

# Research Methodology of the Field Studies on the Firm-Level Internationalisation in Visegrad Countries

---

**Krzysztof Wach**

Cracow University of Economics, Poland

---

## 2.1. RESEARCH APPROACH AND DESIGN

The research was prepared and conducted within the project no. StG-21310034 entitled “Patterns of Business Internationalization in Visegrad Countries – In Search for Regional Specifics” (type: standard grant – category: scientific exchange and research) financed by the International Visegrad Fund<sup>1</sup> in the years 2013-2014 (table 2.1) and coordinated by Cracow University of Economics (Poland) in the 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).

Smooth and efficient conducting of scientific research requires a procedure according to pre-determined steps in order to obtain the most valuable cognitive effects of the research process. The research procedure is based on a synthesis of various ideas proposing phased conducting research in the empirical sciences. The research was divided into six basic steps, but some of them will be an iterative process (table 2.2).

The main problem of the undertaken research was established before the application as the idea which came into being at Cracow University of Economics. The main problem was to verify the paths and patterns of the firm-level internationalisation among businesses operating and registered in all four Visegrad countries. At the same time the thorough literature study was prepared in order to conceptualise and operationalise the research project. These two steps were conducted before the project was granted, whereas the following three steps were

---

<sup>1</sup> The International Visegrad Fund is an international organisation based in Bratislava founded by the governments of the Visegrad Group (V4) countries – the Czech Republic, Hungary, the Republic of Poland, and the Slovak Republic, on June 9, 2000.

introduced afterwards. In the next part of this chapter there is the description of the sampling selection and the choice of research methods as well as the way how the empirical research was carried out, as well as the results of data processing and analysing, which simply should be called a reporting, is attached in the following chapters (3-6) presenting the research results for all four countries.

**Table 2.1.** The coordinator and the partners of the research project

<b>University and its units</b>	<b>Country</b>	<b>Main Investigators</b>
<b>Coordinator university – the grantee</b>		
Cracow University of Economics Faculty of Economics and Int'l Relations Centre for Strategic and Int'l Entrepreneurship	Poland	Krzysztof Wach principal investigator project coordinator
<b>Partner universities</b>		
University of Economics in Prague Faculty of International Relations	Czech Republic	Josef Taušer key investigator
University of Miskolc Faculty of Economics	Hungary	Andrea S. Gubik key investigator
Gdańsk University of Technology Faculty of Management and Economics	Poland	Nelly Daszkiewicz key investigator
Slovak University of Agriculture Faculty of Economics and Management	Slovakia	Elena Horská key investigator
<b>Associate partners</b>		
Fachhochschule Joanneum in Graz Institute of International Management	Austria	Doris Kiendl-Wendner research consultant
University of Zagreb Faculty of Economics and Business	Croatia	Blaženka Knežević research consultant
Technical University of Cartagena Faculty of Business Studies	Spain	Antonio Durendéz research consultant

Source: own elaboration.

The quantitative approach was used in the study as one of the three main approaches best suits to the studied problem. The study assumed to test the objective theories from the literature by examining the relationships among the variables (Creswell, 2014, p. 4). In other words, the study was pre-determined by the objective theory of the internationalisation process of the firm (see chapter 1 of this book). The typical process of deduction was applied according to the given research path in social sciences (including economics and business studies) typical for the quantitative approach (Figure 2.1).

**Table 2.1.** The outline of the research project and a work plan

No.	Phase	Tasks during the Research implementation
1	Problem establishing	<ul style="list-style-type: none"> <li>– initial formulation of the problem,</li> <li>– assessing the situation and identifying the problem,</li> <li>– exploration of the state of knowledge (science),</li> <li>– determining the purpose of research,</li> </ul>
2	A. Conceptualisation	<ul style="list-style-type: none"> <li>– clarifying the meaning of terms,</li> <li>– specifying the variables to be tested,</li> </ul>
	B. Operationalisation	<ul style="list-style-type: none"> <li>– selection and justification of the research hypotheses,</li> <li>– identifying ways to measure variables</li> <li>– selection research methods and techniques,</li> </ul>
3	A. Selection of the surveyed population	<ul style="list-style-type: none"> <li>– defining the study population,</li> <li>– selection of the source database (for existing data)</li> </ul>
	B. Research instruments preparation	<ul style="list-style-type: none"> <li>– survey questionnaire,</li> <li>– standardized interview questionnaire,</li> <li>– pilot study, the possible correction tools</li> </ul>
	C. Sampling	<ul style="list-style-type: none"> <li>– determining the criteria for selecting the research sample,</li> <li>– selection of the research sample,</li> </ul>
4	Empirical research conducting	<ul style="list-style-type: none"> <li>– collection of data for analysis and interpretation,</li> <li>– surveys conducting,</li> </ul>
5	A. Data processing	<ul style="list-style-type: none"> <li>– empirical verification of the collected material,</li> <li>– preliminary data coding and grouping,</li> </ul>
	B. Data analysis	<ul style="list-style-type: none"> <li>– analysis of the empirical material,</li> <li>– testing of hypotheses,</li> <li>– inference on the basis of the results obtained,</li> <li>– generalisation of research results,</li> </ul>
6	Reporting	<ul style="list-style-type: none"> <li>– report on the results and assess their implications,</li> <li>– development of the final report,</li> <li>– conclusions, implications, recommendations.</li> </ul>

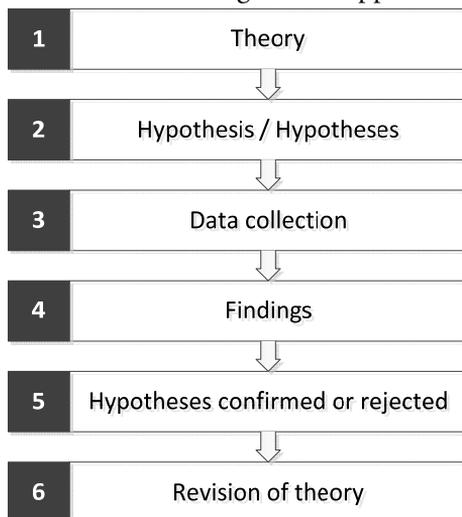
Source: own study based on (Babbie, 2012, pp. 112-113).

The nature of the research project is multidimensional, it realises exploratory, descriptive, analytical and predictive purposes (Collis & Hussey, 2009, p. 5).

The exploratory research was included in the problem establishing and a literature review. It allowed to form concrete hypotheses and to prepare the conceptualisation and operationalisation of the model. In here, such methods as secondary data observations, case studies and a literature review were applied.

The explanatory research (descriptive and analytical) was included in the own empirical survey phase of the research project. Both the experimental method (survey) and a descriptive research were applied in here.

In both above mentioned phases the elements of a predictive thinking by a kind of forecasting the future directions of changes, were applied.



**Figure 2.1.** The process of deduction applied in the empirical study  
Source: (Bryman & Bell, 2011, p. 11).

The research project applies *positivism* as a research paradigm, a kind of the philosophical framework or epistemological consideration for the scientific research (Bryman & Bell, 2011, p. 15; Collis & Hussey, 2009, p. 55), and *constructionism* as the ontological framework of the scientific research (Creswell, 2014, pp. 8-9), this is why the research was carried out according to the rules of deductive (not inductive) process.

## 2.2. RESEARCH ASSUMPTIONS AND CONCEPTUAL MODEL

The **main objective** of the research project was the exploration and explanation the various paths and patterns of the internationalisation process of businesses from four Visegrad countries. Within such established the main objective, the following **five specific objectives** were distinguished for their implementation in the cognitive and methodological dimension:

- O1:** Systematisation of conceptual perspectives of internationalisation research approaches as well as its internal and external factors.
- O2:** Determination of measuring methods of the intensity of the firm-level internationalisation.
- O3:** Identification and discussion of the paths and patterns of the firm-level internationalisation including entry modes, entry scope, entry pace and

entry strategy.

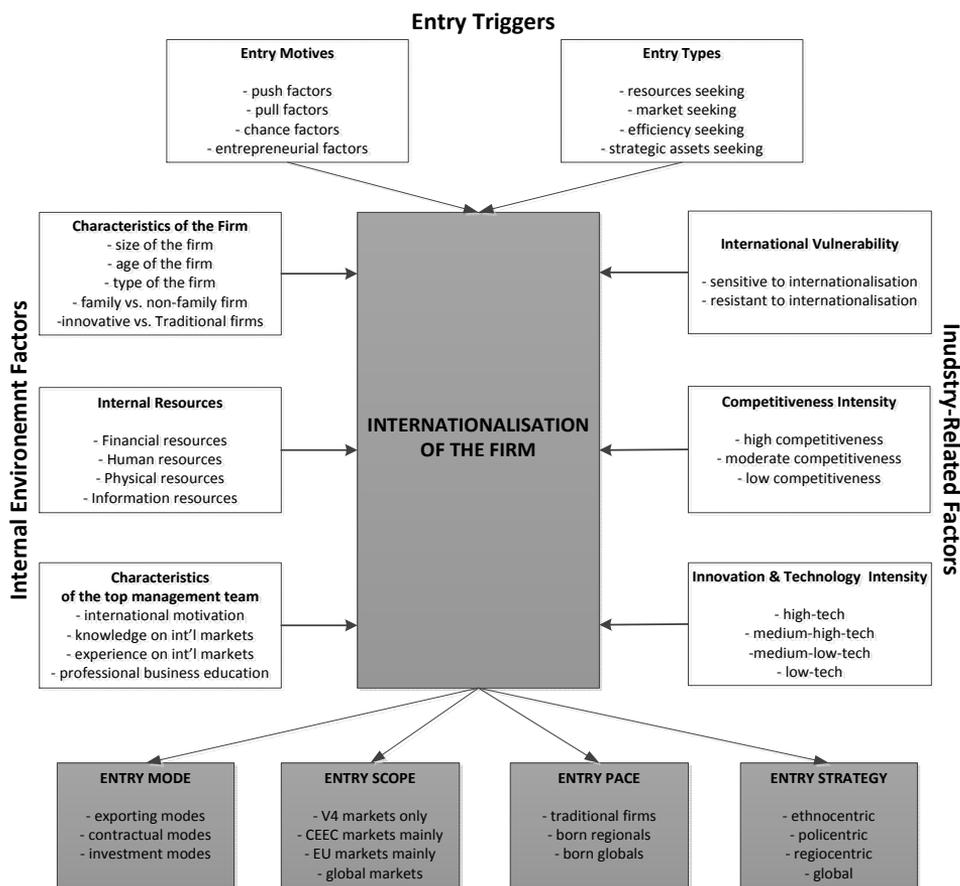
- O4:** Construction and design of the conceptual research framework (research model) explaining the patterns of the firm-level internationalisation among businesses in V4 countries.
- O5:** Diagnosis, analysis and evaluation of the patterns of international behaviours of Visegrad firms including four main groups of determinants such as the firm, the top management team, the industry and the external domestic and international business environment.

Based on the study of the literature and the observations of cause-and-effect relationships a total of **ten research hypotheses** were assumed:

<b>H1:</b>	In general, firms from V4 countries implement traditional process approach towards their internationalisation.
<b>H2:</b>	Firms, from V4 countries, operating in high-tech industries are more likely to accelerate their process of internationalisation.
<b>H3:</b>	Micro and small firms, from V4 countries, entry mainly other V4 and CEEC markets.
<b>H4:</b>	Medium and large firms, from V4 countries, entry mainly other EU markets.
<b>H5:</b>	SMEs, from V4 countries, apply mainly ethnocentric and regiocentric strategies of internationalisation.
<b>H6:</b>	Large firms, from V4 countries, apply mainly polycentric and global strategies of internationalisation.
<b>H7:</b>	Firms, from V4 countries, operating in industries where there is high competitiveness, are more likely to use more advanced entry modes (i.e. contractual and investment modes).
<b>H8:</b>	Firms, from V4 countries, operating in hi-tech industries, are more likely to use more advanced entry modes (i.e. contractual and investment modes).
<b>H9:</b>	The higher the international motivation and openness of the top management team of the firms from V4 countries, the more advanced entry modes (i.e. contractual and investment modes) are used.
<b>H10:</b>	The higher the level of knowledge and experience on international markets of the top management team of the firms from V4 countries is, the more advanced entry modes (i.e. contractual and investment modes) are used.

The established objectives and assumed research hypotheses, led to prepare the conceptual framework of the research project based on a literature review with the line of the deductive process. This kind of the research model (figure 2.2) will include four variables, whereby the **independent variables** are (1) entry triggers; (2) internal environment factors; (3) industry-related factors, whereas the **dependent variable** of the model is (4) the internationalisation process, and its patterns, which is preceded by a decision of the expansion. The above-mentioned internationalisation

patterns applied in the model include only four aspects, namely (i) entry modes; (ii) entry scope; (iii) entry pace as well as (iv) entry strategy.



**Figure 2.2.** The Conceptual Framework: Empirical Research Model

Source: own study.

### 6.3. RESEARCH METHODS

As it was mentioned above, the quantitative research method was applied in the V4 project. What is more two main types of non-experimental qualitative research was applied, which are *casual-comparative research* as well as *correlational design* (Creswell, 2014, p. 12).

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” (Fowler, 2009; Creswell, 2014, p. 13).

## The Survey and the Questionnaire

The survey was conducted between October 2013 and February 2014 (Wach, 2014a; 2014b; Wach & Wojciechowski, 2014; Daszkiewicz & Wach, 2014; Daszkiewicz, 2014; Bartha & Gubik, 2014; Gubik & Karajz, 2014; Gubik & Wach, 2014; Knežević & Wach, 2014; Kiendl-Wendner, 2014).

The questionnaire was prepared by Cracow University of Economics and consulted with all partner universities, most of the remarks were applied and the final questionnaire was modified accordingly. The questionnaire was prepared in English<sup>2</sup> and translated into four national languages (Czech<sup>3</sup>, Hungarian<sup>4</sup>, Polish<sup>5</sup> and Slovak<sup>6</sup>). **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<sup>7</sup>, which was password protected.

The request to fill in the online questionnaire was sent via a special dedicated e-mail, followed by a telephone conversation request. The responders were selected according to the national criteria slightly differed among V4 partners (for details see chapters 3-6 containing national research results).

The survey was conducted among a **random sample** consisting of **1149 firms** from V4 countries, including **274** Polish firms, **618** Czech firms, **113** Hungarian firms and **144** Slovak firms. However, some questionnaires were rejected as were not suitable or properly filled and they were not selected to further statistical preparations.

Management perceptions of firm-level variables are often used in entrepreneurship research (Naman & Slevin, 1993; Horská & Maitah, 2011, pp. 20-26), and the perceptions can be obtained from interviews or from surveys using questionnaires (Lyon, Lumpkin, Dess, 2000, p. 1058). Managerial perception was chosen as an operationalisation approach, thus it assures the acceptable correctness and the reliability, and first of all tops other approaches in relation to its pragmatism, what is more it is very often applied in analogous research. This method was applied for the whole questionnaire. "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, Lumpkin & Dess, 2000, p. 1058).

---

<sup>2</sup> By Cracow University of Economics (Poland).

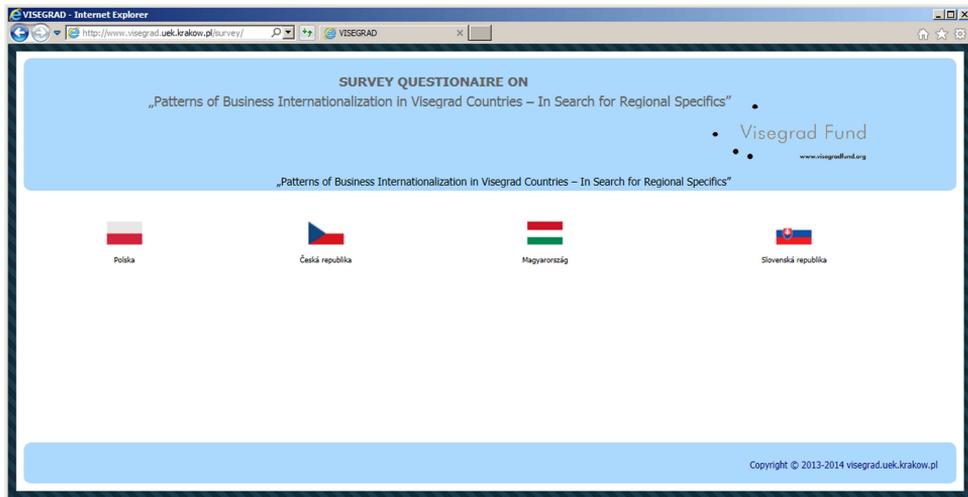
<sup>3</sup> By the University of Economics in Prague (Czech Republic).

<sup>4</sup> By the University of Miskolc (Hungary).

<sup>5</sup> By Gdańsk University of Technology (Poland).

<sup>6</sup> By Slovak University of Agriculture in Nitra (Slovakia).

<sup>7</sup> The online questionnaire was available at <<http://www.visegrad.uek.krakow.pl/survey>>.



**Figure 2.3.** The online questionnaire using CAWI method

Source: Cracow University of Economics, <<http://www.visegrad.uek.krakow.pl/survey/>>.

The questionnaire was divided into four parts dedicated to different aspects under the investigation, such as (see the attachment to the book):

1. **the characteristics of the firm** (e.g. year of establishment, year of internationalisation, number of employees, foreign ownership percentage, familiness, localisation, NACE code, scope of internationalisation, internal resources, innovation activities),
2. **the characteristics of the top management team** that is the owner, the entrepreneur and/or the 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 level, innovativeness level),
4. **the patterns of internationalisation** (e.g. motives for going international, entry modes types, entry modes combination, internationalisation performance, international strategy, networking, plans for further internationalisation vs. de-internationalisation).

Some variables were measured on an instrument as a **continuous score** (e.g. age, number of employees) or **discrete scores**, while the 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 Likert's scale. The **dichotomous variables** were used very often to divide the population (e.g. family vs. non-family firms), however in other cases the **dummy variables** were used (e.g. traditional vs. rapid internationalisation).

### The Variables and the Statistics

Two basic types of variables were applied - the single indicators as well as the overall assessment indexes. The single indicators were based directly on the questionnaire answers without any changes. On that basis the standardised indicators consisting of a couple of the single indicators, i.e. the overall assessment indexes were applied. Each of the overall assessment index was constructed through the sum of values 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 assessment was obtained, standardised in the interval from 0 to 1 (given in percentage in the interval from 0 to 100).

The statistical calculations were made by the use of the statistical software, however national teams used different software for national calculations, namely:

- SPSS® v. 21 & v. 22,
- MATLAB® R2010b,
- STATA® SE v. 12.0,
- STATISTICA® PL v. 10.

In the empirical study, the level of the **statistical significance** (alpha or  $\alpha$ ) for statistical hypotheses testing were considered as **0.05**. On the basis of obtained statistical calculations, ***p*-values**<sup>8</sup> were coupled to a significance or alpha level (Creswell, 2014, p. 169). The widely recognised informal interpretation of a *p*-value was applied:

$p \leq 0.01$	very strong presumption against neutral hypothesis,
$0.01 < p \leq 0.05$	strong presumption against neutral hypothesis,
$0.05 < p \leq 0.1$	low presumption against neutral hypothesis,
$p > 0.1$	no presumption against the neutral hypothesis.

Apart from the well-known basic descriptive statistics, in order to verify the assumed hypothesis the following inferential statistical tests were applied:

- Pearson's independent test of chi-squared statistics,
- Pearson's chi-square contingency coefficient C,
- Spearman's rank correlation coefficient (Spearman's Rho),
- Eta coefficient of strength of association,
- Cramér's V as a measure of associations between two nominal variables,
- test of differences between two means,
- Kaiser-Meyer-Olkin test (within the principal component analysis (PCA), the three factor groups under investigation were jammed into two factors),

---

<sup>8</sup> *P*-value is the probability of obtaining the observed sample results when the null hypothesis is true.

- hierarchical cluster analysis,
- logistic regression.

The research results of the survey based on a questionnaire are presented and discussed by national teams of researchers in the four consecutive chapters.

## REFERENCES

- Babbie, E. (2012). *The Practice of Social Research*. 13th ed., Belmont, CA: Wadsworth Cengage Learning.
- Bartha, Z. & Gubik, A.S. (2014). The Role of Business Knowledge in the Internationalisation Process of Hungarian Corporations (chapter 6) In: D. Kiendl-Wendner, K. Wach (eds), *International Competitiveness in Visegrad Countries: Macro and Micro Perspectives*. Graz: Fachhochschule Joanneum.
- Bryman, A. & Bell, E. (2007). *Business Research Methods*. 3rd ed., New York, NY: Oxford University Press Inc.
- Collis, J. & Hussey, R. (2009). *Business Research: A Practical Guide for Undergraduate & Postgraduate Students*. 3rd ed., London: Palgrave Macmillan.
- Creswell, J.W. & Plano Clark, V.L. (2011). *Designing and Conducting Mixed Methods Research*. 2nd ed., Los Angeles, CA: SAGE Publications Inc.
- Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Los Angeles, CA: SAGE Publications Inc.
- 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 Publishing Service, pp.15-24.
- Daszkiewicz, N. & Wach, K. (2014). Motives for Going International and Entry Modes of Family Firms in Poland, *Journal of Intercultural Management*, 6(2).
- Fowler, F.J. (2009). *Survey Research Methods*. 4th ed., Thousand Oaks, CA: Sage.
- 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).
- Gubik, A.S. & Wach, K. (eds) (2014). *International Entrepreneurship and Corporate Growth in Visegrad Countries*. Miskolc: University of Miskolc Publishing Service.
- Horská, E. & Maitah, M. (2011). Homogenization, Regionalization and Localization in Theory and Practice of International Business (chapter 1), In: E. Horská (ed.), *European Studies on Intercultural Dimensions of International business: Marketing and Managerial Consequences*, Nitra: SPU, pp. 9–32.
- Kiendl-Wendner, D. & Wach, K. (eds) (2014). *International Competitiveness in Visegrad Countries: Macro and Micro Perspectives*. Graz: Fachhochschule Joanneum.

- Knežević, B. & Wach, K. (eds) (2014). *International Business from the Central European Perspective*. Zagreb: University of Zagreb Publishing Service.
- Lyon, D.W., Lumpkin, G.T. & Dess, G.G. (2000). Enhancing Entrepreneurial Orientation Research: Operationalizing and Measuring a Key Strategic Decision Making Process. *Journal of Management*, 26(5), pp. 1055-1085.
- Naman, J.L., & Slevin, D.P. (1993). Entrepreneurship and the concept of fit: A model and empirical tests. *Strategic Management Journal*, 14, pp. 137–153.
- Saunders, M., Lewis, Ph. & Thornhill, A. (2012). *Research Methods for Business Students*. 6th ed., Harlow: Pearson Education Ltd.
- Wach, K. (2014a). Familiness and Born Globals: Rapid Internationalisation among Polish Family Firms. *Journal of Intercultural Management*, 2(3-4).
- Wach, K. (2014b). The Role of Knowledge in the Internationalisation Process: An Empirical Investigation among Polish Businesses (chapter 7) In: D. Kiendl-Wendner & K. Wach (eds), *International Competitiveness in Visegrad Countries: Macro and Micro Perspectives*. Graz: Fachhochschule Joanneum.
- 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*, t. XV(7[1]), pp. 143-156.

