation coefficients (Table 1).

The general results show many similarities among countries regarding interpersonal communication: there are many statistically significant correlations between the frequency of using SM and communication activities in Poland, Turkey and China, where it was found that the more people use SM, the more they participate in the communication with individuals (C_1,…,C_7). The smallest number of statistically significant relations was identified in the American group.

Table 1. Relations between the frequency of using SM and the communication activities

Communication activity via SM	Facebook			Qzone
	Poland *n*=296	Turkey *n*=395	United States *n*=260	China *n*=295
	R	R	R	R
C_1 - Maintaining contact with friends	**0.368***	**0.181***	**0.411***	**0.161***
C_2 - Maintaining contact with family	**0.120***	**0.187***	**0.382***	**0.153***
C_3 - Exchanging views and opinions on different topics with others	**0.239***	**0.152***	0.031	0.07
C_4 - Placing private photographs and films	**0.263***	**0.241***	**0.312***	**0.20***
C_5 - Recommending interesting websites to other SM users	**0.204***	**0.182***	**0.132***	**0.16***
C_6 - Looking for information about different products and brands	**0.127***	**0.125***	0.088	**0.143***
C_7 - Asking SM friends for advice concerning purchase of product and brands	**0.165***	**0.137***	0.002	**0.186***
C_8 - Expressing a positive opinion about good products and brands (after good experiences with the product or brand)	**0.127***	0.076	-0.045	0.013
C_9 - Expressing a negative opinion when the purchased product is of low quality	**0.280***	**0.159***	-0.031	**0.135***
C_{10} - Making comments on the information posted by other users (both individuals and institutional)	**0.197***	**0.230***	**0.182***	**0.15***
C_{11} - Watching advertisements placed by companies on SM	0.056	0.07	0.01	**0.192***
C_{12} - Being a fan of a brand or company to obtain discounts for purchasing products	**0.119***	0.04	0.02	0.07
C_{13} - Taking part in competitions organised by companies on SM	0.036	**0.13***	0.04	**0.15***
C_{14} - Following companies' SM profiles, and 'liking it' guarantees the discounts	0.02	**0.17***	0.08	**0.16***
C_{15} - Using promotions which are communicated by companies via SM	**0.17***	**0.19***	0.04	**0.172***

R – Spearman Indicator; * Correlation is significant at the level of $p < 0.05$
Source: own study.

More varied results were obtained in the case of participants` engagement in marketing communication (C_8,…,C_{15}). With regard to expressing positive opinions about the products raised after good consumer experiences (C_8), a statistically significant ($p < 0.05$) correlation was achieved only in the Polish group. By contrast, placing a negative opinion about products (brands or companies) on social platforms is much more often done among research participants (C_9). In the Polish, Chinese and Turkish groups statistically significant correlations ($p < 0.05$) were noted, and the highest results of the Spearman indicator (R) were obtained in the Polish group. When it came to commenting (i.e. taking part in Internet communication) on information placed by both individuals and companies (C_{10}), statistically significant correlations ($p < 0.05$) were obtained in each group. The

more respondents use SM, the more often they take part in such conversations. The highest score was achieved in the Turkish group (R = 0.230). Watching advertisements placed by companies on SM (C_{11}) was not a common activity for a majority of research participants. Only among Chinese Qzone users was a statistically significant correlation ($p < 0.05$) identified (R = 0.192). Poles were more eager (compared to the other groups) to become fans of companies` brands in order to receive a discount ($C_{12}$), only in that group there was a statistically significant correlation ($p < 0.05$) obtained, albeit at a low level (R = 0.119). Competitions organised on companies` social media profiles (C_{13}) were frequently used in Turkey and China, and the more these groups used SM (Facebook or Qzone), the more frequently they participated in such events. A further communication activity is 'liking' information presented on companies' SM profiles (C_{14}). For this category, statistically significant correlations ($p < 0.05$) were achieved in two out of the four researched groups (Turkey and China). Lastly, SM are effective as a tool of communication about companies` promotional campaigns ($C_{15}$), with respondents in three groups having a positive attitude to marketing information presented on SM profiles, but not advertising. In these two groups, the more they used SM, the more often they took into account the promotional information presented on companies` profiles. With regard to the hypothesis (H1) formulated before the measurement, it should be stated that it is partially confirmed. The confirmation depends on the marketing communication activity via SM and a country. It should be emphasized that the H1 is not confirmed in the American group. The Chinese, Polish and Turkish groups are similar in the number of achieved correlations between the frequency of SM usage and particular marketing communication activity. The hypothesis was approved in all the countries in the relation to the C_{10} (*making comments on the information posted by other users - both individuals and institutional*).

The analysis done in both the theoretical and empirical parts of the article showed few differences among the researched countries in relation to the use of SM (Facebook, Qzone) for interpersonal and marketing communication purposes. Moreover, great importance of Facebook in Poland and Turkey, and Qzone in China should be highlighted. In a situation when a company would like to use SM for marketing communication in these markets it should make use of these services. Less statistically significant correlations were found in the case of the American group. These results show that American respondents use SM especially for interpersonal communication (communication with friends, family members, etc.). The results also confirm the assumptions of CMC theory, where consumers communicate via SM as Internet tools.

The results also confirmed the findings of the literature analysis, where it was found that consumers use SM for both interpersonal and marketing communication purposes. In this case the results can be compared to the achievements of e.g. Chu and Kim (2011), Kucukemiroglu and Kara (2015), Erkan and Evans (2016) or Finne and Grönroos (2017). The empirical research showed some new contexts and activities regarding the reasons for communication via SM, e.g. obtaining discounts for purchasing products by being a fan of a company or taking part in competitions organised by companies on SM. It has been found that there is not much difference among researched countries regarding interpersonal communication. All respondents communicate with their friends and relatives, and share private movies and photos via SM, etc. What is interesting, however, is that the presented

results have not confirmed the previous results obtained by, for example Ko *et al*. (2006) and Hsu *et al*. (2015), where people from collectivistic cultures had a higher tendency to build relations, and people from individualistic cultures treated SM as a source of gathering information. The reasons for this could be a relatively young age of respondents and the research limitations presented in the last section of this article. Young people have many cosmopolitan behaviours which are sometimes far from their cultural roots.

More differences among the respondents can be recognized in the scope of marketing communication. Americans are less involved in social marketing communication activities than Poles, the Chinese and Turks. Using the cross-cultural data, and comparing the obtained Spearman's correlation coefficients to the coefficients of cultural dimensions distinguished in the research done by Hofstede`s team (Hofstede, Hofstede, & Minkov, 2010), it is worth noting that a higher degree of collectivism (and lower degree of individualism) is related to more frequent use of social marketing communication activities. The greatest number of interdependencies was obtained in the Chinese and Turkish groups, which are also characterised by the highest degree of collectivism (China - IDV=20, Turkey - IDV=37). Collectivistic cultures are characterised by acting in a group and emphasizing the achievements of a group over individual ones. Looking for information about products from other users and sharing experience and knowledge with them is related to collectivistic values. Moreover, when characterising collectivistic cultures, Hofstede *et al*. (2010, p. 117) state that their 'consumption patterns show dependence on others' and that a 'social network is the primary source of information'. These behaviours were also verified in the research presented in this article. However, it needs to be emphasized that the Polish group proved to be an exception. In the studies done by Hofstede, Poland was found to be a country with a moderate level of individualism (IDV=60), but the results of the primary research showed quite high involvement of Poles in social marketing communication activities. There is a discussion about the utility of Hofstede`s results regarding an individual`s behaviours, because they are based on national level constructs (Brewer & Venaik, 2012; De Mooij, 2013). However, because of the multi-national profile of respondents described in this article and existing differences among them, the purpose here was to show any connections with existing cultural dimensions (Zhang & Hao, 2018).

CONCLUSIONS

Concluding the results of the study presented in the article it is worth noting that SM are very good sources of gathering information about both products and consumers. Furthermore, SM platforms are great tools of communication and conducting a dialogue (C_{10}) between companies and current or potential customers (B2C market). The researched consumers in this article involve themselves in social dialogue with other SM users. This was indicated by the frequency they commented on posted information. However, the results also showed that SM users are more eager to express negative opinions than positive ones about products, brands, and companies (C_9) on social platforms. In the presented study Poles were the most likely consumers to post such claims. The problem of the strong influence of negative opinions on the decision of other buyers confirmed the results of earlier studies (e.g. Balaji *et al*., 2016). Useful advice for Polish companies which use SM in communication with customers is to be more sensitive and follow posts of SMs users very carefully. What is more, companies should react to negative posts immediately. Another finding

that could be of use for companies is that consumers are usually interested in social marketing communication to obtain a discount or take part in a promotion. Thus, the study findings are of great value for producers that want to use SM for marketing communication. The engagement of social media tools can be helpful in, on the one hand, advertising and informing customers (SM users) about products, promotions, events, etc., and, on the other hand, conducting a dialogue via SM with customers, answering questions, and quickly reacting to negative opinions and comments. In other words, SM platforms have a great potential to be a marketing communication tool in the international marketplace, but they have to be used properly and with adaptation to particular markets and clients.

There are some limitations to this article which should be highlighted. Firstly, the most efficient method of acquiring information would not be a quantitative questionnaire, but rather by qualitative research in which individual and institutional SM profiles would be analysed. This is because the answers given in questionnaires may differ slightly from actual SM usage patterns. The most effective method to minimise this risk is observational research. Some literature studies show that researching the SM usage is more effective when using qualitative methods (e.g. Branthwaite & Patterson, 2011). However, when undertaking a study across multiple national markets, this method generates considerable costs and, as a result, researchers often decide to apply only questionnaire methods. Another limitation issue is that the non-random sampling method and the sample size means there is a lack of possibility to extrapolate the results to whole populations.

This notwithstanding, research limitations are very often a stimulus to either continue a study or expand it, especially in relation to international activities. Further international-scale research on the utility of SM could be expanded and improved via random sampling and larger samples. For future research, it could be useful to identify product categories and ask respondents about their behaviour regarding marketing communication via SM. Such findings would bring more managerial implications for producers of particular goods.

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Convergence and Transition of the Eastern Partnership Countries towards the European Union

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ABSTRACT

Objective: This article aims to present the convergence analysis results for the Eastern Partnership EaP countries and the twenty-eight members of the European Union (EU).

Research Design & Methods: The relationships between the selected macroeconomic variables and per capita GDP growth rate are econometrically tested to support this research. We analyse the convergence during the period of 2004-2017, but also include two sub-periods: 2004-2008 and 2009-2013.

Findings: The empirical findings support the economic convergence hypothesis. The results show that the recent financial crisis negatively affected the absolute and conditional convergence process, when economic variables are included in the analysis. The negative effects of the crisis on conditional convergence with economic and socio-political variables are not identified.

Implications & Recommendations: Poorer countries in the analysed group should do more to open their economies to attract investment, as gross fixed capital formation and economic openness have a positive impact on per capita growth, while general government debt, unemployment and inflation should be stabilised in the examined sample of countries.

Contribution & Value Added: The contribution of this article is reflected in the fact that it examines a geographic and economic area that has been under examined. The analyses on the Eastern Partnership countries convergence process towards the European Union are almost nonexistent. Economic literature on convergence has focused on the EU Member States, while the analyses on the Eastern Partnership countries convergence process towards the EU are almost nonexistent.

Article type: research article

Keywords: beta convergence; Eastern Partnership; European Union; transition; financial crisis; economic growth

JEL codes: F15, O47, O52

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INTRODUCTION

In this article, we analyse the real economic convergence process among the Eastern Partnership countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine) and the twenty-eight Member States of the European Union. The focus of the analysis is on absolute (unconditional) and conditional beta convergence during 2004-2017, with two subperiods: 2004-2008 and 2009-2013.

The fall of the Berlin Wall in 1989 led to the collapse of communism and the dissolution of Yugoslavia, the Union of Soviet Socialist Republics (USSR) and Czechoslovakia. During that process more than twenty new countries were created. The countries now called Central and Eastern Europe (CEE) started their transition from centrally planned to market economies in the early 1990s. One of their main goals was the EU membership. In order to join the European Union (EU), the CEE countries had to fulfil various economic, political, and institutional criteria, known as the Copenhagen Criteria (1993). The goal of the criteria fulfilment was to enable the countries to function in the EU market and assimilate with the countries that had already joined the European Union. Eight CEE countries, together with Cyprus and Malta, joined the European Union in 2004, followed by Bulgaria and Romania in 2007, and Croatia in 2013. The criteria fulfilment, as well as the access to the EU funds, enabled the CEE countries to converge towards the EU-15 Member States. Convergence is defined as the tendency of poor countries to grow faster than rich countries (Barro & Sala-i-Martin, 1992). The CEE countries have converged towards the EU-15, as shown by their average per capita GDP, which increased from 41.1% of the EU-15 average in 1995 to 48.3% in 2004, and to 59.1% in 2016. Once new Member States join the European Union, they must eventually join the Europe's Economic and Monetary Union, or adopt the euro as their currency. In this process, they must fulfil the Maastricht criteria (1992), also known as the convergence criteria. During the period of 2007-2015, seven new Member States joined the Eurozone.

The Western Balkan countries are considered to be the next group likely to join the European Union. The six countries (Albania, Bosnia and Herzegovina, FYR Macedonia, Kosovo,[1] Montenegro, and Serbia) signed the Stabilisation and Association Agreement (SAA) with the EU, four of them (excluding Bosnia and Herzegovina and Kosovo) are candidate countries, and only Kosovo has not implemented visa-free regime with the European Union.

Another group of countries going through the transition process is the Eastern Partnership group. The Eastern Partnership countries are former USSR countries; Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine. The Eastern Partnership, which is a specific dimension of the European Neighbourhood Policy (ENP), was launched in 2009 and focuses on four areas of cooperation; stronger governance, stronger economy, better connectivity, and stronger society (European External Action Service, 2016). The EU's major concern towards the Eastern Partnership includes the establishment of a democratic government, human rights, the rule of law, and socio-economic stability in the region

[1] "This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence" (European Commission, 2015)

(Kharlamova, 2015, p. 30). The Eastern Partnership initiative is not an EU accession process, but it aims to build a common area of shared democracy, prosperity, stability, and increased cooperation (European External Action Service, 2017).

The main purpose of this research is to present the results of a convergence analysis between the Eastern Partnership countries and the twenty-eight members of the European Union. Its other objectives are to present the results of the convergence process between different time periods, because this could show if the recent financial crisis slowed down convergence, and to determine what affects per capita growth in the group. There are two research hypotheses of this analysis.

H1: There is absolute convergence between the Eastern Partnership and the EU-28 countries in at least one analysed period.

H2: There is conditional convergence between the groups of countries in at least one analysed period.

We use simple and multiple linear-log regression in order to investigate if the Eastern Partnership countries converge towards the EU-28 member states in the period 2004-2017.

The article is organised as follows. The literature review on convergence is presented in Section 2, followed by Materials and Methods in Section 3. Section 4 presents and discusses the empirical findings on absolute and conditional beta convergence. Section 5 concludes the article.

LITERATURE REVIEW

Based on the Solow neoclassical growth model (1956), Barro and Sala-i-Martin (1992) analyse if the U.S. states converged in the period 1840-1988. The results of this analysis show that the states converged at the rate of 2% per year, regardless of the analysed period.

Matkowski and Prochniak (2004) asses the real economic convergence among the eight CEE countries that joined the European Union in 2004. The CEE countries converge between themselves and reveal a good cyclical synchronisation with the EU. El Ouardighi and Somun-Kapetanovic (2007) show that the Western Balkan countries converge towards the EU-27 member states during 1989-2005. However, income inequality increases and convergence in per capita GDP moved at a slow annual rate, confirming the basic rule of 2%. The authors (2009) expand the analysed period to 2008, and conclude that the Western Balkans countries converge during the entire period, but there are differences in the convergence patterns across sub-periods. Borys, Polgár, and Zlate (2008) investigate the convergence process of candidate and potential candidate countries for EU membership against the new Member States between 1993 and 2005. The countries converged, with the main drivers of the convergence process having been total factor productivity growth and capital deepening, whereas labour contributed only marginally to economic growth. Vojinović, Acharya, and Próchniak (2009) present an analysis on the convergence of countries that joined the European Union in 2004. The analysed period is 1992-2006. Their results show that the poorer countries in the group had a tendency to grow faster than richer countries, but the income gap remained substantial. Cavenaile and Dubois (2010) test for the existence of two heterogeneous groups of countries with different convergence rates in the EU-27 between 1990 and 2012. The EU-15 and CEE countries display significantly different rates of convergence,

confirming the heterogeneity in the European Union. Szeles and Marinescu (2010) find both absolute and conditional convergence amongst the ten CEE countries that joined the EU in 2004 and 2007 (Cyprus and Malta are not included in the analysis).

Mikulić, Lovrinčević, and Galić Nagyszombaty (2013) find absolute beta convergence on the national level for the EU countries. Convergence can also be found for NMS regions, but the convergence speed for the regional level is lower in comparison to the national level. Grzelak and Kujaczyńska (2013) confirm convergence within the EU-27 during 2001-2010. Faster growth of the new Member States is associated with improved productivity of production factors, relatively intensive investment activity, and greater homogeneity of the group. Šikić (2013) analyses if there is absolute convergence among countries that joined the EU in 2004 in the period of 1997-2012, with two sub-periods: 1997-2007 and 2007-2012. The results show that the countries formed a homogenous convergence club during the entire period and achieved high convergence rates in the pre-crisis period, but the level of homogeneity decreased after the recent financial crisis started. Tsanana, Katrakilidis, and Pantelidis (2013) find that there are dissimilarities among the Balkan countries in catching-up with the EU-15 during the period of 1989-2009. The income gap relative to the EU-15 remains significant. Dvoroková (2014) investigates the convergence process in the EU-28 between 2001 and 2012. The study shows that higher growth rates were observed in countries with initially lower per capita GDP.

Benczes and Szent-Ivanyi (2015) confirm the convergence of the EU countries (excluding Croatia and Luxembourg) during the period of 2004-2014. The countries were split into two main clusters: the new and the old Member States. Borsi and Metiu (2015) investigate economic convergence in the EU-27 between 1970 and 2010. Their findings suggest no overall real income per capita convergence in the EU, but there are different subgroups that converge at different steady states. Colak (2015) analyses if the CEE and SEE countries converge towards the old Member States of the European Union (EU-15) during the period of 1993-2012. The results a strong tendency on convergence of new Member States, candidate, and potential candidate countries. Bićanić, Deskar-Škrbić, and Zrnc (2016) find that there was no beta convergence or sigma convergence in Yugoslavia, yet both kinds of convergence developed after Yugoslavia dissolved and the countries declared their independence.

Alcidi, Núñez Ferrer, Di Salvo, Pilati, and Musmeci (2018) show that the CEE countries led the convergence process in the European Union during the period of 2000-2015. However, the countries had different patterns at the regional level, because capitals accelerated the convergence process while other parts of the country lagged behind. Pipień and Roszkowska (2018) test the heterogeneity of convergence in post-communist countries (CEE and CIS) between 1992 and 2015 concluding that CEE countries have become relatively homogenous. During the same time, the CIS countries lack similar convergence patterns. Siljak and Nagy (2018) confirm the existence of convergence between the Eastern Partnership countries and the EU-13 Member States. Stanišić, Makojević, and Ćurčić (2018) examine stochastic income convergence between the Western Balkan and Central and Eastern European countries (the Czech Republic, Slovakia, Poland, Slovenia, Estonia, Latvia, and Romania) towards the EU-15 during the period of 1993-2015. The results confirm the existence of convergence in the cases of the CEE countries, but convergence is not found in the case of the Western Balkan countries. Žuk, Polgar, Savelin, Diaz del Hovo,

and König (2018) analyse if countries of Central, Eastern and South-Eastern Europe converge towards the EU-15 between 2000 and 2016. The results show that convergence was particularly rapid before the recent financial crisis but slowed down thereafter.

MATERIAL AND METHODS

Convergence occurs when poor countries grow faster than rich countries, and it indicates a negative relationship between per capita GDP growth rate and the initial level of per capita GDP. Convergence can be classified as absolute (unconditional) and conditional.

We follow Sala-i-Martin's (1996) classical approach to convergence analysis and analyse absolute and conditional beta convergence among the Eastern Partnership and the EU-28 countries using ordinary least squares (OLS) regression based on cross-sectional data.

When it is assumed that countries do not differ in their structures, they converge to the same steady state and convergence is absolute. The beta coefficient, or the speed of convergence, captures the rate at which countries converge towards the steady state during a single year. The coefficient is obtained through a simple linear-log regression analysis with one dependent and one independent variable (Equation 1). The dependent variable is the average annual per capita GDP growth rate, while the independent variable is per capita GDP in purchasing power terms (PPP) at the beginning of the analysed period. Because per capita GDP is expressed in PPP, we compute it in natural logarithm. In order to test absolute convergence hypothesis, we estimate the following linear-log model:

$$\Upsilon_{i.0,T} = \alpha_i + \beta \log(Y_{i,0}) + \varepsilon_i \quad (1)$$

where:

β - the convergence coefficient;
$\Upsilon_{i.0,T}$ - the average annual growth rate of per capita GDP for country I;
$Y_{i,0}$ - per capita GDP at PPP for country *i* at the beginning of the analysed period 0;
α_i - a constant;
ε_i - the stochastic error of the equation;
T - the end of the analysed period.

The relationship between the variables must be negative; i.e., the beta coefficient must be negative. The positive coefficient indicates divergence, which means that rich countries grow faster than poor countries, in per capita terms.

When countries have different structures, they converge towards a different steady state and convergence is conditional. The beta coefficient is obtained using a multiple-regression analysis. The absolute convergence model (1) is augmented with various economic, social, or political variables. In this analysis, we include three economic variables: economic openness, gross fixed capital formation, and inflation rate, with three socio-political variables: general government debt, unemployment rate, and population growth rate. Equations (2) and (3) present conditional convergence models:

$$\Upsilon_{i.0,T} = \alpha_i + \beta_1 \log(Y_{i,0}) + \beta_2 EO_{i.0,T} + \beta_3 Inf_{i.0,T} + \beta_4 GFCF_{i.0,T} + \varepsilon_i \quad (2)$$

and

$$\Upsilon_{i.0,T} = \alpha_i + \beta_1 \log(Y_{i,0}) + \beta_2 EO_{i.0,T} + \beta_3 Inf_{i.0,T} + \beta_4 GFCF_{i.0,T} + \beta_5 Debt_{i.0,T} + \beta_6 Pop_{i.0,T} + \beta_7 Unemp_{i.0,T} + \varepsilon_i \quad (3)$$

where:

EO - economic openness;
Inf - inflation rate;
$GFCF$ - gross fixed capital formation;
$Debt\ I$ - general government debt;
$Unemp$ - unemployment rate;
Pop - population growth rate.

It is expected that economic openness and gross fixed capital formation will have a positive impact on per capita growth, i.e., positive estimated coefficients, while inflation, general government debt, unemployment and population growth will have negative estimated coefficients.

The analysed period is 2004-2017, with two sub-periods: the pre-crisis period of 2004-2008 and the crisis period of 2009-2013. The sub-periods are included so that we are able to test whether the recent financial crisis negatively affected the absolute and conditional convergence process. When deciding on the appropriate length of sub-periods, Islam (1995) suggests that five-year time intervals should be used. Even though one-year periods are technically feasible, they are too short, this is because short-term disturbances may appear larger in such brief intervals.

In this research, convergence is analysed based on the cross-sectional data, using the average rates for a given period. Cross-sectional data are used because this type of data is free of the distortions caused by business cycles and various demand-side and supply-side random shocks, both internal and external, which could deviate the economy from a path towards the steady state (Vojinović *et al.*, 2009, p. 127). We analyse whether the countries converge or diverge during the analysed period, and do not estimate a model which could predict the future development of the convergence process. Therefore, this model can be applied only ex post (Dvoroková, 2014, p. 91).

In order to investigate relevant model diagnostics, we conducted three tests with all estimated models, the Breusch-Pagan test, which tests the null hypothesis that the variance of the residuals is constant, the multicollinearity test using the variance inflation factor (VIF), and the Ramsey RESET test, which tests the null hypothesis that a model has no omitted variables.

This research is based on annual data. Table 1 presents the descriptive statistics of the variables used in the estimation of absolute and conditional convergence models during 2004-2017. The data set includes thirty-four countries.

The Eurostat, World Bank, and World Economic Outlook (WEO) databases were the main sources of data for this analysis. Data for the per capita GDP growth rate, the initial per capita GDP, economic openness, gross fixed capital formation, inflation, the unemployment rate, and the population growth rate are derived from the World Bank's database. Data for general government debt, as a percentage of GDP, were obtained from Eurostat for the EU Member States, and from the World Economic Outlook database for the non-EU countries. The data for this variable coincide because they are based on the same measure.

Table 1. Descriptive statistics

Variables	Description	Mean	Standard Deviation	Minimum Value	Maximum Value
Per capita GDP growth	Annual percentage growth rate of GDP per capita based on constant local currency	2.45	2.08	-0.87	7.84
Log (initial per capita GDP at PPP)	Natural logarithm of per capita GDP at the beginning of the analysed period	9.76	0.76	7.88	11.07
Economic openness	A sum of exports and imports divided by GDP	116.95	60.84	53.85	344.73
Inflation rate	Measured by the Harmonized Index of Consumer Prices	3.48	3.69	1.06	18.55
Gross fixed capital formation	Measured as a percentage of GDP	22.60	3.31	16.37	31.54
General government debt	The government debt to GDP ratio	54.76	30.10	7.15	144.13
Unemployment rate	As a percentage of total labour force	8.83	3.71	0.73	17.53
Unemployment rate (excluding Belarus)	Aa s percentage of total labour force	9.07	3.48	5.02	17.53
Population growth	The annual growth rate of a population	0.18	0.75	-1.35	2.02

Source: own calculations based on World Bank, IMF, and Eurostat data.

RESULTS AND DISCUSSION

We analyse the absolute and conditional beta convergence of the Eastern Partnership countries towards the Member States of the European Union during the period of 2004-2017, and two sub-periods: 2004-2008 and 2009-2013. We make the subdivision in order to test whether the recent financial crisis had a negative impact on the convergence process in the analysed countries. Four equations are estimated for each period: absolute convergence models (Models 1-3), conditional convergence models, when economic variables are included (Models 4-6), and conditional convergence models, when economic and socio-political variables are included in the analysis (Models 7-12).

The regression results for absolute convergence models in the analysed periods are presented in Table 2.

The regression results show that the beta coefficient during the period of 2004-2017 is -2.16. If we assume that the countries have similar structures, they converge towards the same steady state at the rate of 2.16%, which is slightly higher than the reference value of 2% taken from the Barro and Sala-i-Martin (1992) findings. The convergence rate in the pre-crisis period is 4.24% and decreases to 1.77% during the crisis. The beta coefficients are highly significant in every analysed model (p = 0.0000 in Models 1 and 2 and p = 0.0001 in Model 3). Analysing convergence during the sub-periods, we can conclude that the recent financial crisis had a negative impact on this process. The countries

converge in every period; therefore, we do not have enough evidence to reject the first research hypothesis.

We do not find multicollinearity in the estimated models, which have a proper functional form. However, the issue of heteroskedasticity is detected in Model 2, so we estimate a regression with a heteroskedasticity robust standard error (Model 2'). When the issue is corrected, the beta coefficient remains the same at $p = 0.0000$.

Table 2. Absolute (unconditional) convergence of the Eastern Partnership and the EU-28 countries

Statistic	Model 1 2004-2017	Model 2 2004-2008	Model 2' 2004-2008	Model 3 2009-2013
	β (t)	β (t)	β (t)	β (t)
Log of initial per capita GDP at PPP	-2.16*** (-7.11)	-4.24*** (-7.01)	-4.24*** (-4.32)	-1.77*** (-3.79)
F statistics (*p*-value)	50.53 (0.0000)	49.17 (0.0000)	18.65 (0.0001)	14.37 (0.0006)
R^2	**0.6123**	**0.6058**	**0.6058**	**0.3099**

Significant codes: *** p < 0.01, ** p < 0.05, *p < 0.1
Source: own calculations based on the World Bank data.

Figure 1 indicates convergence among countries in the analysed group during the period of 2004-2017. The Figure plots per capita GDP in 2004 (X-axis) against the average per capita GDP growth rate in the period of 2004-2017 (Y-axis). The regression line has a downward slope; therefore, there is a negative relationship between the variables.

Figure 1 shows a high degree of dispersion among the Eastern Partnership countries, while the EU-28 Member States act as three distinct clubs. In the analysed period, the Eastern Partnership countries grew at an average per capita rate of 5.2%. The average rate in the European Union was 1.9%; 0.8% in the old Member States and 3% in the new Member States. Armenia, Azerbaijan, and Georgia achieved the highest per capita growth rates (5.7%, 7.8%, and 6.4% respectively). Belarus forms a club with the former transition countries; Bulgaria, Estonia, Latvia, Lithuania, Poland, Romania, and the Slovak Republic. Their average per capita growth rate is 4.2%. These countries achieved the highest per capita growth rates in the European Union. Ukraine's per capita growth rate is 2%, close to the average rate of the second club; Croatia, the Czech Republic, Hungary, Malta and Slovenia. However, Ukraine's per capita GDP in 2004 was only 31.7% of the second club's average. Cyprus forms a club with the old Member States, excluding Ireland and Luxembourg. Luxembourg's per capita GDP has been the highest in the European Union, while Ireland's average per capita growth rate is 3.5%, which is close to the first club's rate. The Eastern Partnership country's average per capita GDP in 2004 was 20.4% of the EU-28 average and increased to 28.8% in 2017.

We estimate nine conditional convergence models; three models with economic variables (Models 4-6) and six models with economic and socio-political variables (Models 7-12). The empirical results can serve as a recommendation for countries when choosing which policies should be pursued in order to increase per capita GDP growth rates.

Table 3 presents the regression results for conditional convergence, when economic variables are included in the models.

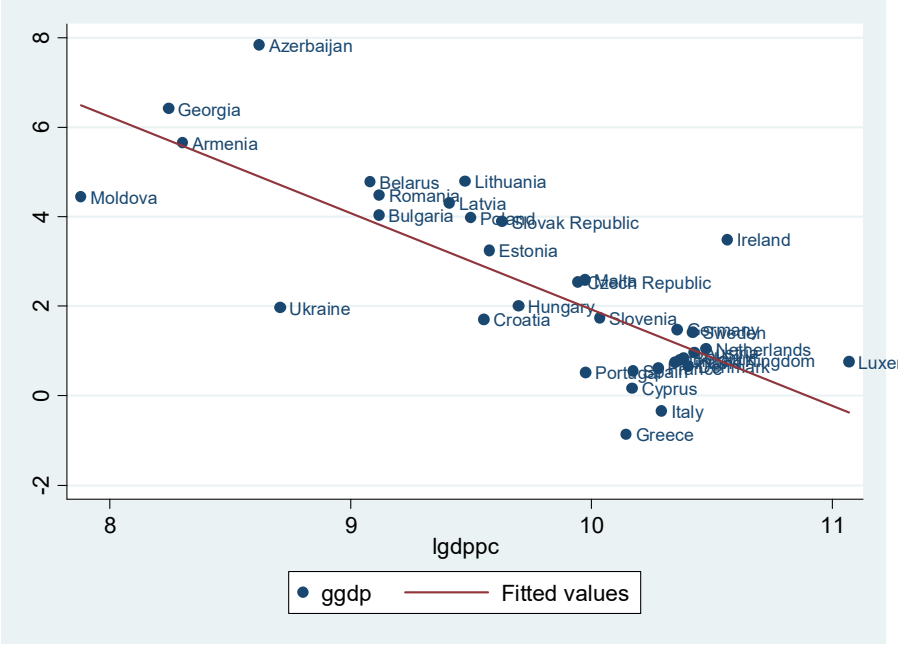

Figure 1. Absolute convergence of the Eastern Partnership and European Union countries, 2004-2017
Source: own calculations based on World Bank data.

Table 3. Conditional convergence of the Eastern Partnership and EU-28 countries, when economic variables are included in the models

Statistic	Model 4 2004-2017	Model 5 2004-2008	Model 5'	Model 6 2009-2013
	β (t)	β (t)	β (t)	β (t)
Log of initial per capita GDP at PPP	-2.04*** (-5.73)	-2.36** (-2.26)	-2.36* (-1.93)	-1.71*** (-3.46)
Economic openness (%)	0.01** (2.40)	0.01 (0.64)	0.01 (0.77)	0.01* (1.73)
Gross fixed capital formation (% of GDP)	0.22*** (3.19)	0.32** (2.64)	0.32** (2.31)	0.10 (0.95)
Inflation rate (annual %)	-0.08 (-1.23)	0.23 (1.05)	0.23 (0.90)	0.02 (0.25)
F statistics (*p*-value)	22.46 (0.0000)	17.81 (0.0000)	8.31 (0.0001)	5.32 (0.0025)
R^2	**0.7560**	**0.7107**	**0.7107**	**0.4231**

Significant codes: *** p<0.01, ** p<0.05, *p<0.1
Source: own calculations based on World Bank, and World Economic Outlook data.

The regression results show that, when economic variables are included in the models, the Eastern Partnership countries converge towards the EU-28 at the rate of 2.04% during

the period of 2004-2017. In the period before the crisis, the convergence rate is the highest among the analysed periods, 2.36%, and decreases to 1.71% during the crisis period. Based on these results, we can conclude that the recent financial crisis had a negative impact on the conditional convergence process.

The issue of heteroskedasticity is again detected in the pre-crisis model. When a regression with a heteroskedasticity robust standard error is estimated (Model 5'), the convergence rate remains the same, but the *p*-value increases from 0.032 to 0.064.

Tables 4 and 5 present the regression results for conditional convergence models, when economic and socio-political variables are included. Models 7-9 include Belarus in the analysis, while Models 10-12 exclude the country as an outlier.

Belarus is excluded from the analysis because the country's official unemployment rate during the analysed period is 0.73%. However, it is estimated that the real rate ranges between 5% and 10%, or even higher. Unemployed people in Belarus do not register with the employment agencies because (a) the level of unemployment benefits is extremely low and (b) the people who do register have to participate in public work programmes, which include seasonal agricultural work or street sweeping where the payment is low (Preiherman, 2012).

Table 4. Conditional convergence of the Eastern Partnership and the EU-28 countries, with economic and socio-political variables included in the models

Statistic	Model 7 2004-2017	Model 7' 2004-2017	Model 8 2004-2008	Model 8' 2004-2008	Model 9 2009-2013
	β (t)	β (t)	β (t)	β (t)	β (t)
Log of initial per capita GDP at PPP	-1.91*** (-4.11)	-1.91** (-2.62)	-1.52 (-0.97)	-1.52 (-0.77)	-1.27*** (-2.08)
Economic openness (%)	0.004 (1.09)	0.004 (1.19)	0.001 (0.10)	0.001 (-0.14)	0.005 (0.94)
Gross fixed capital formation (% of GDP)	0.16** (2.11)	0.16* (2.00)	0.21 (1.52)	0.21* (1.83)	0.03 (0.27)
Inflation rate (annual %)	-0.09 (-1.13)	-0.09 (-1.16)	0.33 (1.16)	0.33 (0.98)	0.01 (0.06)
General government debt (% of GDP)	-0.02* (-1.80)	-0.02** (-2.32)	-0.03 (-1.53)	-0.03*** (-2.96)	-0.02 (-1.50)
Population growth (annual %)	0.08 (0.24)	0.08 (0.15)	0.11 (0.17)	0.11 (0.09)	-0.50 (-1.03)
Unemployment rate (annual %)	-0.02 (-0.29)	-0.20 (-0.28)	0.17 (0.91)	0.17 (0.91)	-0.13 (-1.55)
F statistics (*p*-value)	13.97 (0.0000)	17.60 (0.0000)	10.61 (0.0000)	19.08 (0.0000)	4.39 (0.0025)
R^2	**0.7900**	**0.7900**	**0.7407**	**0.7407**	**0.5419**

Significant codes: *** p<0.01, ** p<0.05, *p<0.1

Source: own calculations based on World Bank, World Economic Outlook, and Eurostat data.

The results for conditional convergence, when economic and socio-political variables are included, are consistent in both cases, whether Belarus is included or excluded from the analysis. The selected countries converge in the periods 2004-2017 and 2009-2013.

When Belarus is included in the analysis, the convergence rate in the entire analysed period is 1.91%, compared to 2.23% when the country is excluded. During the crisis period, together with Belarus, the countries converge at the rate of 1.27%, and at the rate of 2.33%, when the country is excluded. In the pre-crisis period 2004-2008, the beta coefficients are negative, but not statistically significant. Based on these results we can conclude that the recent financial crisis did not negatively impact the conditional convergence process, when economic and socio-political variables are included in the analysis.

Table 5. Conditional convergence of the Eastern Partnership and the EU-28 countries, with economic and socio-political variables included in the models, excluding Belarus

Statistic	Model 10 2004-2017	Model 10' 2004-2017	Model 11 2004-2008	Model 11' 2004-2008	Model 12 2009-2013
	β (t)	β (t)	β (t)	β (t)	β (t)
Log of initial per capita GDP at PPP	-2.23*** (-3.91)	-2.23*** (-3.02)	-1.53 (-0.97)	-1.53 (-0.84)	-2.33*** (-2.98)
Economic openness (%)	0.004 (1.02)	0.004 (1.11)	0.001 (0.11)	0.001 (0.16)	0.004 (0.76)
Gross fixed capital formation (% of GDP)	0.11 (1.18)	0.11 (1.15)	0.20 (1.44)	0.20* (1.91)	-0.03 (-0.28)
Inflation rate (annual %)	-0.19 (-1.46)	-0.19* (-1.73)	0.31 (1.05)	0.31 (0.93)	-0.61* (-1.91)
General government debt (% of GDP)	-0.02* (-2.00)	-0.02** (-2.67)	-0.03 (-1.56)	-0.03*** (-3.14)	-0.02* (-2.00)
Population growth (annual %)	0.15 (0.45)	0.15 (0.28)	0.21 (0.32)	0.21 (0.17)	-0.33 (-0.70)
Unemployment rate (annual %)	-0.02 (-0.24)	-0.02 (-0.24)	0.24 (1.16)	0.24 (1.18)	-0.14* (-1.86)
F statistics (*p*-value)	13.37 (0.0000)	18.71 (0.0000)	9.81 (0.0000)	25.58 (0.0000)	4.47 (0.0017)
R^2	**0.7892**	**0.7892**	**0.7332**	**0.7332**	**0.5703**

Significant codes: *** p<0.01, ** p<0.05, *p<0.1
Source: own calculations based on World Bank, World Economic Outlook, and Eurostat data.

Three economic variables are included in the analysis; economic openness, inflation rate, and gross fixed capital formation, and three socio-political variables; general government debt, unemployment rate, and population growth rate.

When economic variables are included in the models, economic openness and gross fixed capital formation are determinants of growth. Economic openness has a positive estimated coefficient during the periods 2004-2017 and 2009-2013. Gross fixed capital formation has a positive impact on per capita growth in the periods 2004-2017 and 2004-2008. The inflation rate is not a statistically significant variable in any of the analysed periods; therefore, it is not a determinant of growth.

When economic and socio-political variables are included in the models, general government debt is a determinant of the per capita growth rate during the entire period for both models, and in the crisis period, when Belarus is excluded from the analysis.

General government debt has a negative impact on per capita growth. Gross fixed capital formation has a positive impact in the entire period, when Belarus is included in the analysis. In the crisis period, unemployment and inflation negatively affect per capita growth, when Belarus is excluded from the analysis.

Heteroskedasticity is detected in both models for the entire period and the pre-crisis period. When regressions with heteroskedasticity robust standard errors are estimated, the results for the conditional convergence rates do not change. The difference occurs in the determinants of growth in the models; gross fixed capital formation, general government debt, and inflation rate. These variables are not statistically significant in the original models. Gross fixed capital formation and general government debt are determinants of per capita growth in both corrected models during pre-crisis period. The inflation rate is a statistically significant variable in the model, when Belarus is excluded from the analysis, in the entire period. Population growth rate is the only variable that is not statistically significant in any model.

CONCLUSIONS

In this article we investigate the convergence process of the Eastern Partnership countries towards the twenty-eight Member States of the European Union. The analysed period is between 2004 and 2017 with two sub-periods: the pre-crisis period 2004-2008 and the crisis period 2009-2013. Two types of beta convergence are analysed: absolute (unconditional) and conditional convergence.

The empirical results suggest that the Eastern Partnership countries converge towards the EU-28 in every analysed period. The recent financial crisis had a negative impact on the convergence process, since the convergence rate during 2009-2013 is lower than the rate in 2004-2008.

The regression results for conditional convergence models, when economic variables are included in the analysis, show that the convergence rate during 2004-2008 is the highest of the three periods.

When economic and socio-political variables are included in the models, the highest convergence rate is found throughout the entire analysed period. However, when Belarus is excluded from the analysis, the beta coefficient is the highest during the crisis period. Even though the beta coefficients are negative in the pre-crisis period, they are not statistically significant in the estimated models. Therefore, we do not have enough evidence to reject the research hypotheses, because the analysed countries converge, in absolute or conditional terms, in at least one analysed period.

The only selected macroeconomic variable that does not affect per capita growth rate is the population growth rate. The remaining variables are statistically significant in at least one analysed period. Economic openness and gross fixed capital formation have a positive impact on per capita growth, while the inflation rate, general government debt and the unemployment rate have a negative impact.

According to the empirical results of the study, economic openness and gross fixed capital formation promote per capita growth within the group. The results imply that the countries should increase their efforts in opening their economies to more investment and promoting trade, which is one of the main benefits of the EU membership.

The study also shows that the countries should pursue policies that will decrease unemployment and general government debt, and stabilise inflation. Improvements in these areas will lead to higher per capita growth rates while speeding up the convergence process. As a result, the Eastern Partnership countries could eventually catch up with the living standard of the European Union.

The main limitation of this study is the availability of data. A post-crisis period analysis would give a better overview on how the recent financial crisis affected the convergence process. The period of 2014-2017 is not suitable, because periods used in the analysis should not be shorter than five years.

Once we have data for the post-crisis period of 2014-2018, we will be able to conduct new research. This research will provide a complete overview on the effects of the recent financial crisis on the convergence process in the selected regions. We can also analyse the convergence process of the Eastern Partnership countries towards the separate groups within the European Union; the old Member States (EU-15) and the CEE countries (EU-11).

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Positive Management of Universities: A Model of Motivation to Strive for Scientific Excellence

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ABSTRACT

Objective: The aim of the article is to conceptualise a model of work motivation in the management of universities striving for scientific excellence.

Research Design & Methods: The most relevant for our aim is the self-determination theory that is applied to the work and organisational domain. We used a narrative literature review.

Findings: The proposed model is derived from the self-determination theory. It includes three types of motivation: autonomous motivation, controlled motivation, and amotivation, as well as three psychological needs, i.e. autonomy, mastery, and purpose. These motives and needs can interact to enhance scientific effectiveness further.

Implications & Recommendations: Universities need innovative staff who can contribute to strengthening scientific productivity and enhance the influence of the university at the international level.

Contribution & Value Added: Connection of three perspectives – institutional, individual and scientific disciplines – will capture the complexities of managing work motivation oriented to scientific effectiveness.

Article type: research article

Keywords: motivation; university management; scientific effectiveness; psychological needs; positive organisational scholarship; self-determination theory

JEL codes: I23

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INTRODUCTION

The second mission of universities is to strive for scientific excellence (Scott, 2006), as expressed in the academic community, by publishing in highly ranked peer-reviewed journals, peer-reviewing scientific articles, collaborating with other scientists and receiving funding grants (Kwiek, 2018). The development of an organisation is affected by the configuration of its institutional resources, the exploration and implementation of ways of strengthening it and the identification of strengths and opportunities (Cameron *et al.*, 2003; Cameron & Spreitzer, 2011). That is why universities need proactive staff who, through their scientific activities, practices and cooperation, will build up prestige and recognition at the international level. However, scientific effectiveness depends not only on the skills of individual academics but also on an appropriate system of motivation. Recent changes in the landscape of scholarly communication have shown that motivation based on external instruments in the form of rewards and punishments is insufficient and poorly matched to the goals of universities (Cerasoli, Nicklin, & Ford, 2014; Leja, 2015). Furthermore, very few studies into motivation among academics have focused on the institutional and the individual lenses (Blind, Pohlisch, & Zi, 2018; Christensen, Dyrstad, & Innstrand, 2018; Teye *et al.*, 2019). Thus, a more appropriate model of motivation in academics is needed. Our study will fill a gap in the areas of the higher education research and management science.

The aim of this study is to conceptualise a model of motivation of academics in the management of universities. As its theoretical framework, it will use a combination of the management paradigm with its strategic paradoxes (antinomy of synergy; Leja, 2013) and positive organisational scholarship (Cameron et. al., 2003; Cameron & Spreitzer, 2011). Our study concerns a model of work motivation in line with the assumptions of the self-determination theory in work organisations (Deci, Olafsen, & Ryan, 2017; Pink, 2009). The model of motivation includes the following: autonomous motivation (e.g., intrinsic motivation), controlled motivation (e.g., extrinsic motivation) and amotivation (lack of motivation), integrated with psychological needs of autonomy, mastery and purpose. In particular, we would like to highlight that motivation can be treated as a mediator between institutional resources and scientific effectiveness.

In the article the considerations are carried out in accordance with the worldview of social constructivism, typical in the case of qualitative research. The logic of the argument is based on the synthesis of paradigms of positive organisational scholarship (Cameron et. al., 2003; Cameron & Spreitzer, 2011) and the management of paradoxes (Leja, 2013; Lewis, 2000). Therefore, a narrative literature review is applied as a research method. It provides critical evaluation of previous studies and synthesis of the review of literature on work motivation, in line with the self-determination theory (Deci, Olafsen, & Ryan, 2017).

The article is divided into four main parts. The first part (Literature Review) illustrates the scientific effectiveness and scientific productivity including the Polish scientific context. The second part (Material and Method) describes the research methods and the methodology approach used. The third part (Theory Development) presents the conceptualisation of a model of work motivation among scientists based on the self-determination theory adopted in the work domain. The fourth part (Conclusion) summarises and discusses practical implications and further recommendation for positive management of universities.

LITERATURE REVIEW

Management of Universities

A necessary condition for the creation of new knowledge is the ability to synthesise opposites and manage paradoxes in organisations (Lewis, 2000; Smith & Lewis, 2011). In university management, the synergy of antinomy is needed. This requires to integrate conflicting requirements and conditions that result in tensions (Leja, 2013; Tabatoni, 2002). The major strategic tensions in the higher education system are the level of education excellence (quality versus mass), the outcomes of education (general academic skills versus skills determined by the needs of the labour market) and research funding (autonomy of academics versus social needs). It is therefore essential to understand the paradoxes (Cohen, 1998) and to use them as an asset belonging to the entire organisation (Lewis, 2000). Managing an organisation's strategy can be viewed as a long-term plan for exploiting opportunities that can be a significant source of competitive advantage in the future (Krupski, Niemczyk, & Stańczyk-Hugiet, 2009).

Focusing on the positive aspects and advantages is a crucial element of the paradigm of Positive Organisational Scholarship. The development of an organisation is affected by the configuration of its institutional resources, the exploration and implementation of ways of strengthening it and the identification of strengths and opportunities (Cameron *et al.*, 2003; Cameron & Spreitzer, 2011). In these ways, it is possible to enhance the institution's contribution to the growth and thriving of its employees and to scientific effectiveness in the higher education system.

Academic Productivity

Work motivation is one of the key factors determining the effectiveness of work performance. Scientific effectiveness in the higher education system is defined as publishing and reviewing in international journals, applying for research grants and external funding, as well as collaborating in scientific teams (Kwiek, 2018). This definition of scientific effectiveness is relatively new to the Polish higher education system and stems from significant changes that occurred after 2011, when it was assumed that scientific effectiveness would be primarily related to the presence and recognition of Polish academics at the international level. A similar strategy of internationalisation was also observed in other European countries and in the United States (Wolszczak-Derlacz, 2017). Thus, integration and cooperation within the international academic community is essential, and a new set of indicators is therefore being used to evaluate scientific effectiveness.

The concept of academic productivity is much narrower than that of scientific effectiveness, and it mainly focuses on publishing findings of the scientific output. It results in quantitative measures of scholars' research performance. Currently, the evaluation reform is undergoing and it will most probably result in profound changes related to the new Constitution for Science called Act 2.0. This law will probably expand the number of bibliometric indicators allowed for the evaluation of productivity by indicators provided by Elsevier Publishing, such as SNIP and CiteScore. However, at the time when this article is written, we do not know the exact guidelines that will apply, and that is why we use the indicators that have been obligatory until now. According to recommendations from the Polish Ministry of Science and Higher Education, special lists are published that rank and

weigh scientific journals. Those lists (A, B and C) introduce publication points awarded on the basis of the inclusion in the Journal Citations Report database (list A), inclusion in Polish journals that have passed the evaluation process (list B) and inclusion in the ERIH database (list C). Other channels of publication, such as monographs and conference proceedings, are also awarded points. Further obligatory components have been selected and introduced; for example, scientists who apply for publicly funded grants have to provide the number of citations, including the individual Hirsch Index according to the Web of Science Core Collection database and the number of publications that have an Impact Factor and are indexed by the Journal Citations Report.

Kwiek's proposal (2015; 2018) drew our attention to two further indicators of effectiveness: overall research engagement and internationalisation. Overall research engagement is primarily connected to the membership in national and international scientific boards and committees, acting as editors of peer-reviewed journals and writing reviews of scientific articles. Internationalisation is deemed to include working in national and international scientific teams, publishing in international journals and focusing on internationally oriented research, including comparative studies. Kwiek's findings showed that being affiliated to the top 10% of productive scientists in the STEM (science, technology, engineering and mathematics) subjects is strongly correlated with cooperating internationally, publishing in prestigious international journals, conducting research at the international level and having a research-oriented approach in terms of the academic lifecycle. It was also highlighted that serving as an editor in journals or for book boards has a significant impact on productivity (Kwiek, 2018). From the Polish perspective, the most productive scientists belong to research-oriented groups characterised by active involvement in international scientific teams, publishing in international scientific journals, serving as reviewers and editors and serving in national and international scientific boards (Kwiek, 2015).

Academic Productivity: Evidence from Poland

We wanted to explore how Polish academic productivity is recognized in Europe. For this purpose, we formulated the following questions: (1) how many documents were indexed in Web of Science, (2) how many times were Polish papers cited, and (3) how many Polish papers had authorship with international collaboration between 2015 and 2017? Finally, we compared the results to that of the United Kingdom, a leader in scientific effectiveness in Europe.

Data for this basic comparison came from the European Union countries, Norway, and Switzerland, and was provided by Web of Science and its InCites application (published by Clarivate Analytics). Datasets were built by running reports at the end of May 2018 based on a simple query using Web of Science Documents in InCites for the 2015-2017 period (Szuflita-Żurawska, Basinska, & Leja, 2018).

Results showed that Poland ranks eighth among the European countries, with 119 154 retrieved documents. Polish scientific documents were cited 305 782 times. In absolute terms, the United Kingdom leads the scientific publication landscape in Europe with 594 176 documents and 2 129 433 citations. In the same period, Polish academics published 20.05% as many papers. Polish universities employed 91 603 academics compared to the United Kingdom's 206 870 scientists, which makes 44.28%. Interestingly, there were 390 public and non-public higher education organisations registered in Poland, whereas the United Kingdom is represented by 162 higher education institutions. Although the

number of Polish scholars was close to half of the number of their British counterparts, the number of Polish documents amounted to one-fifth of the number of British ones.

Collaboration in publishing scientific papers is important to succeed across the research process. The percentage of international collaborations per country is defined as the number of publications with at least two different country affiliations among co-authors, divided by the total number of documents for that country. Our findings demonstrated that only 33.2% of papers by Polish authors indexed in Web of Science between 2015 and 2017 met the criterion for international co-authored publications. At the same time, over 50% of documents published by scientists from the United Kingdom had international collaboration. (Szuflita-Żurawska *et al.*, 2018).

Publication Practices within Scientific Disciplines

Research results are typically disseminated through peer-reviewed scientific papers. The prestige of a journal is one of the crucial factors in terms of choosing a publishing channel by academics and many of them have decided to publish research in highly ranked international journals. However, publication practices vary within scientific disciplines. For example, in computer science, conference papers are more valued and more frequently cited than papers in scientific journals (Bar-Ilan, 2010; Goodrum *et al.*, 2001). Anyway, due to factors such as the implementation of evaluation systems, publication practices in computer science have become more journal-oriented (Cavero, Vela, & Cáceres, 2014).

In Poland, only a few scientific disciplines have scholarly communication practices in which the most important channel for disseminating research results is the publication of scientific articles in international journals. For other disciplines, such as the social sciences, this trend is rather a new phenomenon, and it is proving difficult to adopt, especially in the humanities (Kulczycki *et al.*, 2018). Notable examples are popular monographs and book chapters that dominate publication output in the humanities. However, publication patterns have begun to transform in recent years. According to Kulczycki *et al.*, since 2013, social science and humanities articles published and shared in Poland have increased from 20.71% to 48.08% of total publications. At the same time, book chapters have significantly decreased – from 65.04% of the total in 2011 to 46.28% in 2014, and monographs have dropped – from 14.25% of the total in 2011 to 5.64% in 2014.

Barriers and Enhancers of Academic Productivity

Some factors can facilitate and others can inhibit academic productivity and motivation for international collaboration. Existing studies have focused on institutional factors: barriers, such as teaching overload and funding levels, or facilitating factors, such as the size of an institution, its technical orientation, type of unit, geographic location, year of foundation or traditions (Bukowska & Łopaciuk-Gonczaryk, 2013; Kwiek, 2015; Wolszczak-Derlacz, 2017; Wolszczak-Derlacz & Parteka, 2011). Moreover, some institutional resources, both financial and structural, have a significant impact on the motivation to work. Previous studies have shown that employees expect that their remuneration will be fairly distributed and appropriate for the task (Landry *et al.*, 2017; Olafsen *et al.*, 2015; Siegrist, 1996). Furthermore, an engaging or transformational style of leadership contributes to work efficiency, enhances commitment to the organisation, as well as energises and brings together employees (Alimo-Metcalfe *et al.*, 2008; Kim & Beehr, 2017; Schaufeli, 2015).

There has been an unfortunate neglect of the issues of academics' motivation, proactivity in sharing scientific knowledge, collaboration and building up of the academic community (Spreitzer *et al.*, 2005). A number of studies regarding the importance of personal features – such as the "sacred spark" theory (Cole & Cole, 1973) – have been conducted, but it would seem to be more beneficial in terms of organisation management in the higher education sector to motivate academics rather than to categorise them in terms of their personality predispositions. Thus, we aim to establish a sustainable process guided by an experienced management team that recognises the needs of scientists, helps employees to attain work motivation, and adjusts available resources to stimulate scientific effectiveness. To conclude, there is insufficient understanding in the higher education system of the relationship between motivation and scientific effectiveness.

MATHERIAL AND METHODS

The aim of the research is to conceptualise a model of work motivation in the management of universities striving for scientific excellence. The management of work motivation among scientists based on direct rewards and punishments, sometimes called "carrot and stick", has proved ineffective (Leja, 2015; Pink, 2009). The use of external instruments, mainly financial ones, is beneficial to routine work, but this comes at the expense of work that needs a creative and innovative environment (Cerasoli *et al.*, 2014; Pink, 2009). Prior studies have mainly explored the efficacy of monetary rewards, while research on non-monetary rewards is relatively absent (Zaharie & Seeber, 2018). Indeed, it is important to recognize how effective more intrinsic rewards are in increasing academics' productivity. This does not indicate, however, that motivation by means of external instruments is unnecessary but that a different approach to motivation is needed. Previous concepts of work motivation have tended to be dichotomous, contrasting, for example, extrinsic and intrinsic motivation (Gagne & Deci, 2005). The modern approach must allow us to understand motivations as existing on a continuum with respect to preferred types of regulation (i.e., more extrinsic or more intrinsic), instead of treating externally regulated motives as opposed to the internal drive.

The most relevant forto our aim is the self-determination theory (Deci *et al.*, 2017; Gagne & Deci, 2005) that is applied to the work and organiszational domain. We used a narrative literature review (Baumeister & Leary, 1997).

In the Google Scholar database we searched the terms "self-determination theory" and "work motivation". We found around 15 000 documents. Therefore, we added the term "scientific productivity". As a result, we obtained 34 documents. We also used the term "academic motivation", however, the results in this case included too many documents about student and pupil motivation. In addition, we searched the terms "profile approach to self-determination" and "profiles of work motivation" due to the fact that we looked for combinations of different types of motivations. According to the initial criteria, articles in review needed to be available in English and published in peer-reviewed journals – they also had to describe work motivation on the self-determination continuum. Titles and abstracts that were retrieved were manually screened in order to verify our stipulations. Many studies reviewed did not meet the above-mentioned eligibility requirements and were excluded due to belonging to a non-work domain, being published in a language

different than English, or being dissertation theses or duplicates. Finally, only 23 documents were included in the literature review and were used to build a model of work motivation in higher education settings.

THEORY DEVELOPMENT: A CONCEPTUAL MODEL OF WORK MOTIVATION AMONG ACADEMICS

Self-Determination Theory in Work Organisations

According to the self-determination theory in the work context (Deci *et al.*, 2017), employees can be motivated in different ways that are not mutually exclusive. There are two major types of motivation, autonomous and controlled, and these may differ in their function and manner of regulation. Autonomous motivation is related to intrinsically regulated activities that facilitate the employee's authentic engagement, appreciation of meaningfulness and purpose, sense of personal agency and search for an internal drive towards job performance. Specific subtypes of autonomous motivation are intrinsic motivation and identified motivation, differing in the level of the internalisation of values, well-being involved. Intrinsic motivation encourages activity that is interesting in its own right and whose benefit is spontaneous satisfaction. Identified motivation is also regulated intrinsically, but its reward comes from cognitive fulfilment.

In contrast to autonomous motivation, controlled motivation is externally regulated. The employee expends effort in order to receive rewards and avoid punishments, with the result that short-term benefits, rather than growth and development, are achieved. Even if their job performance is good, employees whose motivation is more controlled are relatively poorly engaged in their professional roles. An example of controlled motivation is the extrinsic motivation, consisting of instrumental behaviours contingent on rewards and punishments, both material (e.g., money) and social (e.g., recognition and respect from others). A more mature form of controlled motivation is the introjected motivation, in the case of which employees take action as much in order to feel pleasure and pride as to avoid shame and guilt. The introjected motivation is considered to be enforced through its own internal system of reward and punishment.

In addition to autonomous and controlled motivation, there is also amotivation, a lack of motivation and unwillingness to work. Amotivated employees do not pursue the organisation's goals and, moreover, feel helpless and incompetent. The motivation continuum in the self-determination theory is presented in Figure 1.

<table>
<tr><td>Quality of behaviour</td><td colspan="5">Non-self-determined</td><td>Self-determined</td></tr>
<tr><td rowspan="2">Types of motivation</td><td>Amotivation</td><td colspan="3">Extrinsic motivation</td><td>Intrinsic motivation</td></tr>
<tr><td></td><td colspan="2">Controlled motivation</td><td colspan="2">Autonomous motivation</td></tr>
<tr><td>Regulator styles</td><td>Non-regulation</td><td>External regulation</td><td>Introjected regulation</td><td>Identified regulation</td><td>Intrinsic regulation</td></tr>
</table>

Figure 1. The self-determination continuum showing types of motivation with regulatory styles
Source: based on Deci *et al.* (2017), Gagne & Deci (2005), Gagne *et al.* (2015).

Employees who are autonomously motivated gain more benefits and incur fewer losses. They perform their tasks better and are more likely to feel happy, fulfilled and attached to the organisation (Gillet *et al.*, 2017). Most importantly, they are more willing to share their knowledge. In contrast, controlled motivated employees experience more negative consequences in their jobs (Christensen *et al.*, 2018; Klaeijsen, Vermeulen, & Martens, 2017). They are more likely to feel exhausted and intend to leave or change their career pattern. Furthermore, they take little personal initiative and are reluctant to exchange knowledge, which means that they neither obtain knowledge from co-workers nor pass knowledge on (Cerasoli *et al.*, 2014; Gagne *et al.*, 2015; Howard *et al.*, 2016).

Universities want to create conditions for professional thriving and to motivate their employees to achieve academic success. However, the management of motivation has to take account of the basic needs that fulfil employees, particularly the satisfaction of the needs for autonomy, mastery and purpose (Deci & Ryan, 2000; Dahling & Lauricella, 2016; Pink, 2009). Unfortunately, these motives and needs of employees have been examined separately in previous research (Deci *et al.*, 2017). The need for autonomy reveals itself in people who would like to act independently and with personal agency, deciding which tasks to do, which methods to use, how fast to work and with whom to collaborate. Autonomy results in a greater sense of internal locus of control instead of being pushed or pulled by external factors. A drive for mastery is a need to be competent and to demonstrate ongoing development of professional skills and abilities. Mastery creates and strengthens self-efficacy in employees seeking new ideas and taking new challenges. Maximising purpose is connected with giving meaning to work, so that its goal is to broaden one's horizons and become part of something valuable and sustainable; purpose leads to a situation in which all the employee's actions contribute to benefits for the organisation (maximising profit) and for society (enhancing welfare and creating a sense of community).

Based on the self-determination theory, we propose a theoretical model of work motivation among academics. This model shows a system of assumptions, terms and relations between them, which allows to describe a fragment of reality. The aim is to capture the most important characteristics and relationships that enable it to be recognized. A graphical representation of the model is presented in Figure 2.

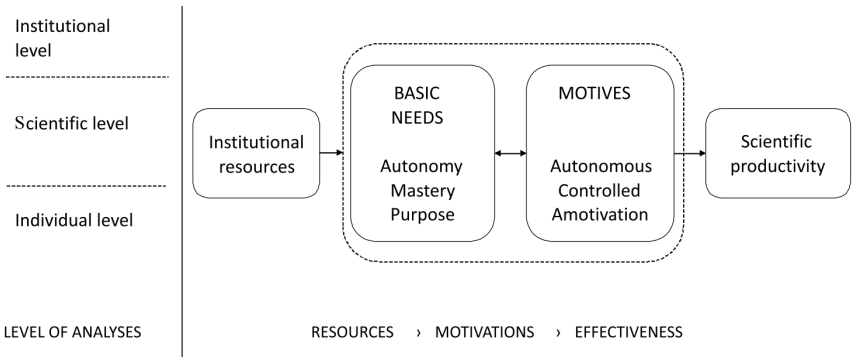

Figure 2. The model of work motivation among academics in a multilevel approach: indirect role of motivation in the relationship between institutional resources and scientific effectiveness at universities

Source: own elaboration.

There are four theoretical propositions elaborated from our conceptual model.

First, the relationship between institutional resources (e.g., leadership style, organisational support, rewards) and scientific productivity can be mediated via the combination of psychological needs and different types of motivations (Christensen *et al.*, 2018; Landry *et al.*, 2017; Olafsen *et al.*, 2015; Schaufeli, 2015).

Second, in heuristic work environments, the satisfaction of basic psychological needs, especially autonomy and mastery, facilitates autonomous motivation and this relationship can be reciprocal. As we mentioned above, few studies that connect needs with motives have been conducted (Deci *et al.*, 2017; Klaeijsen *et al.*, 2017; Van der Broeck *et al.*, 2016).

Third, motivation should be understood as forming a continuum that stretches from more controlled to more autonomous regulation or involves a mixed profile of motivation (Gagne *et al.*, 2015; Howard *et al.*, 2016; Tremblay *et al.*, 2009). Autonomous motivation was more correlated with the quality of performance, whereas extrinsic incentives were associated with the quantity of performance. In regard to performance, both autonomous and controlled motivation can be considered simultaneously (Cerasoli *et al.*, 2014; Wollersheim *et al.*, 2015). Moreover, findings suggest that several combinations of work motivations can, to varying degrees, successfully drive scientific productivity compared to the linear relation between motives and performance (Howard *et al.*, 2016; Ryan & Berbegal-Mirabent, 2016). Prior studies revealed four main profiles of motivation that were based on the combination of autonomous and controlled motivation. There were autonomously regulated, highly motivated, balanced motivation and amotivated profiles (Howard *et al.*, 2016; Van der Burgt *et al.*, 2018). Autonomously and highly motivated employees demonstrated higher work performance and incurred less personal costs of work compared to amotivated co-workers. Autonomous motivation can be more promising in promoting positive workplace outcomes due to the fact that it can mitigate a detrimental impact of controlled motivation.

Fourth, it is important to integrate knowledge from both perspectives, the institutional perspective of management through organisational resources and the employee perspective of satisfying individual needs and motives. Higher education institutions aiming to foster productivity among academics should adapt their incentive systems to the psychological needs and motives of academics in different stages of their career (Albert, Davia, & Legazpe, 2018). It means that institutions could integrate more individual and institutional input and output for academic performance depending on specific scientific disciplines. Moreover, developing a more integrative incentive system to exploit synergies between different academic activities, e.g. publishing and teaching, and individual needs is a challenge for the management of universities (Blind *et al.*, 2018). Based on the self-determination theory, the relational perspective provides new insights into understanding motivation in higher education settings. Universities want to seek to promote the emergence of psychological and relational conditions in order to enhance creativity and innovation (Teye *et al.*, 2019).

In conclusion, the proposed model of work motivation among scientists is required to focus on positive activities to stimulate linking autonomous motivation with controlled motivation and to fulfil psychological needs for mastery (being competent), autonomy (being independent) and purpose (finding a meaning of work) in order to increase scientific effectiveness.

CONCLUSIONS

Implications and Recommendations

The problem of academics' motivation is rooted in two paradigms, the management of paradoxes and Positive Organisational Scholarship. Recent changes in the landscape of scholarly communication have shown that motivation based on extrinsic instruments is inefficient and poorly matched to the goals of universities (Leja, 2015). So far, the effectiveness of academics has not been connected to proactive behaviour that promotes the building of scientific knowledge and disseminates it in the international space (Christensen *et al.*, 2018). Furthermore, very few studies into motivation among academics have focused on varying degrees of scientific effectiveness between scientific disciplines that differ in their publication practices (Kulczycki *et al.*, 2018).

Contribution

The proposed model of motivation in scientists has some theoretical and methodological innovations. First, the scientific elaboration of a new model of motivation in the management of universities can be empirically verified. Second, this model may integrate institutional and individual levels. Thus, managerial practices can be linked with academics' needs and preferred motives. Third, a multilevel examination of the motivation model between institutions, scientific disciplines, and academics will reveal the complexity of managing academics' motivations in relation to scientific effectiveness.

In conclusion, the self-determination continuum provides new insights into understanding of research motivation in higher education settings. The proposed model of motivation integrates different types of motives and psychological needs, as well as the individual, scientific and institutional perspectives. As a result, it will extend existing knowledge about the motivation of academics to strive for scientific excellence and will fill a gap in the areas of higher education and management science.

Research Limitations

Our study has some limitations regarding institutional resources and scientific disciplines. More attention should be given to differences among scientific disciplines that may be important for scientific productivity and motivations, as well as more accurate identification of relevant organisational resources, both financial and structural.

Suggestion for Future Studies

Future research can be focused on the empirical verification of the motivation model in higher education institutions. The examination of the model of motivation in the management of universities can integrate the institutional and the individual lenses. Moreover, scientific fields can be taken into consideration. The implementation of the self-determination theory allows to observe the complexity of managing scholars' motivations in relation to scientific effectiveness, as well as the differences between various institutions, scientific fields and individuals.

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