

Suggested Citation:

Wach, K. (2014). The Role of Knowledge in the Internationalisation Process: An Empirical Investigation among Polish Businesses (chapter 7). In: **Kiendl-Wendner, D. & Wach, K.** (eds), *International Competitiveness in Visegrad Countries: Macro and Micro Perspectives*. Graz: Fachhochschule Joanneum, pp. 143-158.

7

The Role of Knowledge in the Internationalisation Process: An Empirical Investigation among Polish Businesses

Krzysztof Wach

Cracow University of Economics
Faculty of Economics and International Relations
Department of Entrepreneurship and Innovation
ul. Rakowicka 27, 31-510 Kraków, Poland
e-mail: wachk@uek.krakow.pl

Summary:

In the era of the knowledge-based economy, especially with the constitution of the new paradigm of the entrepreneurial economy, it is knowledge which is attributed to play the key role in economic growth and socio-economic development, what is more knowledge plays a special role for firms, in their corporate growth. Nowadays, business knowledge is increasingly used as an important variable to explain the process of internationalisation of firms. The aim of this study is to present the essence and role of knowledge in the internationalisation process as well as nature of knowledge-based models of internationalisation of the firm and to show the empirically proved dependences between knowledge and internationalisation process among surveyed Polish businesses. The research results do not let generalise and absolutise, nevertheless they prove that the level of experience on international markets among top management team is positively related to the acquisition and utilisation of knowledge on international markets, which proves the theoretical assumptions from the literature on knowledge-based models and learning process models. The mechanism of knowledge acquisition and utilisation impacts on the intensiveness of internationalisation coefficient, however there is weak correlation. The V4 survey was dedicated to general patterns of internationalisation and it was not assumed to research deeply into knowledge-based models, so this is why it is to be undertaken in the future.

Keywords: internationalisation, knowledge-based models, learning approach, business knowledge

JEL classification: M16, L20, L21

* The article was prepared within the project no. StG-21310034 entitled "Patterns of Business Internationalization in Visegrad Countries – In Search for Regional Specifics" financed by the International Visegrad Fund in the years 2013-2014 and coordinated by Cracow University of Economics.

7.1. INTRODUCTORY REMARKS

In the era of the knowledge-based economy, especially with the constitution of the new paradigm of the entrepreneurial economy, it is knowledge which is attributed to play the key role in economic growth and socio-economic development, what is more knowledge plays a especial role for firms, in their corporate growth. Widely recognised approaches such as the learning approach or knowledge-based approach at the earliest appeared in management studies, but then gained in popularity also in economics, especially in the theories of the growth of the firm. At the turn of the first and second decade of the twenty-first century, business knowledge is increasingly used as an important variable to explain the process of internationalisation of firms. The literature is rich in numerous attempts to implement the concept of knowledge to modelling the firm-level internationalisation (Wach, 2012b, pp. 245-264). Hence, the aim of this study is to present the essence and role of knowledge in the internationalisation process as well as nature of knowledge-based models of internationalisation of the firm and to show the empirically proved dependences between knowledge and internationalisation process among surveyed Polish businesses. The selection of presented models was based on the criterion of frequency of citations in the literature.

7.2. LITERATURE REVIEW

Internationalisation Models

Although there are numerous proposals, concepts, models or theories of internationalisation of the firm, in the literature (Wach, 2014b), there is a common agreement in principle on the major assumptions for systematics the trends in the firm-level internationalisation modelling, however – for obvious reasons – there are some inconsistencies, because of the fact that some models can be classified in many ways, especially these aspiring to be considered holistic as to a lesser or greater extent they are based on earlier theories and models, assumptions of which can be easily seen. N.E. Coviello and A. McAuley (1999, pp. 223-256) distinguish three schools, which are supposed to be used to study the internationalisation of the firm, especially SMEs, namely neoclassical school of foreign direct investment; behavioural school of stages models as well as network approach of the relational school. B. Rundh (2001, pp. 319-320) distinguishes three approaches to analyse the internationalisation process of firms, particularly in relation to SMEs, which are: incremental approach based on various stages of internationalisation; network approach, in which internationalisation is based on cooperation among firms operating in networks as well as business-and-strategic approach, where internationalisation is described as a result of international growth due to the intended and realized business strategy.

In turn, K. Mejeri and K. Umemoto (2010, pp. 157159) distinguish two very broad trends, which include above mentioned models, and they are: process theories highlighting the increasing commitment to foreign markets with the passing of time and secondly, adaptive concepts explaining the adaptation of corporate operations to the international environment. M. Ruzzier, R.D. Hisrich and B. Antoncic (2006, pp. 478-489) propose one of the most extensive typology of approaches to internationalisation of firms, especially SMEs, pointing out four or five perspectives such as (i) process or stages models as well as innovation-based models (as a special subgroup of process models), (ii) network approach, (iii) resource-based view, (iv) international entrepreneurship theory. M. Gorynia (2007, p. 68) identifies four broad groups of internationalisation theories, namely sequential (conventional) models and their developments; unconventional (simultaneous) models; network approach and finally other concepts of internationalisation, including born globals. J. Whitelock (2002) divides theories of internationalisation into four groups, namely: U-model, OLI theory (eclectic paradigm), network approach, and last but not least strategic approach. M.K. Witek-Hajduk (2010, p. 29) recognises contemporary theories of internationalisation into four groups, namely: stage theories (including Uppsala model, innovative models, Finnish models), network theories, theories of early internationalisation (INV), alternative theories of internationalisation (including models of the strategic, decision-making and organizational capabilities approach). N. Daszkiewicz (2004, pp. 38-62) proposes the 5-groups scheme of the internationalisation models, namely: stages models (including U-model, innovation-related models, models based on the learning process), resource-based view (including organisational life cycle models), intentions-based models, network approach, as well as other models). Presented systematic approaches to analysis of the internationalisation process of the firm, especially small and medium-sized enterprises have a lot in common, however, they are in many aspects divergent. Taking into account the dominant features of the particular models and the prospect of the theory and practice of entrepreneurship (Wach, 2012a, pp. 94-131; Wach, 2012b, pp. 254-264), the authorial typology of 7-currents can be tempted to be assumed and promoted (Table 7.1).

Models explaining internationalisation of the firm – as a main focus – are dated back to 1970s and at the beginnings they used the process approach (stages), but drew from the learning process assumptions by explaining the phenomenon of corporate involvement in international activities through the prism of gaining knowledge about new international markets. It should be noted, however, that over time the knowledge-based models, especially the learning process approach, have developed considerably, not necessarily referring to the original assumptions of stages models, and thus constituted a separate current of internationalisation models, which is trying to holistically treat the process of internationalisation of the firm.

Table 7.1. Typology of the modern theories of internationalisation of the firm

| Approaches | Models | Representatives |
|---|--|--|
| Stages models | U-model | J. Johanson & F. Wiedersheim-Paul (1975), J. Johanson & J.E. Vahlne (1977) |
| | I-model | W.J. Bilkey & G. Tesar (1977), S.T. Cavusgil (1980), S.D. Reid (1981), L.H. Wortzel & H.V. Wortzel (1981), M.R. Czinkota (1982), J.S. Lim, T.W. Sharkey & K.I. Kim (1991), R. Rei, T.R. Rao & G.M. Naldu (1992) |
| | Hybrid models | K. Yoshihar (1978), R. Swedenborg (1982), M. Juul & P. Waters (1987) |
| Resource-based view | Resources-based models, Capabilities-based models, Resources-and-Capabilities-based models | P. Westhead, M. Wright & D. Ucbasaran (2001), O.N. Toulan (2002) |
| Networking approach | Theories of network internationalisation | J. Johanson & L.G. Mattsson (1988), H. Håkanson & J. Johanson (1992) , J. Johanson & F. Wiedersheim-Paul (2009) |
| International entrepreneurship | International entrepreneurship general models (GIEMs) | M. Ruzzier, R.D. Hisrich & B. Antoncic (2006), H. Etemad (2004), R. Schweizer, J.-E. Vahlne & J. Johanson (2010) |
| | International new ventures (INVs) | P.P. McDougall & B.M. Oviatt (1994) |
| | Born globals (BGs) | G.A. Knight, T.K. Madsen & P. Servias (2004), R. McNaughton & J. Bell (2004) |
| | Rapid internationalisation | I. Kalinic & C.Forza (2012), N. Hashai, T. Almor (2004) |
| Managerial and strategic approach | Strategies-based models | J. Bell, D. Crick & S. Young (2004), B. Hagen, A. Zucchella & P. Cerchiello, N. De Giovanni (2012) |
| | Decision-making models | R. Schweizer (2011) |
| | Organization-based models | S. Andersson & H. Florén (2008) |
| Protoholistic approach (integrative models) | General holistic models | R. Flecher (2001), J. Bell, S. McNaughton, S. Young & D. Crick (2003), H. Etemad (2004) |
| | Knowledge-based models | K. Mejri & K. Umemoto (2010), M. Kutschker, I. Bäurle, S. Schmid (1997) |
| Alternative concepts | Alternative theories of the firm-level internationalisation | K. Liuhto (2001), P.A. Havens (1994) |

Source: (Wach, 2012a, p. 99).

Role of Knowledge in Internationalisation of the Firm

Stages models formed the basis and even gave rise to the emergence of, as already mentioned, a separate current of internationalisation models which are learning process models, hence the synthetic presentation of the process theories (stages models) seems to be reasonable (Forsgren, 2002, pp. 257-277). J. Johanson and J.-E. Vahlne (1974; 1977; 1990), and F. Wiedersheim-Paul (1975) treat the internationalisation of the firm as an incremental process of international commitment which is a result of the learning process, whereby incrementality is understood as a consequence of the series of decisions. The U-model assumes a stepwise expansion in four stages (Johanson & Wiedersheim-Paul, 1975, p. 307), which are associated with greater commitment of resources leading to different market experience and market knowledge. The first stage (no regular export activities) is associated with the lack of commitment by the firm of its resources in the export activities, which results in the impossibility of obtaining the required knowledge about foreign markets. On contrary, the second stage (export through independent intermediaries), allows the firm to obtain regular information on foreign markets, which of course is associated with the market exposure. The third stage (commercial subsidiaries) is associated with a controlled channel of information that allows the firm to acquire information from the market. This step also allows to gain direct experience of resource factors that determine the further internationalisation process. The fourth stage (manufacturing subsidiaries) means even greater commitment of resources. This sequence is defined as a an establishment chain. While developing the original concept, the U-model was elaborated by dividing these four factors into state aspects and change aspects. The input state variables (market knowledge and market commitment) influence the output dynamic variables (commitment decisions and current activities). The level of internationalisation is dependent on the associated risks. The scale of further internationalisation will therefore be limited to market commitment, while the decisions will be constrained by the uncertainty (Johanson, Vahlne, 1990).

J. Johanson and J.-E. Vahlne (2009) proposed a modified version of their stages model of 1977 adapting it to the network approach. The updated model assumes that the firm is embedded in the active network of interdependent actors. As in the original model, there are four interrelated variables, two state aspects associated with the storage of knowledge and two variables related to the flow and transfer of knowledge. These variables determine the dynamic cumulative process of learning, but also a commitment to building trust among partners of the network (Johanson & Vahlne, 2009, p. 1424). The increasing level of knowledge has a positive or negative impact on building trust. An important change compared to the original model is the introduction of an element of entrepreneurship theory manifested in

recognition of opportunities to the knowledge. These opportunities constitute knowledge, acting in a subset, in addition to the needs, skills, strategy and relationship network (Johanson & Vahlne, 2009, p. 1424). Since the internationalisation process occurs in the network, hence the variable 'market commitment' of the original model was replaced by the variable 'network position'. Learning by building trust, as one of two dynamic variables, expresses the result of current operations. This contributes to an increase in knowledge. The last variable of the model was only completed in relation to the original concept of attribute 'relational' to emphasize the key role of networks in the decision making process ('relationship commitment decisions').

M. Kutschker, I. Bäurle and S. Schmid (1997) propose the three Es model (3E model), which is based on a process (consecutive) approach and the managerial and strategic approach. It explains the process of internationalisation of the firm (defined as an increase in the involvement of business in international activities) taking into account the implications that brings this concept to the practice of managing the process of internationalisation. This model distinguishes three categories of processes, namely (i) international evolution, (ii) international episodes and (iii) international epochs (3E). In this sense, it is based on an earlier concept of the four types of internationalisation processes introduced by L. Melin (1992, pp. 101-102), which are (i) events or states, (ii) episodes, (iii) epochs and (iv) biographic history, while the latter process corresponds to the international evolution in terms of 3Es model, which in turn consist of individual evolutionary steps. The internationalisation of the firm is determined by three factors, namely the geographical and cultural distance to foreign markets, the range of value added in these markets and the degree of integration of international activities. A business is becoming more internationalised if the firm enters new markets, what is more if the firm expands its activities in existing international markets and if the firm further integrates its international business (Melin, 1992, p. 104). This model is based on the sociological concept of deep structure introduced in the 1960s by Claude Lévi-Strauss. It is a kind of invisible (internal) skeleton phenomena in the firm, and is contrasted with the concept of the surface structure, which is the visible part of the structure of the firm. Deep structure, using well-known in the social sciences the concept of contextual orientation, is defined as the specific constellation of data and values, which are fragments of knowledge (Kutschker *et al.*, 1997, p. 108). Deep structure and surface structure are the two layers of the organisation, which differently affect the three processes of internationalisation, as managers play crucial role in the internationalisation of the firm.

J.C. Casillas, A.M. Moreno, F.J. Acedo, M.A. Gallego and E. Ramos (2009) recently have proposed an integrated model of internationalisation of the firm, which articulates the role of knowledge in the process. It combines the four processes of

generation, absorption, spreading and implementation of knowledge in the internationalisation process. The model tries to explain three important issues in the internationalisation process: entry mode, entry scope and entry pace. The essence of the model is reduced to four variables, including three inputs and one output. The dependent variables are therefore prior knowledge (K1), the search for new knowledge (K2), which is here understood as the recognition of the internationalisation of the firm as a market opportunity. The combination of these two variables, which both are a third variable (knowledge integration) determining the behaviour of the firm in the field of internationalisation. The integration of knowledge (K3) is understood as a suitable absorption of new knowledge and its combination with the previously acquired knowledge in order to intensify the process of internationalisation. Prior knowledge is the result of an individual (the founder) and collective (managers) activities supported by adequate communication and activities in the formal and informal networks. This knowledge affects the degree and intensity of the search for new knowledge. The degree of internationalisation of the firm positively affects international learning, and thus the pace of further internationalisation (Casillas *et al.*, 2009, p. 318).

K. Mejri and K. Umemoto (2010) refer to resource-based view initiated by E.T. Penrose (1959) and developed by J.B. Barney (1991), and knowledge is treated as an intangible resource. They discuss three phases of internationalisation, which are pre-internationalisation, novice internationalisation and experienced internationalisation (Daszkiewicz & Wach, 2012, pp. 100-102). K. Mejri and K. Umemoto (2010) distinguish four types of knowledge: market knowledge, network knowledge, cultural knowledge, entrepreneurial knowledge. Hence, this concept also refers to the theory of entrepreneurship, which is currently the focal point of all the latest models of internationalisation, especially those integrative models (embedded in the international business). Experimental knowledge includes network knowledge cultural knowledge and entrepreneurial knowledge, while market knowledge is objective. The acquisition and utilization of these types of knowledge is different at the different stages of internationalisation process.

R.G. Javalgi, S. Deligonul, A. Dixit and S.T. Cavusgil (2011) puts knowledge in the centre while explaining re-entry phenomenon. They take into account three processes: exploration of knowledge, acquisition of knowledge and the use of knowledge (knowledge utilisation). Decisions on re-entry to the given foreign market is determined by knowledge gained during the previous expansion, which is called *de novo* entry. During the initial entry into the international market, knowledge exploration, both explicit and tacit knowledge, takes place. The knowledge acquisition and knowledge utilisation are correlated.

7.3. MATERIAL AND METHODS

The article presents the results of the research project no. StG-21310034 entitled “Patterns of Business Internationalization in Visegrad Countries – In Search for Regional Specifics” financed by the International Visegrad Fund in the years 2013-2014 and coordinated by Cracow University of Economics in cooperation with four partner universities (University of Economics in Prague, Czech Republic; University of Miskolc, Hungary; Slovak University of Agriculture in Nitra, Slovakia; Gdańsk University of Technology, Poland). The main research method, which was applied, was the survey (an e-mail or a telephone conversation request followed by an online password protected questionnaire) conducted among 1149 firms from V4 countries, including 274 Polish firms, 618 Czech firms, 113 Hungarian firms and 144 Slovak firms. In Poland 190 completely filled in questionnaires (out of 274 all questionnaires) were selected to further statistical preparations. The survey was conducted between October 2013 and February 2014 (Wach, 2014; Wach & Wojciechowski, 2014; Daszkiewicz & Wach, 2014; Daszkiewicz, 2014; Gubik & Karajz, 2014; Duréndez & Wach, 2014). It seems that research into the issue of the role of knowledge in the firm-level internationalisation process among Polish businesses can be treated as the supplementation to the internationalisation research in Poland (Jarosiński, 2014). The statistical calculations were made by the use of the statistical software package Stata/SE® 12.0 as well as Statistica® PL v. 10. In order to verify the assumed hypothesis the following statistical tests were applied: Spearman's rank correlation coefficient (Spearman's Rho) as well as Cramér's V as a measure of associations between two nominal variables, which are based on Pearson's chi-squared statistics. The studies on the role of knowledge in the internationalisation process takes two main research hypotheses:

- H1:** The level of experience on international among top management team is positively related to the acquisition and utilisation of knowledge on international markets, which proves the theoretical assumptions from the literature on knowledge-based models and learning process models.
- H2:** The knowledge acquisition and utilisation impacts on the intensiveness of internationalisation.

The Questionnaire

The questionnaire was prepared in English and translated into four national languages (Czech, Hungarian, Polish and Hungarian). Computer-assisted web interviewing (CAWI) was applied as a main survey method. It means that responders answered the questions on their own using the online questionnaire, which was

password protected¹. The responders were selected on the basis of Polish Exporters Database and the request to take part in the survey was sent to almost 7 thousands internationalised firms. Only 274 firms replied, so the return rate was rather low (ca. 4%), thus the results are not representative for the whole population of Polish internationalised firms. The questionnaire was divided into four parts dedicated to different aspects such as:

1. the characteristics of the firm (e.g. year of establishment, year of internationalisation, staff, foreign ownership percentage, familiness, localisation, NACE code, scope of internationalisation, internal resources, innovation activities),
2. the characteristics of the owner, entrepreneur and principal management (e.g. sex, level of education, type of education, age, personal attitude including beliefs and habits),
3. the characteristics of the industry, in which the firm operates (e.g. high-tech vs. low-tech, competition, innovativeness),
4. the patterns of internationalisation (e.g. motives for going international, entry modes, entry combination, internationalisation performance, international strategy, networking, plans for further internationalisation vs. de-internationalisation).

Managerial perception was chosen as an operationalisation method, thus it assures the acceptable correctness and the reliability, and first of all tops other methods in relation to its practical usage, what is more it is applied in analogous research very often (Lyon, Lumpki & Dess, 2000). This method was applied for all qualitative variables.

In order to discuss the issue of the role of knowledge in the internationalisation process among Polish firms, six simple knowledge variables were selected (Table 7.2). On that basis the standardised indicators consisting of the simple indicators were applied, namely basic PIKAU (basic potential index of knowledge acquisition and utilisation) including the first four simple variables as well as extended PIKAU by adding two more simple indicators describing the international orientation, cosmopolitanism and international openness.

An overall assessment index was constructed through the sum of values (the interval from 1 to 5 of Likert's scale) indicated by the respondents at each question, and then it was divided by the sum of maximum values possible to be obtained. Finally, the averaged total assessment was obtained, standardised in the interval from 0 to 1 (given in percentage in the interval from 0 to 100).

¹ The questionnaire was available at <http://www.visegrad.uek.krakow.pl/survey>.

Table 7.2. Variables used to measure business knowledge in the internationalisation process

| Variables | Explanation | Type | Measure |
|--|--|-------------------|--------------------------------|
| Human resources for internationalisation | Importance and role of HR of the firm for internationalisation process (e.g. staff members fluent in foreign languages, experienced with foreign markets and different cultures) | simple question | 1-5 Likert scale |
| Knowledge on international markets | Knowledge on international markets among TMT | simple question | 1-5 Likert scale |
| Experience on international markets | Level of experience on international markets among TMT | simple question | 1-5 Likert scale |
| Professional experience | Professional business experience in general of the TMT | simple question | 1-5 Likert scale |
| Basic PIKAU | Overall standardised indicator consisted of 4 above mentioned simple questions | overall indicator | 1-100 <i>quasi</i> -continuous |
| International motivation | Motivation to go international among TMT | simple question | 1-5 Likert scale |
| Cosmopolitanism and openness | Cosmopolitanism and international openness among TMT | simple question | 1-5 Likert scale |
| Extended PIKAU | Overall standardised indicator consisted of all 6 above mentioned simple questions | overall indicator | 1-100 <i>quasi</i> -continuous |

Source: own study.

7.4. RESULTS AND DISCUSSION

The Sample Characteristics

As for the business size measured by number of employees, approximately 23% of respondents were micro enterprises, 23% were small enterprises, 21% were medium-sized firms (76% SMEs altogether) and 24% were large companies. On average the statistical respondent employs 187 workers, however among 25% of them the employment was up to 10 workers, and only among 25% of them exceeded 180 workers. Half of the firms were established before 1996 and the second half afterwards. One fourth of the firms were established after the accession of Poland to the European Union. About 41% of the business were family firms, which is coherent with other results in Poland. Almost 60% of the firms holds only domestic capital, nevertheless on the average foreign ownership among studied firms amounts to ca. 30%. Most of the firms operates within and beyond EU markets (Figure 7.1).

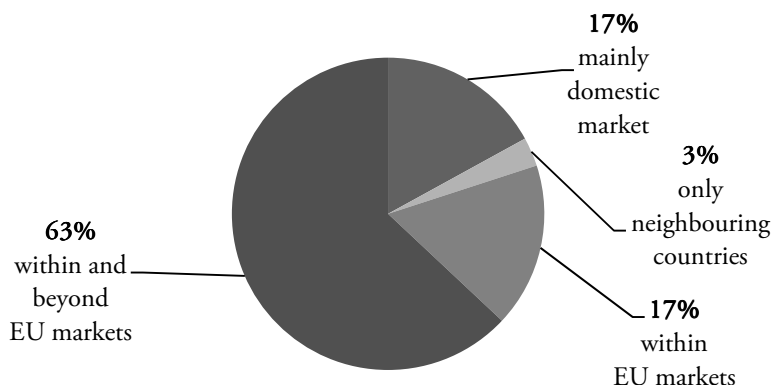


Figure 7.1. The territorial scope of studied firms
Source: own study based on the V4 survey results of 2014 ($n = 190$).

Elements of Business Knowledge for Internationalisation

The responders were asked to evaluate how six different aspects of knowledge impact the internationalisation process in the given firm. Most of the Polish firms evaluated these dimensions rather or extremely high (comparing to results in the Czech Republic, Hungary and Slovakia the so high self-evaluation was the exception in the case of Poland). International orientation as well as cosmopolitanism and international openness, and also general professional experience in business were evaluated extremely positively (Table 7.3).

Table 7.3. Evaluation of knowledge elements according to the studied firms

| Proxies | Scale | Min | Max | Mean | Me | S.D. | Q1 | Q3 |
|------------------------------|---------|-----|-----|-------------|----|-------|----|----|
| HR for internationalisation | {1-5} | 1 | 5 | 3.93 | 4 | 1.00 | 3 | 5 |
| Knowledge on int'l markets | {1-5} | 1 | 5 | 3.77 | 4 | 0.90 | 3 | 4 |
| Experience on int'l markets | {1-5} | 1 | 5 | 3.69 | 4 | 0.96 | 3 | 4 |
| Professional experience | {1-5} | 1 | 5 | 4.24 | 4 | 0.79 | 4 | 5 |
| Basic PIKAU | {1-100} | 70 | 90 | 77.87 | 80 | 13.97 | 70 | 90 |
| International motivation | {1-5} | 1 | 5 | 4.27 | 4 | 0.81 | 4 | 5 |
| Cosmopolitanism and openness | {1-5} | 1 | 5 | 4.20 | 4 | 0.81 | 4 | 5 |
| Extended PIKAU | {1-100} | 30 | 100 | 80 | 80 | 12.42 | 73 | 90 |

Source: own study based on the V4 survey results of 2014 ($n = 190$).

Checking the relations among these six knowledge elements can be interesting (Table 7.4. and 7.5). The strongest relation is experienced in case of knowledge on international markets and experience on international markets among top

management team, which was proved by using two tests (Cramér's $V = 0.686$, $p < 0.000$ as well as Spearman's $Rho=0.732$, $p < 0.000$). On one hand, the results are quite obvious, nevertheless there are very optimistic, as it proves that internationalised firms can make use of the knowledge gained on international markets, so the model of knowledge acquisition and utilisation discussed in the literature is also valid for Polish tested businesses (Mejri & Umamoto, 2010; Casillas *et al.*, 2009). The fact that the high level of professional experience in business in general makes top management much more cosmopolitan and open to foreign markets (Cramér's $V = 0.406$, $p < 0.000$), is a very good proof as it may testify that general experience is based or can be based in the future on international cooperation due to the openness. These managers who have good working knowledge on international markets declare also excellent professional experience in general (Spearman's $Rho=0.471$, $p < 0.000$ as well as Cramér's $V = 0.324$, $p < 0.000$), which is very important for stages models of internationalisation, and it proves the most commonly accepted concept (Johanson & Vahlne, 2009) that the market commitment and international activities require some time. It also tell us that the selection of the staff involved in international operations can't be stochastic, but must be very careful and well-thought-out.

Table 7.4. Cramér's V associations between knowledge variables

| Variables | [HRINT] | [KNOW] | [INTEXP] | [PROFEXP] | [MOTIV] | [COSMP] |
|-----------|---------|---------|----------|-----------|---------|---------|
| [HRINT] | 1 | | | | | |
| [KNOW] | .210*** | 1 | | | | |
| [INTEXP] | .242*** | .686*** | 1 | | | |
| [PROFEXP] | .173† | .324*** | .347*** | 1 | | |
| [MOTIV] | .274*** | .237*** | .229*** | .204* | 1 | |
| [COSMP] | .0191* | .229*** | .237*** | .406*** | .333* | 1 |

Correlation is significant at:

† $p > 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.000$.

Notes: [HRINT] HR for internationalisation; [KNOW] Knowledge on international markets; [INTEXP] Experience on int'l markets; [PROFEXP] Professional experience; [MOTIV] International motivation; [COSMP] Cosmopolitanism and openness.

Source: own study based on the V4 survey results of 2014 ($n = 190$).

Using the data from the questionnaire, the transnationality index (TNI) was calculated based on the provided data. TNI is one of the most popular and commonly accepted measures of internationalisation (Wach, 2012a, p. 132). The dependence between TNI and extended PIKAU (discussed above in the article) index was checked by using Pearson correlation coefficient ($r=0.2$, $p=0.01$). Although

there is weak correlation, but at the widely-accepted *p*-value. The results are not so strong to support the hypotheses absolutely or unconditionally.

Table 7.5. Spearman's rank correlation coefficient among knowledge variables

| Variables | [HRINT] | [KNOW] | [INTEXP] | [PROFEXP] | [MOTIV] | [COSMP] |
|-----------|---------|---------|----------|-----------|---------|---------|
| [HRINT] | 1 | | | | | |
| [KNOW] | .262*** | 1 | | | | |
| [INTEXP] | .301*** | .732*** | 1 | | | |
| [PROFEXP] | .138* | .471*** | .452*** | 1 | | |
| [MOTIV] | .348*** | .314*** | .310*** | .206** | 1 | |
| [COSMP] | .235** | .373*** | .350*** | .348*** | .525*** | 1 |

Correlation is significant at:

* *p* < 0.05; ** *p* < 0.01; *** *p* < 0.000.

Notes: [HRINT] HR for internationalisation; [KNOW] Knowledge on international markets; [INTEXP] Experience on int'l markets; [PROFEXP] Professional experience; [MOTIV] International motivation; [COSMP] Cosmopolitanism and openness.

Source: own study based on the V4 survey results of 2014 (*n* = 190).

7.5. CONCLUSIONS

In the literature, especially in the recent decades, knowledge plays a crucial role while explaining the internationalisation process of the firm. What is more, there are numerous different and peculiar models and their beginnings are dated back to the U-model from 1970s. J.C. Casillas *et al.* (2009, pp. 312-313) believe that knowledge-based models and learning process models of internationalisation can be divided into three groups:

- concepts rooted in stages models, which treat knowledge in a sequential approach,
- international entrepreneurship models that assign a key role to knowledge, especially in terms of recognition of international market opportunities (in particular the concept of international new ventures, INV),
- integrative knowledge-based models using the perspective of organisational learning.

Concluding, knowledge seems to be a key variable explaining the process of internationalisation of the firm. Knowledge is explicitly expressed as an important variable while modelling the process of internationalisation, what is more, knowledge has gained in popularity for the last two decades, the heyday of knowledge-based internationalisation models and learning process approach is dated back at the turn of the first and second decade of the twenty-first century. It seems that the knowledge-based models as well as international entrepreneurship models will dominate in the coming years as a major issue of research on the internationalisation

of the firm (Wach & Wehrmann, 2014). The top management teams through continual learning can “change and re-direct the composition of their responsiveness and efficiency activities in ways sensitive to an ever-changing world” (Morris, Hammond & Snell, 2014, p. 405).

The research results do not let generalise and absolutise, nevertheless they prove that the level of experience on international markets among top management team is positively related to the acquisition and utilisation of knowledge on international markets, which proves the theoretical assumptions from the literature on knowledge-based models and learning process models (Cramér’s $V = 0.686$, $p < 0.000$ as well as Spearman’s $Rho=0.732$, $p < 0.000$). The mechanism of knowledge acquisition and utilisation impacts on the intensiveness of internationalisation coefficient ($r=0.2$, $p=0.01$), however there is weak correlation, but at the widely-accepted p -value.

The V4 survey was dedicated to general patterns of internationalisation and it was not assumed to research deeply into knowledge-based models, so this is why it is to be undertaken in the future. It would be good to explore the knowledge mechanisms among Polish businesses in details as well as their impact on the firm-level international competitiveness.

REFERENCES

- Barney, J.B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 14(1), pp. 33-46.
- Casillas, J.C., Moreno, A.M., Acedo, F.J., Gallego, M.A., Ramos, E. (2009). An Integrative Model of the Role of Knowledge in the Internationalization Process. *Journal of World Business*, 44.
- Coviello, N.E., McAuley, A. (1999). Internationalisation and the Smaller Firm: A Review of Contemporary Empirical Research. *Management International Review*, 39(3).
- Daszkiewicz, N. (2004). *Internacjonalizacja małych i średnich przedsiębiorstw we współczesnej gospodarce*. Gdańsk: Scientific Publishing Group.
- Daszkiewicz, N. (2014). Internationalization and Europeanization of Businesses in the Single European Market (chapter 2), In: B. Knežević & K. Wach (eds), *International Business from the Central European Perspective*. Zagreb: University of Zagreb, pp.15-24.
- Daszkiewicz, N. & Wach, K. (2012). *Internationalization of SMEs: Context, Models and Implementations*. Gdańsk: Gdańsk University of Technology Publishers.
- Daszkiewicz, N. & Wach, K. (2014). *Motives for Going International and Entry Modes of Family Firms in Poland*. *Journal of Intercultural Management*, 6(2).
- Duréndez, A. & Wach, K. (eds) (2014). *Patterns of Business Internationalisation in Visegrad Countries – In Search for Regional Specifics*. Cartagena: Universidad Politécnica de Cartagena.

- Forsgren, M. (2002). The Concept of Learning In the Uppsala Internationalization Process Model: A Critical Review. *International Business Review*, 11.
- Gorynia, M. (2007). *Strategie zagranicznej ekspansji przedsiębiorstw*, Warszawa: PWE.
- Gubik, A.S. & Karajz, S. (2014). The Choice of Foreign Market Entry Modes – The Role of Resources and Industrial Driving Forces. *Entrepreneurial Business and Economics Review*, 2(1).
- Jarosiński, M. (2014). Characteristics of Polish Firms' Internationalisation Processes (chapter 4), In: B. Knežević & K. Wach (eds), *International Business from the Central European Perspective*. Zagreb: University of Zagreb, pp. 43-52.
- Javalgi, R.G., Deligonul, S., Dixit, A., Cavusgil, S.T. (2011). International market Reentry: A Review and research Framework. *International Business Review*, 20(5).
- Johanson, J., Vahlne, J.-E. (1977). The Internationalization Process of the Firm: A Model of Knowledge Development and Increasing Foreign Commitments. *Journal of International Business Studies*, 8(1).
- Johanson, J., Vahlne, J.-E. (1974). *The Internationalization Process of the Firm*. Mimeographed Working Paper, Uppsala: Department of Business Administration.
- Johanson, J., Vahlne, J.-E. (1990), The Mechanism of Internationalization. *International Business Review*, 7(4).
- Johanson, J., Vahlne, J.-E. (2009). The Uppsala Internationalization Process Model Revisited: From Liability of Foreignness to Liability of Outsidership. *Journal of International Business Studies*, 40(9).
- Johanson, J., Wiedersheim-Paul, F. (1975). The Internationalization of the Firm: Four Swedish Cases. *Journal of Management Studies*, 12(3).
- Kutschker, M., Bäurle, I., Schmid, S. (1997). International Evolution, International Episodes, and International Epochs – Implications for Managing Internationalization. *Management International Review*, 37(2), special issue.
- Mejri, K., Umemoto, K. (2010). Small- and Medium-Sized Enterprise Internationalization: Towards the Knowledge-Based Model. *Journal of International Entrepreneurship*, 8(2).
- Melin, L. (1992). Internationalization as a Strategy Process. *Strategic Management Journal*, 13.
- Morris, Sh., Hammond, R. & Snell, S. (2014). A microfoundations approach to transnational capabilities: The role of knowledge search in an ever-changing world. *Journal of International Business Studies*, 45(4), pp. 405-427.
- Penrose, E.T. (1959). *The Theory of the Growth of the Firm*, Oxford: Oxford University Press.
- Rundh, B. (2001), International Market Development: New Patterns in SMEs International Market Behaviour?. *Market Intelligence & Planning*, 19(5).
- Ruzzier, M., Hisrich, R.D., Antoncic, B. (2006). SME Internationalization Research: Past, Present, and Future. *Journal of Small Business and Enterprise Development*, 13(4).
- Wach, K. (2012a). *Europeizacja małych i średnich przedsiębiorstw: rozwój przez umiędzynarodowienie*, Warszawa: PWN.

- Wach, K. (2012b). Wybrane modele internacjonalizacji przedsiębiorstw bazujące na wiedzy. In: S. Wydymus & M. Maciejewski (eds), *Innowacyjność i wiedza we współczesnym handlu międzynarodowym*. Kraków: Fundacja Uniwersytetu Ekonomicznego w Krakowie.
- Wach, K. (2014a). Familiness and Born Globals: Rapid Internationalisation among Polish Family Firms. *Journal of Intercultural Management*, 2(3/4).
- Wach, K. (2014b). Theoretical Framework of the Firm-Level Internationalisation in Business Studies (chapter 1). In: A. Duréndez, K. Wach (eds), *Patterns of Business Internationalisation in Visegrad Countries – In Search for Regional Specifics*. Cartagena: Universidad Politécnica de Cartagena.
- Wach, K., Wehrmann, C. (2014). Entrepreneurship in International Business: International Entrepreneurship as the Intersection of Two Fields (chapter 1). In: A.S. Gubik & K. Wach (eds.), *International Entrepreneurship and Corporate Growth in Visegrad Countries*. Miskolc: University of Miskolc Press.
- Wach, K., Wojciechowski, L. (2014). The Size and the Strategic International Orientation: The Use of EPRG Model among Polish Family and Non-Family Firms. *Przedsiębiorczość i Zarządzanie*, XV(7[1]), pp. 143-156.
- Whitelock, J. (2002). Theories of Internationalization and Their Impact on Market Entry. *International Market Review*, 19(4).
- Witek-Hajduk, M. (2010), *Strategie internacjonalizacji polskich przedsiębiorstw w warunkach akcesji Polski do Unii Europejskiej*. Warszawa: OW SGH.