edited by
Andrea S. Gubik and **Krzysztof Wach**

International Entrepreneurship and Corporate Growth in Visegrad Countries

University of Miskolc

INTERNATIONAL ENTREPRENEURSHIP AND CORPORATE GROWTH IN VISEGRAD COUNTRIES

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Andrea S. Gubik
and
Krzysztof Wach

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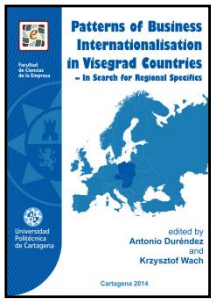

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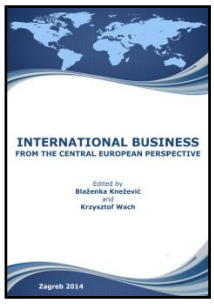

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INTRODUCTION

The concept of 'international entrepreneurship' (IE), as far as we know, was used for the first time in the doctoral dissertation of Tomas Otto Kohn in 1988 at Harvard University. It is most probable that it was published for the first time in a work of J.F. Morrow in the same year. A year later, this notion appears in scientific publications by various authors, including P.P. McDougall, who together with B.M. Oviatt developed this theory in the following years. It can therefore be assumed that the current international entrepreneurship as an area of research is only 25-30 years old. Its most intensive development, though, occurred only in the first decade of the 21st century, that is, de facto, just a few years ago. While IE has been developing very intensively, it must be admitted that, apart from some elements of this school, it is still a quite poorly explored and described field in the literature. It is to be hoped that this volume will contribute to a better understanding of international entrepreneurship.

The book is divided into 9 chapters, where the first one serves as an introduction providing the theoretical background of international entrepreneurship. The next three chapters present selected results of the V4 survey of 2014, and finally the last five chapters deal with different determinants of the successful internationalsation of firms, such as the role of national policies, consulting, consumer expectations and energy prices.

Krzysztof Wach (Kraków, Poland) and **Carsten Wehrmann** (Kiel, Germany) discuss and explore international entrepreneurship as the intersection of two, or even three research fields: entrepreneurship, international business and strategic management. The chapter has an introductory character, being the theoretical foundations into the theme of the whole book.

Andrea S. Gubik (Miskolc, Hungary) and **Zoltán Bartha** (Miskolc, Hungary) develop an index (Small and Medium-Sized Enterprise Internationalisation Index – SMINI) to measure the degree of internationalisation in the SME sector, and to uncover its most important influencing factors. The index is tested using data from the V4 survey.

Krzysztof Wach (Kraków, Poland) explores international strategies of firms, especially by discussing the relation of the size of the firm and its international strategy. The chapter is based on V4 survey results conducted between October 2013 and February 2014 on a random sample of 190 firms from Poland.

Nelly Daszkiewicz (Gdańsk, Poland) illustrates the role of networks in the internationalisation process of firms. Based on a database of 216 Polish firms she highlights the relationship between network participation and the knowledge about international markets, the strategy type and the main motives for internationalisation.

Erzsébet Czakó (Budapest, Hungary) and **Erzsébet Könczöl** (Budapest, Hungary) analyse the critical success factors of Hungarian-majority-owned exporting SMEs. This chapter contrasts the enterprise level findings of ten case studies with economic policies towards internationalisation.

Katarzyna Szopik-Depczyńska (Szczecin, Poland), **Arkadiusz Świadek** (Zielona Góra, Poland) and **Marek Tomaszewski** (Zielona Góra, Poland) illustrate the impact of demand on innovation activity of enterprises of the Visegrad Group. The chapter demonstrates that without strong or very strong pressure from customers, a company will not commence innovative activity.

Edward Stawasz (Łódź, Poland) and **Jarosław Ropęga** (Łódź, Poland) examine internal barriers to the development of micro and small businesses and associated risk factors and present the determinants and significance of economic consulting as a development fostering factor which eliminates barriers and risk.

Marian Holienka (Bratislava, Slovakia), **Anna Pilková** (Bratislava, Slovakia) and **Michal Munk** (Nitra, Slovakia) analyse business restarts in the Visegrad (V4) countries on an individual level and identify the key drivers of restart activity from among perceptual variables. Their analysis is based on Global Entrepreneurship Monitor data.

Ágnes Kádár Horváth (Miskolc, Hungary) deals with the effect of energy prices on competitiveness from the perspective of EU energy-intensive industrial sectors and shows the competition distortion effect of differences in energy prices among EU Member States and their main economic partners.

* * *

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We would like to thank the authorities of the International Visegrad Fund for financing the project on the basis of experts' evaluation. Thanks to the IVF's funds, this scientific monograph came into being. We want to express our special thanks to the reviewers of this book – Prof. **Elena Horská** from Slovak University of Agriculture in Nitra (Slovakia) and Prof. **Robert Włodarczyk** from Cracow University of Economics (Poland) for their valuable comments and editorial suggestions.

Andrea S. Gubik
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Entrepreneurship in International Business: International Entrepreneurship as the Intersection of Two Fields

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Summary

The paper explores international entrepreneurship as the intersection of two research fields: entrepreneurship and international business. The objective of the chapter is to discuss and elaborate on the basics of international entrepreneurship, its inception and emergence, fundamentals and principles, as well as its branches or bifurcations. The chapter is divided into three main sections. The first section reveals various approaches and theoretical concepts and models of the firm-level internationalisation process. The second section discusses specific features of international entrepreneurship as one of the approaches towards internationalisation process. The third section is dedicated to the internationalisation of SMEs, which are one of the main interests of international entrepreneurship. It seems that creating a solid and unique methodology for international entrepreneurship is essential to recognise international entrepreneurship as a separate research discipline, as is true currently in the case of international business. Taking into account the interdisciplinary character of entrepreneurship, it is possible that international entrepreneurship will fully become 'a hub and a spoke' (Mtigwe, 2006, p. 19) and a binder for all internationalisation theories and approaches constituting the base for the integrative models.

Keywords: international entrepreneurship, international business, internationalisation
JEL classifications: F23, M00

1.1. INTRODUCTION

International entrepreneurship (IE) has become a very popular research field since its emergence in the late 1980s (Kohn, 1988; Morrow, 1988; and one year later: McDougall, 1989) as well as its intensive and influential bloom in the mid-1990s (Oviatt & McDougall, 1994). Still a new research field, there is a lot of controversy over the delimitation of IE as well as serious disputes on whether IE is a separate discipline or not. International entrepreneurship "has become an important research domain at the intersection of entrepreneurship and international business" (Oviatt & McDougall, 2000 cited in; McDougall-Covin et al. 2014, p. 2;); however, it is influenced not only by business disciplines (economics, management), but also from non-business disciplines "as diverse as sociology, economic geography, political science, development economics, and psychology" (McDougall-Covin et al. 2014, p. 2).

This chapter focuses on entrepreneurship in international business, while internationalisation generally refers to any type of cross-border activities of firms (Dülfer & Jöstingmeier, 2008; Wach, 2014a) and entrepreneurship is about "identification and exploitation of entrepreneurial opportunities" focusing on innovation, novelty and value creation (Volkmann et al., 2010, p. 4).

The main goal of the article is to discuss and elaborate on the basics of international entrepreneurship, its origins and emergence, fundamentals and principles, as well as its branches or bifurcations. The article is of descriptive character, thus it is based on a literature review and its constructive critics.

1.2. DEVELOPMENT AND DIVERSITY IN FIRM-LEVEL INTERNATIONALISATION CONCEPTS

The history of ideas of the internationalisation discourse in the context of economics and management theory can be summarised as a progression from schematic to more sophisticated models, including new concepts, ideas and approaches, especially these developed in business studies. Sorensen (1997, pp. 4-5) proposes a comprehensive classification of four groups of models, namely progressive models, contingency models, business network models as well social construction models, where the last two can be termed interactive models (Danciu, 2012). Wach (2012) distinguishes six main research strands and their development from models of stages to holistic approaches (Figure 1.1.).

The development of stages models and their core referencing in the so-called Uppsala model by Johanson & Vahlne (1977) in the mid-1970s marked the beginning of the discourse. Their model still serves as a frame of reference for internationalisation theory today (Mtigwe, 2006; Wach, 2014d), and, despite being criticised by others and modified four times by its authors, is still the most frequently used in different research around the globe. The Uppsala model identifies temporal and spatial patterns of internationalisation. In the temporal dimension firms first gain

experience in the home market and then begin exporting. If this step is completed successfully, the establishment of new firms in the target markets and possibly the relocation of production abroad will follow. In the local dimension firms first launch into the markets closest to them in terms of culture, before expanding into culturally or geographically distant markets (Johanson & Vahlne, 1977).

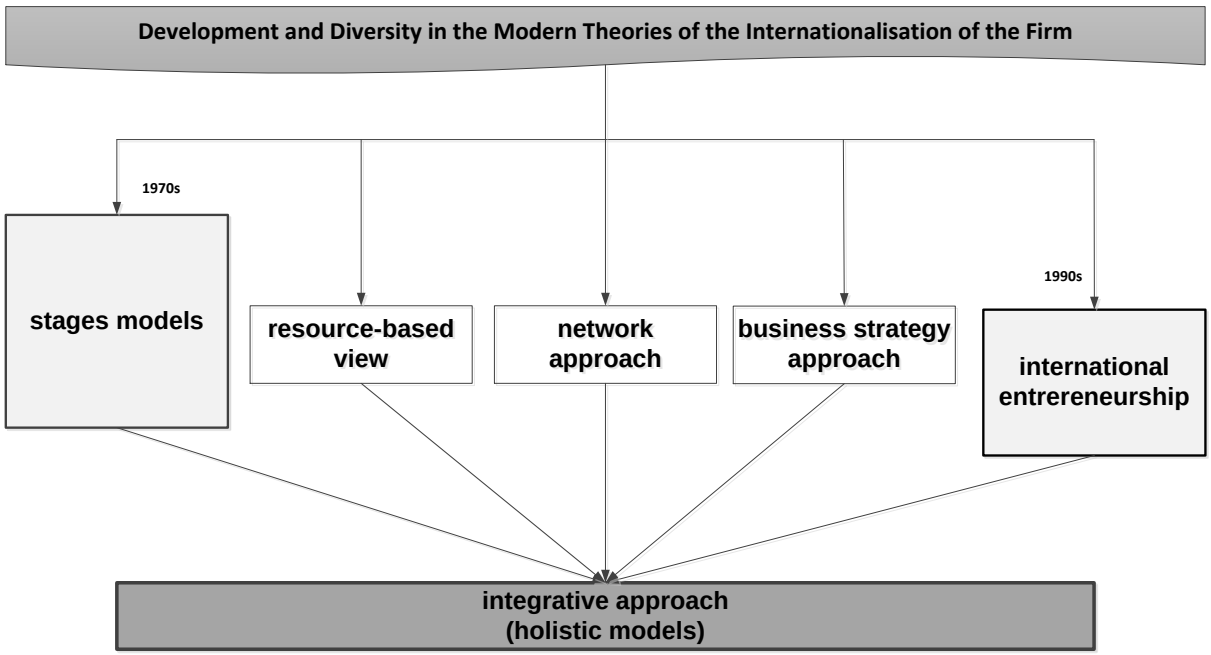

Figure 1.1. Main approaches to firm-level internationalisation according to Wach
Source: adapted from Wach (2012, p. 99).

The resource-based view (RBV) is still very important, however it has undergone some changes. Due to the growing macroeconomic instability in 1970s (energy crises, intensifying of globalisation), shorter product life cycles due to accelerated technological change, and increasing market saturation in various industries, the business environment changed radically. Strategic planning was no longer understood as a process of resources and sales planning (the traditional resource-based view), but as the interaction of the firm with competitive forces (a market-based view) and what is more, with the implementation of strategic management elements such as managerial and entrepreneurial skills, capabilities and competences (Wach, 2014c). The firms which have a unique set of resources (including competencies, knowledge, capabilities, attitudes, relationships and reputation) or combination of reserved resources have more proclivities to go international (Bloodgood et al., 1996).

The network theory of internationalisation and hidden champions research specifically emphasises the role of the firm's network of suppliers, customers and business contacts in internationalisation (Mtigwe, 2006). Sometimes, network opportunities are of more essential importance than strategy building and planning. Therefore, we could rather speak of a process of evolution, in which entrepreneurs

take advantage of existing networks and arising business opportunities (Madsen & Servais, 1997) and the use of the bridge function of their networks (Burt, 1997). Entry to the foreign markets is the process of creating opportunity in the foreign markets network (Daszkiewicz & Wach, 2012; Mort & Weerawardena, 2006; Najda & Wach, 2005). In markets in which a firm or its products are not known (due to no entry being made), a successful market entry depends on the management's ability to build networks and promote market development (Carsrud & Brännback, 2007; Merz & Stute, 2010), in particular due to the shortage in resources, information and skills that is typical of SMEs (Meyer, 2006).

Studies rooted in the business strategy approach are very diverse and rich. Root (1994) focused on the decision making process within internationalisation. Other various models deals with the organisational structure of international strategy. One of the few explicit definitions of the term 'internationalisation strategy' in the discourse of internationalisation is given by Perlitz (2000), who defines internationalisation strategy as the development of a fundamental, transnational concept of action, based on competitive advantages that are important for a firm's international activities (Perlitz, 2000). This definition also determines internationalisation as a structured planning process and as an instrument of strategic management for targeted business development. This idea of strategy is consistent with international entrepreneurship research (strategic entrepreneurship), which does not describe internationalisation as a planned, strategic process, but rather as patterns of action driven by the seeking and making use of business opportunities and situational actions by entrepreneurs (Jones & Dimitratos, 2004). Planned strategic actions cannot be found in the reality of successful firms. This is confirmed by the fact that SMEs usually first internationalise to a neighbouring country or countries with which there is a certain cultural proximity and in which the business already has contacts, mostly with suppliers. SMEs, which are renowned for their export success, typically internationalise without using a planned strategy. Furthermore, no methodical approach in the selection of target countries is detectable (Stehr, 2012). However, this is not to be regarded in a negative way. On the contrary, research results and analyses show that an optimal and unique approach in the context of entrepreneurial internationalisation is not applicable to all companies alike (Stehr, 2012). Some studies determine that successful SMEs focus on their actual strengths in the home market and seek, on this basis, gradual growth with key partners and customers abroad (Ahlert et al., 2007). Thus, it seems that successful internationalisation is not a question of a rational and planned approach, but a pragmatic approach in terms of seeking and taking entrepreneurial business opportunities. Empirical SME research shows that, especially at the beginning of internationalisation activities, there is no plan or internationalisation strategy. These are, if any, generated *ex post* strategies (Garret & Covin, 2007; Wiesner, 2005).

1.3. SPECIFIC FEATURES AND FACES OF INTERNATIONAL ENTREPRENEURSHIP

International entrepreneurship (IE) specifically examines and prioritises the role of the entrepreneur as a key factor in the internationalisation process of the firm, especially SMEs (Daszkiewicz, 2014; Duliniec, 2013; Kraśnicka et al., 2008). Research in international entrepreneurship (Table 1.1) thus stresses the 'human factor' and not the 'planning factor'. Strategy is considered as an evolutionary process in which formalised strategy at best delivers 'guidelines' for entrepreneurial initiatives (Garret & Covin, 2007) and is not the beginning nor the core of internationalisation activities. According to the scholars conducting research on this topic and involved in the IE Scholars Network:

> "International entrepreneurship sits at the intersection of two areas (international business and entrepreneurship) and labeling itself as its own field of research is still relatively new and still evolving. (…) International entrepreneurship is the creation of economic value through cross-border entrepreneurial activity."
>
> (ie-scholars.net/about/what-is-ie)

Table 1.1. A chronicle development of selected definitions of international entrepreneurship

International Entrepreneurship is defined (…) as the development of international new ventures or start-ups that, from their inception, engage in international business, thus viewing their operating domain as international from the initial stages of the firm's operation. **(McDougall, 1989)**
The study of the nature and consequences of a firm's risk-taking behaviour as it ventures into international markets. **(Zahra, 1993)**
…. a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and sale of outputs in multiple countries. **(Oviatt and McDougall, 1994)**
New and innovative activities that have the goal of value creation and growth in business organization across national borders. **(McDougall and Oviatt, 1996)**
A combination of innovative, proactive, and risk-seeking behavior that crosses or is compared across national borders and is intended to create value in business organizations. **(Oviatt and McDougall, 2000)**
It is associated with opportunity seeking, risk taking, and decision action catalysed by a strong leader or an organisation. **(Knight, 2000)**
International entrepreneurial orientation reflects the firm's overall proactiveness and aggressiveness in its pursuit of international markets. **(Knight, 2001)**
International Entrepreneurship is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services. **(McDougall, Oviatt and Shrader, 2003)**
… [an] evolutionary and potentially discontinuous process determined by innovation, and influenced by environmental change and human volition, action or decision. **(Jones and Coviello, 2005)**
… the discovery, enactment, evaluation and exploitation of opportunities – across national borders – to create future goods and services. **(Oviatt and McDougall, 2005)**

Source: adapted and extended from Zucchella & Sciabini (2007, p. 8, Table 1.1).

According to these basic characteristics, IE describes internationalisation as a "combination of innovative, pro-active, and risk-seeking behavior that crosses national borders and is intended to create value in organizations" (Oviatt & McDougall, 2000, p. 903).

As was mentioned, international entrepreneurship is reported to be a research domain at the intersection of two fields, which are entrepreneurship and international business (McDougall-Covin et al., 2014). Zucchella & Sciabini add one more very important fundamental pillar, which is strategic management (Figure 1.2.), however strategic management is included also in entrepreneurship (strategic entrepreneurship) as well as in international business (business strategy approach). Nevertheless, its rich productivity and influence can also be analysed separately.

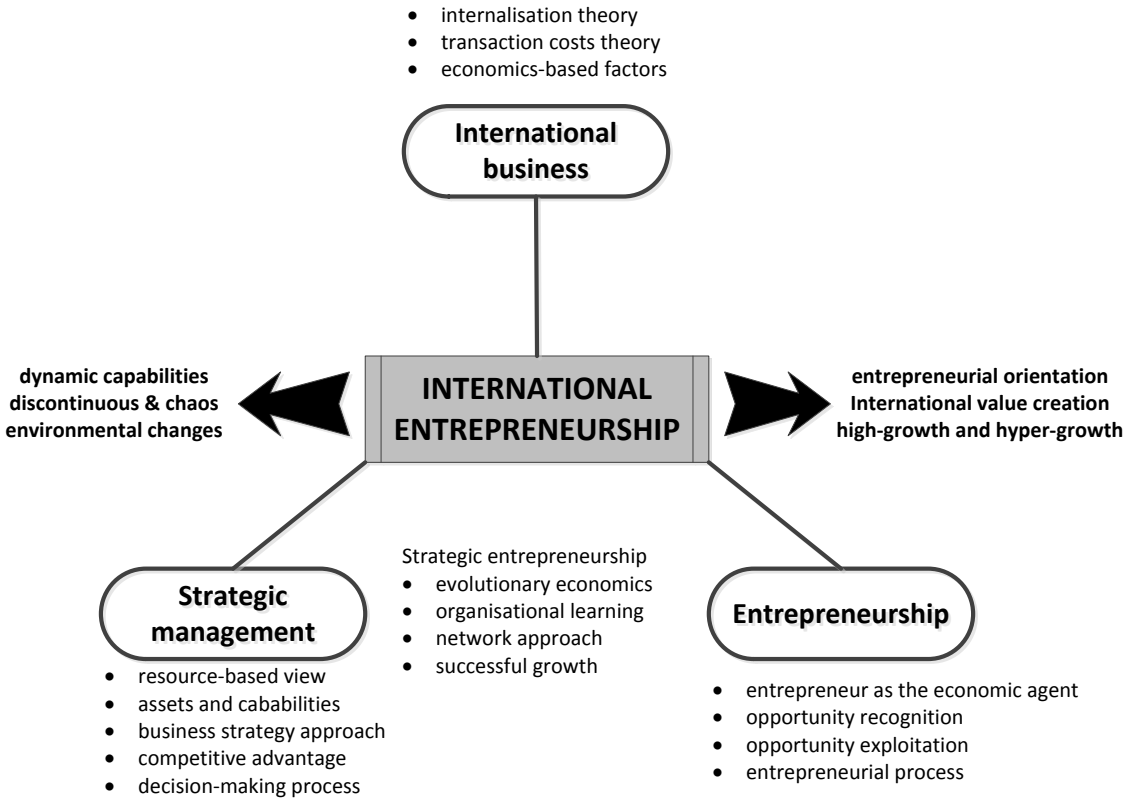

Figure 1.2. International entrepreneurship as the amalgamation of three fields
Source: adapted and extended from Zucchella & Sciabini (2007, p. 22).

International entrepreneurship can be treated dichotomously: firstly, as a research area within the theory of entrepreneurship or the theory of internationalisation. Secondly, it can be considered an autonomous area of research. The latter trend is becoming more and more popular and quite widely accepted by international scholars, as is noticeable in top scientific journals publishing articles on IE, especially after 2010 (e.g. *Journal of International Entrepreneurship*, *Journal of International Business Studies*, *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, *Small Business Economics*, *Academy of Management Journal*, *Journal of International*

Management, *Journal of International Review*, *Journal of International Marketing*, *International Marketing Review*, *Journal of World Business*, *Strategic Entrepreneurship Journal*; *International Journal of Entrepreneurial Behaviour & Research*).

Taking into account the overall theory of economics in general, but especially the narrow understanding of international business, international entrepreneurship can be regarded only as one of the research approaches to the issues of internationalisation of a firm (Andersson & Florén, 2008; Ruzzier et al., 2006). IE has made an important contribution to international business and to the theory of internationalisation of the firm. The rich heritage of this school fully justifies its distinction as a separate stream within the framework of the theory of internationalisation, firstly because of its important contribution and, secondly, by its nature, which puts the spotlight on SMEs.

In a broad understanding, international entrepreneurship includes at least two different research areas (Wach, 2014b, p.434):

- creative process of recognition and exploitation of opportunities in foreign markets; in this sense, this research area is the same as the traditional approach of the theory and practice of entrepreneurship, using the same analytical tools as in the case of establishment of domestic ventures; what is crucial, it is characterised by a high degree of creativity, innovation and entrepreneurship, and a special role in the internationalisation process is attributed to the entrepreneur (Figure 1.3.),
- international studies and comparative research in the field of entrepreneurship; in this sense, this research area is the same as with traditional international comparative studies, placing entrepreneurship as the main subject of these comparative studies (e.g. GEM).

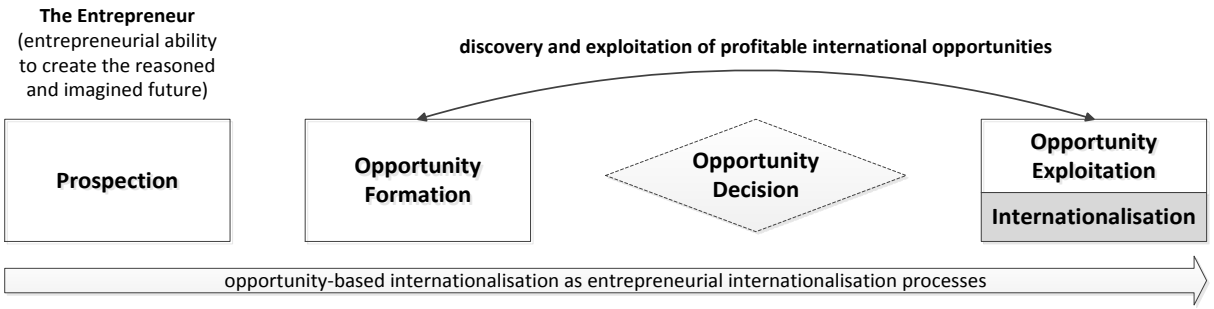

Figure 1.3. The internationalisation process in the international entrepreneurship
Source: adapted and extended from Oyson & Whittaker (2010, p. 9).

It can be noticed that international entrepreneurship theory focuses on three main research issues, which are the entrepreneur, the external business environment and the entrepreneurial process (Coviello et al., 2011; Wach, 2012, p. 113). Zucchella & Sciabini (2007) emphasize that IE develops the typical internationalisation process sequence starting from opportunities recognition and ending with corporate

performance, in which resource mobilisation and dynamic capabilities play a major role (Figure 1.4). Internationalisation is a learning process of key employees based on opportunity recognition, opportunity seeking and opportunity taking (Zuccehalla & Scabini, 2007).

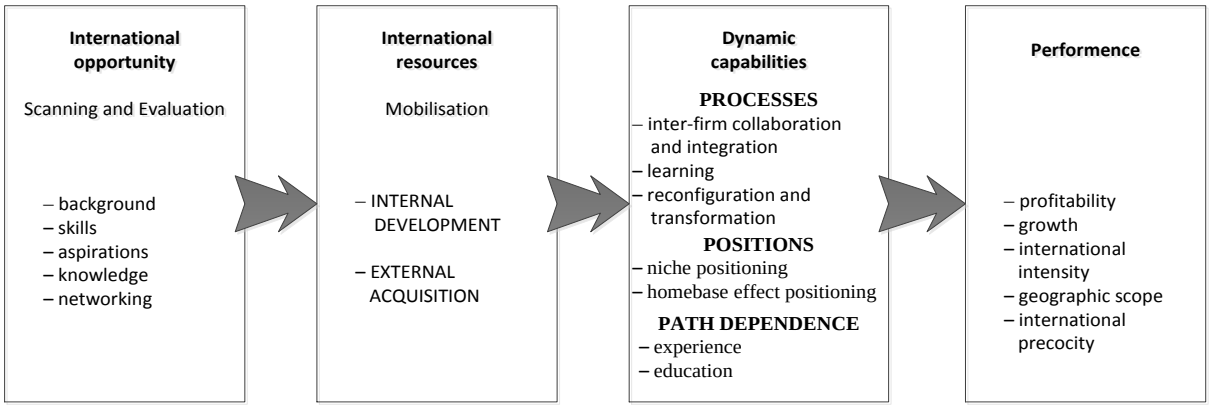

Figure 1.4. An interpretative model for international entrepreneurship
Source: Zucchella & Sciabini (2007, p. 126)

Jones et al. (2011) point out three parallel streams (types) of research within international entrepreneurship, namely:

- entrepreneurial internationalisation (A)
- international comparisons of entrepreneurship (B),
- international comparisons of entrepreneurial internationalisation (C).

It should be noted that in the framework of international entrepreneurship, there are many concepts and models (Coviello et al., 2014). On the basis of an ontological analysis of the articles in this area for the years 1989-2009, Jones at al. (2011) have developed a taxonomy containing 69 different themes within 14 thematic areas and three main types (Figure 1.5.).

1.4. INTERNATIONALISATION OF SMES AND INTERNATIONAL ENTREPRENEURSHIP

SMEs are an important part of international entrepreneurship. The so far existing classic ideal-typical stages models of internationalisation refer primarily to large firms. SME studies conclude that smaller businesses successfully operate internationally without going through the particular phases of decision-making and action sequences of widespread complex models of the theoretical literature (Ahler et al., 2008). In contrast to the ideal-typical construction of a strategy process, the entrepreneurial activity is observed in practice as the decisive success factor (Ahler et al., 2008). However, IE has not generated many outcomes due to its relatively recent development into an independent approach. Many studies only support the basic assumptions of this process model through case studies. Nevertheless, this process model of internationalisation delivers a matrix for further empirical studies that stands in contrast to the planning theory of internationalisation.

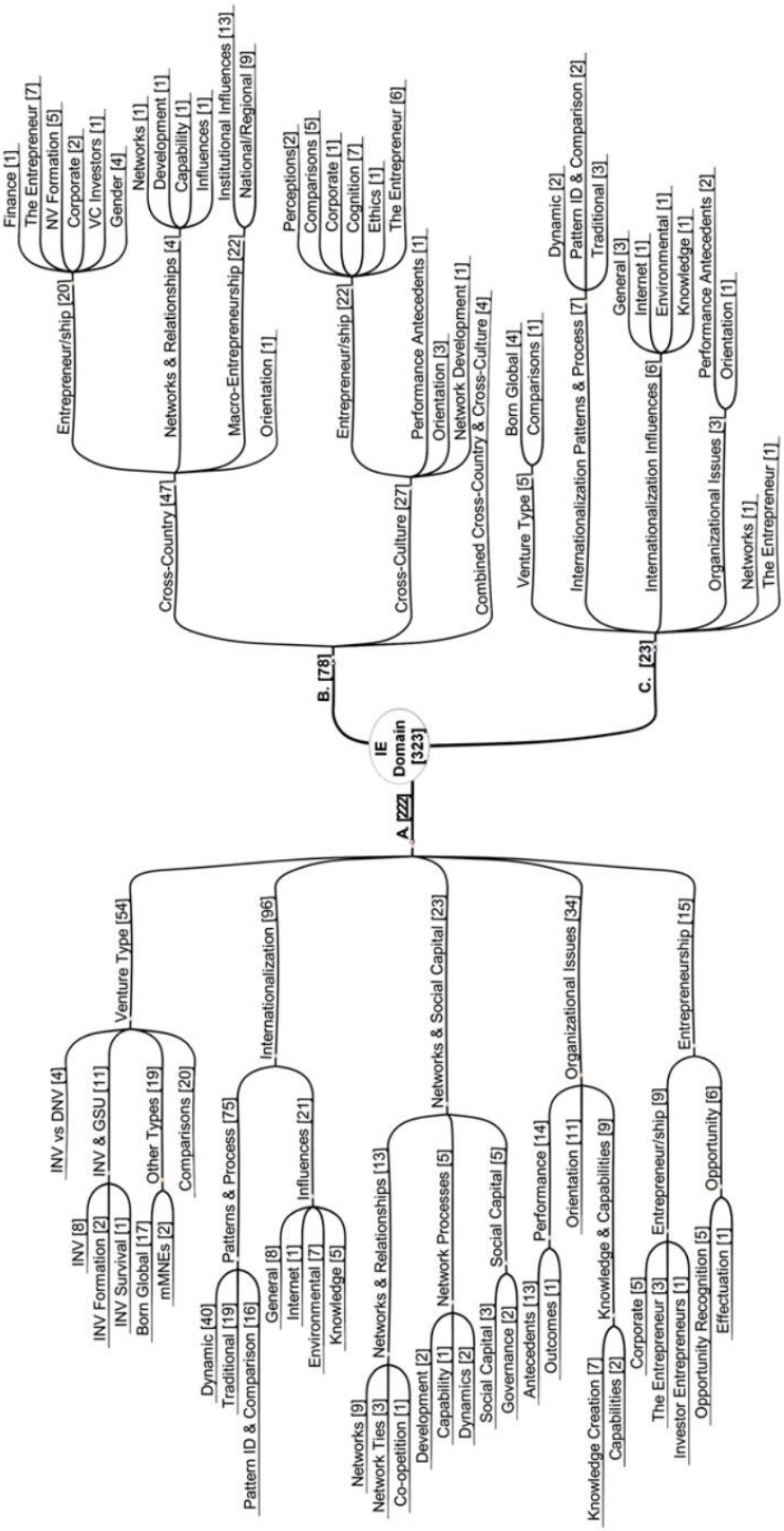

Figure 1.5. Thematic map of international entrepreneurship
Source: Jones et al. (2011, p. 636).

The Uppsala model in its simplicity has proven to be an empirically observable internationalisation model. Rational decision-making or planned strategic action is not the reality of SMEs (Huber, 2008). In contrast to the complex strategy and planning theories of classic international management theory, the Uppsala model explains internationalisation as an incremental process of recursive learning and gradual build-up of market knowledge and networks.

Medium-sized and smaller companies expand to neighbouring countries geographically or culturally, irrespective of which surrounding target markets are interesting strategically and financially (Wolf, 2011).The normal case of internationalisation in medium-sized and smaller businesses is the use of business opportunities and existing contacts. Beginning from this, most firms slowly proceed from the "known" to the "unknown" (Blunck & Martin, 2011). This correlates with the findings of organisation theories. Organisations slowly gain experience and subsequently develop them further into a methodical approach based on organisational learning. Internationalisation is a learning process characterised by a chain of improvisation, trial, and error and strongly depends on the initiatives of key employees (Simon, 2007).

Medium-sized and smaller firms use less risky, smaller scale and less aggressive market entry strategies particularly for cost reasons. In addition, they do not practice the typical options of internationalisation models and theory such as licensing, franchising and strategic alliances, joint ventures or mergers and acquisitions (Hollenstein, 2005; Wolf, 2011). At the beginning, the focus is often put on export, which is mostly due to customer demand from abroad (pull factor) or supplier contacts. On this basis, an average medium-sized business establishes a sales subsidiary abroad, with continuous sales and the achievement of a specific level of sales volume. Then it expands, depending on sales volume, transportation and wage costs, and sets up a permanent establishment with a department for research and development and/or a production facility (Kutschker & Schmid, 2008; Müller-Stewens & Lechner, 2005; Wolf, 2011).

1.5. CONCLUSIONS

In summary, it can be stated that ideal-typical classifications and models are developed for an ideal-typical firm with no restrictions in terms of size, industry or other firm characteristics. Thus, it is not surprising that points of criticism to the linear deterministic view are highlighted in the literature. Internationalisation models and theories follow a quasi-predictable sequence of stages that do not exist in reality; what is more, although they are considered proven in the literature, it is hard to call them universal and specifically applicable to SMEs (Chetty & Campbell, 2003; Wolff & Pett, 2000). Based on a literature review the following conclusions are drawn:

- international entrepreneurship can be considered a research domain at the intersection of two fields, namely entrepreneurship and international business,

with a noticeable admixture of strategic management (perceived as strategic entrepreneurship),
- international entrepreneurship can be also considered one of the strands in firm-level internationalisation (taking the whole productivity of economics and management) explaining this process from the perspective of the entrepreneur and the entrepreneurial process,
- international entrepreneurship has become an important research domain, which is gaining in quantity (the number of published articles as well as the number of journals publishing special issues on IEs) and quality (of the level of the published articles),
- international entrepreneurship focuses on the entrepreneur as well as on innovation and entrepreneurial processes concerning recognition and exploitation of international opportunities.

It seems that creating a solid and unique methodology of international entrepreneurship (Coviello & Jones, 2004) is essential to recognize international entrepreneurship as a separate research discipline, similarly as in the case of international business. Taking into account the interdisciplinary character of entrepreneurship, it is possible that international entrepreneurship will fully become 'a hub and a spoke' (Mtigwe, 2006, p. 19) and a binder for all internationalisation theories and approaches constituting the base for integrative models.

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2

SME Internalisation Index (SMINI) Based on the Sample of the Visegrad Countries

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Summary

The goal of the chapter is to develop an index (Small and Medium-Sized Enterprise Internationalisation Index – SMINI) to measure the degree of internationalisation in the SME sector, and to uncover its most important influencing factors. The index was calculated from a data set obtained from a questionnaire conducted among 1,124 firms from the Visegrad (V4) countries, comprised of 270 Polish, 597 Czech, 113 Hungarian and 144 Slovak firms. The relationship between the index value and the influencing factors was also tested using the same dataset. The influencing factors were chosen based on a literature review. We found that the factors suggested by the literature (company size, company age, ownership structure, innovation activity, network participation and sectorial structure) have a significant effect on the SMINI, but the strength of relationship is either weak or weak to moderate. A multiway ANOVA analysis revealed that three of our variables – firm size, family ownership and innovation – have an 11.8% combined effect on the SMINI.

Keywords: internationalisation, small and medium-sized enterprises, degree of internationalisation
JEL classification: F23, F61, L25, M16

2.1. INTRODUCTION

One of the main features of globalisation is the emergence of multinational enterprises. No wonder that when addressing the issue of corporate-level internationalisation most authors focus on the multinational firms, which are typically very large, employing several thousand people in various countries. But internationalisation is not limited to larger, multinational firms. An empirical study conducted by the Entrepreneurship Unit of the European Commission has found that 25% of the EU27's small- and medium-sized enterprises (SMEs) export, and 7% of them are either subcontractors of foreign firms, or have foreign subcontractors. The export activity is especially strong among larger SMEs: 24% of the micro firms export, 38% of the small ones, and 53% of the medium-sized ones (EC, 2010). The international activity of SMEs has not only been increasing in recent decades, but many authors suggest that firms that are internationally more active perform better and grow faster (e.g. EC, 2010; Mayer & Ottaviano, 2007; Prashantham, 2005; Siedschlag et al., 2010). It is therefore of key importance to understand what factors drive SMEs toward internationalisation.

Before the driving factors can be determined, the concept of internationalisation needs to be addressed. Because the focus is not on multinational enterprises but on SMEs, involvement in foreign direct investments cannot be used as the main criteria. We will therefore use the definition put forward by Welch and Luostarinen (1988), who defined the term 'internationalisation' as 'the process of increasing involvement in international markets' (p. 36). Exporting, involvement in international cooperation, and foreign direct investment can all be forms of corporate-level internationalisation. When comparing the degree of internationalisation of several firms, researchers usually use indicator sets and indices to determine which company is more internationalised. These indicator sets, and especially the indices, were typically developed for multinational enterprises. To counter this problem, we develop our own index (SMINI) which is then used to measure the degree of internationalisation of SMEs. The determinant factors of SME internationalisation are identified by testing the relationship between these factors and the SMINI value of the firms.

This chapter is made up of five main sections. The first one gives a literature review on the measurement of internationalisation, which is followed by a literature review on those factors that were found to influence internationalisation. In the third section we introduce our own index, called the Small- and Medium-Sized Enterprise Internationalisation Index – SMINI. The fourth section presents the relationships found between the SMINI and the various possible determinants of internationalisation. Finally, the chapter is closed with the main conclusions of our analysis.

2.2. LITERATURE REVIEW

Measuring corporate level internationalisation

The need to measure the internationalisation process of firms emerged when an ever increasing number of large firms invested overseas and became multinational. Although there is still no one single universally accepted definition for multinational enterprises, most academics and data-collecting agencies (like OECD or UNCTAD) tend to accept Dunning's suggestion as a threshold definition: "an enterprise that engages in foreign direct investment (FDI) and owns or, in some way, controls value-added activities in more than one country" (Dunning & Lundan, 2008, p. 3). Dunning and Lundan identify 7 criteria which have been generally used in the literature to assess the degree of an enterprise's internationality:

1. the number and size of foreign affiliates;
2. the number of countries in which the firm operates;
3. the proportion of foreign or global assets, sales, income or employment of the firm;
4. the internationalisation of the ownership or management of the firm;
5. the depth of foreign production, e.g. the value of research and development activities conducted abroad;
6. involvement in the control of international networks;
7. the extent to which responsibility in critical management issues (e.g. financial and marketing decisions) is devolved to foreign affiliates (Dunning & Lundan, 2008, p. 3).

Aharoni (1971) suggested as early as the beginning of the 1970s that multinational enterprises have at least three important dimensions: structural, performance and behavioural. Some of the sorting criteria listed by Dunning and Lundan can be easily put into Aharoni's categories: the first and second are structural indicators, and so is the employment proportion from the third one; the remaining items in the third criteria are performance indicators; while the fourth one can be interpreted as a behavioural indicator. The final three criteria are meant to measure the depth of the internationalisation, so they can best fit into the structural component, but they incorporate a complexity that goes beyond Aharoni's classification.

The geographical dimension of the internationalisation process also matters. Some of the structural indicators shed some light on the geographic structure, but they cannot distinguish between close and far away affiliates, or between affiliates operating in a similar or a different cultural and institutional environment. Schmidt (1981) used the Herfindahl index to measure the heterogeneity and homogeneity of a firm's international activities, to show how concentrated or equally spread out it is. In a similar attempt Perriard (1995) calculated a Gini index to measure how the regional distribution of a certain internationalisation indicator of a firm is similar to the total and global distribution of the same indicator. Ietto-Gillies (1998) developed the Network Spread Index, which shows the proportion of those countries where a firm

has an affiliate to the total number of countries receiving foreign direct investments. Rugman (2007) used sales data to show the most of the largest multinationals from the Triad (Japan, Europe and North America) concentrate their activity on their "home" region. In order to add cultural differences to the mix, Sullivan (1994) estimates the so called Psychic Dispersion of International Operation, which shows how many of the ten psychic zones of the world (Ronen & Shenkar, 1985) a firm has subsidiaries in.

Besides the structural, performance, behavioural and geographical (environmental) dimensions, Fischer (2006) mentions two more: strategy and resources (Sommer, 2009). The last three criteria of Dunning and Lundan fit best into the strategy category.

The indicators mentioned so far all measure a single dimension of multinational enterprise internationalisation. Using only one measurement method as an indicator of internationalisation can be misleading. Shoham (1998) found in his study that no single indicator can be a reliable measure of export performance. Most studies use internationalisation indices or a combination of several indicators to make the measurement more reliable.

One the better known such indices is the Transnationality Index (TNI) compiled by the United Nations Trade and Development Conference (UNCTAD, 2014). It is calculated as the average of two performance indicators and one structural indicator:

$$TNI = \frac{\frac{foreign\ assets}{total\ assets} + \frac{foreign\ sales}{total\ sales} + \frac{foreign\ employment}{total\ employment}}{3}$$

Ietto-Gillies (1998), with the use of the Network Spread Index (NSI) mentioned above, developed the Transnational Activities Spread Index (TASI). The TASI is a modified version of the TNI:

$$TASI = TNI * NSI$$

The TASI gives a better picture of the true internationalisation of the firm, especially in the case of regional enterprises. If a company has its headquarters in Luxembourg, but most of its activity is conducted in Germany, the TNI will have a very high value, even though it is not a global enterprise. If, however, the previous index is multiplied by the NSI, the result is a more realistic indicator value.

Neither the TNI nor the TASI consider cultural differences. A third index, developed by Sullivan (1994), uses the psychic dispersion index (PDIO) and a ratio showing the international experience of top managers to incorporate cultural elements into the measurement. Sullivan's Degree of Internationalisation (DOI) is yet again a modified version of the TNI:

$$DOI = TNI * PDIO * \frac{number\ of\ years\ worked\ abroad\ by\ top\ managers}{total\ number\ of\ years\ of\ working\ experience\ of\ top\ managers}$$

Many studies simply use a combination of internationalisation indicators instead of an index. Sommer (2009) mentions a study conducted by Lesch (2005) among firms of the German Stock Exchange (DAX), where the following aspects were measured: proportion of foreign sales and number of persons employed abroad; spread of foreign subsidiaries; owner structure; international experience of the board members. Heiltjes et al. (2003) observed the internationalisation of 80 Danish and Swedish firms with two indicators: proportion of foreign sales and foreign executive board members.

Measuring SME Internationalisation

Because the most widely accepted definition of multinational enterprises focuses on foreign investments and foreign affiliates, the most commonly used measurement methods also concentrate on some aspect of the foreign subsidiaries. As a result of globalisation, however, the rate of internationalisation has sped up not only among multinational enterprises, but also among small and medium-sized firms. Most of these SMEs do not own foreign affiliates, but a considerable number of them are engaged in international activities. A study conducted among SMEs in the EU27 (EC, 2010) has found that while only 2% of the SMEs were active in foreign direct investment in 2009, 25% of them were exporters, and half of the exporters sold their goods and services beyond the borders of the European Internal Market.

The classical internationalisation indicators and indices cannot be used for SMEs because of the lack of foreign affiliates. As import and export are the most common forms of internationalisation, the basic indicator is whether or not an SME engages at all in importing or exporting activities. More precisely, importing is usually considered to be too simple a form, so the analysis is focused on the exporting activities.

Some of the more sophisticated indicators include the intensity of exports (share of exports from the total sales of the company) and the geographical scope of exports (the number of countries/regions a company exports to). Cerrato & Piva (2012) use four variables to measure the internationalisation of Italian SMEs: 1) engaged in exports (yes-no); 2) export intensity, 3) geographical scope (number of regions the firm exports to, where the regions are the following: EU15; EU25; other European countries; North America; Latin America; China; rest of Asia; Africa; Australia); sales-based entropy index (combining the previous two). The study by the EU Entrepreneurship Unit (EC 2010) measured the entry mode (technological cooperation, subcontracting) in addition to the exporting activity of SMEs.

Table 2.1. summarises the possible indicators that may be used to measure SME internationalisation.

Table 2.1. Possible indicators for SME internationalisation

Dimension	Indicator
Structural	-
Performance	Export intensity
Behavioural	(Foreign) experience of entrepreneur/manager Ownership structure
Geographical	Geographical scope
Strategy	Complexity of strategy Entry mode
Resources	-

Source: own compilation based on dimensions by Sommer (2009) and by Fischer (2006) p. 83

Determinants of Internationalisation

Some of the most commonly mentioned factors that are related to the internationalisation of SMEs are the following: firm size; ownership structure; involvement in cooperation; innovation characteristics. This paper also tests the effects of these factors, but this section gives a brief summary of what other studies have found.

Size

It is a well-established fact that the larger the company size is, the better opportunity this company has to enter international markets (EC 2007). Based on a survey of 9,480 SMEs from 33 European countries, it can be concluded that not only the involvement in international activities but also the mode of internationalisation is closely related to the size of the companies. The larger the firm is, the more complex the solutions it is likely to apply (EC, 2010).

Ownership structure

As far as ownership structure is concerned, the two focal points of research have been the analysis of family-owned and externally-owned businesses. Family ownership has been found to have a significant effect on the performance and the degree of internationalisation of the firms, but the there is no agreement on the direction of the effect. Zahra (2003) found that family ownership and the presence of family members in the management in 490 US manufacturing firms positively correlated with the export intensity, and also with the number of countries the firm was active in. Other papers suggest that family-owned firms are more risk averse, and so they are either less likely to go international, or make that decision later than other enterprises (Gallo & Garcia Pont, 1996). Fernandez & Nieto (2006) found a negative relationship between family ownership and export intensity in a sample of Spanish SMEs. Based on data obtained from 1,324 Italian manufacturing SMEs, Cerrato & Piva (2010) also show that the involvement of family members in the management negatively affects the export intensity of the firm.

External ownership, and foreign ownership as a special case, is positively correlated with the internationalisation of the firm. George et al. (2005) claim that externally-owned firms can make better decisions in strategic issues (like internationalisation). Utilising panel data for the 102 largest German manufacturing firms, Oesterle et al. (2013) conclude that the relationship between the concentration of ownership and the degree of internationalisation is non-linear, U-shaped. This means that the stake of the largest external owner influences the internationalisation strategy of the firm. Using a data set of 434 companies with foreign investment located in Hungary, Poland, Slovakia, Slovenia and Estonia, Filatotchev et al. (2008) show that foreign investor ownership is positively associated with export intensity.

Innovation

Most studies have found a positive connection between innovation activity and internationalisation. Siedschlag et al. (2010) reported that exporters were more likely to invest in innovation, and they were more likely to be more successful in terms of innovation output. They explained the phenomenon by the opportunity for exporters to get access to external knowledge flows. After conducting a qualitative study among 30 British knowledge-intensive and traditional firms, Bell et al. (2004) suggest that knowledge-intensive firms are much more likely to experiment with foreign markets. In fact, one of the knowledge-intensive firms in their sample only became active on the domestic market after more promising opportunities had been exploited abroad. Altomonte et al. (2014) analyse a data set of manufacturing firms from seven European countries and conclude that there is a strong positive association between internationalisation, innovation and productivity.

Networks

The personal experience and professional knowledge of owners/managers and employees play a major role in internationalisation; beside these, the economic and social networks around the company also have a decisive role in this process. According to one study, small businesses prefer a cooperative strategy in internationalisation, and they gain additional resources and information from the network they participate in (Gemser et al., 2004). Some researchers think that the number of decision makers is of determining importance in terms of internationalisation as well (Clercq & Bosma, 2004). They consider that the more decision makers are involved, the more networks they can access, the more experience they can gain and the more knowledge they can generate.

As far as the form of cooperation is concerned, informal networks play a more emphasised role in the case of small enterprises than in medium-sized or larger enterprises. As the size of the company increases, formal relationships gain more importance, at the cost of informal ones (Gubik, 2008).

2.3. MATERIAL AND METHODS

The chapter presents the results of the research project No. StG-21310034 (Patterns of Business Internationalization in Visegrad Countries – In Search for Regional Specifics) financed by the International Visegrad Fund in the years 2013-2014. The data was obtained from a survey (an e-mail or a telephone conversation request followed by an online password protected questionnaire[1]) conducted among 1124 firms from V4 countries, including 270 Polish firms, 597 Czech firms, 113 Hungarian firms and 144 Slovak firms (For more detailed information on the survey see Duréndez & Wach, 2014; Kiendl-Wendner & Wach, K. 2014; Daszkiewicz & Wach 2014).[2]

The sample does not represent Visegrad Group companies since this was not the purpose of the data collection. A sample with the same ratio of different company size groups would have encompassed mainly micro-sized enterprises, which were less active internationally and would have been less suitable for achieving the goals of the research. The purpose of this survey was to include an approximately similar amount of companies of different sizes in the research, which is why large and internationally active companies are over-represented in the sample. When evaluating the results of this study this fact has to be considered because it may affect the generalisability and applicability of the results.

Sample Characteristics

As for company size, approximately 24.5% of companies were micro-sized enterprises, 42.1% were small-sized enterprises, 21% were middle-sized companies and 12.5% were large companies. Most companies were founded after 1990, less than 10.8% had been in business longer than 25 years. Only 47.2% of companies reported that the business was a family business. According to our definition, these are firms that are solely (or dominantly) owned by the same family, employ family members or are active in supporting the business processes of the family members. In our database 684 (61%) of companies are owned by domestic investors and 131 (11.7%) of companies are 100%in foreign ownership.

As for the business activities of the surveyed companies, the ratio of industrial companies are 39.6%, 40.2% are service providers, 16.5% are trade companies and 3.5% are involved in agricultural activities. Within the industrial firms, construction and manufacturing were the most often mentioned economic activities. Besides them, companies with professional, scientific and technical activities and information and communication technology firms are also overrepresented.

[1] The online questionnaire was available at <http://www.visegrad.uek.krakow.pl/survey>. The questionaire is attached in Duréndez & Wach (2014, pp. 239-244).

[2] More details on the research project can be found at: http://www.visegrad.uek.krakow.pl/

SME Internationalisation Index

Based on the literature review we have found four relevant dimensions whose factors can be used to measure the internationalisation degree of SMEs (Table 2.1.). In this study we operationalise these four dimensions using eight variables gained from our questionnaire (Table 2.2.).

Table 2.2. Operationalisation of the SME Internalisation Index (SMINI)

Dimension	Indicator	Variable	Type of variable
Performance	Export intensity	Percentage of total revenue that comes from export	Percentage
Behavioural	Attitude of the owner/entrepreneur/ manager	Motivation to go international Cosmopolitism and international openness Knowledge of international markets Experience in international markets Professional business experience in general	Likert scale, 1-5
Geographical	Geographical scope	Territorial scope of the firm	National/neighbouring/ EU/EU&beyond/ beyond EU
Strategy	Complexity of the strategy	Planned strategy for internationalisation	No/not formalised/formalised

Source: own compilation

The four dimensions were compiled into one index value. In order to be able to add them as a component of the same index, the variables were recoded in the following way:

- Export intensity (EI): original values divided by 100.
- Attitude of the owner/entrepreneur/manager (A): this element was obtained as the average of five variables measured on a Likert scale (1-5).
  1. The answers were rescaled to 0-4, where the 0 value was assigned to the response “extremely low” (so that negative attitudes do not increase the value of the index);
  2. An average was calculated from the five variables (the average of the individual values for motivation, cosmopolitism, knowledge etc.);
  3. Finally, the average was recalculated to have a value between 0 and 1.
- Geographical scope (G): 0 value for national market activity; 0.25 value for only neighbouring countries; 0.5 for solely within EU markets; 0.75 for EU markets and beyond; 1 for only beyond EU markets.
- Complexity of strategy (S): 0 value for no planned international strategy; 0.5 for non-formalised international strategy; 1 for formalised internationals strategy.

The final index was calculated as the unweighted average of the four dimensions:

$$SMINI = \frac{EI + A + G + S}{4}$$

Although the four variables are meant to measure four different dimensions of internationalisation, there is a weak-moderate correlation among the four components. Because the relation is not strong, the individual components can shed light on different aspects of internationalisation, and so the featuring of them in the index can be justified.

2.4. RESULTS AND DISCUSSION

General SMINI Characteristics

From the 1124 respondent firms 984 were micro, small or medium-sized, for which the SMINI was compiled. Some of the answers were not complete, and some of the firms were not involved in international activities, which meant that the index value was actually calculated for 710 firms. The overall SMINI value in the Visegrad countries was 0.4432, with a minimum of 0 and a maximum of 0.94. Mean SMINI values for different sizes of companies and different countries are given in Table 2.3.

Table 2.3. The SMINI values of Visegrad country SMEs

Country	Size	Mean	N	Std. Deviation
Poland	Micro	.4760	48	.20199
	Small	.5211	49	.16134
	Medium	.5585	63	.18888
	Total	.5223	160	.18707
Czech Republic	Micro	.3527	67	.18039
	Small	.3814	213	.20042
	Medium	.5037	88	.21789
	Total	.4054	368	.20848
Slovak Republic	Micro	.3758	50	.24281
	Small	.4486	46	.17892
	Medium	.5421	28	.21926
	Total	.4403	124	.22322
Hungary	Micro	.3505	19	.24299
	Small	.4898	23	.20600
	Medium	.5862	16	.20039
	Total	.4708	58	.23303

The degree of internationalisation is highest in Poland (SMINI=0.5223), and lowest in the Czech Republic (SMINI=0.4054), according to the SMINI calculated from our dataset (Table 3). The picture becomes more complicated if company size is considered as well, because the Hungarian medium-sized companies are the most internationalised (SMINI=0.5862), while the Hungarian micro firms are the least internationalised (SMINI=0.3505).

Determinants of Internationalisation

Company Size and Age

It is common knowledge that the likelihood of a firm going international increases with its size (measured by the number of people employed). Our study also supports this finding (Eta=0.266, p=0.000), however the relationship is surprisingly low. This is explained by the fact that only SMEs were tested. If large companies are also included in the test, the Eta value increases to 0.385. The importance of traditional barriers of internationalisation (lack of proper market information, geographical and cultural distance, etc.) is decreasing in the Internet age, which makes it much easier for smaller firms to go international.

We found that the more resources a company has (financial, human, physical and information resources were tested) the higher SMINI value it has. Companies were asked to evaluate their internal resources for the internationalisation process on a 1-5 Likert scale. Although there is a significant positive correlation between the size of companies and the resources companies have, the size itself is not able to explain the differences in SMINI values. If we hold the size variable constant, a significant positive relationship remains between the availability of resources and index values. The strongest correlations can be found for human resources (Partial Correlation=0.483, p=0.000) and information (Partial Correlation=0.410, p=0.000).

The correlation between the SMINI and the age of the company (the year the company was established) is surprisingly low as well (Pearson coefficient=-0.097, p=0.01). General business experience accumulated with the operation of the firms does not seem to affect the degree of internationalisation.

Ownership Structure

The effect of ownership on internationalisation was tested with two variables: family ownership (firms that are solely (or mostly) owned by the same family and in which they are employed or at least active in supporting the business processes of the family members), and foreign ownership. The former was measured as a dichotomous variable (yes/no); the latter was given as a percentage of total assets.

Family ownership has a significant but weak effect on the SMINI (Eta=0.12, p=0.01).The relationship is negative, which means that the degree of internationalisation is higher in non-family-owned businesses.

Foreign ownership is positively correlated with the SMINI (Pearson correlation=0.30, p=0.000). The higher the foreign ownership stake in the company, the higher the SMINI value is.

Innovation

The effects of two phenomena were analysed: the innovation activity of the firm, and the level of innovation in the industry. The former was measured by two variables: 1)

whether the firm had implemented any innovation in the last 3 years; 2) the scope of the implemented innovation(s) (on a firm, regional, national, worldwide scale). Both variables have a significant positive effect on the SMINI (Eta=0.203 for innovation implemented, and Eta=0.239 for the scope of implementation; p=0.000 in both cases). The fact that a firm has implemented some sort of innovation increases the degree of internationalisation, and so does the scope of implementation. The bigger the market where a new solution was introduced, the higher SMINI values can be expected.

The level of innovation in the industry was measured as a perceived level by the respondents: Do the firms in your industry implement much innovation (1-5 Likert scale). The Spearman's rho=0.195 (p=0.000) indicating a weak correlation between the SMINI and the perceived level of innovation in the industry.

Sectoral Structure

SMEs operating in manufacturing and transporting and storage are the most internationalised in our sample, with a SMINI value of 0.506. Information and communication comes third with a 0.489 SMINI. The sectors where the sample consists of a relatively high number of companies with a low SMINI value are the construction industry (0.384) and the wholesale and retail sector (0.397, see Table 2.4.).

Table 2.4. Sectoral SMINI values

	V4	PL	CZ	SK	HU	N
Manufacturing (C)	.5057	.5429	.4687	.5188	.5623	194
Transporting and storage (H)	.5056	.5400	.4678	.5514	-	45
Information and communication (J)	.4886	.5171	.4770	.4583	.5719	52
Activities of extraterritorial organisations and bodies (U)	.4875	-	-	-	.4875	1
Mining and quarrying (B)	.4839	.3075	.5000	.5456	.5125	11
Professional, scientific and technical activities (M)	.4822	.5348	.4083	-	.5929	38
Administrative and support service activities (N)	.4820	.5063	.4466	.3000	.7438	16
Other service activities (S)	.4519	.4937	.4390	.3688	.5623	136
Education (P)	.4450	.4675	.4442	.0875	.6188	19
Agriculture, forestry and fishing (A)	.4179	.5790	.5790	.4385	.4381	34
Water supply; sewerage; waste management and remediation activities (E)	.4102	-	.3125	.6875	.4750	11
Financial and insurance activities (K)	.4093	.3313	.5042	.3338	.4167	10
Accommodation and food service activities (I)	.4002	.5292	.2463	.6688	-	11
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	.3968	.5261	.3558	.3367	.3533	158
Construction (F)	.3838	.4928	.3476	.4667	.3573	102
Electricity, gas, steam and air conditioning supply (D)	.3800	.7375	.3763	.3083	.2750	15
Arts, entertainment and recreation (R)	.3669	.4281	.3273	.4308	-	18
Human health and social work activities (Q)	.3580	.4563	.4563	.2813	-	11
Real estate activities (L)	.2438	.1375	.2063	-	.4250	4
Activities of households as employers (T)	.2025	-	.2025	-	-	1

Source: own calculations

There are considerable differences among the countries (e.g. in Poland and the Czech Republic agriculture has a higher SMINI than manufacturing; the most industrialised sector from the categories with a significant number of companies varies: agriculture in the Czech Republic and Poland, transporting and storage in Slovakia, and professional, scientific and technical activities in Hungary), but these results might be distorted by the non-representativeness of the sample.

Network Effect

The questionnaire consisted of the following question: While going international, do you operate in any formal or at least informal networks? There were three possible answers to choose from: 1) we do not cooperate in any international and/or national networks for internationalisation; 2) we operate in at least one informal network, which helps us in the internationalisation process; 3) we operate in at least one formal network, which helps us in the internationalisation process. These three options were used to test the effect of networks on internationalisation. There is a significant but weak relationship between the SMINI and network variable (Eta=0.175; p=0.000). A larger SMINI value is gained even if the firm is only part of an informal network, and the partnership in a formal network further increases the index value.

This positive relationship is only true for small and medium-sized corporations. In the case of the micro firms the highest SMINI value is achieved by those which are engaged in informal cooperation (see Figure 2.1.). Micro firms tend to avoid formal solutions anyway, because they can increase costs, and decrease the flexibility of operation.

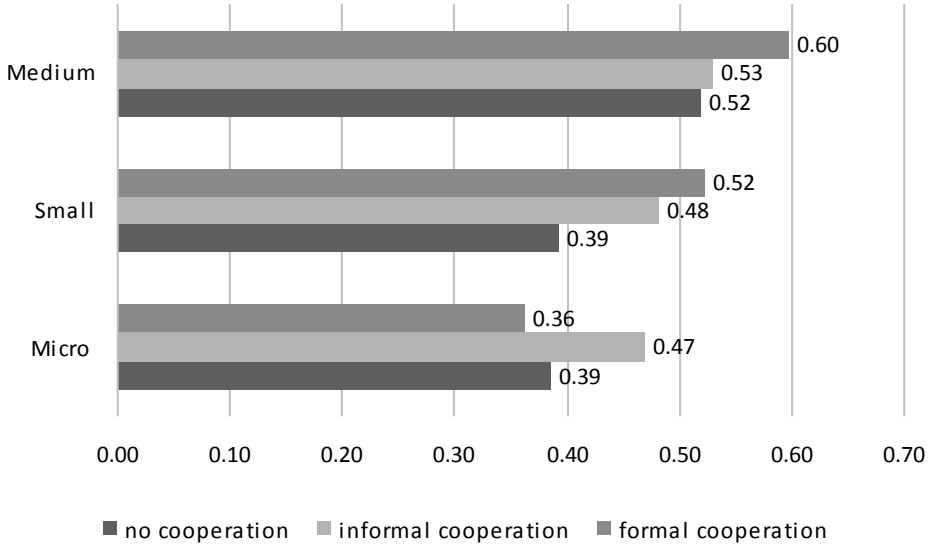

Figure 2.1. SMINI values according to firm size
Source: own compilation

Multiway ANOVA analysis

We have found several variables that are significantly related with the SMINI. These relations, however, were only calculated in pairs, and so the method of analysis is not suitable to show the combined effect of the independent variables. A multiway ANOVA analysis can be used to measure the effect of more independent variables on one single dependent variable (SMINI). Table 6 shows the combined effect of three variables: firm size (three categories – micro, small, medium), family ownership (yes/no) and innovation activity (Has your firm implemented any innovation in the last 3 years?). Two variables (network effect and foreign ownership) had to be left out of the model because of the variance homogeneity condition. Table 2.5. shows that the variance homogeneity condition is fulfilled (Sig=0.964) in the three-variable model.

Table 2.5. Levene's Test of Equality of Error Variances

F	df1	df2	Sig.
.378	11	698	.964

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
Source: own calculations

All three model variables have a significant effect on the SMINI (Sig.=0.000 and 0.006). The interaction between the independent variables on the other hand does not influence the SMINI value (the level of significances are higher than 0.05 in case of Size * Family ownership, Size * Innovation, size * Innovation, Family ownership * Innovation and size * Family ownership * Innovation).

Table 2.6. Multiway ANOVA analysis of the SMINI and the size, family ownership and innovation variables

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3.820[a]	11	.347	8.507	.000	.118
Intercept	84.180	1	84.180	2062.296	.000	.747
Size	.820	2	.410	10.049	.000	.028
Family ownership	.306	1	.306	7.497	.006	.011
Innovation	.957	1	.957	23.454	.000	.033
Size * Family ownership	.130	2	.065	1.596	.203	.005
Size * Innovation	.054	2	.027	.667	.514	.002
Family ownership * Innovation	.023	1	.023	.558	.455	.001
Size * Family ownership * Innovation	.003	2	.001	.037	.964	.000
Error	28.491	698	.041			
Total	171.772	710				
Corrected Total	32.311	709				

R Squared = .118 (Adjusted R Squared = .104)
Source: own calculations

The combined explanatory power of the three variables is 11.8% (R Squared = 0.118). The results suggest that there can be other factors that influence the degree of internationalisation. These factors however could not be involved in the model and/or they were not measured by the questionnaire.

Figure 2.2. shows the profile plots of the variables. The line graphs illustrate the positive relationships between the independent variables and SMINI index.

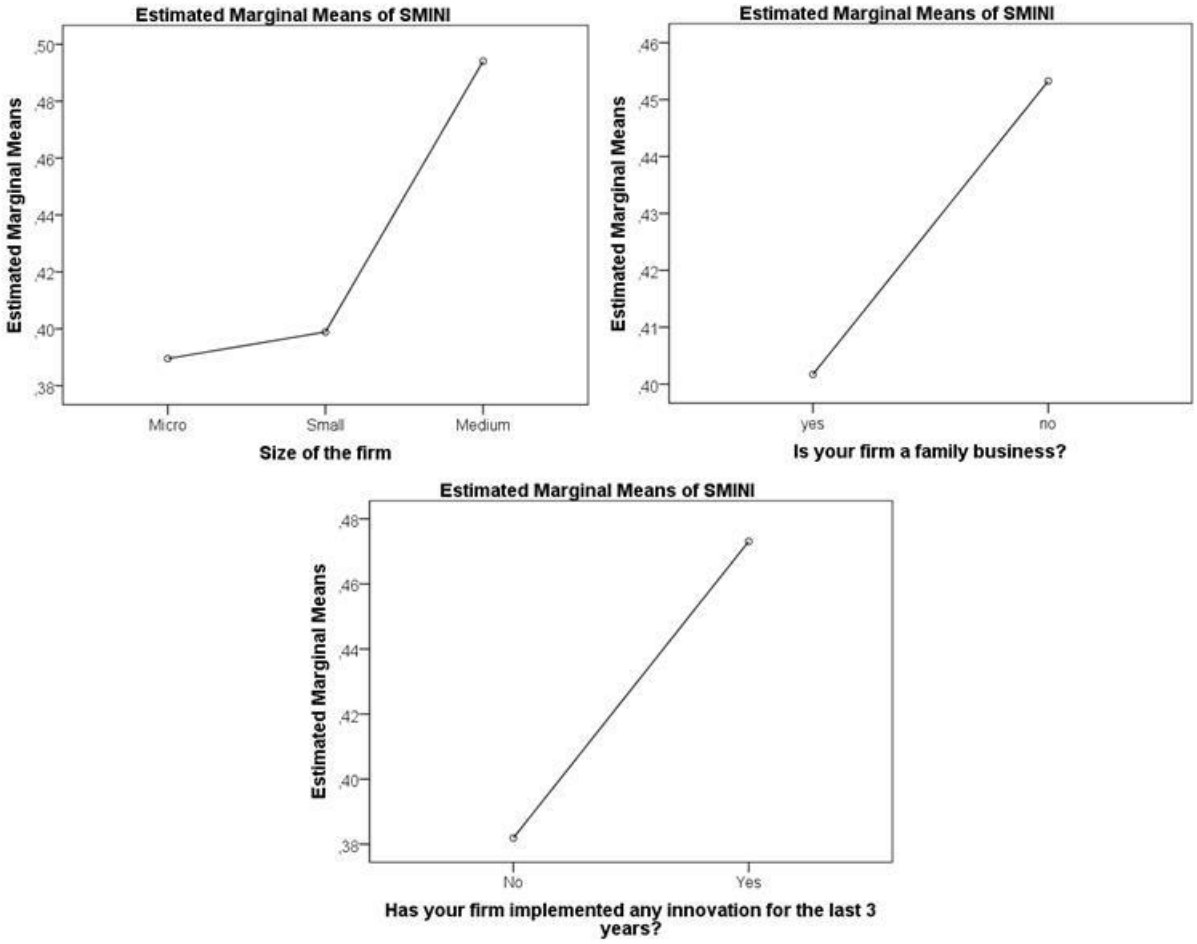

Figure 2.2. Profile plots of the variables
Source: own compilation

2.5. CONCLUSION

Small and medium-sized companies are increasingly internationalised: a considerable part of their revenues come from exports, and some of them are even involved in foreign direct investments. It is therefore important to measure the degree of internationalisation of these firms. Most of the measurement methods, indices and indicators, however, were developed to measure the internationalisation of large multinational enterprises. Therefore, we needed to develop our own measurement method.

We have compiled the Small and Medium-Sized Enterprises' Internationalisation Index (SMINI), which is calculated as an unweighted average of four components:

Export intensity, Attitude of the owner/entrepreneur/manager, Geographical scope, Complexity of strategy. The index can have a value between 0 and 1. The Visegrad country average calculated from our sample is 0.4432.

We have checked the influence of company size, company age, ownership structure, innovation activity, network participation and sectorial structure on the SMINI. All factors had a significant effect on the index value.

- The larger a firm, the higher the index value found.
- The older a firm, the higher the index value found; the connection however is very weak.
- Family-owned firms have a significantly lower index value than non-family-owned firms.
- Foreign ownership is positively correlated with the SMINI.
- The more innovative a firm, the more internationalised it is as well. Also, the more innovative the industry a firm is active in, the higher SMINI value the firm has.
- The participation in networks increases the degree of internationalisation of firms.
- The most internationalised SMEs in our sample are those operating in manufacturing, transportation and storage, and information and communication.

The relationships found in our analysis are in line with the results of other surveys and authors. The strength of the relationships, however, is low or moderate, which may suggest that there are other influencing factors in internationalisation that could not be detected with the sample and the methods we used.

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3

International Strategies of Businesses: Some Evidence from Internationalised Polish Firms

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Summary

The paper discusses the relation of the size of the firm and its international strategy, especially the EPRG (ethnocentric, polycentric, regiocentric, geocentric) formula as one of the basic strategy typologies. The objective of this paper is to verify whether the size of internationalised firms from Poland plays any role in applying a particular international strategy. The article is based on V4 survey results conducted between October 2013 and February 2014 in different regions of Poland. Although it was a random sample of 190 firms, nevertheless the sampling is not representative. The research hypothesis to be tested states that the use of a geocentric strategy means more intensive internationalisation of firms measured by a higher level transnationality index (TNI). The Kruskal-Wallis one-way analysis of variance leads to significant results, that at least one of four samples (EPRG) is different from the other samples as far the TNI level is concerned. Firms applying the geocentric strategy have the highest median as well as lower and upper quartiles than firms applying the ethnocentric strategy.

Keywords: strategy, strategic management, international strategy, international business, internationalisation, international entrepreneurship
JEL classifications: F23, M16, L21, L26

3.1. INTRODUCTION

A strategy is defined as a well thought-out plan of actions in a given field which is to lead to the achievement of a specific goal. With reference to economic activities, the notion of strategy was introduced to economics at the turn of 1950s and 1960s[1]. Among those who probably did it first, H.L. Hansen (1959) is mentioned, but equally often it is A.D. Chandler (1962) with his pioneer publication on the subject.

There is ongoing discussion in the literature on the relation between the size of a firm and its strategy (Pett et al. 2004; Fernández & Nieto, 2005; Kalantaridis, 2004; Julien et al., 1997; Wolff &Pett, 2000; Wach, 2012, pp. 124-125). Thus, the objective of this paper is to verify whether the size of internationalised firms from Poland plays any role in applying an international strategy. The article is based on V4 survey results conducted at the turn of 2013 and 2014 among 190 firms from different regions of Poland. Although it was a random sample, nevertheless the sampling is not representative and it does not allow to absolutise and generalize for the whole population.

3.2. LITERATURE REVIEW

A decision about the internationalisation of a firm, and, in effect, the adopted internationalisation strategy is most often the result of carrying out the previously adopted strategy of a firm operating on the domestic market. The strategies adopted and realised by a firm can be classified or typified differently (because sometimes it is not possible to demarcate them precisely). In the literature of the subject there are two approaches which are most frequently quoted, proposed by authors with well-established positions in the academic environment (Table 3.1.): one concerns the generic (grand) strategies, and the other one talks about the general competitive strategies. Although they are universal by nature, the strategies can be easily used on international markets.

Discussion of internationalisation strategies requires us to consider the specific character of SMEs. Are the strategies broadly discussed in the literature, which were formed with large enterprises in mind, adequate for SMEs? It is difficult to give an unambiguous answer to this question. As a rule, the majority of authors have emphasised the possibility and the necessity of adapting these strategies to the special case of SMEs. The research into internationalised SMEs conducted by Kalantaridis (2004) in England proves that "there are insignificant differences in the development of strategies among internationalised firms of various size; however, while the spectrum of strategic behaviours among medium-sized and large businesses increases with the complexity of foreign operation, this does not happen in the case of small businesses" (Daszkiewicz, 2008, p. 127). Recently, a number of researchers have noticed changes that SMEs have undergone, in which they currently pay more and more attention to their long-term strategy and strategic orientation

[1] An excellent study on this, including both chronological and definition-related ordering, can be found in Cohen (1986).

(Hollensen, 2007). Thus, a considerable part of the international strategy conceptualisation is, in the present conditionings, adequate also for small and medium-sized enterprises. "International or even global strategies are developed and implemented not only by 'big players', but also by smaller businesses" (Bielawska, 2006, p. 18).

Table 3.1. Typology of selected generic strategies and general competitive strategies

Criterion of distinguishing	Typology of the strategy	Representatives
Direction of growth/changes	– offensive – defensive	Porter (1985)
	– growth – stabilisation – defence – mixed	Rue & Holland (1989)
Actions towards competition	– overall cost leadership – differentiation – focus	Porter (1980)
	– struggle with competitors – limiting competition – avoiding competition	Porter (1980)
Entrepreneurial approach	– first with the most – creative imitation strategy – entrepreneurial judo strategy – toll gate strategy – specialty skill strategy – specialty market strategy – desired value creation strategies	Drucker (1985)

Source: Own study

There is a need to take into account the specificity of SMEs in the process of strategy formulation, and more broadly, in the process of their internationalisation. Some instruments are used much less often by SMEs than by large enterprises (e.g., FDI). Much more seldom do SMEs use more advanced strategies, although according to various studies, using more advanced (strategies among SMEs) is intensifying. This is apparent particularly in the group of born global SMEs, high-growth and hyper-growth SMEs, and innovative SMEs operating in high and medium-high technology industries (high-tech SMEs), but first of all in multinational micro-corporations (mMNEs).

Each entry to a foreign market requires the application of an adequate internationalisation strategy, that is, a strategy considering international conditions (e.g. Fletcher, 2001). When explaining the notion of international strategy, Eden et al. (2010), instead of giving its precise definition, show the relations among international management, international business and international strategy. They conclude that international strategy reflects the same areas which lie in the interest of international strategic management. The areas of internationalisation strategy include "significant planning and arbitrary initiatives, including the trans-border ones, undertaken by managers on behalf of the firm owners, which aim at the use of domestic and/or foreign funds to increase efficiency in the international environment" (Eden, et al.,

2010, p. 61). When using the concept of four levels of strategy as discussed before, it should be emphasised that it is also applicable in the business internationalisation dimension. An internationalisation strategy should include the same elements and aspects, on the same levels as the domestic strategy; the difference will be revealed in the content of these strategies.

We can distinguish numerous classifications and typologies of firm internationalisation strategies, taking into consideration various criteria, dimensions and configurations of their isolation. It is worth paying special attention to five typologies which are most popular in academic circles and which are most frequently quoted by various researchers. Some of them were developed as early as in the 1960s and 1970s, yet they are still adequate and most often quoted in the literature of the subject (Table 3.2.).

Table 3.2. Selected typologies of firm internationalisation strategies

Criterion of differentiation	Typology of a strategy	Representatives
Marketing adaptation	– standardisation – adaptation – glocalisation / hybridisation	Elinder (1961) Dunn (1966) Keegan (1969)
International orientation	– ethnocentric – polycentric – regiocentric – geocentric	Perlmutter (1969) Wind et al. (1973) Heenan & Perlmutter (1979)
Integration of activities	– international – multinational – transnational – global	Bartlett & Ghoshal (1989) Leong & Tan (1993) Ghoshal & Nohria (1993)
Level of geographical concentration and dispersion	– market concentration – market diversification	Ayal & Zif (1978)
Market-product strategy	– market penetration – market development – product development – diversification	Ansoff (1965)

Source: Own study

In the literature of the subject, the level of adjusting a strategy to local conditions is regarded the key issue which determines all the other aspects of firm internationalisation. The questions of adaptation (local adjustment) and standardisation (global unification) are considered in the literature of the subject the two model approaches to the formation of the internationalisation strategy, although in most cases a mixed approach is applied. By performing the classification of international business strategies on foreign markets, the adaptation-standardisation dilemma determines the entirety of strategic activities of a firm related to internationalisation. In this context, the standardised and adapted marketing mix is

most often talked about (Powers & Loyka, 2010), which means that the dilemma concerns at least four aspects: product, price, distribution and promotion (but also the remaining aspects related to organisation and management). The most spectacular activities within this scope take place in the promotion and product dimension, since the questions of distribution and price in a natural way are subject to local adaptation, although by their nature they abide by universal laws. In this context, Keegan singles out five international strategies (Figure 3.1.), complementing four conventional solutions (the two-component matrix of a product and the 2x2 type promotion) with the approach rooted in the theory of entrepreneurship (and currently in the international entrepreneurship view), which the creation of a new product and creating a new customer value is (Keegan 1969).

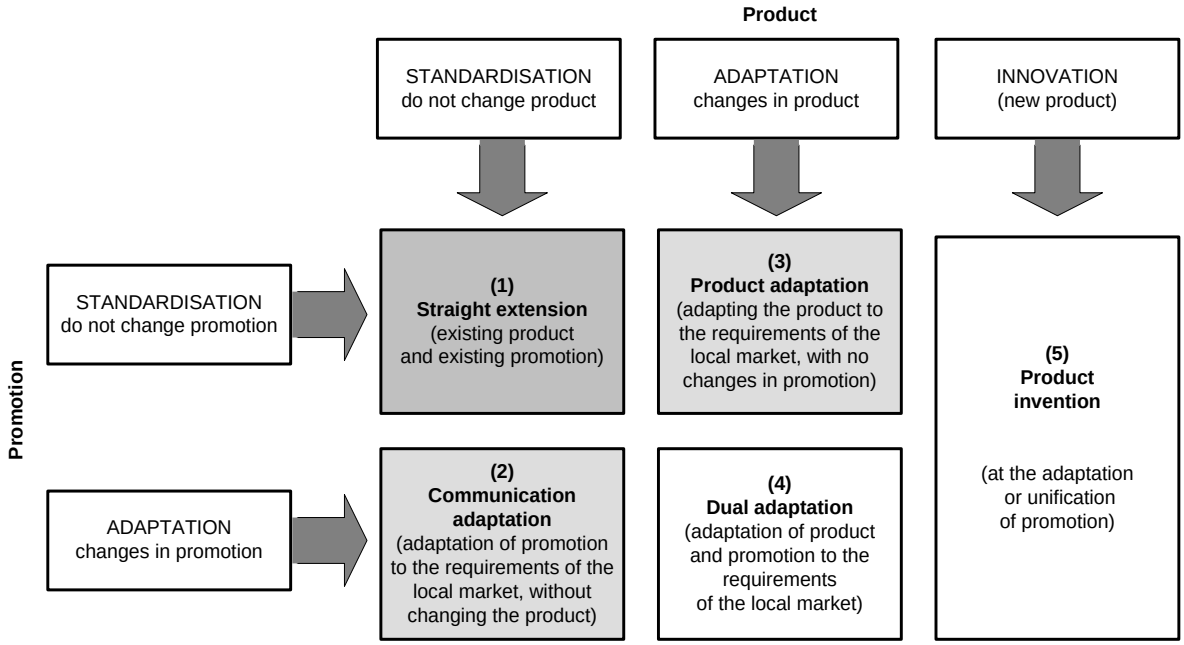

Figure 3.1. Five international product–promotion strategies
Source: adapted from Kotler et al. (2005, p. 242)

The choice between adaptation and standardisation is determined by numerous factors. While performing the conceptualisation of five strategic behaviours, Keegan (1969) distinguished two main determinants - the functions of the product and meeting customer needs, as well as the conditions of the product usage. The research conducted by Hite & Fraser (1988) proves that only 9% of firms take advantage of global standardisation, 37% apply local adaptation, and 54% – that is, the great majority of the studied businesses – in fact conduct a mixed strategy within the scope of the promotional message.

The typology of strategies with regard to strategic orientation was introduced to the literature of the subject in the tri-dimensional form (EPG) by Perlmutter (1969), and then extended by a fourth dimension to its present form by Wind et al. (1973), and also by Heenan & Perlmutter (1979, cited in Caliguri & Stroh, 1995). In this

approach, four strategic directions of orientation are mentioned: ethnocentric (E), polycentric (P), regiocentric (R) and geocentric (G); therefore, the classification is called the EPRG model, but also the E→P→R→G formula or sequence (with the marked model path, see Figure 3.2.). In a simplified way, we can assume that ethnocentric and global approaches are the consequence of standardisation, whereas the polycentric and regiocentric approaches are closer to adaptation.

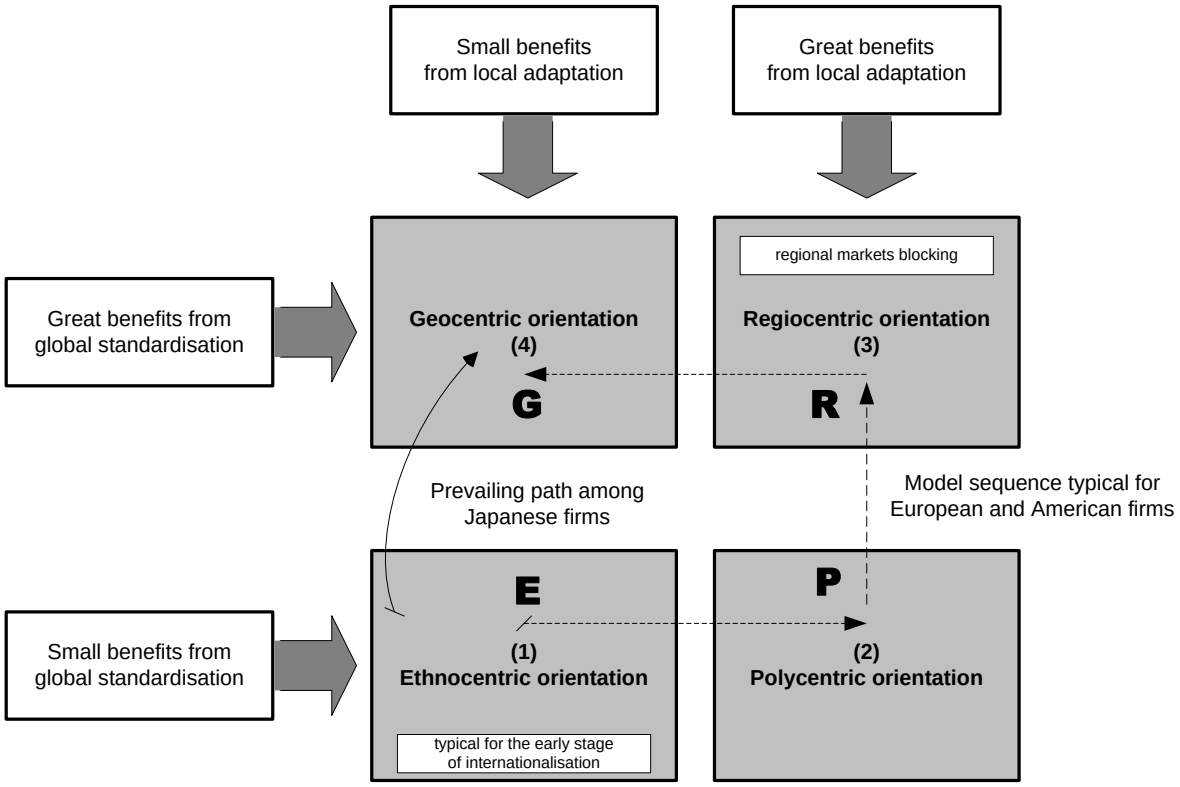

Figure 3.2. The path of international orientation development according to the EPRG formula
Source: own compilation based on Wind et al. (1973), Bell (2008) and Muratbekova-Touron (2008)

An **ethnocentric orientation** (Table 3.3.) occurs in the initial stage of firm internationalisation. The activities of a firm are mainly to keep its position on the domestic market, but it also uses an opportunity to conclude effective foreign transactions. Businesses using the ethnocentric strategy conclude mainly export transactions. A typical feature of applying this marketing strategy is the limited possibility for a firm to consider the specific properties of various foreign markets. Businesses focus on retaining their position on the national market, and they win foreign markets by means of the same strategy as the domestic market, as was already mentioned, most often in the form of simple export.

A **polycentric orientation** enables the consideration of specific qualities of national or local markets. Thus, it uses benefits from its local activities. One of the basic features of the polycentric strategy is decentralisation manifested in creating subsidiaries and production plants abroad and creating joint ventures. For individual

domestic markets independent goals and strategies are formulated, and specific individual marketing programmes are developed. The orientation has a rather low degree of standardisation of the marketing concept levels; on the other hand, the level of differentiation among individual markets is very high.

Table 3.3. The characteristics of strategic orientations according to the EPRG model

Criterion	Ethnocentric	Polycentric	Regiocentric	Geocentric
Complexity of organisation	Complex in home country, simple in subsidiaries	varied and independent	Regionally standardised, with possible regional dependence	increasingly complex and interdependent
Authority; decision making	High in headquarters	relatively low in headquarters	decisions taken in regional headquarters	aim for a collaborative approach between headquarters and subsidiaries
Evaluation and control	Home standards for persons and performance	determined locally	regional and local	find standards which are universal and local
Rewards and punishments; incentives	High in headquarters, low in subsidiaries	wide variation; can be high or low rewards for headquarters. Few rewards between subsidiaries	diverse	international and local executives rewarded for reaching local and worldwide objectives
Communication; information flow	High volume to subsidiaries orders, commands, advice	nationality of host country	bidirectional between the headquarters and regions	both ways and between subsidiaries. Heads of subsidiaries part of management team
Identification	Nationality of owner	develop people of local nationality for key positions in their own country		Truly international company but identifying with national interests
Perpetuation (recruiting, staffing, development)	Recruit and develop people of home country for key positions everywhere in the world			Develop best employees everywhere in the world for key positions everywhere in the world
Consolidation (recruitment, staffing, development)	key positions in foreign subsidiaries intended for employees from the headquarters	key positions in subsidiaries intended for local employees	key positions in subsidiaries intended for employees from a given region of the world	promoting the best employees regardless of origin to work in various subsidiaries and the headquarters
Marketing activities	marketing programmes identical as in the domestic headquarters	individualisation of marketing programmes	regional adaptation of assortment and message	global marketing programmes

Source: Own study based on Perlmutter (1969, p. 12).

A **regiocentric orientation** consists in connecting foreign homogenous groups of countries and treating them as one market. A Eurocentric orientation is a very specific form of the regiocentric strategy. Such an approach is adjusted to the uniform European market. Within this orientation we can mention two specific forms of activity, namely a **European firm** (Schröter, 2008) and a **transatlantic firm** (Tubielewicz, 2004) which use the concept of blocking markets in the scale of the region.

A **geocentric orientation** consists in applying a standardised marketing concept in all countries, with simultaneous very low differentiation on all levels of the marketing concept. What underlies this strategy is the striving to achieve a competitive advantage in the global scale via minimising unit production costs.

3.3. MATERIAL AND METHODS

In order to gather the empirical material, a quantitative research method was applied (Creswell, 2014; Fowler, 2009). The main research method for non-experimental quantitative research, which was applied in the research project, was the research survey using a questionnaire for data collection "with the intent of generalizing from a sample to a population" (Creswell, 2014, p. 13). The survey was conducted between October 2013 and February 2014 (for details see Wach, 2014 as well as Wach & Wojciechowski, 2014).

Computer-assisted web interviewing (CAWI) was applied as the main survey method. This means that respondents (usually members of top management teams) answered the questions on their own using an online questionnaire[2], which was password protected. The request to fill in the online questionnaire was sent to approximately 7,000 Polish firms via a special dedicated e-mail, followed by a telephone conversation request, and 274 questionnaires were submitted, which means that the response rate was around 4%. Of these, 190 completely filled in questionnaires representing all 16 regions of Poland were selected for further statistical processing.

Management perceptions of firm-level variables are often used in entrepreneurship research (Naman & Slevin, 1993), and these perceptions can be obtained from interviews or from surveys using questionnaires. "One potential advantage of perceptual approaches is a relatively high level of validity because researchers can pose questions that address directly the underlying nature of a construct" (Lyon et al., 2000, p. 1058).

The questionnaire was divided into four parts dedicated to different aspects under investigation, such as the characteristics of the firm; the characteristics of the top management team; the characteristics of the industry; and the patterns of internationalisation. Some variables were measured on an instrument as a continuous score (e.g. age, number of employees) or discrete scores, while the

[2] The online questionnaire was available at <http://www.visegrad.uek.krakow.pl/survey>. The questionaire is attached in Duréndez & Wach (2014, pp. 239-244).

majority of the questions were measured in a categorical ways (e.g. type of the applied strategy) which are connected to nominal variables, including also the interval scale from 1 to 5 of the Likert scale. Dichotomous variables were used very often to divide the population; however, in other cases dummy variables were used (e.g. traditional vs. rapid internationalisation). Two basic types of variables were applied – single indicators as well as overall assessment indexes. The single indicators were based directly on the questionnaire answers without any changes. On that basis, standardised indicators consisting of a couple of the single indicators, i.e. the overall assessment indexes, were applied. Each of the overall assessment indexes was constructed through the sum of values indicated by the respondents for each question, and then it was divided by the sum of maximum values possible to be obtained. Finally, the averaged assessment was obtained, standardised in the interval from 0 to 1 (given in percentage in the interval from 0 to 100).

The research hypothesis to be tested states that the use of a geocentric strategy means more intensive internationalisation of the firms measured by the higher level transnationality index (TNI).

The statistical calculations were made by the use of the statistical software Statistica® PL v. 10. In the empirical study, the level of the statistical significance (alpha or α) for statistical hypotheses testing was considered as 0.05. Apart from the well-known basic descriptive statistics, in order to verify the assumed hypothesis the following interferential statistical tests were applied: Pearson's independent test of *Chi-square* as well as the *M-L Chi-square*; the Mann-Whitney U test; and the Kruskal-Wallis one-way analysis of variance.

3.4. RESULTS AND DISCUSSION

In general, only one in every four studied firms declares having a planned international strategy, while one third of studied firms have no strategy for internationalisation. More than half of the studied firms en bloc declare that they have a partial strategy, which is not formalised (Figure 3). However, the Pearson Chi-square (Chi-square = 15.94, df = 6, p = 0.014) and the Maximum-Likelihood Chi-square (Chi-square = 15.10, df = 6, p = 0.019) prove the relationship between the size of the firm in general and the strategic thinking expressed in having applied the international strategy as two categorical variables. Only one out of ten large firms has no international strategy (Figure 3.4), while one out of ten microenterprises has a formalised international strategy, which – in case of the smallest businesses – is quite obvious and in accordance with other research results.

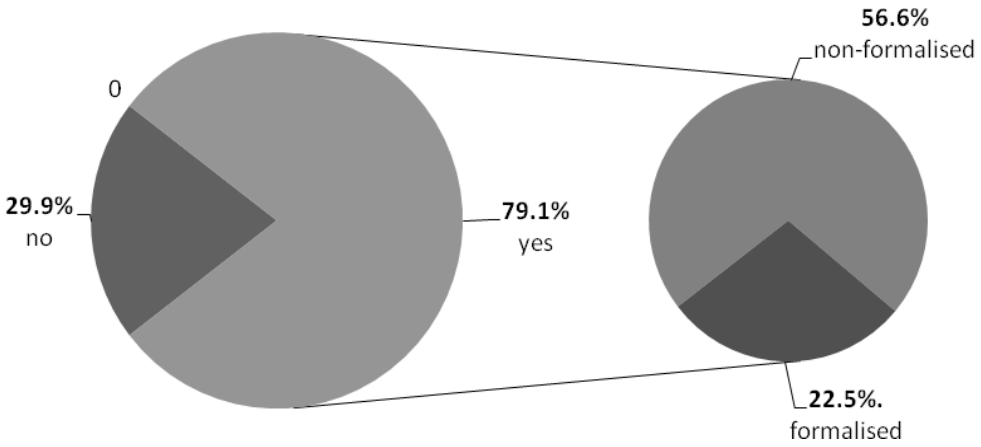

Figure 3.3. Percentage of firms reporting having an international strategy
Source: Own study based on V4 survey results (n = 190).

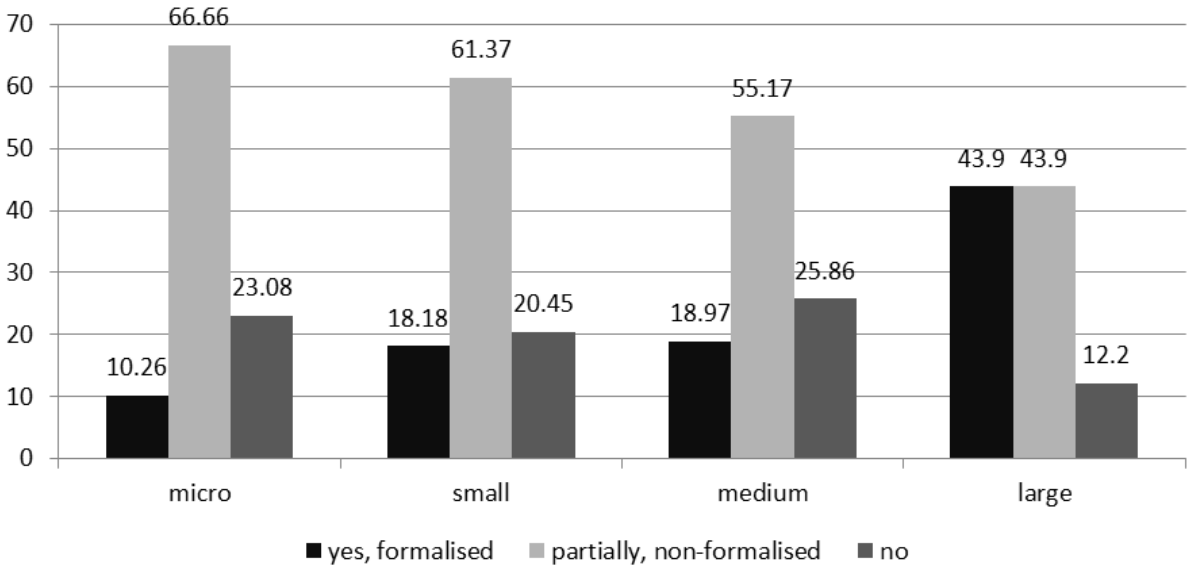

Figure 3.4. Firms reporting having an international strategy by their size (in %)
Source: Own study based on the V4 survey results (n = 190).

In the questionnaire the respondents were asked to determine which of the four basic strategic approaches are used (ethnocentric, polycentric, regiocentric, geocentric strategies). The Chi-square statistic can prove that there is a relationship between the size of firm and the use of EPRG strategy (Chi-square = 20.51, df = 9, p = 0.014). The geocentric strategy is used mostly by large and medium-sized firms (Figure 3.5), while the ethnocentric strategy is used mainly by micro and small business. What is especially interesting is that the polycentric strategy is the most popular among all firms regardless of their size.

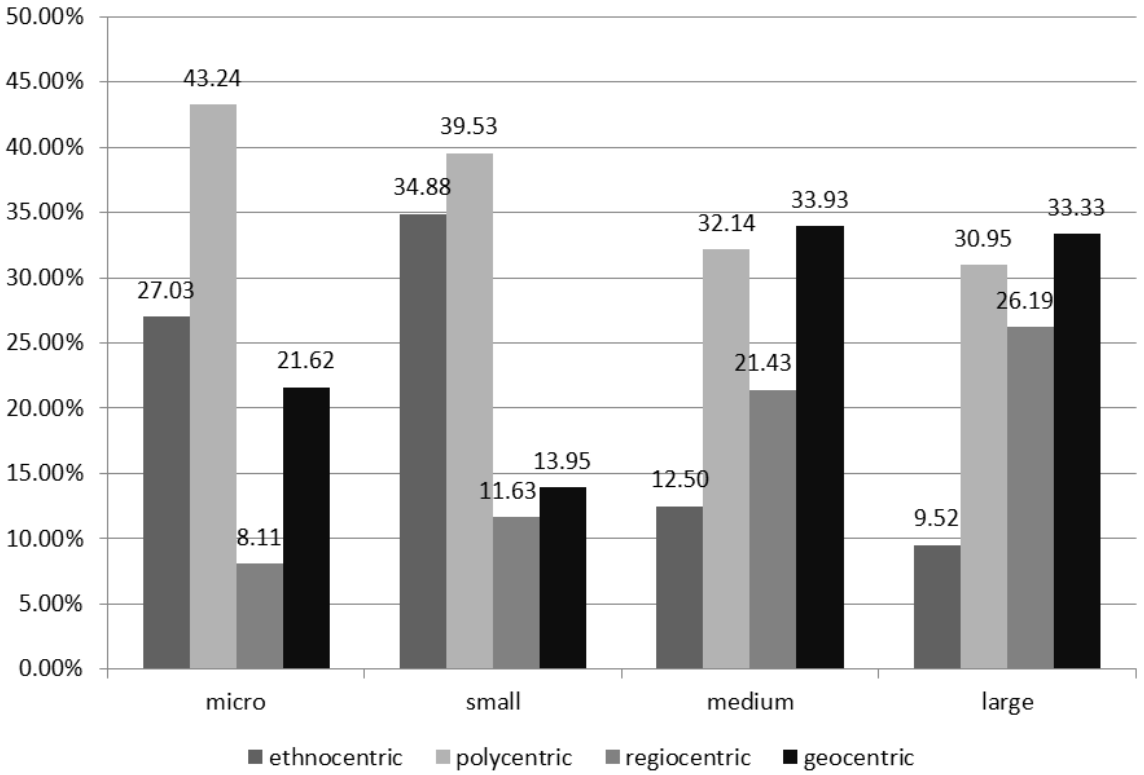

Figure 3.5. Strategy type by the size of the studied firm
Source: Own study based on the V4 survey results (n = 190).

The statistic *U* was applied to check if the sample population of firms having international strategies tends to have larger values than these not having international strategies (Table 3.4). The results of the Mann-Whitney *U* test allows to reject the null hypothesis in 12 out of 31 variables, which means that the average values for these 12 variables are different among firms having and not having implemented international strategies. The average difference in TNI index amounted to 5.5 and is higher in the case of firms having international strategies; nevertheless, the differences are not statistically significant ($p > 0.1$). Based on the calculations, the following conclusions can be drawn up:

- The average foreign ownership among firms having international strategies is 31.5%, while among those not having international strategies is amounted to 11.7%, nevertheless the average difference based on median differences is the same and amounts to 0.
- The average difference in the innovation index (a synthetic overall variable consisting of the intensiveness, level and types of innovation) is higher by13.03% among firms having international strategies.
- Information resources for the internationalisation process are evaluated more highly by the top management team (TMT) among firms with international strategies than by those without. Similar situations are noted for business experience in international markets, as well as the general attitude towards internationalisation and general knowledge of the TMT.

Table 3.4. Results of the Mann-Whitney U Test for the two-sample problem of international strategy implementation

Variables	Rank-sum		U	Z	p	Z corrected	p
	no	yes					
Establishment year	3229.50	13423.50	2488.50	-0.85505	0.392	-0.85579	0.392
Age of the firm	3724.50	12928.50	2488.50	0.85505	0.392	0.85579	0.392
Internationalisation year	3665.00	12988.00	2548.00	0.64907	0.516	0.64987	0.515
Internationalisation moment	4021.50	12631.50	2191.50	1.88318	0.059	1.92901	0.053
Staff	3188.50	13282.50	2447.50	-0.93702	0.348	-0.93732	0.348
Foreign ownership	2775.00	13878.00	2034.00	-2.42840	0.015	-2.72112	0.006
Financial resources	3151.50	13501.50	2410.50	-1.12506	0.260	-1.17581	0.239
Human resources	3429.00	13224.00	2688.00	-0.16443	0.869	-0.17329	0.862
Physical resources	3005.00	13648.00	2264.00	-1.63220	0.102	-1.70581	0.088
Information resources	2780.50	13872.50	2039.50	-2.40936	0.015	-2.52857	0.011
Resources index	2914.00	13739.00	2173.00	-1.94722	0.051	-1.95794	0.050
Innovation index	2793.00	13860.00	2052.00	-2.36609	0.017	-2.37528	0.017
International motivation	2862.00	13609.00	2121.00	-2.07433	0.038	-2.25051	0.024
Cosmopolitism	2937.50	13533.50	2196.50	-1.81133	0.070	-1.94301	0.052
Attitude index	2806.50	13846.50	2065.50	-2.31935	0.020	-2.38009	0.017
Market knowledge	2677.00	13794.00	1936.00	-2.71874	0.006	-2.88925	0.003
Business experience	3144.00	13327.00	2403.00	-1.09203	0.274	-1.18956	0.234
International experience	2887.50	13583.50	2146.50	-1.98550	0.047	-2.10335	0.035
Knowledge index	2731.50	13921.50	1990.50	-2.57898	0.009	-2.59716	0.009
Top Management Features	2620.50	14032.50	1879.50	-2.96323	0.003	-2.97840	0.002
Industry vulnerability	2898.50	12854.50	2195.50	-1.42139	0.155	-1.52720	0.126
Industry competitiveness	2663.00	13627.00	1922.00	-2.71830	0.006	-3.02442	0.002
Industry foreign competitors	4288.00	12365.00	1925.00	2.80572	0.005	3.11368	0.001
Industry foreign capital	3401.50	13069.50	2660.50	-0.19507	0.845	-0.20088	0.840
Industry innovativeness	3068.00	13403.00	2327.00	-1.35676	0.174	-1.42960	0.152
Industry index	3197.00	13456.00	2456.00	-0.96755	0.333	-0.97596	0.329
Amount of entry modes	2784.50	13868.50	2043.50	-2.39551	0.016	-2.45555	0.014
Export in revenue	2989.50	13663.50	2248.50	-1.68586	0.091	-1.68868	0.091
Int'l activities in revenue	2976.00	13677.00	2235.00	-1.73259	0.083	-1.74194	0.081
TNI index	3065.00	13588.00	2324.00	-1.42450	0.154	-1.42968	0.152
II index	3022.50	13630.50	2281.50	-1.57162	0.116	-2.50336	0.012

Source: own study based on V4 survey results (n = 190).

The Kruskal-Wallis one-way analysis of variance leads to significant results ($H(3) = 23.89314$, $p = 0.0000$), that at least one in every four samples for EPRG is different from the other samples as far the TNI level is concerned. Firms applying the geocentric strategy have a higher median and the higher lower and upper quartiles compared to firms applying the ethnocentric strategy (Figure 3.6.).

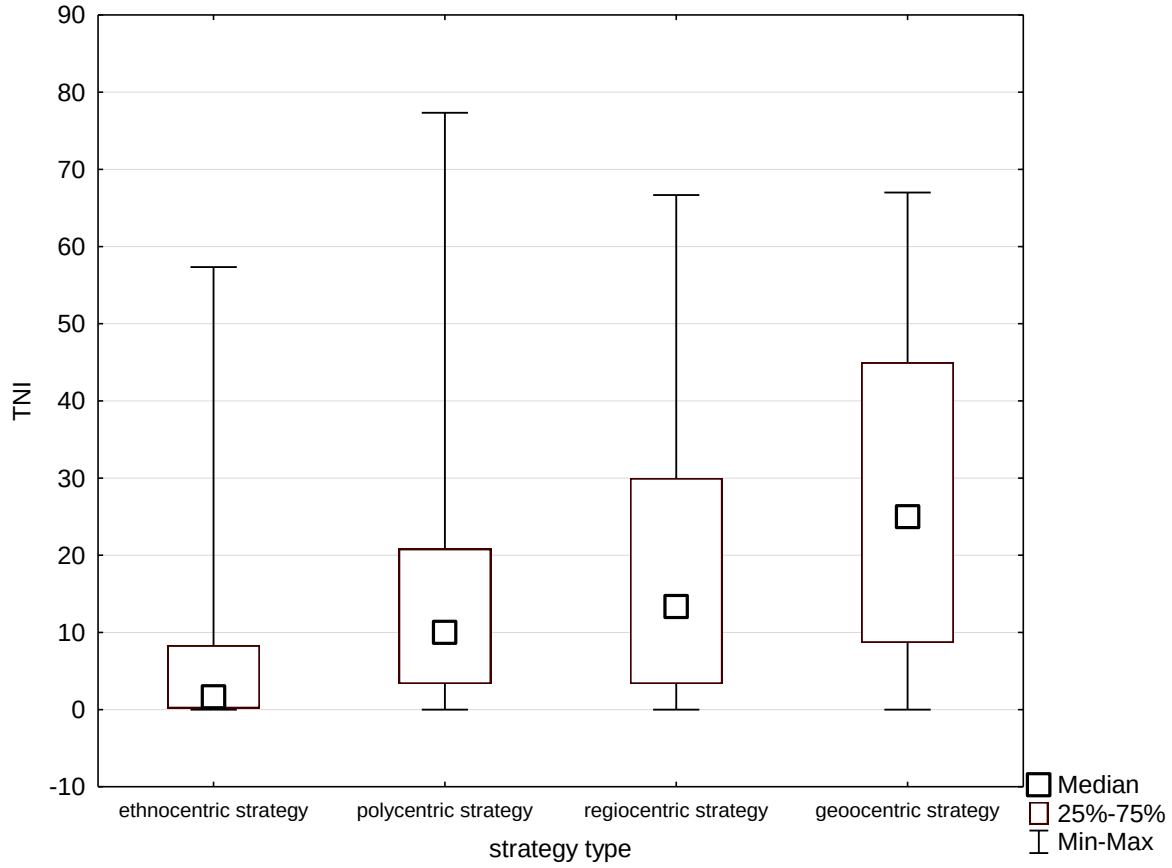

Figure 3.6. Box Plot Medians Graph linking the TNI index and the EPRG strategy type
Source: own study based on V4 survey results (n = 190).

3.5. CONCLUSIONS

Based on the empirical material presented and discussed in this paper, we can state that firms with an international strategy (79.1% of the research sample) are characterised as follows:

- Almost 9 out of 10 large firms have a formalised or at least non-formalised international strategy; the larger the firm is, the more likely it is to have a formalised strategy.
- Large and medium-sized firms tend to use geocentric strategies, while ethnocentric strategies are typical for micro and small businesses.
- Firms with internationalisation strategies are usually much more internationalised than those not having a strategy.
- International strategies are used more often by firms with foreign ownership than those with only domestic ownership.
- Firms having international strategies evaluate their information resources in the internationalisation process much more highly than the other firms.
- Top management teams of firms having international strategies usually have better international experience and knowledge in general, and are more motivated to go international.

– International strategies are used more often by firms that operate in industries of high competitiveness and with foreign competitors.

Some basic conclusions based on the survey results and statistical calculations can be drawn up; however, they must be treated as very initial poll results only. Further detailed research using a much wider sampling of internationalised firms is needed in order to present more detailed and precise conclusions. The primary limitations of this study is its sample, which is not representative; nevertheless, it gives us some illustration of businesses located in Poland.

Deeper studies on the strategies of Polish firms should be conducted. The presented research focused mainly on the analysis of the level, intensity and the forms of internationalisation, having only three questions on strategies. Further research should definitely extend the model by a more complex set of questions on strategies.

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4

Internationalisation of Firms through Networks - Empirical Evidence from Poland

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Summary

The aim of this study is to illustrate the role of networks in the internationalisation process of firms. It discusses the evolution of academic research on firm internationalisation through networks and explains the relationship between the network and the international behaviour of firms as well as presenting the research results. A survey was conducted of 216 internationalised firms, carried out at the turn of 2013 and 2014 on enterprises from all 16 Polish regions. The statistical calculations were made with the use of the statistical software Statistica 10.0. In order to verify the assumed hypothesis the Pearson's chi-square independence test was applied. The research results lead to conclusions that there is a statistical relation between firms operating in networks and 1) their knowledge about international markets, 2) the strategy type and 3) the main motives/reasons for internationalisation according Dunning's typology of internationalisation motives (Dunning, 1993). Statistical significance between firms operating in networks and the main motives/reasons for internationalisation according to the OECD internationalisation motive typology (OECD 1997a, 1997b) has not been found.

Keywords: small and medium-sized enterprises (SMEs), networks, internationalisation.
JEL classifications: F2, F5, M21

4.1. INTRODUCTION

The problems of cooperation among businesses and different organisations is in the area of interest of economists, management specialists and sociologists. Networks and networking are also a subject of interest to researchers of SMEs and entrepreneurship.

Early entrepreneurship research focused on the characteristics of the single entrepreneur. However, in the mid-1980s researchers (eg. Birly, 1985) recognised that networks play a catalyst role in organisational emergence.

There are many studies supporting the existence of a link between social networks and a firm's performance, including its internationalisation process. Scholars have also recognised that informal social networks or networks of social relationships function as the initial basis from which new formal networks of business linkages are developed (Chen, 2003), and through which exporting relationships are formed (Ellis, 2000). Social networks are crucial to the identification of new opportunities (Ellis & Pecotich, 2001), to gain access to foreign markets (Ellis, 2000) and to develop specific competitive advantages through the accumulation of international knowledge and/or the development of formal business linkages across borders (Zhou et al., 2007).

4.2. LITERATURE REVIEW

Small-Firm Networks

Axelsson and Johanson (1992, p.154) defined a network as "sets of two or more connected exchange relationships". Thus, networks include different relationships among various groups e.g. customers, suppliers, competitors, family which influence strategic decisions of firms.

In the literature many types of networks and criteria of their classification can be found. However, Perry (2007) points at four types of network according to the basis of the relationship through which it is sustained (Table 4.1.). These types are (i) personal and ethic ties, (ii) geographical proximity, (iii) organisational integration, and (iv) buyer-supplier linkages.

Personal and ethnic networks include small-business networks constructed around social networks. The strength of social networks derives primarily from trust and commitment among family, friends and close associates (managers, employees, suppliers, customers and business advisors).

Community-based networks can be characterised by special containment within a specialised industrial district. These kinds of networks bring about accumulation of knowledge and a capacity for a high degree of industrial specialisation.

Organisational networks are held together through relations of ownership, investments or shared membership. For example joint-ventures and strategic alliances involve two or more firms in the control of a third-party venture (e.g.

keiretsu in Japan and the *chaebol* in Korea; franchising can be also an example of an organisational network).

Buyer-supplier networks are formed through relational contracting or ongoing relations of exchange, interaction and mutual development between two or more firms and sometimes involve some degree of commitment to mutual development and willingness to accept some degree of involvement by one firm in the operation of another (Daszkiewicz & Wach, 2012).

Table 4.1. Small Firm Networks

Network type	Linkage characteristics	Examples	Issues
Family and ethnic	Ties based on family and personal contacts, embedded in close-knit communities	Overseas Chinese, ethnic minority enterprise, family business	Dependence on ethnic resources, enclave economies, impact on racism
Place	Geographical proximity and shared commitment derived from common values and goals	Third Italy, Silicon Valley, Japan's *jiba sangyo*	Sustainability, variations between industrial districts, origins as a barrier to replication
Organisational	Investment or ownership ties or membership of industry associations	Business groups, join-ventures, chamber of commerce, industry bodies	Small firm status in horizontal and vertical groups, influences on industry cooperation
Buyer-supplier	Interaction to enhance role of supplier and subcontractor**s**	Relational subcontracting	Extent of change in subcontracting, use of vendor rating, impact of global manufacturing

Source: adapted from Perry (2007: 25)

Network Relationship and Internationalisation Process

Johanson and Mattsson (1988) developed one of the first approaches towards internationalisation through networks and proposed a network model of internationalisation. The researchers discussed firms' internationalisation in the context of both the firm's own business network and the relevant network structure in foreign markets. From a network perspective, internationalisation is perceived as a process in which relationships are continuously established, developed, maintained and dissolved with the aim of achieving objectives of the firm (Wach, 2012). Johanson and Matsson (1988) identified four stages of internationalisation: 1) the early starter, 2) the late starter, 3) the lonely international, 4) international among others (Figure 4.1.).

An early starter - may have problems developing a network. When both the degree of internationalisation of the firm is low and the degree of internationalisation of network is low, the firm can follow the traditional step-by-step model.

The lonely international - the co-ordination of international activities might create some problems, such as the adjustment of resources.

In the case of *the late starter* the firm might be dependent on other firms that already exist within the network, which sometimes try to hinder the firms' entrance into the internationalised market.

The international among others operates within the international network, where differences among countries decrease over time. Thus, it is typical that, for example, mergers, joint ventures and alliances occur, which will have an effect on the existing network (Johanson & Mattsson, 1988).

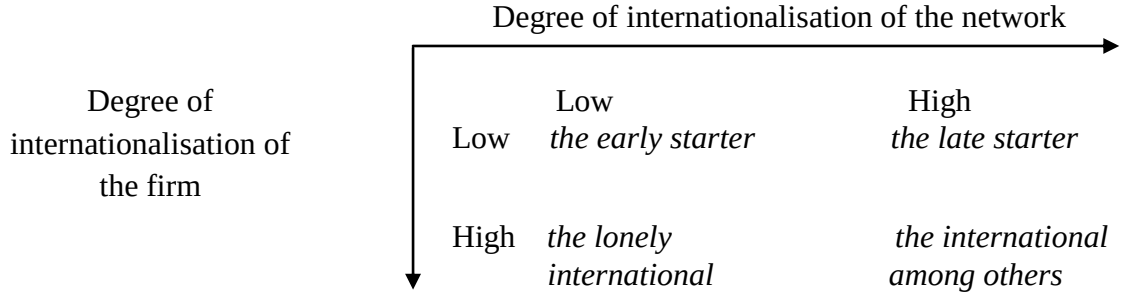

Figure 4.1. Internationalisation and the network model
Source: Johanson & Mattsson, (1988: 298).

Many studies support the argument that networks have a significant impact on the internationalisation processes – its pace, pattern, market selection and entry mode. Coviello & Munro (1997) state that network relationships have an impact on foreign market selection and mode of entry in the context of ongoing network process. Zain & Ng (2006) analysed the literature concerning relationship between networks and internationalisation of SMEs. The analysed research show that networks trigger and motivate firms' internationalisation intention, influence firms' market – selection and entry – mode decisions, gain access to additional relationships and established channels as well as to local market knowledge. Moreover, networks obtain initial credibility, lower costs and minimise risks of internationalisation and influence firms' internationalisation pace and pattern. On the other hand, networks constrain firms' future scope and market opportunities (Zain & Ng, 2006, p. 188).

The Uppsala Internationalisation Revised Process Model

The first theories concerning internationalisation of SMEs developed only in the mid-1970s. Nowadays, they are perceived as classical theories, also called "stage theories" among which the Uppsala Model (U-Model) seems to be the most famous (Johanson & Vahlne, 1977; Johanson & Wiedersheim, 1975; Daszkiewicz & Wach, 2013).

However, since the U-Model (1977) was published research on business networks and entrepreneurship has significantly developed. The Uppsala internationalisation process model was later revised due to ongoing changes in economies and firms' behaviour. In the revised model Johanson & Vahlne (2009) develop different aspects influencing the internationalisation process of the firm. Their two core arguments are based on business network research:

1. Markets are networks of relationships in which firms are linked to each other in various, complex and, to a considerable extent, invisible pattern.
2. Relationships offer potential for learning and for building commitment, both of which are preconditions for internationalisation.

What is more, the U-Model assumed that firm's internationalisation frequently started in foreign markets which were close to the domestic market in terms of *psychic distance* (defined as factors that made it difficult to understand foreign environments). Then, the firms would gradually enter other markets which were further away in psychic distance terms.

The researchers focused on business networks as the market structure in which an internationalising firm is embedded. The original model (Johanson & Vahlne, 1977) was based on the assumption that knowledge is crucial for a firm's internationalisation process. However, in the new, revised model, the researchers argue that the general internationalistion knowledge concerning different kinds of international experience (eg. foreign market entry, mode-specific, core business, alliance, acquisition) is even more important than they earlier assumed. Thus, they added to the "new" model the concept of *relationship-specific knowledge*, which is developed through integration between two partners, and which includes knowledge about each other's heterogeneous resources and capabilities.

The new model also includes affective or emotional dimensions in relationships. The authors state that, for example, trust can substitute for knowledge, especially when a firm lacks necessary market knowledge. This is because trust encourages people to share information, promotes the building of joint expectations and is also crucial in the early phases of a relationship. Trust is a major determinant of commitment.

As far as commitment is concerned, the authors argue that it is rather a question of more or less intensive efforts: when both commitment and trust – not just one or the other – are present, they produce outcomes that promote efficiency, productivity and effectiveness (Johanson & Vahlne, 2009).

A Business Network Model of the Internationalisation Process

The 2009 business network model (and the model from 1977) consists of two sets of variables: stable variables and change variables. The model depicts dynamic, cumulative process of learning, as well as trust and commitment building. An increased level of knowledge may thus have a positive impact on building trust and commitment. These processes can occur on both sides of a mutual relationship and at all points in the network in which the focal firm participates (Figure 4.2.).

The authors added "recognition of opportunities" to the "knowledge" concept in the new model. Opportunities constitute a subset of knowledge. By adding this variable, they consider opportunities the most important element of the body of knowledge that drives the process.

The second state variable is labelled the "network" position. This variable was identified in the original model as "market commitment". Now, the authors assume that the internationalisation process is pursued within a network. Relations are characterised by a certain level of knowledge, trust and commitment.

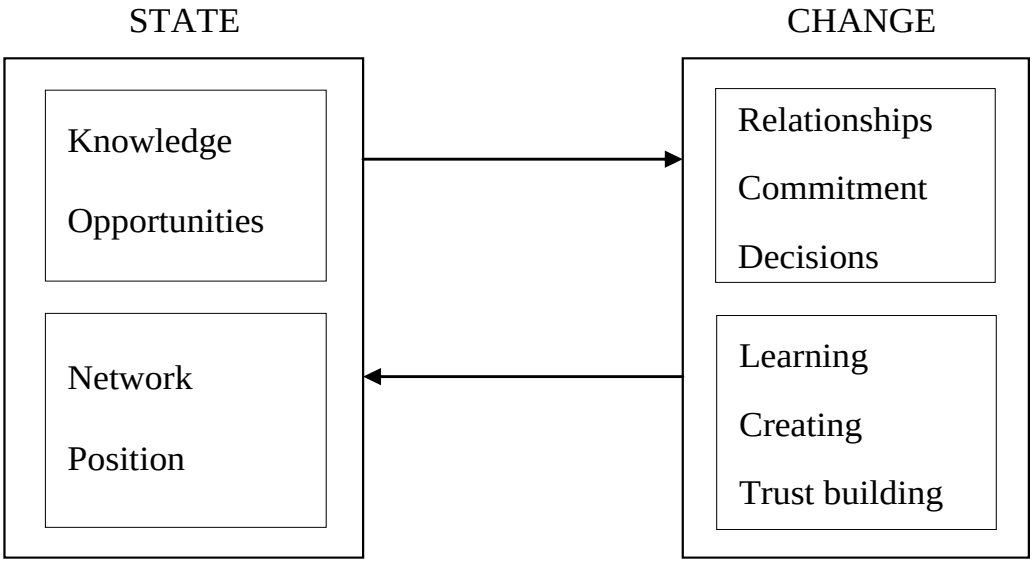

Figure 4.2. The Uppsala internationalization process model revised: from liability of foreignness to liability of outsidership
Source: Johanson & Vahlne (2009: 19)

As far as the change variables are concerned, the researchers changed the original label of "current activities" to "learning, creating and trust-building" to make the outcome of current activities more explicit. Finally, the other change variable, "relationship commitment decisions", has been adapted from the original model. The researchers added "relationship" to clarify that commitment is to relationships or to networks of relationships.

The selected proposals introduced above show that the impact of network relationships on firms' internationalisation has been highlighted in numerous studies. Ojala (2009) grouped a network approaches for entering foreign markets into the following categories:

Network approaches for entering foreign markets - a network model conceptualises internationalisation as being related to relationships establishment and building (Johanson & Vahlne, 2003). Johanson and Mattsson (1988) argue that a firm is dependent on resources controlled by other firms and can get access to these resources by developing its position in a network. Thus firms in a network have common interests in developing and maintaining relationships with each other in a way that provides them mutual benefits (Ojala, 2009).

The different types of network relationships used for entering foreign markets - according to Johanson and Mattsson (1988), a firm can have relationships with various actors, including customers, distributors, suppliers, competitors, non-profit

organisations, public administration, and so on. Other authors divide the different types of network relationships for entering foreign markets into formal and informal (Birley, 1985; Coviello & Munro, 1997).

The influence of network relationships on how markets are entered - the network model of internationalisation says nothing about how markets are entered in terms of geographical or psychic distance or how network relationships impact the entry mode choice in a target country (Johanson & Mattsson, 1988; Johanson & Vahlne, 2003). However, there are studies related to internationalisation of knowledge-intensive SMEs (Bell at al., 1995; Coviello, 2006; Coviello & Munro, 1997; Zain & Ng, 2006) which have indicated that networks have a strong impact on market and/or entry mode choice.

However, Ojala (2009) asks a new research question: whether there are differences in the networking behaviour when firms enter a psychically distant market.

4.3. MATERIAL AND METHODS

The **research objective** of the paper is to identify the impact of network relationships on firms' internationalisation process. In the course of the study, the following **research hypotheses** were assumed:

H1: There is a relation between firms operating in networks and their knowledge about international markets.

H2: There is a relation between firms operating in networks and the types of firms' strategies.

H3: There is a relation between firms operating in networks and the four basic motives/reasons for internationalisation, namely resource seeking, market seeking, efficiency seeking as well as strategic assets or capabilities seeking.

H4: There is a relation between firms operating in networks and the four basic motives/reasons for internationalisation, namely pull factor, push factor, chance factor and and entrepreneurial factor.

The research was carried out within Project No. StG-21310034 on "Patterns of Business Internationalization in Visegrad Countries – In Search for Regional Specifics" financed by the International Visegrad Fund in the years 2013-2014 by the consortium of five Central European universities leading by Cracow University of Economics[1]. A survey was employed in this study, consisting of an e-mail or a telephone conversation request followed by an online passwordprotected questionnaire[2] (for more information, see Daszkiewicz & Wach 2014a; 2014b). In Poland, the responders were selected on the basis of Polish Exporters Database. The survey was conducted among 274 firms between October 2013 and February 2014 (for more information on the sampling and the applied research methodology, see

[1] Further info at: http://www.visegrad.uek.krakow.pl (accessed on April 30, 2014).

[2] The online questionnaire was available at <http://www.visegrad.uek.krakow.pl/survey>. The questionaire is attached in Duréndez & Wach (2014, pp. 239-244).

Wach, 2014). The questionnaire was sent to almost 7 thousands internationalised firms but only 274 firms replied and 216 were accepted for the analysis. Thus the results are not representative for the whole population of Polish internationalised firms.

The statistical calculations were made with the use of the statistical software Statistica 10.0. In order to verify the assumed hypothesis the Pearson's chi-square independence test was applied.

4.4. RESULTS AND DISCUSSION

The Research Sampling

The research sample included micro, small, medium-size and large enterprises. The share of large enterprises in the sample is 24% (52 firms) and SMEs 76% (164 firms). The territorial scope of activities of the majority of the investigated firms is wide. Almost 63% of firms declare that they function both within and beyond EU markets, almost 17% of enterprises function within EU markets only, and only 3% just in neighbouring countries. However, almost 18% of the surveyed firms stated that they function mainly on the domestic market. There was no firm in the research sample that functions only outside of the EU market (Daszkiewicz & Wach, 2014).

According to the OECD internationalisation motive typology (OECD 1997a, 1997b), the most popular motives for going international are entrepreneurial factors as well as push factors. Following Dunning's typology of internationalisation motives (Dunning, 1993), the majority of the investigated firms are market seekers (74%). There is also a relation between these two typologies of motives. All four OECD motives correspond mainly with market seeking (chi^2 = 26.3998, df = 9, p = 0.002) (Daszkiewicz & Wach, 2014a).

Almost 69% of the investigated firms do not cooperate in any international or national networks for internationalisation. However 25% of the firms responded that they cooperate either in at least one formal network (12.5%) or in at least one informal network (12.5%) for the internationalisation process (Table 4.3.).

Table 4.3. Cooperation in networks

Answers	Frequency	Cumulative Frequency	Percent	Cumulative Percent
We do not cooperate in any international and/or national networks for internationalisation	148	148	68.52	68.52
We operate in at least one formal network, which helps us in the internationalisation process	27	175	12.50	81.0
We operate in at least one informal network, which helps us in the internationalisation process	27	202	12.50	93.5
No answer	14	216	6.48	100.0

Source: own study based on the V4 survey results of 2014 (*n* = 216)

Basing on the literature review presented above it seems to be reasonable to investigate whether internationalisation motives/reasons are related with cooperation in networks.

Selected Survey Results

Statistical analysis leads to the following conclusions:

1. There is a relation between operating in networks and the knowledge on foreign markets (chi^2 = 19.49663, df = 8, p = 0.01242). Calculated on the basis of Chi-square contingency coefficient C Pearson C = 0.297 shows that between these variables there is a relationship of moderate strength (Table 5.4.).
2. There is a relation between operating in networks and the strategy type (chi^2 = 13.18287, df = 6, p = 0.04022). Calculated on the basis of Chi-square contingency coefficient C Pearson C = 0.252 shows that between these variables there is a relationship of moderate strength (Table 4.5.).
3. There is a relation between operating in networks and the main reason for internationalisation (chi^2 = 15.14892, df = 6, p = 0.01913). Calculated on the basis of Chi-square contingency coefficient C Pearson C = 0.264 shows that between these variables there is a relationship of moderate strength (Table 4.6.).
4. Due to the lack of statistical significance Hypothesis H4 is neither confirmed nor rejected (chi^2 = 11.09321 , df = 6, p = 0.08554).

4.5. CONCLUSIONS

Based on the calculations it was possible to accept three hypotheses entirely. In the case of the fourth hypothesis no statistical significance was found. Thus:

H1: There is a relation between firm's operating in networks and the knowledge about on international markets - *confirmed*

H2: There is a relation between firm's operating in networks and the types of firms' strategies - *confirmed*

H3: There is a relation between firm's operating in networks and the reasons for internationalisation - *confirmed*.

H4: There is a relation between firm's operating in networks and the main motive for internationalisation – *no significance*.

Concluding the research results, the empirical findings presented in this paper are consistent with other studies. They confirm the relation between firm's operating in networks and its motivation for internationalisation as well as selection of used strategies. Knowledge about foreign markets is also related with functioning in networks. Although the results are not representative for the whole population of Polish internationalised firms and show only selected aspects of firm's functioning in networks and its internationalisation, they are one more evidence that such a relationship exists.

There is no doubt that the findings raise additional questions, which can be a starting point for further/deepened research, especially the impact of operating in

networks on firms' internationalisation pace and pattern, market – selection and entry – mode decisions, access to additional relationships and to local market knowledge.

Table 4.4. Cross tabulation concerning knowledge about international markets of the entrepreneurs

Answers	Knowledge - extremely low	Knowledge rather low	Knowledge moderate	Knowledge- rather high	Knowledge- extremely high	Total
We do not cooperate in any international and/or national networks	5	10	53	52	27	147
We operate in at least one formal network	2	1	3	12	9	27
We operate in at least one informal network	0	0	4	18	5	27
Total	7	11	60	82	41	201

Source: own study based on the V4 survey results of 2014 (*n* = 201)

Table 4.5. Cross tabulation concerning strategies of the firms

Answers	**Ethnocentric** (on international markets we use the same strategies as on domestic market)	**Policentric** (on particular international markets we include the specific conditions for marketing and management strategy)	**Regiocentric** (we use different strategies for a couple of blocked international markets, in which there are similar marketing and management conditions)	**Geocentric** (on all or at least most of international markets we use a standardized and single marketing and management strategy)	Total
We do not cooperate in any international and/or national networks	35	47	20	42	144
We operate in at least one formal network	3	7	10	5	25
We operate in at least one informal network	5	12	5	4	26
Total	43	66	35	51	195

Source: own study based on the V4 survey results of 2014 (*n* = 195).

Table 4.6. Cross tabulation concerning main reasons of firm internationalisation

Answers	market seeking	efficiency seeking	resources seeking	Strategic assets and/ capabilities seeking	Total
We do not cooperate in any international and/or national networks for internationalisation	118	12	5	13	148
We operate in at least one formal network, which helps us in the internationalisation process	22	1	0	4	27
We operate in at least one informal network, which helps us in the internationalisation process	13	6	2	6	27
Total	153	19	7	23	202

Source: own study based on the V4 survey results (*n* =202).

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5

Critical Success Factors of Export Excellence and Policy Implications: The Case of Hungarian Small and Medium-Sized Enterprises

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Summary

The economic growth rates in the European Union raise the question of how the internationalisation of small and medium-sized enterprises (SMEs) can be facilitated by national economic policies. Research evidence in the area of international business suggests that enterprise competencies are critical in internationalisation. Naturally, economic policies should facilitate the development of adequate competencies with SMEs. Ten case studies on Hungarian-majority-owned SMEs that export were analysed to explore their critical success factors. This chapter contrasts the enterprise level findings with economic policies towards internationalisation using the findings of this qualitative research project.

Keywords: Critical Success Factors, Export Performance, Internationalisation of SMEs, Economic Policies, Competitiveness.
JEL classifications: F23, F43, L25, M16

5.1. INTRODUCTION

Policy makers and academics have advocated competitiveness at industrial and national levels since the publication of Porter's seminal work in 1990. This has been the case in Hungary as well. Since the mid-1990s, several research projects have focused on the competitiveness of Hungarian enterprises and its policy implications (Chikán et al. 2002, Chikán 2008, Chikán & Czakó 2010). Although the academic background of competitiveness may need further elaboration, it seems that it has some practical relevance. Especially in a period of slow economic growth, competitiveness is at the heart of economic considerations, and how enterprises are registered and operate in a country may enable them to better face and cope with competition.

In the mid-1990s there was a shift in both the competitiveness and International Business (IB) literature, and new priorities for small and medium/sized enterprises (SMEs) in the national economies crystallized. Previously the key roles of SMEs were associated with innovation and job creation. The observed phenomena of international new ventures (INVs) (Oviatt & McDougall 1994, 1995; Rialp et al., 2005) and decreasing sizes of internationalising enterprises altered the research focus and policy considerations. As the EC (2007:7) put it, "internationalisation is an engine for SME competitiveness". The internationalisation process of SMEs is the second theme of the paper, to uncover the key success factors for managers and also to orient policy makers in initiating competitiveness to enhance policies and measures.

An exploratory qualitative research project was launched in 2011 (called hereafter the pilot project) to examine the internationalisation theory of Johanson and Vahlne (2009) on Hungarian SMEs (Figure 1). Its aim was to elaborate and test an interview outline and gain feedback on the first results from Hungarian scholars (Kozma & Könczöl, 2012). From the lessons and conclusions, a three-pillar project was set out, two of which have been completed. Findings were published in a Hungarian language research book to facilitate IB teaching and learning and to aid the work of policy makers in Hungary (Ábel & Czakó, 2013). The first pillar reviewed international and Hungarian findings on internationalisation and export performance and the international part presented a proposition formulation for the analysis of case studies (Ábel et al., 2013). The second pillar was a case study based research project, where founders and top-level managers of 10 SMEs were interviewed. Case studies were written on each SME with conclusions on their outstanding performance. The third pillar of the project on comparing the financial performance of exporting and non-exporting enterprises is in progress. Its preparatory work and preliminary results influenced and supported the second pillar of the research. This third pillar research approach was also employed to support the validity of the qualitative research.

In this paper the literature review and main propositions are discussed first. International strategy, competitiveness and internationalisation literatures were used to provide theoretical references. Internationalisation was considered as a strategic managerial process to uncover and identify key critical success factors (CSFs). High,

sustained export intensity was taken as a proxy for internationalisation. It is assumed that some of CSFs are competencies that can be assisted by policy measures. Literature and policy papers are reviewed to channel the conclusions on policy implications. Part 3 is on research method and the sample. The 10 export-oriented SMEs will be described here. The notion of CSFs and the method for their derivation are also discussed in this part. The following part discusses the CSFs in matching them to the case studies to set out the general ones. Part 5 sets out policy implications for enhancing and facilitating the competitiveness of SMEs in their internationalisation journey.

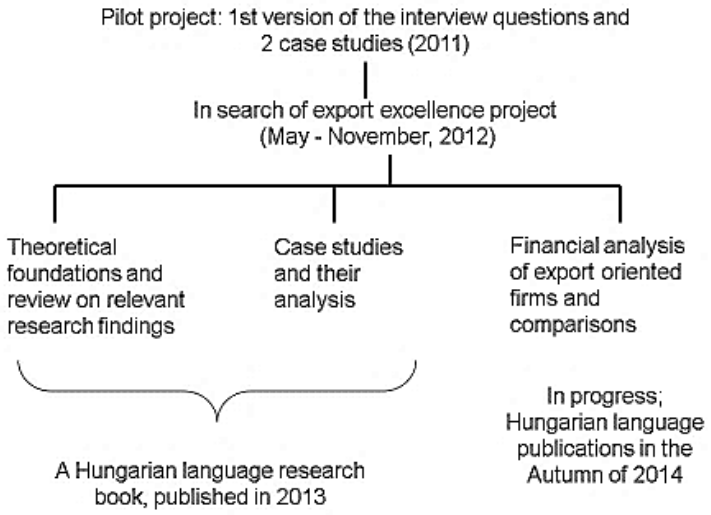

Figure 5.1. The research project on export excellence

The paper takes a broad perspective from theoretical considerations at enterprise- level internationalisation and it moves toward competitiveness policy implications. This is a trajectory with several academic and professional considerations and limitations. It is assumed, however, that for enhancing capacities and competences in both academic and professional work, these kind of ventures may have both theoretical and practical relevance.

5.2. LITERATURE REVIEW AND PROPOSITIONS

Though the idea of competitiveness came up in a period of slow growth period (Scott & Lodge 1985; Dertouzos et al., 1987), its heyday was in the late 1990s. This was a high growth period fuelled by opening up markets and the spread of information and communication technology in the developed countries. The OECD (2001a, 2001b, 2005) initiated a project on exploring hard-to-measure factors of high growth rates in developed countries. In parallel with the first announcement of the Lisbon Strategy, the European Commission launched the enterprise benchmarking exercises (EC 2000, 2001, 2002, 2003, 2004a, 2004b). The OECD assumption was that there are several micro-level factors of macroeconomic growth, which might have interplayed in outstanding growth rates of the most developed countries (Canada, Finland, Sweden,

the Netherlands, and the USA) in the late 1990s. It was proposed that most of these micro-economic drivers induced the economic performance of enterprises. Quantitative and qualitative methods were applied to uncover them. Four micro-economic drivers were identified – entrepreneurship, information and communication technologies, science and technology, and human capital – and each was decomposed. The EC enterprise benchmarking exercise was initiated in 2000 to map the best practices of the EU members and monitor the advancement of the 2000 Lisbon Strategy. (It was ended in 2004.) The benchmarked fields included the micro-economic drivers of the OECD, and besides them, some others were added (e.g., taxation, markets, eco-efficiency). Entrepreneurship is the only micro-driver which was identified as a fairly new driver of economic growth.

The two approaches of the OECD and the EC were compared to orient public policy initiatives to enhance the competitiveness of Hungarian enterprises (Czakó, 2007, 2010, 2011)[1]. In examining and considering the applicability of the best practices to the overlapping fields, entrepreneurship was singled out. In the empirical work, an emerging segment of internationalising SMEs was detected. Meanwhile, the internationalisation of SMEs became the focus of EC policy papers as well (EC 2007, 2008). Based on these considerations and findings we formed a proposition for channelling policy implications.

Proposition 1. The critical success factors of internationalisation in SMEs propose measures for public policies to increase the skills of SMEs to tackle internationalisation.

Several quantitative analyses on Hungarian and non-Hungarian exporting companies were done to reveal patterns of exports and imports and their role in firm performance (Békés & Muraközy, 2012; Békés et al., 2009, 2011b; Castellani et al., 2010, Halpern et al., 2011). Their findings suggest that exporting firms are heterogeneous in their financial performance. Two propositions were set:

Proposition 2. The case study research method is suitable to uncover managerial competences of enterprises with different export intensity and product scope.

Proposition 3. Financial performance analysis needs to be supplemented with other performance analysis for evaluating the export excellence.

Proposition 2 served as a rationale for the qualitative research. The 3rd pillar was initiated to study Proposition 3 and draw conclusions for financial instruments to enhance the internationalisation process of SMEs.

A study on 15,000 enterprises from 7 EU member states concluded that the firms which had intensive international business connections through their import could cope with the 2008 crisis more effectively than those with no, or less intensive international trade relations (Békés et al. 2011a).

Proposition 4. Export-intensive SMEs can resist and cope with economic downturns. It follows that in low economic growth rate periods they can be one target segment to encourage economic growth.

[1] The project was initiated and sponsored by the Hungarian State Audit Office in 2006-2010, and its papers were published in Hungarian.

Internationalisation of SMEs in different countries was one of the hot topics in IB papers and journals in the 1st decade of the 2000s. Most of them relied on a qualitative method and their findings need further investigations. The role of founders and top-level managers is one core finding (Amal & Filho, 2009, Rialp et al. 2005, Suárez-Ortega & Álmao-Vera 2005). The competencies and capabilities of the founders, their personal involvement and the size of their enterprises set limits on internationalisation.

Proposition 5 The role of the founder(s) and the top-level managers is the initiating and enabling factor of internationalisation.

Internationalisation is considered as a process where knowledge accumulation is a key factor in coping the liability of foreignness and with commitment to foreign markets (Johanson & Vahlne 1977). Based on several decade-long research projects, accumulated research findings worldwide and new phenomena from the middle of the 1990s, it was proposed that internationalisation can be considered as foreign network entry and coping with the liability of outsidership, and network position improvement became a key factor (Lu & Beamish 2001; Kaplinsky 2004; Johanson & Vahlne, 2009).

Proposition 6. Among of the drivers of internationalisation the supplier position is as important as that of other national push factors (e.g. size of the market).

Proposition 7. Among the strategic priorities the market development direction includes the strategic partnership development with buyers.

Proposition 8. The geographical scope and foreign market entry modes are secondary in comparison with the supplier position and strategic partnerships.

Propositions 5-8 were employed in designing the key Critical Succes Factors end the mind map of the research program.

5.3. THE RESEARCH METHOD AND THE SAMPLE

The selection of SMEs was based on the following five criteria: (1) Hungarian majority ownership, (2) foundation or re-foundation after 1990, (3) sustained high export intensity[2], (4) more than 50 employees and/or above 1 billion HUF (approximately 3 m Euro) annual revenue and (5) used as case exhibits for Hungarian internationalisation success stories in an International Business textbook published in Hungarian (Czakó 2011). The 1st, 3rd and 4th criteria were tested by publicly available electronically submitted financial reports, the 2nd criteria was checked from the Hungarian Business Register. In compiling the list to contact SMEs that met the criteria, the published and recognized success stories served as a basis. We aimed to represent as many successful industries by export figures as possible. Twelve SMEs were contacted in July of 2012 and 10 of them agreed to participate in the interview and gave their full name for the case studies.

[2] Export intensity was calculated as a ratio of the export revenue and the total revenues. A more than 25% ratio was taken as high, and when it was valid for each of the previous 3 business years, it was considered sustained.

Table 5.1. Main characteristics of the SMEs in the sample

1	2	3	4	5	6	7	8	9	10	11	12	13		14
Code	Product scope	Year of founda-tion	1st year of ex-ports	Reve-nue, million HUF, 2011	Exports reve-nue in 2011, million HUF	Export inten-sity ratio, % 2011	Trend of Exports/Re-venues ratio, 2000-2011	Trend of Taxed incomes/Re-venues ratio, 2000-2011	Number of emplo-yees in 2011	Value Added per employ-yee, thousand HUF, 2011	Number of countries exported to	3 main export countries and their characteristics		Authors of case studies
A	Feed premixes, concentrates, prestarter feeds for livestock	2001	2001	15496	6939	62%	High	Decreasing	118	17.689	11	Russia, Ukraine, Belorussia	CIS	Boda, Gy. & Stocker, M.
B	Alumina-oxide industrial ceramic products	2000	2000	1491	1339	90%	High	Fluctuating	135	4.768	20	USA, Great Britain, Italy	Developed	Kozma, M.
C	High precision automotive parts with alumina die casting technology	1999	1999	7897	6030	76%	High	Fluctuating	230	5.202	7	Germany, France, Austria	EU	Kiss, J.
E	Designing, selling, installing and maintaining CRM products	2000	2000	649	192	29%	Fluctuating	Fluctuating	38	4.940	13	Great Britain, Germany, France	EU	Tátrai. T.
G	Grinding wheels and discs	2001	2001	1566	826	53%	Low start then high	Stable	114	4.779	25	Ireland, Germany, Canada	Developed	Juhász, P.
H	Metal machined vehicle-industry components	2005	2005	5822	1910	33%	Low start then high	Stable	138	9.900	7	The Nether-land, Portugal, Italy	EU	Kzzainé Ónódi, A.
L	Pharmaceuticals for veterinary use	1991	1993	2880	2010	70%	Low start then high	Stable	42	20.000	30	Germany, Poland, Denmark	EU	Pecze, K.
M	Human and pre-clinical imaging systems	1990	1994	4736	3041	64%	High	Fluctuating	133	11.900	84	USA, Germany, Poland	Developed	Szántó, R.
P	Oyster mushrooms	1991	1991	674	513	76%	High	Stable	42	2.029	10	Germany, Romania, Slovakia	EU	Boda, Gy. & Stocker, M.
S	Traumatologic, spine and dental implants	1996	1996	2637	1860	70%	Low start then high	Stable	218	7.478	35	Switzer-land, Russia, China	Mixed	Szalay, Zs.

Source: Enterprise financial reports, interviews and case studies on the SMEs, as well as company websites.

Half-structured interviews were done in August and September 2012. Each interview took between one and a half and 2 hours. Interviews covered 5 broad topics: (i) history before the foreign market entry, milestones of internationalisation, (ii) current export markets and their main characteristics, (iii) the role of imports (suppliers) in the exports and the role of buyers, cooperation with them; (iv) the role of learning and upgrading the process of knowledge in exporting and internationalisation; (v) the role of the founders and other owners and of top level managers in internationalisation.

The Sample

Table 1 shows the main characteristics of the 10 SMEs. For each of them, a detailed case study was completed and published in Hungarian. (The authors of cases are listed in column 14 of Table 4.1.) The published case studies discuss the internationalisation stories based on the interviews and publicly available sources, and the stories are also supplemented by key financial figures. The authors of the case studies took part in refining and finalizing the 2011 pilot project interview outline and deriving the propositions for and of the CSFs through the case studies in three workshops.

The 1st column of Table 5.1. gives the code for the SMEs, which is the initial letter of their names. The 2nd column provides the product scope of each case. It shows that there were altogether 2 companies from agriculture (A and P) and 3 from broadly defined pharmaceutical and health care (L, M and S), while half of them belonged to manufacturing (B, C, E, G and H) industries. From Columns 3 and 4 it can be said that 8 of them were internationally new ventures (INVs) since they started their exports in the year of their foundations. Columns 5 and 6 provide orientation on their value of revenues in HUF[3]. These figures suggest that each case belongs to the SME category based on revenues in the European Union, and this is also true for their size based on the number of employees (Column 10). By the number of employees, 3 companies belong to small (E, L and P) and the other to medium-sized enterprises. Column 7 shows the export intensity of each firm. Eight enterprises have a higher export intensity than 50%, signalling heavy reliance on international markets. Only E and H have an export intensity below 50%. Columns 8 and 9 are for analysing the financial trends for CSFs and are discussed in the next section. Column 11 gives an overview on the value added[4] per employee. The value is the highest for an R&D oriented pharmaceutical company (case L), and it is surprisingly high for an agricultural SME (case A). The two agriculture firms signal extremes, as other company (P) has the lowest figure in the column. Columns 12 and 13 are on internationalisation by geography. The number of export countries in Column 12 shows a high dispersion, from 7 countries to 84. The three main export markets, in Column 13, signal the focus of the SMEs and show more concentration. Five of them focus on EU member states (C, E, H, L, P), three on developed countries (B, G, M) and only two of them have key markets in non-developed countries (A and S).

[3] According to the Hungarian National Bank the yearly average exchange rate of HUF was 279.21 for Euro and 200.94 for USD in 2011.

[4] This was calculated to be a proxy for the contribution of each enterprise to the national economic growth rate. The data were calculated using data from financial reports and interview sources for each SME. The values of operating profit, depreciation and wages with contributions were added and then divided by the number of the employees for the year of 2011.

The Map of Critical Success Factors

Critical Success Factors (CSFs) are taken from the field of strategic management. They are resources or competencies which are of key importance in management to meet goals of an organization or a project. They require special attention and/or measurement from managers in charge (Daniel 1961; Rockart & Bullen 1981). Internationalisation is considered a special strategic management process. Based on the internationalisation literature and the findings of the pilot project, 6 key CSFs were proposed, which were further decomposed by using a mind map approach (Buzan & Buzan, 1993). (See Figure 5.2.)

The 1st CSF was identified as a question: what export excellence is, and how it is pursued and/or measured. Three options were set: the growth rate, performance indicators and sustainability.

The 2nd CSF was the role of founder(s) and the management. Four elements were proposed. The change of generation refers to the fact that founders of the SMEs started their businesses in the early 1990s and their companies may face to the challenge of retirement of founders and this situation may endanger their achievements so far. The aspiration of founder(s) refers to the widely shared proposition that it is one key element in SMEs achievements. The managerial capabilities reflect the findings that the SMEs are not one-person shows, and professional managers and managerial capabilities are needed. The last element is about the division of labour between the group of founders and managers and its effectiveness.

The 3rd CSF is the drivers of internationalisation, broken down into three elements. The first one relates to the size of the Hungarian markets, which correlates with the economies of scale in many industries. The second one reflects the network type of internationalisation pattern and focuses on the relationships with the buyers. The last one is a special chance or opportunity that was taken.

The 4th CSF is about the ways and modes of foreign market entry. Its elements include the foreign entry modes (e.g. direct export, international joint venture), the number of export markets and their diversities (EU member, developed or less developed countries), and finally the branding policy in international markets. This latter one reflects that most SMEs find that it is time and resource intensive to market their private brands abroad and they sell their products through foreign private branding channels.

The 5th CSF is the strategic priorities, which goes back to Ansoff's (1965) strategic direction choices. Its elements are product development, market development and strategic partnerships, technology development, and innovation in other fields (e.g. general administration).

The 6th is about the critical milestones. It is method specific and emerged from the fact that most case studies highlight some turning points in internationalisation.

Note: The shaded boxes signal the most dominant CSFs.

Figure 5.2. The critical success factors and findings
Source: Könczöl, 2013.

5.4. THE CRITICAL SUCCESS FACTORS

Based on the analyses of the 6 key CFSs in each of the 10 case studies, the following factors were defined as dominant ones.

The most frequently mentioned and underlined CSF was understanding, defining and accepting the drivers of internationalisation (3rd CSF). The dominant element of this factor group was the size of the Hungarian market as a barrier to growth and to achieve economies of scale. The space of time between understanding that critical factor and the action of the companies differed – two companies were "born to export" at the very beginning, the others took the necessary steps gradually – but all of the 10 successful companies understood and followed these drivers.

We found that most of the reviewed companies have gone through an intense growth period. The rate of the growth was different among the companies, but it was relevant in sales volume, in export turnover and in investments as well. For some companies, growth factors were attached to declining profitability (1st CFS).

The role of one or two key persons was crucial to success in relation to the most studied companies. There was at least one "dreamer" or "visionary" who could foresee the relevant drivers and was in an influential position to support the necessary actions. In some cases, that person was the founder or a new owner and in other cases a top manager. How can these persons be described? They have a strong

commitment towards the company, a strategic approach, and they are open to changes and capable of managing change (2nd CSF).

Besides the role of the key persons, we could also identify critical organisational capabilities within these successful companies. The most frequently referred to capabilities were related to innovation, experiential learning, ability to build and maintain external relationships and capability to develop their organisational culture.

An important and strong success factor is R&D and innovation, which includes permanent efforts for technology development and innovative reactions to customer needs (5th CSF).

It is also worth mentioning that some factors that we had assumed to be major CSFs were eventually proven to be not so dominant. An example is the legal form of entering foreign markets, or a strong brand (the 1st, 4th and 6th CSFs).

5.5. POLICY IMPLICATIONS

The EC reports (2007 and 2008) discuss recommendations and best practices for supporting the internationalisation of SMEs in EU member states. EC (2007) provides a European overview on internationalisation and EC (2008) picks out the best practices. It is stated that for the social embeddedness of SMEs, national policies should be matched with the national conditions and context. In drawing up policy implications, the EC papers are taken as reference. There is financial research in progress and this field will not be covered in detail here.

The internationalisation level of SMEs in Europe is low and the lack of awareness of the founders is considered as a key impediment for that (EC 2007). Out of the 10 cases, 8 were INVs. This purports that internationalisation intentions in starting up businesses are a promising start. General and professional dialogue on globalization and internationalisation may be a first inducement in this regard.

Supporting managerial competency and capacity building to develop management skills may be the second broad field. Learning-by-doing practices were outstanding with the 10 SMEs and this is suggested by the theories of Johanson & Vahlne (1977 and 2009), as well. Appropriate institutional network and financial incentives may spur the learning intentions and enlarge the necessary knowledge base within SMEs. Skill development may require theoretical knowledge as well.

There was evidence from the 10 SMEs' cases that besides their own strategy and development efforts, financing sources for their development plans were also crucial elements of their success. As the new financial planning period of EU will start in 2014 and its preparation is still an on-going process at present, this might be the right time to draw attention to the importance of preferential forms and means of financing export-oriented SMEs.

5.6. CONCLUSIONS

This paper is based on a qualitative study to map the CSFs of 10 export-intensive Hungarian SMEs. It was assumed that deriving CSFs could give insights into what skills

for their development need assistance. The paper linked two strands of research findings: the competitiveness theme, with its inquiry on what fields are worthy of assistance and support to enhance the internationalising of SMEs, and the internationalisation of SMEs. Several years of high export intensity were used as a proxy for internationalisation. The ten sample SMEs are in a wide variety of industries. Interviews and case studies were used to gain insights on their CSFs, and these factors are regarded as indicating fields where both SMEs and economic policies may contribute to the competitiveness.

Eight propositions were set to channel the discussion of the research findings. Propositions 2 and 3 were for the qualitative research method selection. Propositions 5-8 were on the fields in which skills development is required. Proposition 1 and 4 were set to channel the policy implications. The propositions are diverse in their theoretical, academic and professional backgrounds. This is one of the limitations of the eclectic academic backgrounds of competitiveness, as well.

The other limitation comes from the qualitative method. The empirical base includes a one-country sample of 10 cases. This poses restrictions on the generalization of the findings. There is evidence, however, that the SMEs – founded in the 1990s or later – show the characteristics of the network-based internationalisation pattern of Johanson & Vahlne (2009).

The CSFs are applied in strategy literature and consultancy. Their purpose is to orient thinking on the strategic development of organizations. The role of the founder(s) and the top-level managers supports the research evidence on their role in both SMEs development and internationalisation. This finding has a consequence for policy. The skills and competence development may be a key area in policy initiatives and measures to assist and support SMEs. This is in line with the messages of the EC (2007 and 2008) reports.

In a slow growth period, traditional economic policies such as fiscal and monetary policies blur the sophisticated policies and measures to enhance the economic performance of enterprises. Further research is needed on how this approach can be altered to make internationalisation one engine of competitiveness.

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6

Pressure from Consumers as a Determinant of Innovative Activity of Enterprises from Countries of the Visegrad Group

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Summary

Among Visegrad countries the dominating innovations have a demand nature. Strong or very strong pressure from customers (who purchase goods), to introduce new products or to reduce production costs stimulates innovative activity of the surveyed companies. This study illustrates the impact of demand on innovation activity of enterprises of the Visegrad Group. Research was carried out on a large group of enterprises (1,349) in the four Visegrad countries, which is rather rare because of the difficulty in obtaining research material. The aim of this article is to show how variation in the intensity of the pressure from customers to introduce new products and to reduce production costs affects the individual attributes of innovation activity in enterprises of the

Visegrad Group. It was found that without strong or very strong pressure from customers, the company will not commence innovative activity.

Keywords: innovative activity, pressure from customers, Visegrad countries
JEL classifications: O31, O32

6.1. INTRODUCTION

Among Visegrad countries the dominating innovations have a demand nature. Strong or very strong pressure from customers to introduce new products or to reduce production costs stimulates innovative activity of the surveyed companies. Without strong or very strong pressure from customers, the company will not commence innovative activity in any of the studied aspects. The aim of this article is to show how variation in the intensity of the pressure from customers to introduce new products and to reduce production costs affects the individual attributes of innovation activity in enterprises of the Visegrad Group.

Empirical data was obtained in the course of four rounds of business environment studies, conducted in 2008-2009 at the request of the European Bank for Reconstruction and Development (EBRD) and the World Bank. Within the Visegrad Group countries 1349 enterprises were examined. The analysis has a static nature and relates to the period 2006-2008, which is consistent with the methodological standards described in the Oslo Manual. In order to accept or reject the research hypothesis, the independent variables were based on: a) the pressure from customers to market new products, b) pressure from customers to reduce production costs. Factors used as the dependent variable were the occurrence in the company of: a) investing activities, b) R&D, c) the implementation of new products, d) improvement of previously manufactured products, or e) obtaining international certification of quality for manufactured products.

The results of the research are in the field of interest of those responsible for the implementation of innovation policy at every level (national, regional and enterprise scale). The study covers four countries: the Czech Republic, Poland, Slovakia and Hungary. The study illustrates the impact of demand on innovation activity of enterprises of the Visegrad Group. Research had been carried out on a large group of enterprises in four countries of V4, which is not too often done because of the difficulty in obtaining research material.

6.2. LITERATURE REVIEW

Reviewing the literature, we can encounter many criteria for innovation distribution. One of the many criteria is the division of innovation due to the causes evoking it. Therefore, innovations can be divided into supply and demand (Janasz & Kozioł, 2007).

Supply innovations in literature are also innovations pushed by technologies. This means that knowledge connected with basic sciences, applied research, design and production stimulate the innovative activity of enterprises (Dosi, 1982; Griliches, 1995; Nelson, 1982). The collection in one place of considerable resources of knowledge and their systematic analysis drives the practical use of the laws and rules known by the enterprises in various areas of science. However, we should note that the very access to the accumulated knowledge, regardless whether it is located inside the enterprise or outside, only constitutes a relevant condition, but is insufficient in itself to conduct the innovative activity. To implement the innovation additionally we need an idea, meaning the idea of how to use the acquired knowledge in practice for the needs of the enterprise.

The demand innovations in literature are also called “innovations drawn by demand". This name results from the fact that these innovations have an external character and are created from the innovation of the buyers (Von Hippel, 1988). They consist of the implementation of innovative processes that constitute the response to the consumer demands. Innovative activity in this sense refers to the flexible response to the changing requirements of consumers (Baran et al., 2012). In a situation of increased demand, enterprises invest more and pursue a more active innovative policy due to the requirements posed by the market (Acemoglu & Linn, 2004; Newell et al., 1999; Popp, 2002; Schmookler, 1966). The satisfaction of more sophisticated requirements favours the raising of the profitability of the enterprises. However, we should remember that demand and consumers vary and they can influence the innovative activity of enterprises in different ways (Adner & Levinthal, 2001).

The issue of cooperation between an enterprise and its customers has become an important element of development of many organisations. This issue has also become an important topic of numerous publications. For example, in the years 2004-2006 there appeared a number of publications describing the influence of customers’ knowledge on the possibility to implement new products for the market (Elofson & Robinson, 2007; Franke & Piller, 2004; Franke et al., 2006;). The issue of the impact of the information obtained by the customers and suppliers on the innovative activity of the enterprises was the subject of interest of Prahalad & Ramaswamy (2000) and Skaggs & Youndt (2004). There are also many studies which illustrate the influence of the customers on the innovative activity of the enterprises in the sector grasp, e.g. in the sector of the sports footwear manufacturers (Fuller et al., 2007), extreme sports equipment (Hienerth, 2006), medical equipment (Lettl et al., 2006), video games (Jeppsen & Molin, 2003) and toys (Seybold, 2006).

The issue of the influence of customers on the innovative activity of the enterprise was also addressed in the deliberations regarding innovations by Chesbrough and co-authors (Chesbrough, 2003; 2006; Chesbrough & Crowther, 2007), Lichtenthaler (2008) and Prandelli et al., (2006). In their discussions, these authors pointed out that in the process of the formulation of the innovations the enterprise cannot conduct the whole innovative activity independently, without cooperation with other units

and consumers. Cooperation between manufacturers or suppliers and customers contributes to the creation of new products and services. Thus understood, cooperation constitutes one of the main areas of the interests of open innovations, which were defined as "the systematic search inside and outside the enterprise, storing and using the knowledge in order to implement the innovative process" (Lichtenthaler, 2011, p. 156). Summing up, we can state that open innovations draw special attention to the diffusion of knowledge "from" and "to" the enterprise (Chesbrough & Crowther, 2006).

6.3. MATERIAL AND METHODS

Empirical data were obtained during the fourth round of business studies, conducted in the years 2008-2009 at the request of the European Bank for Reconstruction and Development (EBOR) and the World Bank. In the area of the countries of the Visegrad Group 1,349 enterprises were examined. Their structure in the division into particular countries is presented in Table 6.1.

Table 6.1. Characteristics of the surveyed enterprises from the countries of the Visegrad Group, 2009.

No.	Country	Number of enterprises			
		Total	Processing	Dealing with retail trade	Other services
1	Czech Republic	250	94	90	66
2	Poland	533	172	175	186
3	Slovakia	275	86	97	92
4	Hungary	291	103	105	83
Total		1349	455	467	427

Source: Own study based on data obtained during the BEEPS 2009 study[1]

The study included trade, service and manufacturing enterprises that employ at least 5 employees full time. All types of offices, including the army, police, health service and education, were excluded. The study involved enterprises belonging to the following sectors, according to the classification ISIC Rev 3.1:

1. group D – Manufacturing,
2. group F – Construction,
3. group G and H – Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods ; Hotels and restaurants
4. group I – Transport, storage and communications.

The study did not include enterprises belonging to Groups J (financial intermediation) or K real estate, renting and business activities) with the exception of sub-sector 72, which includes IT activities. Moreover, the study did not include enterprises dealing with agricultural or mining activities[2].

[1] Business Environment and Enterprise Performance Survey

[2] A detailed description of the selection of companies for research has been published on the website: http://www.enterprisesurveys.org/Methodology.

The conducted analysis is static and concerns the years 2006-2008, which is consistent with the methodological standards described in the Oslo Manual (OECD, Oslo Manual). In order to accept or reject the basic research hypotheses, the explanatory variables are: a) pressure from the customers to introduce new products to production and b) pressure from the customers to lower the costs of production. In turn, the explained variables include the occurrence in the enterprise of: a) investment activity, b) R&D activity, c) implementation of new products, d) improvement of previously manufactured products, e) obtaining international quality certification for the manufactured products.

The above-mentioned variables are reflected in the questions placed in the questionnaire constructed for the EBOR and the World Bank. These questions were closed, so there was the possibility to select the best answer from a list of potential possibilities[3].

Dependent and independent variables adopted in the study were dichotomous, which means that they took on values equal to 0 or 1. For variables describing the innovative activity this means that either the given type of innovative activity of the enterprise occurred (in this case the variable took on the value of 1) or not (the value was 0). Adoption of the dichotomous values for the dependent and independent variables makes it impossible to use the most popular methods of modelling, which include, among others, the multiple regression.

For the purposes of this study calculations were conducted using the Statistica software. In total, within all countries from the Visegrad Group there 160 models were made, from which 25 were statistically significant and which were presented and discussed in the further stages of the study.

Due to the use of the models taking into account only one factor to interpret the examined dependencies, models are presented in the structural form. The key meaning was possessed by the sign standing by the parameter. A positive sign indicates that the probability of the occurrence of the given type of the innovative activity in the enterprise vulnerable to the pressure of the specified intensity from the customers was higher than the probability of the occurrence of the given type of the innovative activity in the enterprises vulnerable to the pressure from the party or customer of different intensity than in the first case. On the other hand, a negative sign means that the probability of the occurrence of the given type of innovative activity in the enterprises vulnerable to the pressure of the certain intensity from a competitor or customer was lower than the probability of the occurrence of the given type of the innovative activity in the enterprises vulnerable to the pressure from the party or the customer of different intensity than in the first case.

For the purposes of the article the following research hypotheses were formed:

Hypotheses 1: In the area of Visegrad countries innovations remain under the strong influence of customer behaviour. Strong or very strong pressure on their side

[3] Ibidem.

to introduce new products to manufacturing by the enterprises stimulates the innovative activity of enterprises from Visegrad countries;

Hypothesis 2: The lack of pressure or minimal pressure from the customers to introduce new products to manufacturing by the enterprises does not have has a activating effect on the innovative activity of these enterprises;

Hypothesis 3: The lack of pressure or minimal pressure from the customers to lower the costs of production by the enterprise has a detrimental effect on the innovative activity of the enterprises from the countries of the Visegrad Group;

Hypothesis 4: Strong or very strong pressure from the customers to lower the costs of production by the enterprise has a detrimental effect on the innovative activity of the enterprises from the countries of the Visegrad Group.

6.4. RESEARCH RESULTS

As a result of the conducted calculations, we managed to obtain 14 statistically important models, which illustrate the effect of pressure from the customers to introduce new products to manufacturing in enterprises from countries of the Visegrad Group. The obtained models are presented in Tables 6.2-4. below. The data for the Czech Republic are not included, because all models were statistically insignificant, so not included in the tables.

Table 6.2. The influence of pressure from the customers for the implementation of new products to manufacture on the innovative activity of the enterprises in Hungary, 2009

Innovation attribute	**pressure to introduce new products to manufacturing**											
	none			**minimal**			**quite strong**			**very strong**		
	s	**p_1**	**p_2**	**s**	**p_1**	**p_2**	**s**	**p_1**	**p_2**	**s**	**p_1**	**p_2**
	T	**χ**	**p**	**T**	**χ**	**p**	**T**	**χ**	**p**	**T**	**χ**	**p**
Hungary												
introduction of a new product to manufacturing	-			-0.55x+0.17			-			-		
				0.18	0.35	0.57						
				-2.98	9.08	0.00						
improvement of previously manufactured products	-			-0.40x+0.66			-			-		
				0.19	0.60	0.74						
				-2.17	4.66	0.03						
Investment activity	-0.49x-0,15			-0.39x+0.30			-			-		
	0.21	0.21	0.21	0.18	0.47	0.62						
	-2.29	-2.29	-2.29	-2.12	4.50	0.03						

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,
P – probability of the model's irrelevance
P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

Table 6.3. The influence of pressure from the customers for the implementation of new products to manufacture on the innovative activity of the enterprises in Slovakia, 2009

Innovation attribute	pressure to introduce new products to manufacturing											
	none			minimal			quite strong			very strong		
	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2
	T	χ	p	T	χ	p	T	χ	p	T	χ	p
Slovakia												
implementation of international quality certification	-0.51x-0.18			-0.50x-0.17			+0.33x-0.39			-		
	0.23	0.24	0.43	0.21	0.25	0.43	0.16	0.48	0.35			
	-2.23	5.17	0.02	-2.35	5.73	0.02	2.11	4.45	0.03			
introduction of a new product to manufacturing	-0.59+0.12			-0.42x+0.11			-			+0.62x-0.12		
	0.22	0.32	0.55	0.20	0.38	0.54				0.18	0.69	0.45
	-2.70	7.51	0.01	-2.10	4.45	0.03				3.46	12.32	0.00
improvement of previously manufactured products	-			-0.47x+0.58			-			-		
				0.20	0.54	0.71						
				-2.34	5.46	0.02						

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,
P – probability of the model's irrelevance
P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

Table 6.4. The influence of pressure from the customers to the implementation of new products to manufacturing on the innovative activity of the enterprises in Poland, 2009

Innovation attribute	pressure to introduce new products to manufacturing											
	none			minimal			quite strong			very strong		
	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2
	T	χ	p	T	χ	p	T	χ	p	T	χ	p
Poland												
introduction of a new product to manufacturing	-			-			-			+0.27x+0.13		
										0.12	0.66	0.55
										2.26	5.13	0.02
improvement of previously manufactured products	-			-0.83x+0.22			-			-		
				0.41	0.27	0.59						
				-2.03	4.39	0.04						
Investment activity	-			-1.00x+0.39			-			-		
				0.40	0.27	0.65						
				-2.44	6.47	0.01						

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,
P – probability of the model's irrelevance

P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

From the models presented in Tables 6.2-4. it was found that the variables of no or minimal pressure from the customers for the introduction of new products had a detrimental effect on almost all examined attributes of the innovative activity, meaning on investment activity, implementation of international quality certification, improvement of previously produced products and introduction of new products to manufacturing. In the case of no or minimal pressure from customers for the introduction of new products to manufacturing, the probability of the introduction of a new product to manufacturing ranged from 0.27 to 0.38 depending on the intensity of pressure and country in the area in which the enterprises functioned. This probability was 42% to 118% lower than the probability of introducing a new product in the enterprises in which there was quite strong or very strong pressure from the customers for the introduction of new products. The confirmation of the above dependency is provided by the models illustrating the influence of very strong pressure for the introduction of a new product in Poland and Slovakia. From these models it was found that the probability of the introduction of a new product in the enterprises in situations where there was very strong pressure from the customers to introduce new products was in the range of 0.66 to 0.69 and was 20% to 53% higher than the probability of introducing new products in enterprises on which there was pressure of less intensity. Minimal pressure from the customers for the introduction of new products to manufacturing has a detrimental effect also on the improvement of previously manufactured products. This probability was from 0.54 to 0.60, depending on the country where the operating enterprise is located, which is 23 to 31% lower than this probability when there was higher pressure.

The lack of minimal pressure from the customers to introduce new products also has a detrimental effect on the investment activity and implementation of the international quality certification. In the first case, the probability of the investment – depending on the intensity of the pressure – was from 0.27 to 0.56 and was 32 to 141% lower than the probability of conducting investments in the enterprises on which pressure of a higher intensity than no or minimal pressure was exerted.

On the other hand, in the case of the implementation of the international quality certification, the probability of their implementation in the enterprises, with pressure from the customers to introduce new products to manufacturing was 0.24. A similar value was also achieved for the probability of the implementation of international quality certification in the enterprises where there was minimal pressure from the customers to introduce new products to manufacturing. In both cases, the discussed probability was from 72 to 79% lower than the probability of the implementation of international quality certification in the enterprises on which there was pressure from the customers concerning the introduction of new products to manufacturing above no or minimal pressure, while the occurrence of strong pressure from the customers

to introduce new products to manufacturing stimulated the introduction of the international certification. The probability of the implementation of the international certification in the enterprises whre strong pressure was exerted by the customers to introduce new products was 0.48. This was 37% higher than the probability to introduce the international quality certification in the enterprises on which there was lower pressure from the customers to introduce new products to manufacturing.

6.5. THE INFLUENCE OF PRESSURE ON LOWERING THE PRODUCTION COSTS FROM THE CONSUMERS ON THE INNOVATIVE ACTIVITY OF THE ENTERPRISES FROM THE VISEGRAD COUNTRIES

Examining the influence of pressure from customers on lowering the production costs as a result of the conducted calculations, we managed to obtain 11 statistically important models, which are presented in Tables 6.5-7. below.

Table 6.5. The influence of pressure from customers for the lowering of production costs on the innovative activity of enterprises in Hungary, 2009

Attribute of innovation	Pressure to lower the production costs											
	Like in the others			minimal			quite strong			very strong		
	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2
	T	χ	p	T	χ	p	T	χ	p	T	χ	p
Hungary												
R&D activity	-0.39x+0.75			-			-			-		
	0.19	0.23	0.36									
	-2.06	4.20	0.04									
investment activity	-			-0.42x+0.30			-			-		
				0.19	0.45	0.62						
				-2.21	4.89	0.03						

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,
P – probability of the model's irrelevance
P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

Table 6.6. The influence of pressure of the customers on the lowering of the production costs on the innovative activity of enterprises in Slovakia, 2009

Attribute of innovation	Pressure to lower the production costs											
	Like in the others			minimal			quite strong			very strong		
	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2
	T	χ	p	T	χ	p	T	χ	p	T	χ	p
Slovakia												
introduction of international quality certification	-0.62x-0.15			-			+0.34x-0.37			-		
	0.21	0.22	0.44				0.16	0.48	0.35			
	-2.89	8.80	0.00				2.10	4.43	0.04			
introduction of a new product to manufacturing	-0.54x+0.13			-			-			-		
	0.20	0.34	0.55									
	-2.69	7.39	0.01									
improving previously manufactured products	-			-			+0.34x-0.37			-		
							0.17	0.76	0.64			
							2.01	4.09	0.04			
investment activity	-			-0.55x+0.36			-			-		
				0.21	0.42	0.64						
				-2.68	7.24	0.01						

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,
P – probability of the model's irrelevance
P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

Table 6.7. The influence of pressure of the customers on the lowering of the production costs on the innovative activity of enterprises in Poland, 2009

Attribute of innovation	Pressure to lower the production costs											
	Like in the others			minimal			quite strong			very strong		
	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2	s	p_1	p_2
	T	χ	p	T	χ	p	T	χ	p	T	χ	p
Poland												
introduction of international quality certification	-0.40x-0.49			-			-			-		
	0.15	0.19	0.31									
	-2.67	7.40	0.01									
introduction of a new product to manufacturing	-0.36x+0.28			-			-			-		
	0.13	0.50	0.61									
	-2.71	7.39	0.01									
investment activity	-			-0.92x+0.39			-			+0.28x+0.29		
				0.42	0.30	0.65				0.12	0.72	0.61
				-2.18	5.02	0.02				2.26	5.18	0.02

where:
S – standard error,
T – t-student statistics for the parameter,
χ^2 – Chi-square compliance test,

P – probability of the model's irrelevance
P_1 – probability of the occurrence of the given phenomena in the examined group of enterprises,
P_2 – probability of the occurrence of the given phenomena in other groups of enterprises,
Source: Own study based on BEEPS data

Based on the presented models in Tables 6.5-7., it can be stated that the lack of even minimal pressure from the customers to lower the production costs had a detrimental effect on R&D activity, investment activity, implementation of the international quality certification and the introduction of new products to manufacturing. The probability to conduct the investment in the group of enterprises when the customers exerted minimal pressure connected with the lowering of the production costs ranged from 0.30 to 0.45, 38% to 117% lower than the probability of conducting the investment in the group of enterprises experiencing pressure of intensity different than minimal, meaning quite strong or very strong pressure or the complete lack of pressure. In turn, the probability of conducting the investment in the group of enterprises on which there was very strong pressure from the customers on lowering the production costs was 0.72, which was 18% higher than the probability of conducting the investment in the group of enterprises on which there was pressure from customers concerning the lowering of production costs of intensity other than very strong.

Similar conclusions can be drawn from the model, which illustrates the dependency between the lack of pressure from the customers to lower the production costs and the R&D activity. The probability of the occurrence of the R&D activity in enterprises where there was no pressure from the customers to lower the production costs was 0.23, 56% lower than the probability of the occurrence of the R&D activity in the enterprises on which there was at least minimal pressure from the customers to lower the production costs.

Also the probability of introducing international quality certification in the enterprises from the three investigated countries (fourth case – Czech Republic was not included because of statistically non significant models) of the Visegrad Group was significantly lower than in the group of enterprises where there was pressure from the customers to lower the production costs. The probability of introducing these certification by the enterprises was examined by country, in ranging from 0.19 in Poland to 0.22 in Slovakia. This probability was even two times lower than the probability of introducing the certification in the enterprises in which there was stronger pressure from the customers concerning the lowering of the production costs. The confirmation of the above observation is the model stimulating the influence of quite strong pressure from the customers on the lowering of the production costs on the probability of the international quality certification. This probability was 0.48 and it was 37% higher than the probability of introducing international quality certification in the enterprises where pressure from the customers to lower the production costs of intensity was different than quite strong.

The same dependency also exists in case of the introduction of a new product to manufacturing. Also in this case the probability to introduce new products to

manufacturing in enterprises experiencing no pressure from customers was lower than the probability of introducing a new product in the enterprises on which there was at least minimal pressure from the customers to lower the production costs. This probability ranged from 0.34 to 0.50 and was 22% to 62% lower than the probability of introducing a new product in the enterprises, on which there was at least minimal pressure from customers to lower the production costs.

The probability of improving previously manufactured products in enterprises where there was quite strong pressure from the customers to lower the production costs was higher than the probability of improving the previously manufactured products in the group of enterprises where customer pressure to lower the production costs of intensity differed from quite strong pressure. This probability was 0.76 and was 19% lower than the probability of improving the previously manufactured products in enterprises under pressure from customers to lower production costs that had an intensity different than quite strong.

6.6. CONCLUSIONS

Analysing the probit models presented in the third and fourth part, the validity of the accepted hypothesis can be confirmed: in the area of countries of the Visegrad Group innovations are strongly stimulated by customers. The obtained models confirm that strong or very strong pressure from customers to introduce new products to manufacturing by the enterprises stimulates the implementation of the international certification and the introduction of new products to manufacturing.

The findings also confirm the second hypothesis, according to which the probability of the occurrence of the innovative activity in enterprises under no or only minimal pressure from the customers for the introduction of new products to manufacturing was lower than the probability of the occurrence of the innovative activity in enterprises where there was quite strong or strong pressure to introduce new products to manufacturing. The obtained models confirm the detrimental influence of the lack of pressure or of minimal pressure from customers to introduce new products to manufacturing on the implementation of the international quality certification, investment activity, improvement of the previously manufactured products and introduction of new products to manufacturing.

The obtained models mean that if there is demand for new products from customers, then the enterprises from the countries of the Visegrad Group adapt to this demand. However, in the situation of the lack of impulse from the customers or competitors, the enterprises refrain from innovative activity, not seeing the need for it, or not having too many free resources available to them. When pressure for innovation is lacking, resources which would be devoted to innovative activity are directed to other areas of the activity of the enterprise.

Also the third and fourth hypotheses were confirmed in the obtained probit models. No or minimal pressure from the customers to lower the production costs by the enterprise has a detrimental effect on R&D activity, investment activity,

implementation of international quality certification and introduction of new products to manufacturing. While the strong or very strong pressure from the customers to lower the production costs by the enterprise has a detrimental effect on the investment activity, introduction of the international quality certification and improvement of previously manufactured products.

In conclusion, probit models concerning Visegrad countries are dominated by models with no or minimal pressure from customers. This means that the surveyed enterprises do not often experience pressure from customers concerning either the introduction of new products into the production phase or lowering production costs. On the other side, if pressure from customers occurs, the companies adapt to it.

This particular article illustrates the importance of customers in the innovative activity of enterprises. The arguments presented in the article, which have also been verified by the empirical data, confirm the validity of the conclusions, concerning open innovation and the impact of customers on innovative activities of companies. The conclusions presented in this paper emphasise the key role of pressure from customers in the innovative activity of enterprises. Note that the literature distinguishes between customer impact on innovations drawn by demand and drawn by supply factors. The conclusions in this article concern only innovation of demand nature; the impact of customer demand on supply-side innovations requires separate research and empirical verification.

A unique contribution of the article to the scientific development and literature of the subject is the use of probit modelling for the purposes of determining the impact of various intensities of pressure from customers to introduce new products and reduce production costs on different aspects of innovative activity of enterprises of the Visegrad countries.

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7

Barriers and Risk Factors in the Development of Micro and Small Businesses in Poland

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Summary

The presented paper is an attempt to examine internal barriers to the development of micro and small businesses and associated risk factors. It also presents the determinants and significance of economic consulting as a development fostering factor which eliminates barriers and risk in business activity of micro and small businesses. In order to achieve the assumed goal, foreign and domestic literature study as well as the criticism of literature on the analysed research strand was used. Discrepancies between companies of different scale are also present in relation to the process of their growth and development. This process runs a different course in a small business than in large entities (Machaczka, 1998). As the company grows, it faces new problems and challenges, new barriers and risk factors at each growth phase. New businesses, however, that undertake no pro-growth – hence risky – activities have little chance of survival. Based on literature studies and few empirical analyzes on the functioning of Polish sector of micro and small businesses we can draw conclusions that increase the ability of firms to absorb economic consulting may be a factor supporting the development of business.

Keywords: sector of micro and small businesses, barriers to development, risk in business activity, economic consulting.
JEL codes: D21, D22, D81, L21, L26

7.1. INTRODUCTION

Small business entities are characterised by a number of unique market, financial, location, organisational and technological features that determine their operational and strategic behaviour, which differs from that of large businesses. These features mean that a small company is not only a reduced/re-scaled version of a large company (Storey, 1994). Discrepancies between different scale businesses are also present in relation to their development process. As opposed to large enterprises, most small businesses are in the initial (existence) and survival phases, and only some of these companies are successful and become larger, more stable or expansive businesses. As the company grows, it faces new problems and challenges, new barriers and risk factors (Wach, 2008a). The literature concentrates for the most part either on barriers or on risks in the functioning of companies in the SME sector. For many years, reports or other forms of publication have been prepared on the functioning of SMEs (including micro and small businesses) in which the categories of barriers and risks are discussed separately. Among the recommended ways to reduce barriers and risks for micro and small businesses, consulting is increasingly mentioned as an external form of support for their development. It helps to cope with emerging barriers or minimise risks by means of financial, infrastructural and technological support, training services, economic consulting, etc. The last form of support is considered to be an important factor in improving the management of micro and small companies, particularly in the field of reduction of development barriers and risk management. Thus, it is important to look at the role of external consulting as a source of reducing development barriers and decreasing risk in the pro-development orientation of micro and small businesses.

7.2. OBJECTIVES AND SCOPE

Risk and its consequences, as well as barriers to knowledge and competence, have an impact on many areas of business and may also inhibit the development of the company. The basis for managing the development of a small business is the realisation by the entrepreneur of the existence of certain risks and limitations in the area of resources and competences, as well as the need to analyse them and take appropriate responsive actions. The use of consulting services by micro and small businesses can be an important stimulus that eliminates the aforementioned barriers.

The aim of this paper is to present systems of internal barriers and risk factors in micro and small businesses. It also seeks to identify the determinants and estimate the importance of economic consulting as a pro-development factor reducing barriers and risks, as well as affecting the relationship between barriers and risk in business operations of small companies. Figure 7.1. presents the correlation model. This chapter puts forward three proposals:

– P_1 – barriers to the development of small businesses increase the risk of failure of small companies; weakening of the barriers has a positive effect on reducing the

risk of business operations conducted by small companies and this effect increases with the scale of enterprises,

- P_2 – economic consulting has a positive impact on reducing barriers to the development of small businesses and this influence increases with the scale of companies,
- P_3 – economic consulting has a moderating impact on the relationship between development barriers and the risk of failure of small businesses.

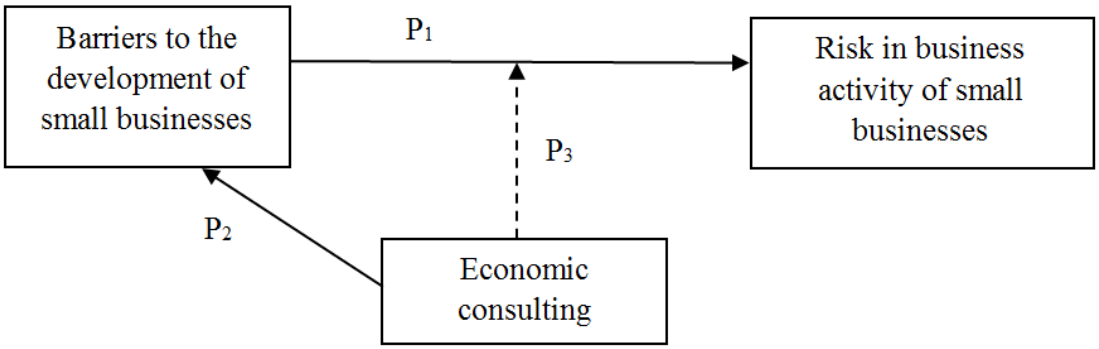

Figure 7.1. The proposed correlation model
Source: The authors' compilation

The paper reviews the foreign and domestic literature on the complex issue of barriers to the development of small businesses and the associated risk of doing business. Both literature studies and empirical analyses on the functioning of Polish sector of micro and small businesses were used in the description of the determinants of economic consulting and its importance as a pro-development factor reducing barriers and risks.

7.3. LITERATURE REVIEW: BARRIERS AND RISK FACTORS IN THE DEVELOPMENT OF MICRO AND SMALL BUSINESSES

The Specificity of Micro and Small Businesses and Barriers to their Development

The sector of micro and small businesses is not homogeneous; on the contrary, it is characterised by acute heterogeneity. It is very diverse in terms of motivation and objectives as well as contacts with the environment, in terms of the form and nature of ownership, geographical location and scope of activity, the development stage of companies, their organisational and legal form, etc. These elements have a significant impact on the choice of business activity, its objectives and strategies, and consequently the success or failure of the company's growth. On this basis, the literature recognises various categories of small businesses (see Kirchhoff, 1994; Piasecki, 1998).

The diversity of development behaviour of micro and small businesses is the result of many determinants and factors, often characterised by complex relationships and of different significance for the operation of various companies. There is no comprehensive theoretical interpretation of the reasons for the growth and development of companies. While it is possible to identify key growth factors for different types of businesses, it is extremely difficult to formulate a coherent development model of companies predicting their ability to grow and develop (Smallbone et al., 1995; Wasilczuk, 2005). The remarks above relate primarily to the growth determinants of new and small businessesThe relatively small size is often related to the relationship between the company and the entrepreneur. Micro and small businesses are entities in which the direct impact of the owner can still be felt. In addition, they have a number of specific market, financial and organisational characteristics that determine their operational and strategic behaviour, which is different from the behaviour of large companies. The growth process of these companies is characterised by high irregularity, volatility, sensitivity to instability of conditions and circumstances, as well as reversibility. For these reasons, frequent changes can be observed in the path of growth of new businesses that enter the phase of stagnation or even decline (Garnsey et al., 2006).

Micro and small businesses can choose a variety of development paths, guided by both internal potential and opportunities posed by the environment. Limited opportunities to shape their environment force small entities to continuously adapt to market conditions, which often determines the choice of development strategy. Numerous papers on determinants of small business development divide the determinants into internal and external ones (Kamińska, 2011; Lisowska, 2012; Nogalski et al., 2004; Matejun, 2007b). These determinants can affect the development of the company both constructively and destructively. Destructive factors, i.e. barriers to development, which hinder the development of companies, may also lead to significant disturbances in their functioning and even (if appropriate corrective actions are not taken) to business failure.

The authors of this chapter are naturally aware of the existence and importance of external barriers. However, due to their universality and impact on companies of various scales operating in the market, the authors have decided to focus their attention on internal barriers to the development of micro and small businesses. The internal determinants are equated with weaknesses of these entities (Matejun, 2007b) specific to that category of businesses, referring to the person of the entrepreneur and the strategy, management or resources of the company.

The behaviour of the company is determined by its resources and capabilities, i.e. how capabilities are used to implement and use resources (Amit & Shoemaker, 1993). Grant (1991), referring to the evolutionary theory of R.R. Nelson and S.G. Winter, defines these capabilities as sets of interaction routines, coordination patterns between people, as well as between people and other resources. The type, size and quality of the resources available in the organisation are important in overcoming limitations when creating routines and also have an impact on their standard.

Interactions and dependencies between resources and capabilities, as well as strategic environment-related factors, shape the strategic assets necessary to generate profits. For a company to establish a sustainable competitive advantage, these resources should be valuable, rare, inimitable and non-substitutable (Barney, 1991). According to Barney (1991, 2001), all of these criteria are important for survival in a competitive environment; the most important, however, is that the competition have difficulty copying or imitating the resources. The uniqueness or originality of tangible resources is rather difficult to achieve (as such resources are, with few exceptions, generally widely available). Unique combinations of intangible resources, however, can strengthen the company's competitive position. The studies conducted by Krupski (2007) among small and micro businesses indicate that the most valuable, rare and difficult to copy resources are non-formalised, privileged relationships with the environment. These resources, in addition to knowledge, were also assessed as the most useful for those companies to make use of opportunities and reduce risks. Attitudes and behaviours of employees are another resource important in terms of originality and value indicated by the small businesses. More cost-intensive resources such as technologies or information systems, which were not indicated by the small businesses as valuable and original, confirm the existence of barriers in this area.

Barriers related to defective management in micro and small businesses are determined in most cases by the person of entrepreneur. Key decisions about the company are usually made by one person – the owner. The entrepreneur's qualities and attitudes determine how a small business is managed and the likelihood of its success or failure. The quality of management in the company depends on what kind of experience and skills the owner possesses. Management-related barriers include (Bartlett & Buković, 2001; Matejun, 2007a; Storey, 1994): (i) low level of knowledge and skills, (ii) errors in the development strategy, (iii) reluctance to delegate powers, (iv) focus on operational activity.

The management process in micro and small businesses, intuitive and geared towards solving current tasks, does not create favourable conditions for the development of these companies. In this context, access to information and its subsequent analysis also pose a problem for micro and small businesses, in particular: there is typically a lack of time for in-depth analysis of the collected information, misinterpretation of signals and limited financial resources. These problems arise from the information barriers faced by small businesses in the course of their business activity (Galewski, 2012; Matejun, 2007a): (i) informational in the strict sense barriers, (ii) psychological barriers, (iii) sociological barriers, (iv) organisationalbarriers, (v) economic barriers.

Information barriers are a real obstacle to the creation of the competence basis of the entrepreneur and the organisation. In practice, this causes the existence of both unintended and conscious incompetence, hence the entrepreneur is not capable of obtaining information about, among others, solutions to existing problems or potential areas of knowledge.

The Importance of Risk in the Functioning of Micro and Small Businesses

In modern economic realities, risk management has become a prerequisite for effective functioning of enterprises in the market. The turbulent economic environment generates a number of growing threats to all companies, but especially to micro and small businesses. Small business owners often have low awareness of the risks associated with their activities that may have an impact on the further existence of their companies. Wieczorek-Kosmala (2009) emphasises that awareness of risk and protection against it should be even more important in the case of smaller scale business, as small companies cope worse with the effects of risk than large firms. The inability to recognise risk may result in the impossibility of carrying out actions undertaken. On the other hand, its exaggeration and lack or ignorance of the possibility of risk control may discourage pro-development activities.

Risk is an inherent element of business activity, it is impossible to eliminate it completely since in the process of making decisions entrepreneurs never have complete and reliable information on a particular phenomenon or issue. The Cambridge Language Dictionary[1] defines risk as the possibility that something bad or dangerous will happen, a project whose outcome is uncertain. Risk is strongly associated with uncertainty, but uncertainty is treated as a subjective phenomenon, immeasurable, unlike risk, whose probability of occurrence can be estimated. In other words, it can be said that risk is the possibility that something will happen, something which will affect the objectives, measured in terms of consequence and likelihood, or a combination of the probability of an event and its consequences (Gasiński & Pijanowski, 2011).

From the point of view of the factors that affect the functioning of companies, risk can be divided into systematic risk and specific risk. Systematic risk includes factors beyond the control of the company, resulting from the conditions of the economy. Specific risk, on the other hand, results from company-related factors. These can be partially controlled or predicted and derive from both the internal environment and the proximal environment of the organisation (see: Everett & Watson, 1998). Table 7.1. shows the areas and types of risks present in micro and small business.

On the basis of the existing publications on barriers and risks in small businesses, certain groups of barriers can be associated with specific areas of risk. Barriers in micro and small businesses related to management and competences may increase the likelihood of different types of risk occurring in these organisations, particularly in the case of risks of an internal nature, dependent on the specific characteristics of the way the company operates. For example, errors in capital management increase liquidity risk, while incompetent personnel management can translate into a higher incidence of problems with fraud on the part of employees or their transfer to competition. The risk associated with the business collapse or withdrawal from cooperation of a key contractor is definitely higher when the entrepreneur makes

[1] Cambridge Business English Dictionary, http://dictionary.cambridge.org/dictionary/business-english/risk_1?q=risk,

strategic mistakes regarding the selection of suppliers or customers (see Bartlett & Buković, 2001; Korombel, 2012; Matejun, 2007b; Wieczorek-Kosmala, 2009).

Table 7.1. Risk present in micro and small businesses

Company	Specific risk	Internal factors	• Liquidity risk – the loss of liquidity as a result of delays in payments from contractors or lack of capital reserve • Key employees joining the competition or setting up their own businesses • Risk of fraud by employees • Risk of loss of reputation • Risk of too great dependence of the company on its location • Risk of leaving the company by the owner or co-owner – as a result of illness or death • Risk of interruption in business activity temporarily preventing the achievement of revenue due to random events causing the loss of tangible and financial assets • IT risk – with a high level of dependence of the company on information technology • Tax risk related to lack of knowledge, insufficient competences of the owner or employees
Industry		External risk	• Increased competition • Risk of business failure, withdrawal from cooperation or untimely payment on the part of key customers • Risk of business failure or delays in deliveries by the key supplier • Risk of changes in commodity prices – especially important in commercial activities • Risk of changes in technology • Risk of claims for liability
Economy	Systematic risk		• Economic slowdown • Change in legislation, including tax legislation • Decrease in demand • Fluctuations in the prices of raw materials and energy • Foreign currency risk – the size of the risk depends on the scale of transactions conducted in foreign currencies

Sources: The authors' compilation based on: Everett & Watson (1998), Wieczorek-Kosmala (2009), Gorzeń-Mitka, (2011), Korombel (2012)

Proper identification of risk is of key importance for the process of risk management. The study carried out by Gorzeń-Mitka (2011) among micro, small and medium-sized enterprises indicates that the process of identification of risk factors occurs intuitively, particularly in micro companies. Relying on past experience (95% of the micro businesses and 66.7% of the small companies), brainstorming and SWOT analysis were pointed to most often among the tools to identify risk. Regrettably, relying solely on intuition and previous experience may not be sufficient for companies that operate in a turbulent – unstable and rapidly changing – environment.

Methods of Risk Reduction in Small Businesses

Risk management strategies should include options for risk prevention or control in order to reduce or eliminate negative consequences, or reduce the likelihood of its occurrence.

One of the responses to risk is its reduction. It is a basic strategy used when there is the possibility of major consequences for the company and can lead to the

elimination of the risk or its reduction to an acceptable level. Measures taken in this area include (Ropęga, 2013):

1. Reduction in the likelihood of risk - reducing the probability of negative results of the event or eliminating its occurrence entirely,
2. Reduction in consequences of risk –refers to actions targeted to reduce losses, can be taken both before the event and after its occurrence.

Table 7.2. presents examples of methods to reduce particular risks present in micro and small businesses.

Table 7.2. Methods for reducing risk in micro and small companies

Risk	Actions
Risk of business failure, withdrawal from cooperation or untimely payment on the part of the key customer	Search for new customers, monitoring of payments, next delivery conditional on making payments, concluding long-term contracts
Risk of business failure or delays in deliveries by the key supplier	Search for alternative suppliers of similar quality and price range
Key employees joining the competition or setting up their own businesses	Changing the remuneration system to include bonuses dependent on profits generated or other measures involving the key personnel in the success of the business.
Risk of fraud by employees	Introduction of the control and monitoring system of the risk areas
Liquidity risk – the loss of liquidity as a result of delays in payments from contractors or lack of capital reserve	Creating capital reserves. Since it requires financial resources, many small businesses cannot afford to implement this method Systematic monitoring of cash flows Establishing a line of credit at a bank for use in the event of late payment by contractors Partial settlement of contracts. Invoicing each stage of the service provided or each delivery of the goods – in the case of non-payment of the instalment, the company can refrain from further provision of services and incurring costs. Requesting advance payment before the service or delivery of the goods.
Increased competition	Development of new products and services

Source: The authors' compilation based on Wieczorek-Kosmala (2009),

Apart from the possibility of risk reduction, its transfer can be also considered. This is a particularly useful method for a small business as it does not have to prepare for the consequences of the risk on its own. Insurance is indicated in the literature as one of the most popular forms of risk transfer and financing consequences of possible threats (see: Jedynak, 2010; Wieczorek-Kosmala, 2009). It should be noted that insurance does not avert the threat to the insured, or eliminate the possibility of risk, but is only one of the forms of financing the consequences of this risk and improving liquidity. The transfer of risk by outsourcing is attractive for the company when the external service provider can offer more efficient, cheaper and better management of the given risk area. In many cases, the lack of sufficient expertise to manage the given type of risk among micro and small businesses is of crucial significance. In small

companies, the most common type of outsourcing, associated with legal and tax risks, is the outsourcing of accounting and payroll services to specialised external companies. The risk transfer can be also done by entering into alliances with business partners and sharing the risk (e.g. sharing a contract with another company to perform a specific job).

The approach towards risk in micro and small businesses depends on the entrepreneur's knowledge, competences and attitude towards risk and ability to recognise sources of risk, as well as on previous experience in risk handling. Thus, the entrepreneur's awareness and knowledge about risks threatening the venture are the prerequisites for taking effective measures to protect against risk (compare: Mikulska, 2010).

7.4. DISCUSSION: OVERCOMING RISK AND THE ROLE OF CONSULTING IN THE DEVELOPMENT OF MICRO AND SMALL BUSINESSES

A measure of the development of modern micro and small businesses is their ability to consciously reduce barriers and minimise risks. This phenomenon is positively correlated with the scale of companies and the stage of their growth. The literature emphasises that a growth in the scale of the company and in its development maturity through an increase in resources and capabilities causes a certain decline in the significance of development barriers (Eisenhardt & Martin, 2000; Głodek & Łobacz, 2013; Grande et al., 2011; Wach, 2008). As a consequence, the risk related to business projects undertaken by companies decreases to the level of risk specific to a particular industry or region of companies' operations, regardless of the scale of the company (Głodek & Łobacz, 2013). External business support, in the form of financial, infrastructural and technological assistance, training services, economic consulting, etc., may play a positive role in the process of decreasing development barriers and reducing risk in micro and small businesses. External support, including economic consulting, plays the role of an accelerator in the process of weakening development barriers and reducing risk in the functioning of micro and small businesses by contributing to an increase in resources and competences of companies. The larger the scale and scope of the external support, the more diminished the importance of barriers to the development of companies (Figure 7.2.). Building the capacity of companies to absorb external support may, therefore, be a factor fostering the development of businesses.

Economic consulting has a significant impact on the management and development of companies. Entrepreneurs rarely have all the knowledge necessary to effectively and successfully run a business (Nogalski & Falencikowski, 2005). The required and scarce knowledge can be acquired from the environment, from advisors, in the form of a professional and independent service aimed at helping managers and companies in achieving their goals by means of solving management issues, by identifying and taking advantage of new opportunities, and by learning and

implementing changes (Kubr, 2002). According to the functional criterion, consulting includes general advice provided to smaller companies in the initial phase of development, issue-based and functional consulting, as well as specialist consulting, generally offered to larger, mature companies. However, according to the institutional criterion, it is divided into internal consulting encountered in large and mature companies and external consulting, which is a paid or free service offered by qualified and independent individuals and legal entities (Stecki, 1997).

The use of external consulting services by companies is a necessity; it can help these businesses to overcome many barriers, contribute to their survival and achievement of market success. This is due to the fact that they have resources in a small and limited amount, including knowledge and skills, as well as due to numerous determinants that have a direct impact on the difficulty of solving problems that appear in micro and small businesses (Antoszkiewicz, 1999). For this reason, it is important to obtain these resources from the outside. On the other hand, the limited resources and low quality of management of such companies, as well as low inclination and limited ability to absorb the knowledge acquired, constitute barriers to the use of consulting services (Mole, 2002). These barriers are usually much higher in micro and small businesses than in medium and large companies and are mainly of the internal kind. Due to the aforementioned barriers, micro and small businesses are aware only to a limited extent of the possibility of using consulting services and hence are not really interested in these services. It is also important that the benefits achieved in these areas by the company are visible in a short period of time and often that they are of a measurable financial nature. For this reason, micro and small businesses mainly avail themselves of cheap and readily available sources of knowledge on doing business, using various channels of access to knowledge, including private contacts, the Internet, the media and the advice of companies with whom they have business relations.

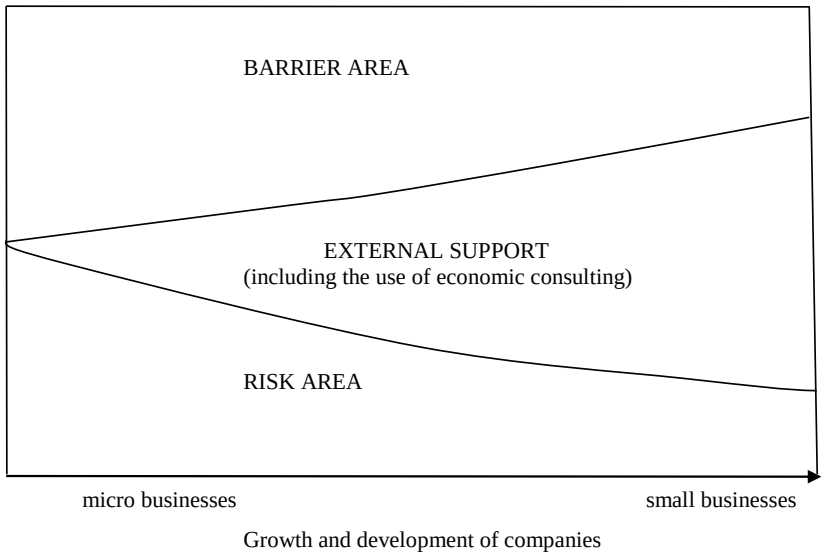

Figure 7.2. Barriers and risks, external support in micro and small companies
Source: The authors' compilation

Among determinants of the use of consulting services for micro and small companies, factors characterising the personality of the manager (education and age, position in the company) and pro-development factors (development strategy, level of the manger's knowledge and knowledge gap) have the greatest impact. In contrast, factors characterising the company (age, size, legal form) play a smaller role in this regard (Tuszyński, 2013). These factors differentiate the sector of micro and small companies in terms of the scope and intensity of use of consulting services.

In the area of development-oriented features of micro and small businesses connected with overcoming barriers to development, it can be said that: (i) companies with a development strategy are far more likely to use consulting services compared to companies that do not have a development strategy, (ii) the higher the level of the manager's education and knowledge of management, the more use the company makes of consulting services and the more often it has a development strategy (Tuszyński, 2013). This is a feedback relationship and seems to be an important element in shaping the consulting process for micro and small businesses. A strong correlation between having a development strategy and knowledge may mean managers are aware that knowledge is necessary for the creation of strategies. And vice versa, after mastering a certain degree of knowledge it seems conclusive that every company, in order to operate efficiently and effectively, should create a development strategy. A lower degree of relationship between the use of consulting services and knowledge accompanied by the existence of a development strategy may be due to the fact that managers do not always – and not with the same intensity – combine the process of acquiring knowledge and creating strategies with the use of consulting services.

In terms of areas of inadequate knowledge and skills in micro and small businesses that use consulting services and have a development strategy, managers are most likely to look for advice in the following fields: sales and marketing, strategic management, planning and organisation, as well as financial management. These are the areas of both soft skills and hard knowledge, very important for companies. These areas of knowledge and skills also contribute significantly to the survival of businesses, creating a competitive advantage and achieving success in the market. Companies using consulting services frequently resort to such forms of knowledge transfer as counselling conversation, courses, training, or cooperation with public institutions or commercial companies. The preferred type of cooperation with an institution or consulting firm is short-term (for the specific contract/order), task-oriented without long-term contracts, mostly financed from the company's own resources, as well as in the form of free and/or fully subsidised services (Tuszyński, 2013).

7.5. CONCLUSIONS

An individual approach and adaptation to the changing needs on the part of economic consulting is both the foundation and the consequence of deliberately

implemented processes of development of micro and small businesses. The presented barriers and risk factors in the development of these companies may be reduced as a result of economic consulting. Economic consulting may play the role of an accelerator in the process of decreasing development barriers and reducing risk in the functioning of micro and small businesses by contributing to an increase in resources and competences of companies. Therefore, building the capacity of companies to absorb external support may be a factor which facilitates the development of businesses.

In the area of pro-development features of micro and small businesses related to overcoming development barriers, the following can be observed: (i) companies with a development strategy are far more likely to use consulting services compared to the companies without a development strategy, (ii) the higher the level of the manager's education and knowledge of management, the more use the company makes of consulting services and the more often it has a development strategy. This is a feedback relationship and seems to be a significant element in devising the consulting process for micro and small businesses.

Despite the presented positive impact of economic consulting as a pro-development factor decreasing barriers and reducing business risk, the authors recognise certain limitations in terms of the concept of research on the topic described. These limitations refer to:

- The lack of in-depth research on the determinants of the risk in business activity of micro and small businesses, especially the role of resources such as entrepreneurship and knowledge which affect risk reduction;
- The lack of in-depth studies indicating correlations between consulting and reduction of risk and barriers in business activity of micro and small companies;
- The lack of detailed and reliable data;
- The heterogeneity of the sector of micro and small enterprises (limited comparability of data).

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8

Business Restart in Visegrad Countries

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Summary

The main goal of our study is to analyse business restarts in the Visegrad (V4) countries on an individual level and to identify the key drivers of restart activity from among perceptual variables. The analysis is based on Global Entrepreneurship Monitor data. We employ descriptive statistics to analyse the quantitative aspect of business restart and regression modeling to identify its drivers. Our findings proved that business discontinuation and consequent restart are both integral parts of entrepreneurship in V4 countries. Entrepreneurial self-efficacy and fear of failure, together with gender and age, proved to have a significant relationship with individual restart activity. The individual perceptual variables as components of entrepreneurial potential, as well as the issue of inclusiveness, proved to play an important role in business restart. Our study is the first comprehensive analysis of the under-researched topic of business restart in the V4 region. In addition to highlighting its importance as an integral part of entrepreneurial dynamics in the V4 countries, it also identifies individual-level drivers of this specific type of entrepreneurial activity.

Keywords: entrepreneurship, discontinuation, restart, restart drivers, Global Entrepreneurship Monitor (GEM)
JEL classifications: L26

8.1. INTRODUCTION

Entrepreneurship is viewed as an important driver of economic development and one of the keys to solving some of the most pressing current issues, such as employment (including youth employment) and economic growth. Most of the attention in understanding and promoting entrepreneurship has been paid to so-called first movers or novice entrepreneurs, i.e. individuals who enter the entrepreneurial path for the first time. However, a considerable number of entrepreneurs sooner or later come across a situation where they exit the entrepreneurial process, either after success or following a failure. These individuals stand at an important crossroads along their career path, deciding between turning away from entrepreneurship or re-entering the entrepreneurship process again and restarting their business activity. If they decide to completely restart, they are able to capitalise upon previous experience and utilise the lessons gained in their previous entrepreneurial activity. Restarted entrepreneurs therefore deserve at least as much attention as their novice counterparts.

A better understanding of the drivers behind the decision to restart entrepreneurial activity after discontinuance can help to design support mechanisms which encourage individuals to restart, thus preserving the stock of existing entrepreneurs and developing the overall entrepreneurial potential of an economy. Therefore, when trying to understand and promote entrepreneurship in general, the focus should not only be on promoting new entrepreneurs, but also on preserving the stock of current ones, even after they exit the process. Therefore, the main research question of our article is to find out the level of business restart in V4 countries (how many discontinued entrepreneurs restart their business activities), and what the main drivers (from among perceptual variables) of their restart activities are.

The attention devoted by entrepreneurship research to the issue of business restart is rather scarce, especially compared to the scope of research focused on novice entrepreneurs or drivers of entering the entrepreneurship process in general. However, recent studies by Hessels et al. (2011) or Simmons et al. (2013) together with our study on business restart in Slovakia (Pilkova et al., 2013a) have brought interesting insights to this topic as well as identifying several suggestions for further research. One of the latter, in our opinion, is the investigation into the quantitative aspects and restart drivers in the context of the Czech Republic, Hungary, Poland and the Slovak Republic, a regional group labeled the Visegrad or V4 countries. These countries face a similar historic background as well as similar challenges in the field of entrepreneurship and overall economic development. Analysis of the business restart phenomenon in V4 is, however, still lacking.

Our investigation of business restart in V4 countries is focused on identifying the restart rate (i.e. the percentage of restarted entrepreneurs among discontinued entrepreneurs), and mainly on identifying the individual-level drivers from among perceptions towards entrepreneurship that foster business restart among discontinued entrepreneurs. These restarted individuals play at least as important a

role in the country's entrepreneurial potential as first-mover entrepreneurs do, therefore they deserve the same level of attention from the communities of both research and policy makers. To identify the key drivers of business restart in V4 countries we studied both entrepreneurial potential and demographic aspects. As far as entrepreneurial potential is concerned, we focused on its three basic aspects: business opportunity recognition, social attitudes towards entrepreneurship (in our case explained through the perceived social status of successful entrepreneurs), and self-assessment regarding entrepreneurship (studied through self-efficacy and fear of failure). As for demographics, we have looked at two basic characteristics, gender and age.

8.2. LITERATURE REVIEW

Entrepreneurship is generally understood as a process (e.g. Bygrave, 1989; Cardon et al., 2005; Reynolds, 1992) irrespective of the sequence of particular phases or their length. This process ends with discontinuation of the entrepreneurial activity, also referred to as entrepreneurial exit (e.g. DeTienne, 2010; Wennberg et al. 2010). At this moment the individual ends his/her involvement in entrepreneurship. There are several possible reasons for discontinuation, ranging from success through neutral reasons to entrepreneurial failure. After discontinuation the individual has two basic options: he/she can abstain from entrepreneurship (either thinking of starting again or not even planning to do so) or he/she can actually start new entrepreneurial activity again. In this case he/she re-enters the entrepreneurship process from the beginning. We refer to this situation as "business restart" and we call the entrepreneur who restarts his/her activity after business discontinuation a "restarted entrepreneur".

Business restart is by nature a specific type of entrepreneurial activity. Therefore when trying to understand the restart drivers, attention should be focused on drivers of individual involvement in entrepreneurial activity in general, while carefully considering the specific nature of business restart. Among the most frequently identified determinants of individual entrepreneurial activity are individual perceptions of entrepreneurship, such as entrepreneurial self-efficacy, the perception of opportunities or fear of failure, as well as individual perceptions of societal attitudes towards entrepreneurship, such as the perceived social status of successful entrepreneurs (e.g. Arenius & Minniti, 2005; Bosma, 2013; Koellinger et al., 2007). All these components together create the so-called entrepreneurial potential of the economy (Pilkova et al., 2012). Even though the relationship between entrepreneurial potential and actual entrepreneurial activity is not straightforward but rather complex, its components, including perceptions of one's own skills, fear of failure, opportunities to start up as well as of social attitudes towards entrepreneurship, were each established as important drivers of entrepreneurial activity in both theory development as well as empirical research.

Perceived self-efficacy represents one's judgment of one's ability to execute an action and to produce designated levels of performance (Bandura, 1994). Therefore it has been established as a reliable predictor of a wide range of goal-directed behaviors, including also entrepreneurship. Self-efficacy is strongly related to perceived behavioural control and ability (concerning the ease with which the particular behavior is controlled), that together with attitude toward behaviour and subjective norms affect the intention, which in turn affects the actual behavior of an individual (Ajzen, 1991). In this case, the context-specific entrepreneurial self-efficacy represents the belief and self-confidence of an individual in having the necessary skills and abilities to start and run a business. Empirical evidence has proved that high levels of entrepreneurial self-efficacy have a positive relationship with individual entrepreneurial activity (e.g. Arenius & Minniti, 2005; Lukes et al., 2013; Wong & Lee, 2005).

Perception of opportunities relates to the subjective alertness of an individual to good opportunities for starting up and running an enterprise. The alertness to unexploited opportunities, as argued by Kirzner (1979), is a key perceptual characteristic of entrepreneurial behavior and a necessary condition for entrepreneurial action. Some empirical research has provided evidence that those who perceive opportunities are more likely to become involved in entrepreneurship than those who do not (Arenius & Minniti, 2005; Koellinger et al., 2007).

Fear of failure represents a subjective perception regarding the risk of failure and its possible consequences. Perceived (rather than objective) fear of failure is therefore an important component of risk related to entering the entrepreneurial process. Because the majority of individuals are supposed to be risk averse by nature, increased fear of failure is expected to act as an inhibitor of entrepreneurial action (Arenius & Minniti, 2005). Empirical research has provided certain evidence supporting these expectations considering entrepreneurial activity in general (e.g. Arenius & Minniti, 2005; Wagner, 2007) as well as concerning business restart in particular (Hessels et al., 2011; Pilkova et al., 2013a; Wagner, 2002). On the other hand, it has also revealed limitations of the risk aversion effect related to previous employment status (Caliendo et al., 2009). Additionally, findings by Simmons et al. (2013) suggest that the micro-macro level effect of stigmatisation of failure (potentially leading to a subsequent fear of failure) in failed entrepreneurs and their restart is rather ambiguous and depends on institutional context as well as on individual cognitive processes.

Perceptions of social attitudes towards entrepreneurship are subjective perceptions of social norms, values, beliefs and assumptions that are socially carried by individuals and related to their behavior. In this case we speak about informal institutions (North, 1990), or more specifically about normative institutional pillar (Scott, 1995) in relation to entrepreneurship. In the entrepreneurial context they shape the entrepreneurial activity of individuals (a context-specific type of human behavior and interaction) by forming social attitudes towards entrepreneurship. One of these is also a level of successful entrepreneurs' status in a particular society. If an

individual believes successful entrepreneurs enjoy a high social status, he/she is supposed to be more likely to find entrepreneurial activity desirable. He/she would perceive that his/her individual action will conform to norms and values within society, and thus he/she will, by joining the entrepreneurial path, achieve legitimacy in this society (Lonsburry & Glynn, 2001).

In addition to the above-mentioned perceptual characteristics, demographic characteristics that are intrinsic by their nature (mainly age and gender) have also been identified as determinants of entrepreneurship (e.g. Langowitz & Minniti, 2007; Lukes et al., 2013). Gender studies suggest that entrepreneurial activity of men and women may be affected by differences that can be attributed to certain gender-specific characteristics (Langowitz & Minniti, 2007). The role of age as a crucial characteristic in the decision-making process at the entry to entrepreneurial activity is based on the opportunity cost of time. Time is treated as a scarce resource whose availability is decreasing with age, in contrast to the decrease in the present value of a stream of potential (however uncertain) future payments possibly obtained by starting up an entrepreneurial activity. Put simply, with increasing age the opportunity costs of choosing an entrepreneurial path generally increase (Lévesque & Minniti, 2006). Therefore, both these basic demographic characteristics might play important roles in determining entrepreneurship process entry by an individual. Where business restart is especially concerned, previous findings suggest that age plays an important role in determining business restart (Stam et al., 2008; Wagner, 2002), and some studies have also proved gender to have a significant influence (Hessels et al., 2011; Pilkova et al., 2013a), with males restarting discontinued businesses more frequently than their female counterparts.

8.3. MATERIALS AND METHODS

In this section of our paper we present and describe the data and variables used in our analysis, its main goals, as well as the hypotheses and testing methods employed.

Data and Variables

Our analysis is based on Global Entrepreneurship Monitor (GEM) data. GEM is the largest academic study in the world focused on entrepreneurial attitudes, activities and aspirations. Every year GEM collects data from population samples in each participating country using a standardized survey administered to a representative sample of 18 to 64 years old adults (Amorós & Bosma, 2014). In our analysis of business restart in V4 countries we created a pooled sample using GEM individual level data from the years 2011 and 2012 for V4 countries, leading to a total primary sample of 14,008 individuals (2,005 for the Czech Republic - which participated in 2011 only, 4,002 for Hungary, 4,003 for Poland and 4,000 for Slovakia).

Firstly, using the survey data we identified individuals who experienced business discontinuation, i.e. respondents who had in the past 12 months sold, shut down, discontinued or quit a business they owned and managed. Our sample included in

total 451 such individuals (due to method requirements we have excluded individuals with missing values for independent variables). Secondly we identified early-stage entrepreneurs as individuals in the process of actively starting a business or running a new business less than 3 and a half years old. Thirdly, by overlapping the aforementioned categories we were able to identify restarted entrepreneurs as those individuals who restarted their individual entrepreneurial activity after business discontinuation. This group represented the main sample for our analysis of business restart drivers.

Since our analysis is aimed at investigating the drivers of restart activity, we employed the following independent variables representing the particular underlying phenomena from among perceptions towards entrepreneurship and demographic characteristics: 1) self-efficacy: respondents were asked whether they believe they had the knowledge, skill and experience required to start a new business (yes=1, no=0), 2) fear of failure: respondents were asked whether fear of failure would prevent them from starting a business (yes=1, no=0), 3) opportunities perception: respondents were asked whether in the next six months there would be good opportunities for starting a business in the area where they live (yes=1, no=0), 4) perceived high status of successful entrepreneurs: respondents were asked whether in their country those successful at starting a new business have a high level of status and respect (yes=1, no=0), 5) age: respondents provided their age, 6) gender: respondents provided their gender (male=1, female=2). Besides the above-mentioned independent variables we also controlled for the effect of education (variable coding was based on UN harmonised educational attainment) and country affiliation.

Hypotheses

In addition to unveiling the quantitative aspects of business restart in the Visegrad countries (such as the restart rate or share of restarted entrepreneurs on early-stage entrepreneurs) we investigated the potential drivers of individual restart activity. Building on the above-reviewed theory, empirical research on entrepreneurial activity determinants in general and determinants of business restart, as well as on our previous work in this field, we propose the following hypotheses on business restart drivers in Visegrad countries:

H1: Entrepreneurial self-efficacy positively affects restart activity, i.e. entrepreneurial self-efficacy is a significant driver of business restart in V4 countries.

H2: Alertness to entrepreneurial opportunities positively affects restart activity, i.e. alertness to opportunities is a significant driver of business restart in V4 countries.

H3: Fear of failure negatively affects restart activity, i.e. absent fear of failure is a significant driver of business restart in V4 countries.

H4: Belief in high social status of successful entrepreneurs positively affects restart activity, i.e. belief in high social status of successful entrepreneurs is a significant driver of business restart in V4 countries.

H5: Business restart is mainly dominated by men, i.e. gender is a significant driver of business restart in V4 countries.

H6: Business restart activity declines with the age of discontinued entrepreneurs, i.e. age is a significant driver of business restart in V4 countries.

Methods

To investigate the quantitative aspect of business restart in Visegrad countries we analysed the situation in each country for each year individually using descriptive statistics. We calculated frequencies for discontinued entrepreneurs within the adult population, restarted entrepreneurs within discontinued entrepreneurs, and restarted entrepreneurs within early-stage entrepreneurs. To search for potential business restart drivers a binominal logistic regression modelling was applied on a pooled sample of discontinued entrepreneurs from the analysed V4 countries. Binominal logistic regression estimates the probability of an event happening. In our case this event was restarting an entrepreneurial activity after discontinuation. To estimate the parameters of individual level data we used Statistica Generalized Linear/Nonlinear Models. Requirements of the method (no missing values for any of the independent variables) implied the exclusion of certain cases, resulting in a final sample of 451 individuals. The significance of parameters was tested using Wald statistics. Maximum likelihood estimations were used to calculate the logit coefficients denoting changes in the log odds of the dependent variable. Correlations between independent variables were tested and proved not to be problematic. Residual analysis was used to identify cases with the greatest contribution to model inaccuracy. After their elimination the analysis was repeated, resulting in the final regression model. The goodness of fit of the model was assessed using the Pearson's Chi-square test and log-likelihood function.

8.4. RESULTS AND DISCUSSION

This section of our paper presents and discusses the results of our analysis. Firstly we describe the issue of business discontinuance and restart in V4 countries. Secondly we present results about the individual characteristics related to business restart and to its potential drivers.

Business Restart in V4 Countries

The business discontinuance rate, represented as the percentage of the adult population that personally experienced business discontinuance in last 12 months, varied among V4 countries from 2.7% (Czech Republic) to 7.0% (Slovakia) in 2011 and from 3.8% (Hungary) to 4.7% (Slovakia) in 2012 (see Table 1). In both years Slovakia showed the highest figures in this indicator. The results also show that restart rate in V4 countries ranged from 6.9% (Hungary, 2011) to as much as 29.3% (Poland, 2012). From the opposite perspective, looking at the share of restarted entrepreneurs

among all early-stage entrepreneurs (those individuals starting new enterprises less than 42 months old) revealed that from 2.5% (Hungary, 2011) to as much as 13.9% (Slovakia, 2011) of early-stage entrepreneurs were actually restarting a business after exiting another one.

Table 8.1. Business discontinuation and business restart in V4 countries in 2011 and 2012

Country	Discontinued ent. (% of adult population)		Business restart (% of disc. ent.)		Restarted ent. (% of early-stage ent.)	
	2011	2012	2011	2012	2011	2012
Czech Republic	2.7%	NA	14.9%	NA	5.3%	NA
Hungary	2.3%	3.8%	6.9%	24.1%	2.5%	9.9%
Poland	4.2%	3.9%	10.4%	29.3%	4.8%	12.2%
Slovakia	7.0%	4.7%	28.3%	22.3%	13.9%	10.2%

Source: GEM 2011 and 2012, own elaboration

These findings suggest that in all V4 countries a considerable part of the adult population exited the entrepreneurship process, representing the decline of those countries' actual entrepreneurial potential in terms of quantity. On the other hand, despite the observed differences in figures for particular countries, business restart proved to be an integral part of the entrepreneurship process in V4 countries as well. 2012 restart rates in particular showed a relatively consistent pattern among the three analysed countries, suggesting that approximately every fourth entrepreneur who experienced business discontinuation restarted his/her individual entrepreneurial activity. In addition, from the opposite perspective, analysing the number of restarted individuals out of all early-stage entrepreneurs further proved the importance of the business restart phenomenon, since it underlined that a considerable share of early-stage entrepreneurial activity can be attributed to business restart. Similarly to the previous perspective, also in the last indicator the 2012 figures were more homogeneous than in the previous year. They suggest a common pattern existed among the analysed countries showing that approximately every tenth early-stage entrepreneur was a restarted entrepreneur, i.e. an individual who had experienced business discontinuation in recent 12 months and restarted his/her individual entrepreneurial activity again.

Business Restart Drivers in V4 Countries

The binomial logistic regression conducted in order to identify the potential drivers in relation to business restart suggested that four out of six analysed variables were significant (see Table 2). Both demographic characteristics (age and gender) together with entrepreneurial self-efficacy and fear of failure proved their significance in relation to business restart. Therefore we can consider Hypotheses H1, H3, H5 and H6 to be supported. On the other hand, since our analysis showed no significance of alertness to opportunities and belief of high social status of successful entrepreneurs, we found no support for Hypotheses H2 and H4. As far as control variables are

concerned, their effect was also found not to be significant, suggesting that our results are not influenced by the year of data collection or by country affiliation.

Table 8.2. Business restart drivers in V4 countries (logistic regression results)

	Coeff.	Std. error	Wald	p
Gender (1=male, 2=female)	-1.20057	0.29703	16.33725	0.000053
Age	-0.03760	0.01093	11.83166	0.000582
Self-efficacy (1=yes, 0=no)	3.26245	1.02498	10.13118	0.001458
Fear of failure (1=yes, 0=no)	-1.11268	0.28997	14.72394	0.000124
df				439
LR stat.				381.772
Pearson Chi-sq. stat.				382.679
LR stat./df				0.869641
Pearson Chi-sq. stat/df				0.871706
Log-likelihood				-190.886

Source: own elaboration

According to our findings regarding entrepreneurial potential components, entrepreneurial self-efficacy and fear of failure are significantly related to business restart in V4 countries. However, alertness to opportunities and belief in the high social status of successful entrepreneurs showed no significance. On the other hand, both demographic characteristics included in our analysis, i.e. age and gender, proved significant in relation to business restart.

Our findings are in line with the theory-based expectations and the results of previous empirical research suggesting that (often subjective) perceptions towards entrepreneurship play significant roles in affecting entrepreneurial propensity. Self-efficacy was identified as having the strongest relationship with business restart from the variables included in our analysis, with the belief in having the knowledge, skill and experience required to start a new business increasing the chance of restart by 3.26 times. On the other hand, having a fear of failure that would prevent an individual from starting a new business showed a negative relationship to business restart, decreasing its probability by 1.11 times. This finding corresponds with the previous findings in this field (Hessels et al., 2011; Pilkova et al., 2013a; Wagner 2002), supporting the robustness of considering the fear of failure as an important driver of business restart. However we did not expected that the relationship of opportunities perception and the perception of the high social status of successful entrepreneurs would show no significant relationship to restarting a business after entrepreneurial exit.

As far as demographic characteristics, our findings suggest that with increasing age the probability of restart after business discontinuation decreases. This corresponds not only with the general pattern of decreased probability of entrepreneurial entry with increasing age, but also with the findings of other studies on business restart (Pilkova et al., 2013a; Stam et al., 2008; Wagner, 2002). Here we might conclude that generally occurring descending activity with rising age due to increasing opportunity costs of entrepreneurship applies also to business restart as a

specific type of entrepreneurial activity. Similarly, gender-specific factors affecting entrepreneurial activity in general seem to be influencing business restart in V4 countries as well, because male discontinued entrepreneurs show a higher restart propensity than their female counterparts. These findings are in line with previous research in business restart (Hessels et al., 2011; Pilkova et al., 2013a) as well as in line with the underrepresented inclusion of women (compared to population distribution) in early-stage entrepreneurial activity that is characteristic throughout all V4 countries (Pilkova et al., 2013b). This pattern might be explained by differences in self-assessment between men and women, since women in general show a higher fear of failure and lower self-confidence regarding entrepreneurship (Pilkova et al., 2012; Weclawska et al., 2013).

The potential implications of our research include an improved understanding of business restart in Visegrad countries, not only limited to a quantitative view, but also going deeper in search of perceptual variables and entrepreneurial potential influence. As far as implications for further research are concerned, we propose that further attention should be paid to comparing the business restart patterns with overall (non-restart) activity to explore other potential universal drivers, as well as restart-specific drivers, and to challenge the robustness of existing findings. Also, a relationship between business restart and entrepreneurial context (represented by business environment) should be established. Both these streams would however require considerable samples and time-series data. At this place, longitudinal studies with panel samples would be beneficial in this field of study. Further research should also focus on multi-level analysis, considering the simultaneous effects of both micro- and macro-level potential drivers of business restart.

Regarding implications for policy makers, the strong positive relationship between self-efficacy and business restart implies the need for supporting and educational programs that would develop the knowledge and skills of future and existing entrepreneurs, not only by increasing the hard skills themselves, but also by fostering self-confidence in their application. Also in this area entrepreneurial role models could play an important role as important sources of social capital, transferring knowledge and experience, as well as important enhancers of entrepreneurial self-efficacy (Holienka et al., 2013). Secondly, policy makers should also pay attention to factors influencing the level of fear of failure among entrepreneurs as well as among the overall population in general. In this field both cultural and practical aspects play a role. Therefore moderating the fear of failure should include influencing social attitudes and norms (through e.g. education or success stories) as well as an effort to improve the legislative and bureaucratic aspects of honest bankruptcy and business restart. Finally, the uneven inclusion of genders and age groups in business restart should be addressed by eliminating both individual-level and environmental barriers of inclusiveness, to reach the situation where business restart after discontinuation would be equally accessible to everyone willing to restart, irrespective of age or gender. Therefore specific support programs aimed at groups lacking in restart, together with creating favorable conditions to restart in general, should be priorities

for policy makers. Underrepresented groups in business restart are usually also underrepresented in entrepreneurship in general. By supporting restart among these groups, policy makers could therefore contribute not only to their inclusion in restarting after discontinuation, but also to protection of the overall stock of entrepreneurs from these groups and therefore to improving the issue of inclusiveness in general.

The main limitation of our approach is due to the nature of GEM data. Since they provide a static view at the moment of data collection, we are not able to uncover the timeline of key events (business discontinuance, involvement in early-stage entrepreneurial activity) and avoid their overlapping in certain cases. Also, the GEM variables do not allow for an unambiguous distinction between success and failure as reasons for entrepreneurial exit. However, the harmonised methodology, scope and representative characteristics of the sample and its focus on individuals (rather than corporate entities) make GEM the best available data source to understand the issue of business restart in Visegrad countries. To improve the robustness of the findings, a repeated analysis should be done in the future with pooled data and controlled influence of year and country affiliation.

8.5. CONCLUSIONS

Our analysis of business restart in V4 countries has proven that this phenomenon is an integral part of the entrepreneurship process and its dynamics in the V4 region. In 2012, approximately every fourth discontinued entrepreneur restarted his/her individual entrepreneurial activity, representing around ten per cent of total early-stage entrepreneurial activity. Our further investigation on drivers of this restart suggested that individual perceptual characteristics (in particular entrepreneurial self-efficacy and fear of failure) together with demographic characteristics (age and gender) are important drivers in relation to business restart in V4 countries. Therefore, of the entrepreneurial potential components, only self-assessment regarding entrepreneurship proved important in influencing business restart by discontinued individuals, while the other two components (i.e. business opportunity recognition and social attitudes towards entrepreneurship) showed no significance in our analysis. The findings of our study represent the first systematic view on the business restart phenomenon in the V4 region, contributing to the understanding of entrepreneurship and entrepreneurial propensity in our region's context.

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9

The Effect of Energy Prices on Competitiveness of Energy-Intensive Industries in the EU

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Summary

Several factors affect the (national and international) competitiveness of an industrial sector or a company operating in an industrial sector. This study deals with the effect of energy prices on competitiveness from the prospective of EU energy-intensive industrial sectors. After introducing the energy source structure and the proportion of energy costs in the total operational costs, this paper focuses on energy prices and their differences. The aim of this paper is to show the competition distortion effect of differences in energy prices among EU Member States and their main economic partners. The last part of this paper provides an outlook for Visegrad countries.

Keywords: energy intensive industries, energy prices, energy costs, competitiveness
JEL classifications: Q43, Q49, L60, L61, L65, L69

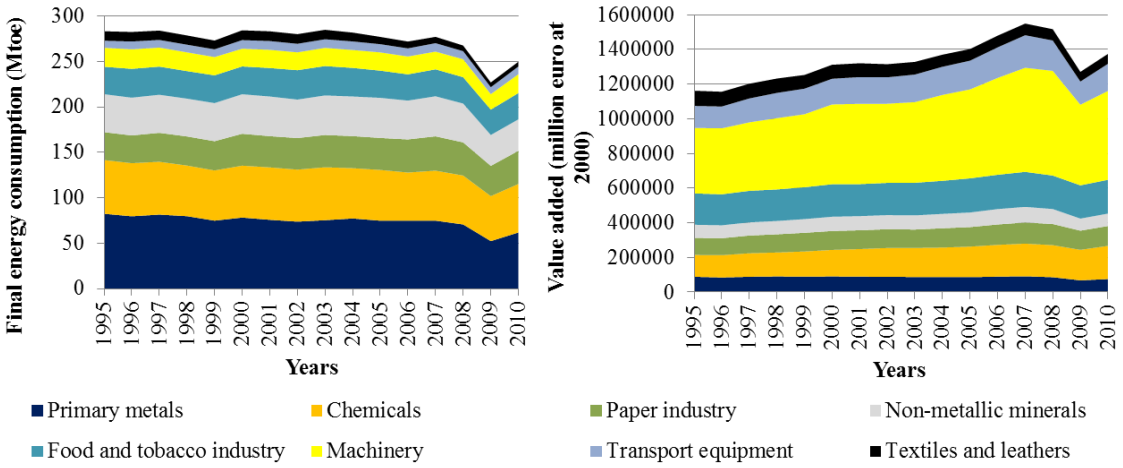
9.1. INTRODUCTION

When operating activities of a company are considered, it is of fundamental importance to ensure both the required resources that prevent any disruption of operation and the lowest possible cost impact. Efficient organisation of resource management is one of the key factors of competitiveness. Among the necessary resources – raw materials, assets, human resources, and others – energy plays an increasingly vital role in today's world. The processes going on in the energy market present huge challenges to companies. Increasing energy prices as well as stricter environmental and climate protection regulations have a considerable impact on the international competitiveness and international presence of certain industries. This is especially true when these processes differ greatly in different parts of the world. The

level of priority that industries assign to energy issues also varies. The importance of energy management differs and depends on the classification of companies into sectors, the intensity of their production activities and the proportion of energy costs in the total operational costs.

9.2. FINAL ENERGY CONSUMPTION IN THE EU MANUFACTURING INDUSTRY AND ITS ENERGY INTENSITY

According to Enerdata, final energy consumption in the EU accounts for almost 1200 Mtoe. Total final energy consumption fell by 5.1% between 1995 and 2010. Industrial energy consumption decreased even more, by as much as 11.6%. Thus, its share in the total consumption fell to 25.9% (compared to 30.8% in 1995) and was ranked third after the transport and household sectors. This study investigates industrial energy consumption[1] with a special emphasis on the manufacturing industry in order to identify the sectors where energy or energy management plays a determining role in resource management and competitiveness. Figure 9.1. shows the evolution of final energy consumption in the manufacturing industry (left) and value added (right) by subsectors. Enerdata uses the NACE sectoral classification system in its database to categorise sectors.



*value added at constant prices in 2000 (in million Euros)

Figure 9.1. Evolution of final energy consumption and value added in the manufacturing industry in the EU, 1995-2010
Source: Author's own elaboration based on the Enerdata database

[1] In the Enerdata database, the industrial final energy consumption includes energy used for activities performed by the mining, manufacturing and construction sectors. The energy used by industry for transportation is not included in this group. The database also excludes non-energy use from the industrial final energy consumption. It excludes the energy used by the energy transformation sector as well. It applies a completely different approach to heat and electrical energy production: in the case of heat, the fuel used for heat generation is included in the final energy consumption, but the generated heat is excluded, whereas in the case of electrical energy production, the generated electrical energy is included, but the fuel used for electricity generation is excluded. This principle also applies to the manufacturing industry (Enerdata 2012).

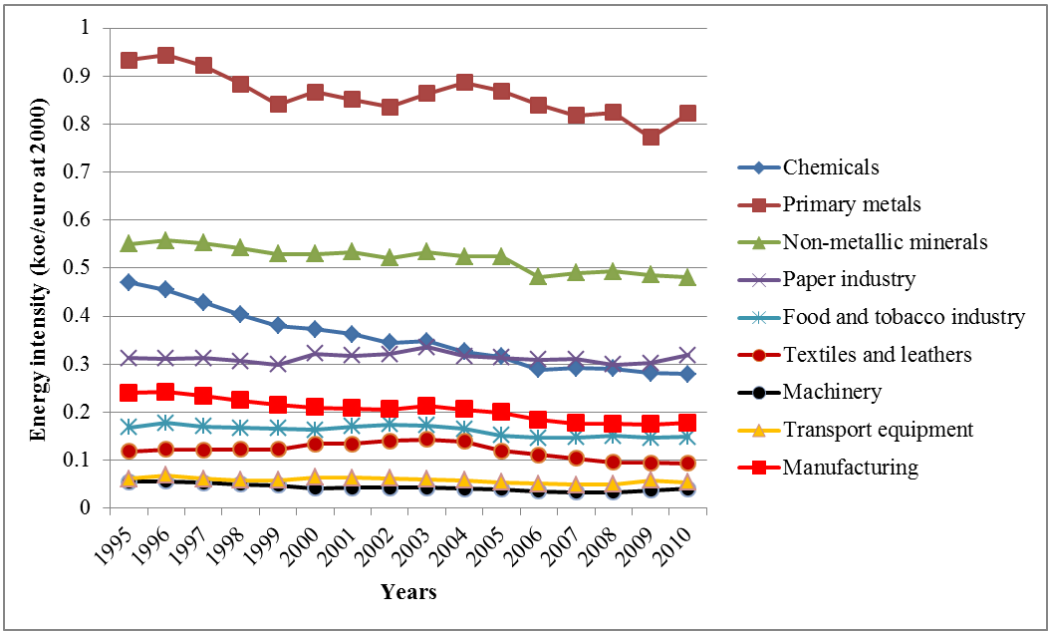
The total final energy consumption of manufacturing industry amounted to about 250 Mtoe in 2010. Primary metals had the largest share (22.14%) in the total energy consumption of the manufacturing industry, with 18% for the iron and steel industry and 4% for the non-ferrous industry. According to the data, the chemicals sector was the second largest energy consumer with its 19.1% in 2010. The paper industry (13%) and the production of non-metallic minerals (12.4%) also belong to energy-intensive sectors. The most significant non-metallic minerals industries, those requiring a substantial amount of energy, are the cement and glass industries. Over the period 1995 to 2010, the energy consumption of the manufacturing industry fell by 12%. The most striking decrease in the energy consumption occurred in the manufacture of basic metals and fabricated metal products.

The right-hand graph in Figure 9.1. illustrates the evolution of value added by subsectors of the manufacturing industry. The graph shows that the performance of the manufacturing industry actually improved by 19.6%. The sectors are listed by their value added on the basis of 2010 data. A considerable increase was experienced in the chemical (52%), machinery (36%) and transport equipment (23%) manufacturing sectors, whereas the value added in textile and fabricated metal production decreased significantly.

When the two graphs in Figure 9.1. are compared, it becomes obvious that the sectors with larger ratio and growth (machinery and transport equipment) in value added figures perform less energy-intensive activities in terms of delivered energy consumption. In contrast, energy-intensive sectors, which produce basic metal and fabricated metal products, chemicals and non-metallic minerals, have a smaller value added.

The energy intensity indicator is calculated by dividing the final energy consumption by value added. This indicator measures how much energy is required to generate one unit of value added. The decrease in this indicator expresses a favourable trend. Figure 9.2. shows the energy intensity of manufacturing sectors in the EU between 1995 and 2010.

In the period from 1995 to 2010 the energy intensity in the manufacturing industry, or more specifically in most of its sectors, experienced a slight recovery with larger or smaller fluctuations. There are two sectors whose energy intensity considerably differs from others. The energy intensity of the production and processing of metals (primary metals) far exceeds other sectors' energy intensity (iron and steel as well as non-ferrous industries perform highly energy-intensive activities). The other large energy-consuming sector is non-metallic minerals, which includes cement and glass. There was a significant fall in terms of energy intensity in the chemical industry.



*value added at constant prices in 2010 (in Euros)

Figure 9.2. energy intensities in manufacturing industry and in some of its sectors in the EU
Source: Author's own elaboration based on Enerdata database

Table 9.1. shows changes in energy intensities in subsectors. The sectors which managed to achieve both an increase in value added and a decrease in energy consumption are highlighted.

Table 9.1. Changes in energy intensities by subsectors, 1995 to 2010 in the EU

Subsector	Change in final energy consumption (%)	Change in value added (%)	Change in energy intensity (%)
	(from 1995 to 2010)		
Chemicals	**-9.6**	**52.2**	**-40.6**
Primary metals	-25.0	-14.9	-11.8
Non-metallic minerals	-17.0	-5.2	-12.4
Paper industry	18.7	16.1	2.3
Food and tobacco industry	**-4.4**	**7.9**	**-11.4**
Textiles and leathers	-48.7	-35.0	-21.2
Machinery	**-0.6**	**35.7**	**-26.7**
Transport equipment	8.5	23.0	-11.8
Manufacturing	**-11.7**	**19.6**	**-26.2**

Source: Author's own elaboration based on Enerdata database

Table 9.1. shows a significant improvement in energy intensity (over 40%) in the chemical industry in the period under analysis. This improvement is due to an increase of over 50% in value added and to a decrease of 10% in energy consumption. Energy intensity fell by 26.2% in the manufacturing industry. This can be because the energy efficiency of some subsectors increased between 1995 and 2010. The

performed calculations (which are not presented here due to space limitations) confirm this improvement, the changes the shares in value added and the comparison of energy intensity measured at a real structure and at a constant structure show, that there was no significant structural reform in the manufacturing industry. The fact that there might be structural changes in specific subsectors and classes within particular sectors should not be neglected; however, this study does not investigate these structural changes because of the lack of data.

Identification of Energy-Intensive Industrial Sectors

The aim of these analyses was to identify the industrial sectors where energy plays a key role in energy management. There is no universally accepted definition for energy-intensive sectors. The proportion of energy consumption and energy intensity indicator help to identify the range of energy-intensive sectors. However, other criteria should also be used to allow us to identify whether the sector is energy intensive. One further criterion might be the proportion of energy costs in production costs. The European Commission uses several criteria to identify energy-intensive sectors (see EC, 2014). The calculations in this study and the EC report (2014) both identify four energy-intensive sectors: primary metals (with iron and steel, and non-ferrous industries), chemicals, non-metallic minerals (glass, cement), and the paper industry. This study focuses on further investigation of these four sectors.

Energy Source Structure of Energy-Intensive Industrial Sectors

Gas and electric energy (over 30%) dominate in the energy consumption of the manufacturing industry. Coal and oil are used in a lesser extent; however, their share amounts to over 10%. Although we have no information about the means of electricity energy generation, it may be claimed that fossil fuels still remain heavily dominant energy sources. The distribution of energy sources by sectors varies. However, gas and electric energy are the most dominant sources (Table 9.2.). (The dominant energy sources of sectors are written in bold).

Table 9.2. Share of energy sources (%) of energy-intensive industrial sectors in the EU, 2010

Subsectors (year 2010)	Coal	Oil	Natural gas	Heat	Biomass	Electricity
Chemical industry	6.2	**13.6**	**35.3**	12.7	1.6	**30.5**
Primary metals	**38.1**	5.0	**30.3**	1.1	0.0	**25.6**
Steel industry	**44.8**	*4.2*	**30.9**	*0.8*	*0.0*	**19.3**
Non-ferrous metals	*4.5*	*9.0*	**27.0**	*2.4*	*0.1*	**57.0**
Non-metallic minerals	14.2	**25.6**	**38.5**	0.6	3.1	**18.0**
Paper, pulp and printing industry	3.1	3.2	**22.9**	5.9	**33.9**	**31.0**
Total manufacturing	**12.6**	11.2	**32.3**	5.5	7.7	**30.7**

Source: Author's own elaboration based on Enerdata database

9.3. SHARE OF ENERGY COSTS IN THE PRODUCTION COSTS OF ENERGY-INTENSIVE INDUSTRIES

In addition to materials, labour, machinery, equipment and other resources, energy is also an important input in company operations. Generally speaking, all company forms need energy, irrespective of their fields of activities. Manufacturing, service and commercial companies use energy for their operation, however, the amount of the required energy and its forms vary. Apart from main (production, services and logistics within the company), auxiliary and supporting (IT, repair, maintenance, cleaning and safety) processes, overhead-related processes (building energetics: lighting, heating, cooling and ventilation) also play a vital role in corporate energy management. Mention should be made of energy use in transport and shipping, namely, the supply and shipping of raw materials and finished goods (fuel consumption of vehicles).

The energy demand for main production processes in energy-intensive sectors is high. The energy resources used for non-energy purposes, such as the amount of energy resources used as raw materials or feedstock in production, are excluded from energy demand. (For example natural gas, which is a raw material used in production in the chemical industry, is excluded from calculations in order to ensure comparability.)

Figure 9.3. shows the share of energy-related costs in the production costs of selected energy-intensive industrial sectors. Energy expenditures are made up of costs of both energy resources and energy products purchased for production purposes, which include network tariffs, taxes, and levies, as well as incidental reliefs and exemptions. Total production costs are costs required to purchase goods for production including energy and costs of labour. In other words, total production costs are ‘the difference between the total production value (gross annual turnover adjusted by changes in stocks and other correction items) and the gross operating margin in a given industry’. (EC, 2014, p.135)

According to an EC study, the share of energy-related costs in total production costs ranges from 4% to 10% in energy-intensive industrial sectors in the EU Member States (EC, 2014). The fact that there are several classes with different energy intensity and energy demands within specific subsectors should also be taken into account. It is clearly seen that the share of energy costs in production costs of specific classes can be as high as 40%, whereas in other classes these costs are under 5%. Thus, the energy intensity of some industrial subsectors can be influenced by subsector structures. Figure 9.3. shows the divergent ranges of performance by classes within subsectors.

Figure 9.3. also shows the lowest and the highest Member State values and EU averages. It should be highlighted that the share of energy-related costs compared to production costs varies greatly by classes. This may be because of different product structures in Member States, and differences in energy prices, energy efficiency and technological procedures in sectors.

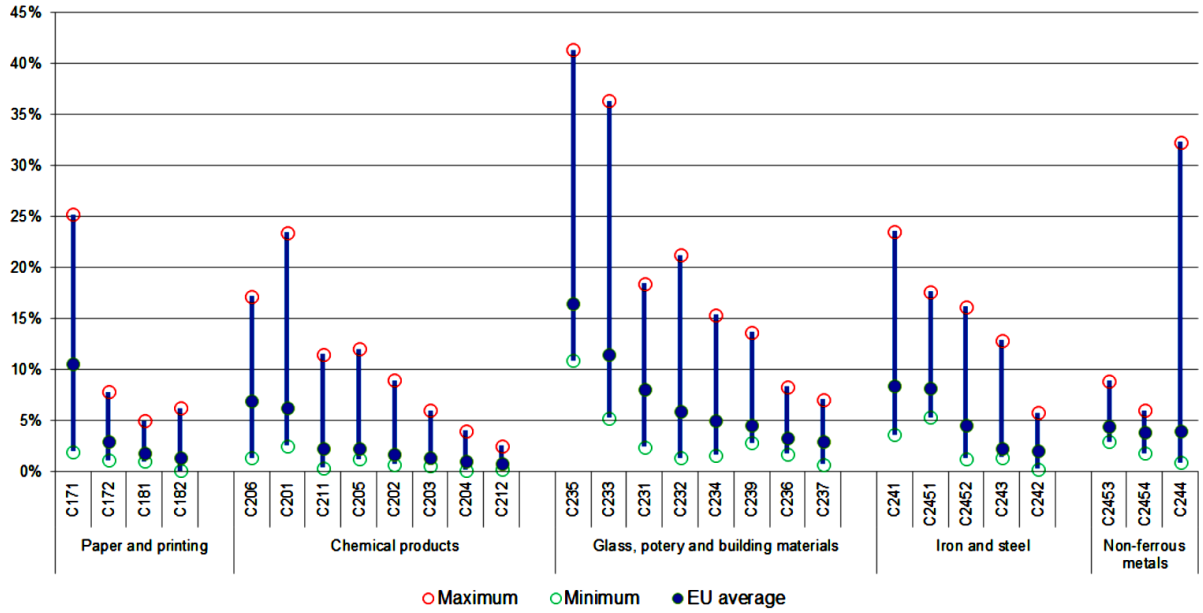


Figure 9.3. Share of energy-related costs in the production costs in selected sub-sectors[2] of energy-intensive industries in the EU
Source: Eurostat, Structural Business Statistics in EC 2014, p.137

The EC study (2014) also investigates the evolution of electrical energy and gas intensities in industrial sectors between 2008 and 2011. The study mentioned analyses sectors' gross value added, electricity and gas use, and changes in electricity and gas expenditures, as well as their extent compared to changes in gross value added. The performed calculations are not presented here due to limited space (see EC, 2014, p. 141, Tables 32 and 33). Only the main conclusions drawn from the EC tables are presented in this paper. In general, electricity and gas intensities declined in the five sectors from 2008 to 2011, which is a favourable trend. When the electricity intensity was analysed, it was observed that the largest drops were experienced in paper and printing (-7.6%), iron, steel and non-ferrous metals (-5.6%). In the case of natural gas, this decline was seen in iron, steel and non-ferrous metals (-8.9%), and the glass, pottery and building material industry (-6.4%). The changes in the intensity indicators result from the fact that the decline in gross value added of some sub-sectors was less significant than the decline in energy consumption. (The gross value added fell in all sectors in the period under analysis). However, annual electricity and gas expenditures fail to reflect this positive trend. For electricity, the decline in energy consumption in all sectors was larger than the decline in annual electricity expenditures. What is more, despite a 6% to 10% decrease in energy

[2] Codes: C171 - Pulp, paper; C172 - Articles of paper; C181 – Printing; C201 - Basic chemicals, fertilisers, plastics and synthetic rubber; C203 - Paints; C204 - Soap, cleaning-, perfumes and toilet preparations; C206 - Man-made fibres; C211 - Basic pharmaceutical products; C212 - Pharmaceutical preparations; C231 - Glass and glass products; C232 - Refractory products; C233 - Clay building materials; C234 - Other porcelain and ceramic products; C235 - Cement, lime and plaster; C241 - Basic iron, steel and ferro-alloys; C242 - Tubes, pipes, hollow profiles; C244 - Basic precious and other non-ferrous metals; C2451 - C2454 Casting. For a full list of codes see EC (2014, p. 137).

consumption in the paper and printing and chemical sectors, there was a 1.6% to 3% increase in annual electricity expenditures. For natural gas, the situation is more favourable. The difference between the decrease in gas consumption and gas expenditures is less than that of electricity. Moreover, the decrease in gas expenditures in chemical sector was larger than the decrease in gas consumption. The huge difference between the two energy resources is seen when the differences between divergent ranges of gross value added and those of energy expenditures are assessed. The decline in gross value added of electricity was larger than the decline in electricity expenditures in all sectors, whereas the decline in gas expenditures was larger than the decline in gas consumption in all sectors (see details in EC, 2014).

9.4. IMPACTS OF ENERGY COSTS ON NATIONAL AND INTERNATIONAL COMPETITIVENESS OF COMPANIES OPERATING IN ENERGY-INTENSIVE INDUSTRIES

The literature available on competitiveness is fairly extensive. The concept can be interpreted both at macro and micro levels. There is competitiveness of national economies and regions, sectors and companies and even products. This study applies a micro-level approach. The basis for competitiveness analyses is the two Porter models: Porter's Five Forces of Competitive Analysis (Porter, [2006]) and Porter's Diamond model (Porter, 1990). Porter's Diamond model describes the possible sources of competitive advantages of nations, industries and companies. One of the elements of competitive advantages is the availability of input factors[3], which include all the inputs required for efficient operation of companies within a specific industrial sector. The availability and the amount of input factors as well as their related costs are taken into account when input factors are analysed (Czakó & Reszegi, 2010). As globalisation spreads across the world and companies go international, companies face new opportunities. Developments in IT, transportation and shipping infrastructure have shrunk the world and opened new purchases and sales markets to companies. The flow of financial capital followed by production capital made it possible for companies to relocate their production facilities to countries that offer a cheap workforce, raw materials and tax advantages. Globalisation has placed competitiveness in an international context. According to Grant (2008), three main factors determine an international competitive advantage: corporate resources and abilities, factors of the recipient country and home country as well as the micro environment.

Competition is influenced by a combination of several factors. Competitive advantages can be achieved by cost efficiencies (cheaper inputs, loss identification and cost reduction), price advantages, innovation advantages and quality advantage. Other factors contributing to a competetive edge are increased specialisation, economies of scale, application of automated and robotised flexible manufacturing

[3] Apart from input factors there are further factors such as demand factors, corporate strategies, industrial structures, competition intensities, related and supporting industries, government and incidental opportunities.

systems allowing quick changeovers to meet constantly changing consumer demands, and keeping pace with technical developments. Concentration of human resources and knowledge, application of efficient organisational solutions (organisational slimming, taking advantage of synergy impacts and decentralisation), development of the immaterial supply chain and decrease of lead time further increase competitiveness (Hoványi, 1999, 2001).

In the scientific literature, there is no strong consensus about priorities of key drivers. The relative order of factors ensuring a competitive advantage has changed over the time. The resources which used to generate a competitive advantage currently act as factors that keep companies in competition. Which primary resource is considered to be a competitive advantage varies by industrial sector.

According to Hoványi (2001), intellectual outcomes prevail over production of material goods. The key to business success lies in innovation. Assets and capital are of secondary importance. Venture capital plays an increasing role in success. Hoványi (1999) believes that immaterial assets play an increasing role in achieving competitive advantages when companies are under pressure to ensure high quality at a low price, which forces companies to provide more and more homogenous quality and follow extremely strict cost management. From this aspect, strict cost management is rather a condition for retaining the company in competition than an opportunity to achieve a competitive edge.

Némethné Gál (2010), Somogyi (2009), and Tóth & Tóth (2003) also highlight the central role of new types of competitive advantages such as the ability to innovate, immaterial assets (a qualified and trained labour force, patents, know-how, software, customer relations, brands, unique organisational models) as well as technical developments. However, none of them denies that the evolution of costs considerably affects competitiveness, even if costs are not considered to be principal factors. Setting competitive prices is of essential importance in international markets. However, low prices ensure a competitive advantage over competitors only if these prices cover corporate costs and meet profit requirements (Némethné Gál, 2010).

Cost factors in the internationalisation of companies act both as motivation factors – if companies get access to cheap resources in the international markets – and as hindering factors – if a high cost level undermines export abilities of products (Antalóczi and Éltető, 2002; Csáki, 2004; Csernenszky 2003; Gubik 2011a,b; Mikesy 2013). This is especially true for energy-intensive industrial sectors, where energy costs have a considerable impact on corporate competitiveness both in national and international markets, since they increase production costs and affect companies' profitability. It is quite obvious that both national and international competitive advantages of a product decreases if it is produced at a higher cost than products of competitors. Studies investigating specific energy-intensive sectors consider increasing energy prices and stricter environmental regulation to be great challenges in terms of competitiveness of industries (Bruxinfo, 2014; EC, 2010; ICEG EC, 2004; Zbořil & Chruszczow, 2009)

Figure 9.4. shows the share of energy costs in production costs of different energy-intensive industrial sectors in Germany, the USA and Japan in 2011. It is clearly seen that the USA had the lowest share of energy costs in all subsectors (aside from cement production).

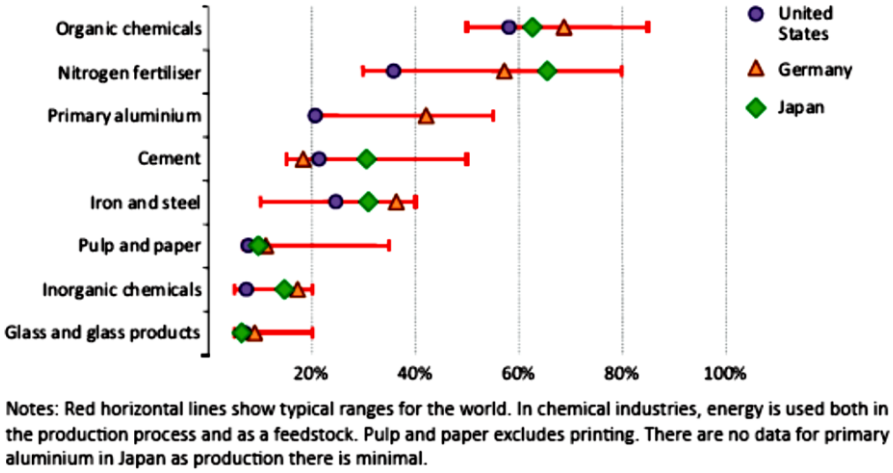


Figure 9.4. Share of energy costs in total production costs by subsectors, 2011
Source: IEA WEO 2013 and sources therein in EC 2014, p. 191.

Note: To calculate the share of energy in total production cost, IEA has used official sources for the USA, Germany and Japan for all industrial sub-sectors apart from primary aluminium in Germany (estimated based on the US data accounting for differences in electricity prices and specific energy consumption).

The evolution of energy costs is affected by two factors. The first is the price of energy and the second is the volume of energy consumtion. This study also deals with energy price evolution in a global context.

Energy Price Evolution

Energy prices have consistently been rising in the past few years. This price rise has been experienced for gas and electricity as well as for coal and oil. The difference between coal and oil prices is lower in different countries, than the price gap between national electricity and natural gas prices. This is because electricity and natural gas prices are regulated by several contracts where, apart from energy prices, other contractual obligations are stipulated. Taking into account that in most energy-intensive industrial sectors, the share of electrical energy and natural gas consumption is high compared to total energy consumption, this study focuses on the price evolution of these energy resources.

Wholesale prices: the EC study (2014) shows that wholesale electricity benchmarks decreased by 35-45% between 2008 and 2012. As for the trading points, the OTC market (Over-The-Counter Market) remains dominant with its two-thirds share. However, its volume significantly decreased. In contrast, spot trading was on the rise. Around 14% of the total traded volumes were executed on the Stock

Exchange. Wholesale natural gas prices still heavily depend on oil-indexed long-term gas import contracts. Data for 2012 show that 51% of traded gas consumption was oil-indexed, as opposed to 80% in 2005. In 2012 about 44% of gas consumption in Europe was priced on a gas-on-gas competition basis compared to only 15% in 2005.

Mention should be made of regional differences in price formation mechanisms. In North-West Europe 70% of natural gas was priced on a gas-on-gas basis compared to only 40% in Central Europe. Different wholesale benchmarks (Stock Exchange prices and oil-indexed prices) showed similar trends over time. However, oil-indexed prices were higher. Gas market benchmarks constantly and dramatically increased in the period between 2009 and 2012, and was followed by a slight decrease. The difference between natural gas wholesale prices within the EU is still considerable.

Retail prices: EU retail prices for electricity for industrial consumers (excluding VAT and tax exemptions) increased by 3.5% over the period 2008 to 2012. In some countries (Hungary, the Slovak Republic and the Czech Republic) the retail prices declined, whereas in other countries (Estonia, Latvia and Lithuania) these prices rose by over 8%. EU retail prices for gas for industrial consumers remained stable between 2008 and 2012.

The dominant price elements in retail prices were energy and energy supply. However, in the past few years, the taxation and levy component's share has risen in prices, especially in the case of electricity prices. As a matter of fact, the considerable increase in retail electricity prices did not result from the increase in energy prices, but rather from taxes built into prices of final goods (Based on EC, 2014).

Comparison of Energy Prices at a Global Level: EU, USA and Japan

There are abundant sources of information available about energy prices (Buchan, 2014; EC, 2014; IEA, 2013; OECD, 2013). Instead of presenting tables, charts, trends, and concrete price data, this study will describe differences in energy price among EU Member States and their main economic partners, the USA and Japan. As for the main price categories, this study attempts to show how much more industrial consumers pay for energy in the EU and Japan than in the United States.

Wholesale prices:

- Natural gas: Wholesale gas prices seemed to follow similar trends in different coutnries until 2009, with only slight differences. However, the gap started to increase from 2010 and reached an all-time high in April 2012. The Stock Exchange wholesale prices in the UK were 4.2 times higher than in the USA. Prices in Germany were 5.8 times higher than those in the USA and the Japanese prices were 8.6 times higher than the US Stock Exchange wholesale prices. In April 2013 the gap shrank considerably; however, the differences were still large. This was because of exploration shale gas resources in the USA (for details see EC 2014, p.170. Figure 108).
- Electricity: The data in September 2013 showed that the wholesale electricity prices varied between 30-50 euro/MWh. US prices were considerably lower than

European prices. The differences between prices were smaller (maximum 1.7 times), than in case of natural gas prices. (For details see EC, 2014, p.176, Figure 113).

Retail prices for industrial consumers in 2012:

- Natural gas: the average EU retail prices were 4 times, EU maximum prices 7 times, EU minimum prices 2.6 times, Japanese prices are 4.8 and Chinese prices are 3.6 times higher than in the US (see EC, 2014, p.180, Figure 116).
- Electricity: the average EU retail prices were 2.25 times, EU maximum prices 4.4 times, EU minimum prices 1.4 times, Japanese prices 2.7 and Chinese prices 1.8 times higher than in the US (EC, 2014, p.178, Figure 114).

There are several reasons for price differences and one of them is shale gas consumption in the USA. (Shale gas is a cheaper energy resource, than natural gas.) Another factor, taxes levied on energy products, has to be highlighted. The price of the final energy consumption contains an energy price element, network costs, taxes and levies imposed by the state. When the proportion of taxes and levies in the price is examined, it can be observed that energy products bear a higher tax burden in the EU Member States than in Japan or in the USA (See: IEA, 2013; OECD, 2013). Some part of these tax revenues is usually channeled into the national general budget and the other part is spent on financing energy and climate policy measures. The EU is more strongly committed to energy and climate policy than the USA, Japan or developing countries.

Export Data of Energy-Intensive Industries

Part 1 of Table 9.3. illustrates the share in the world export of the EU, the USA, Japan and BRICS countries (Brazil, Russia, India, China and South Africa) in 2012, while Part 2 shows the differences in share between 2000 and 2012 in the world export of all energy-intensive industrial sectors.

The data in Table 9.3. (Part 1) confirm that the EU plays a vital role in the export of products of energy-intensive industrial sectors. The EU export share exceeds 30% in all products. What is more, in the case of chemical products (47%) and paper (55%), this share is even higher. Hence, the EU is a dominant exporter of these products. Note should be taken of the trend that between 2000 and 2012 the decline in the EU share in the global export of all sectors was much more significant than that of the USA and Japan (Table 9.3., Part 2)[4]. This phenomenon can be explained at least partially by the unfavourable increase in the EU energy prices. If this huge gap in energy prices grows even further over the next few years, it will have an unfavourable effect on exportability of products of energy-intensive industrial sectors and erode the EU competitive advantage, which will result in further decrease in exports of energy-intensive products.

[4] While the export share of the EU, USA and Japan in these sectors decreased, the export share of BRICS countries considerably increased.

Table 9.3. Export data of energy-intensive industries

Part 1	Share in world export in 2012 (%)				
	BRICS	**Japan**	**United States**	**EU27**	**All these together**
Chemicals and related products	9.92	4.06	10.64	46.85	71.46
Paper and paper manufactures	11.23	1.74	9.32	55.31	77.61
Non-metallic mineral manufactures	23.29	3.39	9.11	30.10	65.89
Iron and steel	21.45	8.98	4.27	36.86	71.56
Non-ferrous metals	14.89	4.06	5.19	30.18	54.32
Part 2	Changes of share in world export between 2000 and 2012 (%-point)				
	BRICS	**Japan**	**United States**	**EU27**	**All these together**
Chemicals and related products	4.97	-2.08	-3.33	-5.22	-5.66
Paper and paper manufactures	7.40	-0.78	-1.84	-0.24	4.53
Non-metallic mineral manufactures	10.58	-1.06	0.63	-15.68	-5.53
Iron and steel	8.59	-1.47	-0.19	-8.99	-2.06
Non-ferrous metals	0.13	-0.06	-1.83	-2.34	-4.09

Source: Author's own elaboration based on UNCTADSTAT database

9.5. OUTLOOK FOR VISEGRAD COUNTRIES

This study presents an outlook for energy-intensive sectors of the countries of the Visegrad Group (V4). Table 9.4. illustrates the V4 export share in energy-intensive products (Part 1) in 2012 and the changes in their export share (Part 2) between 2000 and 2012. Table 4 also shows the V4 export ratio compared to EU and global total goods exports in 2012.

Within the Visegrad countries, the share of Poland in the export of energy-intensive goods is the highest, apart from the export share in iron and steel, where the Czech Republic is ranked before Poland. It is clearly seen that Poland's share in almost all sectors within the V4 increased in the period from 2000 to 2012, whereas the share of the other three countries declined. The share of the V4 countries in EU total exports in most energy-intensive industrial sectors increased between 2000 and 2012, amounting to almost 10% in 2012. The export share of the countries of the Visegrad Group in the global market ranged between 2% and 5%. It is noteworthy that, despite the fact that the EU export share of all sectors considerably declined in the world market, the V4 export share increased in all sectors under analysis.

Table 9.4. Export data of energy-intensive products in the V4 countries

Part 1	Share in V4 export in 2012 (%)				Share in EU export in 2012 (%)	Share in world export in 2012 (%)					
	Czech Republic	Hungary	Poland	Slovakia	V4	Czech Republic	Hungary	Poland	Slovakia	V4	EU27
Chemicals and related products	23.4	26.1	41.6	8.8	4.3	0.5	0.5	0.8	0.2	2.0	46.8
Paper and paper manufactures	20.3	15.0	52.0	12.7	9.6	1.1	0.8	2.8	0.7	5.3	55.3
Non-metallic mineral manufactures	32.6	16.1	39.5	11.8	8.8	0.9	0.4	1.0	0.3	2.7	30.1
Iron and steel	32.9	8.6	31.1	27.4	9.3	1.1	0.3	1.1	0.9	3.4	36.9
Non-ferrous metals	13.7	7.9	62.4	16.0	10.1	0.4	0.2	1.9	0.5	3.0	30.2
Energy-intensive products total	24.6	18.1	43.2	14.2	6.1	0.6	0.5	1.1	0.4	2.6	42.4
Part 2	Changes of share in V4 export between 2000 and 2012 (% point)				Changes of share in EU export between 2000 and 2012 (% point)	Changes of share in world export between 2000 and 2012 (% point)					
	Czech Republic	Hungary	Poland	Slovakia	V4	Czech Republic	Hungary	Poland	Slovakia	V4	EU27
Chemicals and related products	-5.23	-2.60	12.26	-4.43	1.9	0.12	0.17	0.48	0.01	0.8	-5.22
Paper and paper manufactures	-2.46	-0.35	11.11	-8.30	5.7	0.58	0.46	1.87	0.22	3.1	-0.24
Non-metallic mineral manufactures	-16.03	2.86	12.71	0.46	4.4	-0.13	0.16	0.50	0.08	0.6	-15.68
Iron and steel	-0.33	-0.55	2.72	-1.84	3.5	0.24	0.05	0.31	0.16	0.8	-8.99
Non-ferrous metals	0.95	-12.29	8.40	2.94	4.1	0.17	-0.15	0.84	0.23	1.1	-2.34
Energy-intensive products total	-5.12	-1.62	9.86	-3.12	2.6	0.13	0.13	0.55	0.07	0.9	-6.28

Source: Author's own elaboration based on UNCTADSTAT database

Table 9.5. Energy Prices for industry in V4 countries in comparison with some other countries' data in 2012, PPPs

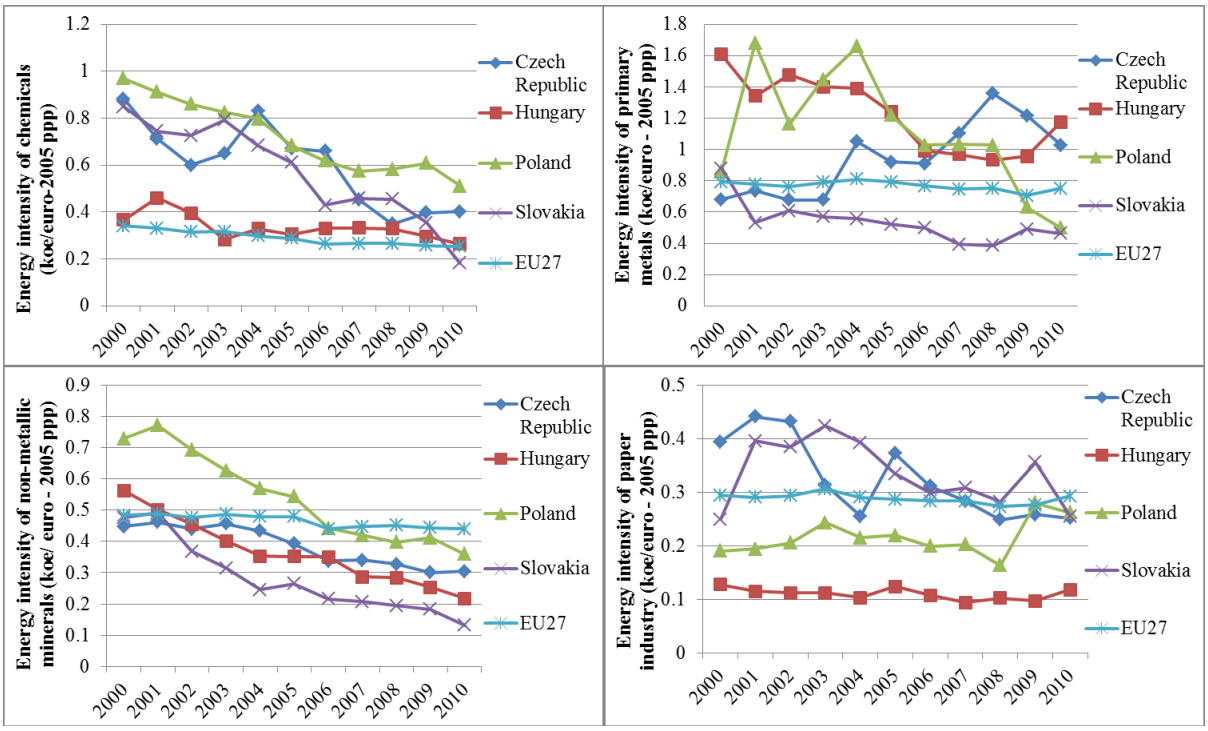
	Light fuel oil (USD/1000 litres)	Gasoline (95 RON) (USD/litre)	Natural gas (USD/MWh)	Electricity (USD/MWh)
Czech Republic	1346.4	2.662	69.2	205.3
Hungary	n.d.	3.239	73.9	224.6
Poland	1720.8	3.014	75.7	197.2
Slovakia	1572.3	2.929	77	254.7
Germany	912.5	2.066	49.7	144.7
UK	931	1.989	35.7	117.1
USA	796.6	0.994	12.7	66.8
Japan	770.8	n.d.	52.6	149.2
OECD Europe	1067.2	2.133	44.8	145.4
OECD	862.4	1.25	29	118.6

Source: Author's own elaboration based on IEA 2014, pp. 360, 366, 369, 375.

Table 9.5. illustrates the relative expensiveness of energy in the V4 in terms of PPPs (purchasing power parities). The price of specific energy sources and that of petrol is substantially higher than in either of the EU industrial countries (Germany, the UK), the USA or Japan. Hence, improving both energy efficiency and energy intensity in the V4 is fundamental.

Figure 9.6. shows the evolution of energy intensities of industrial sectors in the V4 between 2000 and 2012. It can be seen that the energy intensity in chemicals and non-metallic minerals fell in all countries of the Visegrad Group, which is a positive trend. However, the intensity of the non-metallic industrial sector was low in V4 compared to the EU average and this indicator was above the EU average in the

chemicals industry. In the case of primary metals and paper industry, this trend is not so clear. The graphs in Figure 9.6. present the degree of intensity in the V4 energy-intensive industrial sectors compared to each other and to the EU. The disparities in the intensity degree can be explained by the level of energy efficiency in particular countries and subsectors, and by structural reforms and the product mix within particular sectors. (The analysis of these issues do not belong to the aim of this study).



*value added at PPPs in 2005 (in Euros)

Figure 9.6. Energy intensity of energy intensive industries in V4 countries between 2000 and 2010

Source: Author's own elaboration based on ENERDATA database

9.6. CONCLUSIONS

The EU has realised that it can lose its competitive advantage against its main economic partners, primarily to the USA, due to high energy prices. The production costs of energy intensive products and the transportation costs will increase compared to its competitors, which will result in substantial adverse effects not only on product export ability, but also on national competitiveness. The EU has introduced several measures to control price growth and to protect its climate. By creating a competitive environment and liberalising the energy market, EU expects a reduction in energy prices. However, the principle of undistorted competition is sometimes infringed and the actual results are below expectations (See Kádárné Horváth, 2012a).

The development and deployment of energy-efficient technologies is on the rise. There has been a shift towards clean energy in electricity generation. Energy efficiency in transport has increased. The Directive on Energy Efficiency has been adopted where energy savings potential of specific sectors is identified. In the case of natural gas, efforts have been made to diminish infrastructural shortcomings and dependence on gas import, and to seek new purchasing directions and alternatives. The EU Emission Trading System (ETS) aims at increasing energy efficiency and reducing CO_2 emissions. In order to attain EU energy policy objectives, new environmental protection measures and regulatory instruments will be introduced. Apart from regulations at EU level, energy policies in the Member States also regulate energy prices (imposed taxes, levies, etc.). However, resolving global environmental problems is not primarily the EU's task. As long as the main climate polluting countries make little effort to combat climate change, the EU's competitive disadvantage will further increase.

Apart from energy prices, the amount of consumed energy is another factor that affects energy costs. If energy prices are considered to be constraints from sectortial points of view, the efforts targeting improving energy efficiency are vital for reducing energy costs. Increasing energy efficiency is also important at the company level. Conscious energy management is playing an increasingly important role in corporate resource management, especially in energy-intensive setors. Exploring opportunities for rationalising energy is fundamental in maintaining the competitive advantage of companies (See Kádárné Horváth, 2012b).

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