

**Andrea S. Gubik**

University of Miskolc  
Faculty of Economics  
e-mail: [getgubik@uni-miskolc.hu](mailto:getgubik@uni-miskolc.hu)  
tel. +3646 565 111 18 48

**Zoltan Bartha**

University of Miskolc  
Faculty of Economics  
e-mail: [zolib@hu.inter.net](mailto:zolib@hu.inter.net)  
tel. +3646 565 111 23 46

## **The Effect of Business Knowledge on the Internationalisation of Small and Medium Sized Enterprises**

**Abstract.** *It is common knowledge that the internationalisation process of enterprises requires business knowledge. The exact type of knowledge required for internationalisation, and methods of its acquisition are, however, far less obvious. The goal of this study is to identify the knowledge elements that have the greatest influence on the internationalisation process of the small and medium-sized enterprises in the Visegrad countries (Czech Republic, Hungary, Poland and Slovakia). A two-dimensional model of business knowledge is used for the analysis that sorts knowledge elements along the explicit-tacit, and the specific-general dimensions. According to this model, business knowledge that is explicit and general, is the easiest to transfer, while the tacit and specific elements are hardly transferable. The influence of the five knowledge elements described by the model on the internationalisation of small and medium-sized enterprises was tested on a sample of 984 firms. Our analysis confirmed that the amount of knowledge accessible for the firms is connected to internationalisation. It was found that among various knowledge types, the strongest influence for the decision to become international, the rate and intensity of internationalisation exert tacit and specific knowledge elements.*

**Keywords:** *internationalisation, business knowledge, knowledge management, Visegrad countries*

### **Introduction**

Visegrad countries, as part of their structural policy, provide government support to smaller or larger local corporations. Notwithstanding disputes concerning rationality of government support, deciding on the correct form of government support is a major economic policy dilemma. The dilemma is related to the ques-

tion of where should government funds go: provision of tangible resources, infrastructure or information and knowledge.

In its 1996 report on knowledge-based economies, the OECD declared: “The OECD members’ economy is based more and more on knowledge and information. It is widely accepted that only through knowledge can productivity and economic growth be increased, and as a result of it, information, technology and learning play a central role in economic performance” [OECD 1996: 3]. The main message put forward by the report more than 20 years ago is now a reality. Knowledge has become the key success factor on the micro and the macro level as well. Knowledge is also very important in the internationalisation process of the firms. It is therefore essential to identify which kind of knowledge is most needed in an internationalised firm.

For reasons mentioned above this study focuses on business knowledge and its role in the internationalisation process of the Visegrad (V4) small and medium sized enterprises SMEs. Using a questionnaire conducted among 1124 firms from V4 countries (984 SMEs), obtained through the support of IVF Standard Grant no. 21310034, we identify which knowledge elements are most closely related to the international activities of the surveyed firms. The uncovered pattern can be used to determine the areas which government sponsored consultancy services should concentrate on. As, depending on the stickiness, business knowledge can be rather easy but also extremely difficult to transfer, our research can enlighten why some consultancy efforts seem to lack efficiency.

It is an assumption of the study that there are no major differences among the enterprises of the Visegrad countries, therefore their internationalisation challenges and the knowledge base that is accessible for them are fairly similar. For that reason the data collected from the four countries were aggregated and analysed together.

The paper is made up of four sections. Theories on the connection between internationalisation and knowledge are presented first. The literature review is followed by the introduction of a model of business knowledge, which shows which parts of knowledge are easy, and which ones are difficult to transfer. An analysis of the survey data follows in the next section, pointing out the key correlation relationships among business knowledge parts and international activities. Finally, the conclusion sections points out the main lessons to be learnt from the analysis.

## **1. Literature review**

### **1.1. The role of knowledge in internationalisation**

Apart from geographic distance, other factors like cultural differences, language, differences in educational and political systems [Johanson & Wiedersheim

2006] have to be overcome during the internationalisation process. Different internationalisation theories emphasise different knowledge elements in the process, but there's no consensus which of them are crucial.

One group of models emphasizes the gradualism in the internationalisation process. This perspective is included in the Uppsala model [Johanson & Vahlne 1977; 1990] according to which the engagement in international activities evolves gradually. In the first stage, when a company has insufficient knowledge of the market and the partners operating in it, it chooses a simple form of market involvement (for example exporting). Later, thanks to its accumulated experience, the company switches to a more complex form (for example, sets up a subsidiary).

In this model knowledge is based on previous experience, obtained in a learning-by-doing process. As a result, this knowledge is embedded in individuals, and so it is tacit in nature. According to the model, as the employees' knowledge increases, the international activity of the company increases as well. Knowledge can be embedded not only in individuals, but also in teams and company organisation. Organizational learning is viewed as routine-based, history-dependent, and target-oriented [March & Levitt 1988].

The export development models, such as the Reid export behaviour model [Reid 1981], also emphasize the gradual character of the company's internationalisation process. However, they primarily analyse decision-making processes in terms of export activities and main factors related to it. This model pays far more attention to individual characteristics and how these influence the export behaviour.

In the 1990s a new group of companies emerged, which rapidly broke into international markets (born-global enterprises). Their common characteristics are that the entrepreneur has a strong international entrepreneurial orientation, is proactive and aggressive during the internationalisation [Cavusgil & Knight 2009]. Casillas et al. [2014] give a good summary on the motives of born global enterprises. Their model is built on Huber's [1991] classification, and so they also concentrate on a wide spectrum of knowledge elements, such as the pre-founding experience of founders, knowledge acquired through the employment of managers, experience accumulated during the operation of the firm, knowledge learnt from others – experimental learning and search.

The level of internationalisation is influenced by the quantity and quality of available resources. It is obvious, that the more resources are available, the more intensive internationalisation is. Beside the physical resources the importance of human resources like the employees' appropriate foreign language skills or experience in foreign markets [Barkema et al. 1996; Erramilli 1991; Hitt et al. 2006] are also indisputable. Beyond that, the attitudes of the owner/manager toward internationalisation are decisive. The growing size of companies is closely correlated to the increase in motivation, knowledge and experience related to internationalisation.

There is a general consensus that additionally to personal experience and professional knowledge of company managers, social and economic networks created around companies also play a key role in decision-making processes. Network theory [Johanson & Mattsson, 1987] highlights the firm's business context as a crucial factor in companies operation. It emphasizes the role of long term relationships and the role of the individual's personal networks in firms' successful operation.

### **1.2. Knowledge typologies, the relevant knowledge for businesses**

In order to set up a model of business knowledge that can be used to explain the internationalisation process, we need to distinguish between relevant and irrelevant elements of knowledge. During the literature discussion we follow the logic of Bartha [2011].

'We are drowning in information, but starved for knowledge' – wrote John Naisbitt in his famous book, *Megatrends* [1982: 10]. The dual nature of knowledge and information is clearly shown by this quote, and this duality affects the transferability of knowledge quite significantly. Statistical data, for example, are quite easy to transfer. It can be made available online, in easy to process format, but in order to make profitable decisions based on it, one has to be able to understand the pattern hidden behind raw data, what can be rather difficult and time consuming. On the other hand, if one possesses adequate data processing skills that make it possible to crunch big chunks of data, the previous problem can be solved within hours. However if that knowledge is not available inside the company, the transfer (learning) can take years. The tacit or explicit nature of knowledge is one dimension along which its different elements can be sorted.

Polanyi [1966] was the first one to distinguished between tacit and explicit knowledge. Knowledge can be publicly available and private at the same time. It is this duality of knowledge that is reflected in the different categories of Polanyi. A smaller part of our knowledge is public and for that reason explicit, consisting of factual knowledge and knowledge of rules and regulations. Tacit knowledge on the other hand forms the basis of all our explicit one, it can be regarded as a tool that helps us in acquiring and creating new knowledge. Usually we would not even call it knowledge, and use expressions like intuition, logic, associative skills, experience, traditions or apprehension instead. These are the skills that are used to identify and understand new knowledge, and help us integrating into the community. One of the first attempts at the classification of business knowledge (knowledge relevant for companies) was done by Lundvall and Johnson [1994]. The set up four categories:

1. Know what: it basically is equal to information. It comprises knowledge that is easily recorded and stored in forms of bits.

2. Know why: includes the knowledge of rules that govern nature, the economy and the society.

3. Know how: it comprises skills and experiences that help the solving of certain problems.

4. Know who: consists of information and experience about who knows things about certain problems.

This classification is quite similar to Polanyi's [1966]. The first two, know what and know why can be called explicit knowledge, while the second two, know how and know who are tacit knowledge.

The market value and the book value of public companies often is very different, with the market value often being a lot higher than the book value. It was pointed out long ago that the difference is largely thanks to the accumulation of intangible assets. The intangible part is called goodwill, the intellectual value of business. Opinions differ on what exact types of intangible assets does goodwill comprise of. Sveiby [1997] attempts to detect the intangible assets of the company, and distinguishes among three types of so called invisible assets: external structure, internal structure and competence.

Sveiby's classification was driven by the will to separate intangible assets linked to individuals from the ones linked to the organisation. Personal knowledge is carried by the competencies of the employees, structural knowledge on the other hand by the inside and outside structure. The competencies of the employees mean the ability of employees to create physical and intellectual value. Into the inside structure category fall the patents, theories, models, IT and administration systems either created by the company or purchased by it, and also the corporate culture, and the organisational atmosphere. All the links formed with clients and sellers are part of the outside structure, and also the signs that help distinguishing the company and its products from the competitors: trade marks and corporate image.

The idea behind Sveiby's three categories was used to formulate our own model, however the structure had to be rearranged and complemented with another dimension (complexity or the specific nature of knowledge) to better suit the purposes of our analysis. The stronger is knowledge linked to the internal systems of the organisation the more specific it becomes. Specific business knowledge is deeply embedded in the routines of the organisation, and without knowing these routines it is impossible to interpret it. We can also distinguish between specific knowledge coded into employees [Starbuck 1992] and organisational routines [March & Levitt 1988]. While in case of availability we have explicit and tacit knowledge on the two ends of the scale, in case of specific nature we can talk about codified and non-codified knowledge. The latter is also in line with Kuwada's typology of corporate strategic knowledge [Kuwada & Asaba 1989], separating corporate level knowledge from industry level knowledge.

## 2. The dual knowledge model

To analyse the link between internationalisation and business knowledge we use the dual knowledge model, first suggested by Bartha [2006] and developed in Bartha [2011]. The dual typology makes it possible to distinguish individual-bound knowledge from explicit one, and also corporate-bound knowledge from more general one, that can be easily interpreted in all circumstances. So the specific and tacit part of business knowledge is very sticky, difficult to copy or transfer, while the explicit-non-specific part of business knowledge can get easily out of control.

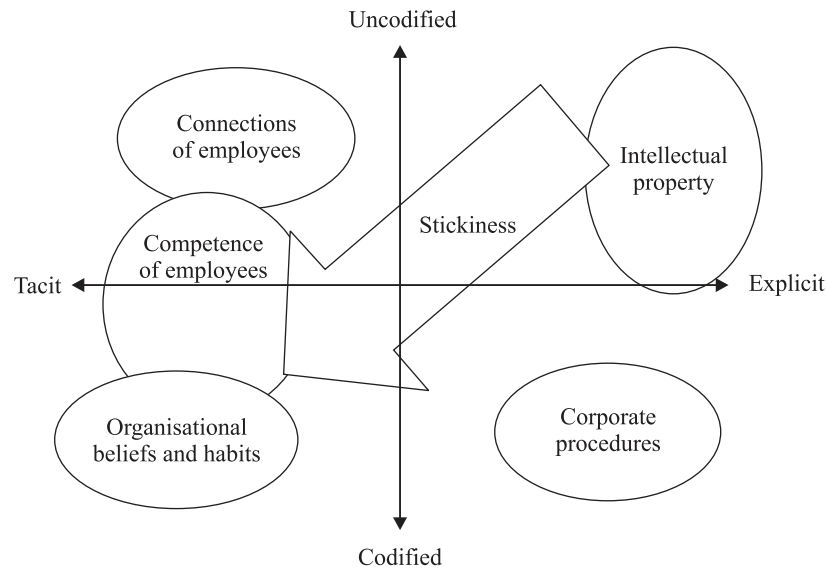


Figure 1. The dual or two-dimensional knowledge model

Source: Bartha 2011: 44.

We now proceed by discussing all five elements in Figure 1 one by one, and we also list the questions posed in our survey that may be used as a proxy to measure them.

### 2.1. Competence of employees

The first category of business knowledge is competence of employees, which comprises also competence of entrepreneurs or owner-managers and reflects the ability of people to create new physical or intellectual value through interactions.

What abilities are we talking about? The know what and know why of all the employees, the experience and logical models applied by them.

While the competency of employees is evidently tacit, the specific nature of it is unclear. Some elements are non-specific, like know what or know why. Other elements however are highly codified, they cannot be learnt in school (unlike the previous, non-specific parts), and can only be acquired and increased after joining the company.

## **2.2. Organisational beliefs and habits**

The competency of employees is a unanimous category because the organisational beliefs and habits integrate the employees working on the managerial level with the ones working lower down the organisational hierarchy. These beliefs and habits are integrated into the minds of the employees, and so they contribute to the efficient cooperation. The organisational beliefs and habits form the common knowledge of all the employees, so they are the common knowledge of the whole organisation. As a result, they are tacit and specific in nature. They can only be learnt after joining the organisation, and when an employee gets a new job at a different firm and/or sector, loses the value of this part of his business knowledge.

## **2.3. Connections of employees**

The cooperation among parties taking part in the creation and diffusion of knowledge is crucial for success. Those who have a lot of friends, and know a lot of people who are willing to help them, can learn faster, and so they can solve problems at a quicker pace. That is why the know who of individuals is part of business knowledge, and it will be called the connections of employees. The basis of the connections of employees is trust, the belief in the fact that the help given will result in help received when needed. The trust is linked to persons, so it is tacit, but it is mostly unrelated to organisations, so it is non-specific. Its value is not decreased if someone leaves an organisation, and is not necessarily increased when joining a new firm.

## **2.4. Corporate procedures**

The explicit knowledge base of the enterprise can be divided into two main categories which are distinguished depending on whether this knowledge can be patented and protected or not, more precisely whether there is any reason to protect the knowledge. The unpatented explicit elements of business knowledge are called corporate procedures. When such elements of business knowledge display low cognitive barriers for learning they can be copied by competitors with relative ease.



Nevertheless, corporate procedures have also elements that are relatively difficult to copy. The reason for that is the fact that many of these procedures are highly codified. Many elements of the corporate procedures are only efficient if some other conditions also apply, like a certain type of corporate culture, organisational hierarchy etc. These bodies of knowledge are not patented, still the fact that they are hard coded into the organisation, makes it difficult for other companies to mimic and copy them.

### 2.5. Intellectual property

All parts of explicit knowledge that are patented fall into the category of intellectual property. These bodies of business knowledge are very general, and the least coded into the organisational specifications. The two main subcategories here are patents coding technological instructions and copyrights protecting the intellectual property of individuals. Patents usually represent a high value for corporations, copyrights on the other hand only if the copyrighted material is relevant to the main profile of the company.

## 3. Material and methods

The data for this study<sup>1</sup> were obtained from a survey (an e-mail or a telephone conversation request followed by an online password protected questionnaire) conducted among 1124 firms from V4 countries, including 270 Polish firms, 597 Czech firms, 113 Hungarian firms and 144 Slovak firms.

A representative sample according to firm size 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. For this reason it was decided that the share of larger enterprises in our sample was higher than their real ratio in the Visegrad countries. An approximately similar number of companies of different sizes were included in the sample, and so larger and internationally active companies are over-represented. When evaluating the results of this paper this fact has to be considered because it may affect the generalizability and applicability of the results. Company size is especially important, because the larger the firm, the higher the chance that it uses some sort of business information system [Sasvari 2012], and such systems can form the backbone of the corporate-level business knowledge.

<sup>1</sup> The paper 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.



### 3.1 Sample characteristics

There were 984 small and medium sized companies among the respondent. Approximately 27.9% of respondent companies were micro-sized enterprises, 48.1% were small-sized enterprises, 24% were middle-sized companies. Most companies were founded after 1990, less than 6.3% had a longer lifespan than 25 years. 50.2% of companies reported that the business was a family business. According to our definition they 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 627 (63.8%) of companies are owned by domestic investors and 76 (7.7%) of companies are in foreign ownership with 100% share.

As for the business activities of the surveyed companies, the share of industrial companies in respondent group is 38.3%, 40.9% are service providers, 17.0% are trade companies and 3.7% are involved in agricultural activities. Within the industrial firms, construction and manufacturing were the most often mentioned economic activities. Besides that companies with professional, scientific and technical activities and information and communication technology firms are also over represented compared to their real life ratios.

### 3.2. Questions used to assess the business knowledge of firms

Some of the studied business knowledge constructs are measured by single items while other are measured by two or more items. Table 1 summarises the proxies of our analysis.

Table 1. Proxies used to measure the five elements of business knowledge

Business knowledge element	Proxy	Measurement method
Competence of employees	1. Human resources for internationalization 2. Experience on international markets 3. Professional business experience in general	1-5 Likert scale
Organisational beliefs and habits	1. Motivation to go international 2. Cosmopolitism and international openness	1-5 Likert scale
Connections of employees	1. Cooperation methods	Multiple choice question
Corporate procedures	1. Planned strategy 2. Knowledge on international markets	Multiple choice question 1-5 Likert scale
Intellectual property	1. Innovations implemented	Multiple choice question

Source: own elaboration.

In case of the competence of employees we rely on the answers given to the following three questions:

1. Evaluate the internal resources of your firm for the internationalization process, please. Human resources for internationalization (e.g. staff members fluent in foreign languages, experienced with foreign markets and different cultures)
2. Evaluate the attitude of the owner/entrepreneur/manager of your firm for the internationalization process, please. Experience on international markets
3. Evaluate the attitude of the owner/entrepreneur/manager of your firm for the internationalization process, please. Professional business experience in general
4. Organisational beliefs and habits are measured using the answers given to questions:
5. Evaluate the attitude of the owner/entrepreneur/manager of your firm for the internationalization process, please. Motivation to go international
6. Evaluate the attitude of the owner/entrepreneur/manager of your firm for the internationalization process, please. Cosmopolitanism and international openness.

The following question measured the connections of employees:

1. While going international, do you operate in any formal or at least informal networks? (we do not cooperate in any international and/or national networks for internationalization / we operate in at least one informal network, which helps us in the internationalization process / we operate in at least one formal network, which helps us in the internationalization process)
2. For the measurement of corporate procedures two questions were used:
3. Do you have a planned strategy for internationalization of your firm? (no / partially, but the strategy is not formalised / yes, we have the international strategy).
4. Evaluate the attitude of the owner/entrepreneur/manager of your firm for the internationalization process, please. Knowledge on international markets.
5. Finally, the intellectual property of firms was evaluated with this question:
6. Has your firms implemented any innovation for the last 3 years (yes/no)? If yes, what type of innovation was it and what was the scope of innovation?

To what extent do the above questions measure the true content of the variables of the model? This is one of the most important question of the operationalization phase. We see three possible problems in this case. When measuring the intellectual property of the enterprise, we could have counted innovations that were not patented, and so they should be part of the corporate procedures. On the other hand, the attitudes towards internationalisation of the owner/entrepreneur/manager were used to measure organisational beliefs and habits, which can be a narrower category than habits and beliefs characterising the whole organisation. Finally, directly linking innovation and intellectual property can distort our findings, since there can be innovative firms that are not based on intellectual property.

### 3.3. Hypotheses

Based on the literature review, and the results of our previous studies on the topic [Bartha-Gubik, 2014, Gubik-Bartha 2014a] four hypotheses were formulated. We assume that the most difficult decision in the internationalisation process is made at the beginning, when a firm first decides on venturing to foreign markets. The attitude of the employees and the corporate culture may strongly influence this first decision. However, one can assume that in most cases the smaller the firm size, the larger the knowledge deficit is (small high-tech firms can be an exception). The distinction between tacit-codified and explicit-non-codified becomes less obvious, and all types of knowledge can be important for small firms.

H1. Knowledge plays a key role in the internationalisation process of the firms.

H2. Among the different types of knowledge that a firm may possess, the codified and tacit parts are more important ones when the internationalisation decision is made.

H3. Among the different types of knowledge that a firm may possess, the uncoded and explicit parts are more important ones in the internationalisation intensity of the firm.

H4. The larger the firm size, the more important tacit-codified knowledge is compared to the explicit-non-codified elements.

## 4. Results and discussion

### 4.1. International markets presence

The relationship between each individual proxy variable and the international activity of firms was tested. The question related to measuring the international appearance was the following: Does your firm run any international activities, at least importing from other countries? Table 2 shows the result of the analysis. The results of the survey indicate that the decision of the firms about internationalisation depends on all the knowledge elements analysed. The strength of the relationships, however, is not the same. The two elements with the strongest influence are: competence of employees, and organisational beliefs and habits. Namely cosmopolitanism and international openness has a Cramer  $V = 0.407$ , and in case of the motivation to go international the Cramer  $V = 0.505$ ; the same indicator for the experience on international markets is 0.448.

The professional business experience in general (competence of employees), and the implemented innovation (intellectual property) variables are only weakly correlated with internationalisation; while the knowledge on international markets (corporate procedures) is moderately correlated. The variables measuring the con-

Table 2. Decisive factors of going international

Business knowledge element	Proxy	SME	Micro	Small	Medium
Competence of employees	Human resources for internationalization	0.344	0.291	0.359	0.363
	Experience on international markets	0.448	0.443	0.436	0.425
	Professional business experience in general	0.243	0.275	0.235	0.204
Organisational beliefs and habits	Motivation to go international	0.505	0.422	0.524	0.579
	Cosmopolitism and international openness	0.407	0.325	0.440	0.452
Connections of employees	While going international, do you operate in any formal or at least informal networks?	–	–	–	–
Corporate procedures	Do you have a planned strategy for internationalization of your firm?	–	–	–	–
	Knowledge on international markets	0.379	0.348	0.380	0.382
Intellectual property	Has your firms implemented any innovation for the last 3 years?	0.209	0.142	0.219	0.211

The stochastic relationships between the variable were analysed with Cramer  $V$  (the Cramer  $V$  is a measure of association between two nominal variables, giving a value between 0 and +1). Every relationship is significant at  $p = 0.05$ . – No statistics are computed because answer to “Does your firm run any international activities, at least importing from other countries?” is a constant (yes or no?).

Source: own elaboration based on the V4 survey results of 2014 ( $N = 984$ ).

nections of employees and partly the corporate procedures cannot be computed here, because they had to be answered by the internationally active firms.

Based on the firm size analysis we can conclude that the role of the organisational habits and beliefs in internationalisation increases with the firm size. Some elements of the competence of employees (e.g. knowledge and experience with international markets, and general business experience) on the other hand, have lesser effect in larger firms. These findings suggest that smaller firms face fundamental competence deficits. The knowledge deficit explains why non-codified knowledge is also crucial in the internationalisation process of small firms.

In case of larger firms the most important knowledge elements are the more embedded parts (codified and tacit), which are difficult to transfer. Internationalisation therefore is rather difficult to influence, because the key knowledge parts can hardly be changed from the outside. As the most commonly used methods of support services are concentrated on giving factual information to the firms, such methods of support are unlikely to have a considerably impact on the decision. The sample data make it very clear that the individual knowledge element variables are correlated not only with internationalisation, but they are also correlated with each other (Table 3).

Table 3. Firm knowledge and its internationalisation\*

Criteria	1	2	3	4	5	6	7	8	9
1. Human resources for internationalization	1								
2. Experience on international markets	0.528 (.000)	1							
3. Professional business experience in general	0.325 (.000)	0.530 (.000)	1						
4. Motivation to go international	0.557 (.000)	0.627 (.000)	0.431 (.000)	1					
5. Cosmopolitanism and international openness	0.498 (.000)	0.613 (.000)	0.485 (.000)	0.726 (.000)	1				
6. While going int., do you operate in any formal or at least informal networks?*	0.110 (.031)	0.130 (.003)	0.109 (.034)	0.091 (.174)	0.087 (.222)	1			
7. Do you have a planned strategy for int. of your firm?*	0.281 (.000)	0.286 (.000)	0.175 (.000)	0.275 (.000)	0.243 (.000)	0.182 (.000)	1		
8. Knowledge on international markets	0.519 (.000)	0.820 (.000)	0.534 (.000)	0.633 (.000)	0.658 (.000)	0.131 (.002)	0.296 (.000)	1	
9. Has your firms implemented any innovation for the last 3 years?*	0.254 (.000)	0.184 (.000)	0.165 (.000)	0.233 (.000)	0.218 (.000)	0.114 (.011)	0.214 (.000)	0.189 (.000)	1

\* Cramer  $V$  is calculated.Source: own elaboration based on the V4 survey results of 2014 ( $N = 984$ ).

This intercorrelation among the variables probably results from the fact that the different knowledge elements together form the knowledge base of the firm, where they complement and also substitute each other. The intercorrelation might also mean that basic information provided by support institutions can still have an impact on the internationalisation decision, as it spills over to the more complex parts of the knowledge base. Our database is not suited to test such speculative propositions; qualitative research (e.g. interviews, case studies) would be needed to get a clearer picture.

#### 4.2. Intensity of internationalisation

A considerable proportion of small and medium sized companies are engaged in more than one international activity.<sup>2</sup> An intensity indicator has been elaborated

<sup>2</sup> The possible answers were the following: Importing; Indirect exporting modes (export commission house (ECH), export/import broker, export management house (EMC), trading company); Direct exporting modes (foreign agent, foreign distributor, own foreign representative office); Co-operative exporting modes (export grouping / export consortium, piggybacking); Contractual modes (management contracting, assembly operations, contract manufacturing, turnkey operations,

to measure internationalisation [Gubik & Karajz 2014]. It indicates how many possible foreign market entry modes a company has utilised during its international activities. An intensity indicator was used to measure the extent of internationalisation [Gubik 2014]. This indicator is built on the idea that different forms of internationalisation require different competencies and resources. The forms of internationalisation can be ranked, and the more complex the activity, the larger weight was added to it as follows: import – 1; indirect export – 2; direct export – 3; export through cooperation – 4; contractual solutions – 5; investment – 6. Using this method, a value between 0 and 21 was calculated for every respondent, which then was recalculated to a 0-1 scale by dividing it by 21. The indicator ranges from 0 to 1, where 0 means that the company does not conduct activities in international markets and 1 means engagement in all activity types (import, direct export, indirect export, cooperative export, contractual modes and investment).

Table 4 shows the relationship between each individual proxy variable and the intensity of internationalisation.

Table 4. Decisive factors of intensity

Category	Criterion	SME	Micro	Small	Medium
Competence of employees	Human resources for internationalization	0.327	0.369	0.315	0.219
	Experience on international markets	0.426	0.507	0.416	0.180
	Professional business experience in general	0.172	0.266	0.124	0.022
Organisational beliefs and habits	Motivation to go international	0.431	0.417	0.458	0.297
	Cosmopolitanism and international openness	0.354	0.370	0.370	0.228
Connections of employees	While going international, do you operate in any formal or at least informal networks?*	0.114	0.143	0.121	0.121
Corporate procedures	Knowledge of international markets	0.359	0.432	0.370	0.137
	Do you have a planned strategy for internationalization of your firm?*	0.283	0.388	0.271	0.207
Intellectual property	Has your firms implemented any innovation for the last 3 years?*	0.209	0.156	0.211	0.119

The stochastic relationships between the variable were analysed with Spearman's Rho coefficient (a nonparametric measure of rank correlation, giving a value between -1 and +1). \* In case of these variables Eta was calculated (Eta Correlation is used to determine if a relationship exists between an interval variable and a categorical variable, giving a value between 0 and +1). [Doman, Szilagyi & Varga 2009]. Every relationship is significant at  $p = 0.05$  except relationships in italics.

Source: own elaboration based on the V4 survey results of 2014 ( $N = 984$ ).

The responses showed that all variables correlate with the intensity indicator. Although the decision on how to go international (intensity indicator) is a different one from the decision on whether or not going international at all, the results in

international licencing, international franchising); Investment modes (foreign branch, joint-venture subsidiary, wholly-owned subsidiary).

Table 4 have a very similar pattern to Table 2. Here again, the relationship between the variables of organisational beliefs and habits knowledge element (motivation to go international, cosmopolitanism and international openness) was the strongest. The competence of employees and the corporate procedure are moderately correlated with the intensity indicator, and there is a very weak (but significant) stochastic relationship in case of the connection of employees.

As for intensity, both financial resources and attitudes toward internationalisation seem to be important determinants. Similar to the decision about going international, the knowledge elements, which are deeply embedded into the firms' habits, are also of determining importance.

In contrast with the findings in point 4.1., the importance of the knowledge elements in the intensity of internationalisation decreases with firm size. This may suggest that factors outside of the scope of the current analysis (e.g. sectorial characteristics, extent of market competition, ownership structure) have a major influence on the intensity of internationalisation.

Based on the above we can accept Hypotheses 1 and 2, but we have not found evidence to support Hypothesis 3. We make the following modification to the statement presented in Hypothesis 4: the larger the firm, the more important is the role of tacit-codified knowledge compared to explicit-non-codified one in the decision about going international. The same relationship could not be proved in case of the intensity of internationalisation.

## Conclusions

The strongest relationship between internationalisation and different elements of business knowledge was identified in the area of organisational beliefs and habits. As noted above, this is a reflection of the owner/entrepreneur/manager's attitude towards internationalisation.

It was closely followed by the competence of employees, and corporate procedures, while some significant relationship was detected in case of the intellectual

Table 5. Relevant knowledge elements based on our sample

Feature	Competence of employess	Organisational beliefs and habits	Connections of employees	Corporate procedures	Intellectual property
International activities	++	+++	x	++	+
Intensity of internationalisation	++	+++	+	++	+

+: significant relationship (weak+; moderate++; strong+++), x: cannot be computed.

Source: own elaboration based on the V4 survey results of 2014 (N = 984).



property. The connections of employees have a weak, but statistically significant effect on the internationalisation process in our sample (Table 5).

The conclusions of the analysis based on firm size are the following:

1. The importance of organisational beliefs and habits increases with firm size in the decision of going international. As the attitude of the owner/entrepreneur/manager towards internationalisation was used to measure organisational beliefs and habits, therefore this result suggests that the number one decision maker in a larger firm is more confident in the decision about internationalisation. Larger firms have more resources, and that would explain the confidence of the manager, but the fact that often internationalisation is the only option for growth over a certain size limit, could also explain our finding.

2. Some elements of the competence of employees (experience with international markets and general business experience) are less important for larger firms.

3. The importance of the studied knowledge elements for the intensity of internationalisation decreases with firm size.

These findings suggest that smaller firms face fundamental competence deficits. The knowledge deficit explains why non-codified knowledge is also crucial in the internationalisation process of micro and small firms. The tendencies uncovered in case of the intensity of internationalisation may be explained by factors that were not involved in our analysis, such as sectorial characteristics or the ownership structure [see Gubik & Bartha, 2014b].

One of the striking features of our findings is that easily transferable business knowledge elements (explicit and uncoded ones) have little effect on internationalisation. Intellectual property, which is both explicit and uncoded, therefore the easiest to transfer, has a weak influence on the international activity of the firm. Corporate procedures on the other hand, an explicit but highly codified knowledge element, moderately affect the intensity of internationalisation.

Most of the government sponsored services provide knowledge easier to transfer areas (market information, how to prepare a formal strategy, marketing tools, information on the red tape barriers related to internationalisation). Our findings suggest that such services can be of little help. Targeted solutions focusing on concrete problems can offer more help (e.g. coaching or counselling), so the inclusion of such services in programmes aimed at increasing the international activity of firms could be effective. One of the most common ways of transferring such sticky knowledge components is through formal and informal meetings, conversations. Meetings for exchanging experience among entrepreneurs, government institutions and researchers are not uncommon.

We can point out two important barriers in the transfer of knowledge elements that are important in internationalisation. As only a weak relationship was found between the connections of employees and the internationalisation process, it is realistic to assume that the personal networks built during such experience sharing

meetings do not strongly influence internationalisation. Since the method used to measure the connections of employees was very basic and one dimensional, further research is needed to clarify this question. The other barrier is that the transfer of those types of knowledge is most needed, the learning of which is the most difficult (because of their tacit and codified nature).

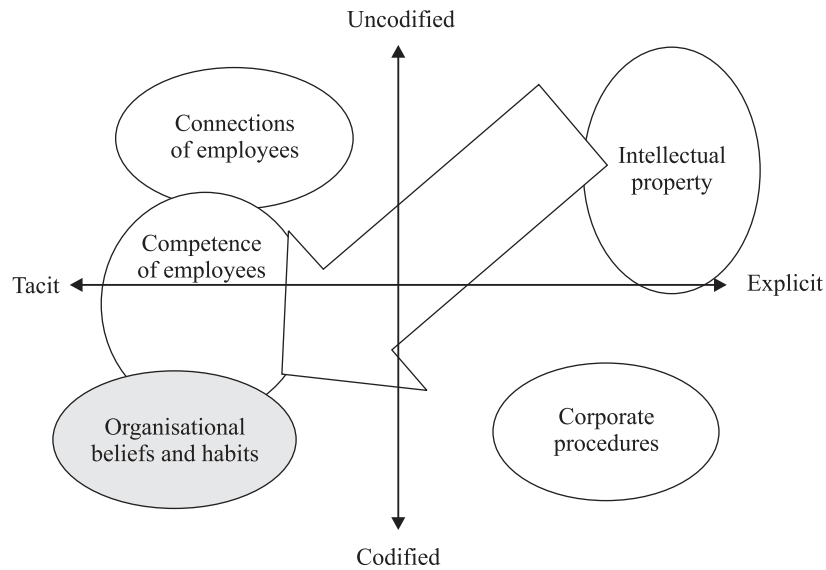


Figure 2. Relevant elements from the dual model

Source: own elaboration based on Bartha 2011.

It is worth noting that the intercorrelation among the variables used to measure the different knowledge elements might mean that basic information provided by support institutions can still have an impact on the internationalisation decision, as it spills over to the more complex parts of the knowledge base. Our database is not suited to test such speculative propositions; qualitative research (e.g. interviews, case studies) would be needed to get a clearer picture. In addition to that the sample is not representative according to firm size even if it contains almost 1000 answers. One has to be very cautious therefore when interpreting the results, and further research on a more representative sample is definitely needed before policy recommendations are established.

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## Wpływ wiedzy biznesowej na internacjonalizację małych i średnich przedsiębiorstw

**Streszczenie.** Powszechnie przyjmuje się, że wiedza biznesowa jest niezbędna dla internacjonalizacji przedsiębiorstw. Mniej oczywiste jest jednak jaki rodzaj wiedzy jest potrzebny i jak może być ona pozyskana. Celem niniejszego badania jest identyfikacja tych elementów wiedzy, które mają największy wpływ na proces internacjonalizacji małych i średnich przedsiębiorstw w krajach wyszegradzkich (Czechach, Polsce, Słowacji i na Węgrzech). W pracy zastosowano dwuwymiarowy model który dzieli wiedzę według wymiarów: jawna-ukryta, konkretna-ogólna. Zgodnie z tym modelem jawna a zarazem ogólna wiedza biznesowa jest najłatwiejsza do transferu podczas gdy elementy ukryte i konkretne są trudne do transferu. Wpływ pięciu elementów uwzględnionych w modelu na proces internacjonalizacji został zbadany na próbie 984 przedsiębiorstw. Nasza analiza potwierdziła, że ilość wiedzy dostępnej dla firm jest powiązana z internacjonalizacją. Badaniu poddano decyzje o umiędzynarodowieniu i stopę oraz intensywność internacjonalizacji. Stwierdzono, iż ukryte i konkretne elementy wiedzy są tymi, które wywierają największy pozytywny wpływ na internacjonalizację.

**Słowa kluczowe:** internacjonalizacja, wiedza biznesowa, zarządzanie wiedzą, kraje wyszegradzkie