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## BOOKKEEPING METHODS USED IN THE POLISH SME SECTOR. AN EMPIRICAL ANALYSIS<sup>1</sup>

### Introduction

Nowadays, in a globalizing economy, a key role is played by small companies. This also applies to the Polish economy. In 2007, Polish companies employing 50 people produced 37.4% of GDP, they employed ca. 51% of the workers in the enterprise sector. Small firms accounted for 98.9% of all active enterprises<sup>2</sup>.

One of the most important economic processes determining the development of each company is to collect information, including financial information. Reliable and well-prepared information about the company's financial condition and reached results is necessary to make rational decisions. In this context, the collection, processing and presentation of financial information is one of the most important parts of financial management.

In addition to economic importance, financial information is an essential component of the public settlements in all companies. For this reason it is strictly regulated by law. Any, even the smallest company, is obliged to choose the taxation form and to provide the relevant financial records. In this context, the collected information is used to determine tax liabilities.

In Poland, small enterprises can choose one of a few different types of financial records. They can also choose different methods of bookkeeping. Entrepreneurs can do it themselves or hand this job to their employees. They may employ qualified accountants or outsource the bookkeeping to an accounting firm. Registers can be carried out manually or by computer.

The aim of this paper is to analyze methods of bookkeeping in the small enterprise sector in Poland and to identify factors influencing the decisions taken in this area.

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<sup>2</sup> *Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce w latach 2007–2008 (Report about Condition of SME Sector in Poland in 2007–2008)*, ed. A. Żołnierski, PARP, Warszawa 2009.

## Forms and Methods of Bookkeeping in Polish SME sector

Taking into consideration the general conditions of bookkeeping, the hypothesis, that used methods mainly depend on the records' structure, the degree of formality and the difficulty in its maintenance can be formulated. This is particularly important in the sector of small enterprises, where Polish law allows some simplifications and diversions from the classic double-entry accounting rules.

The primary factor influencing these accounting systems is the type of income taxation. In view of tax solutions, this income may be legally taxed in Poland under the following laws:

- 1) Act of February 15, 1992, applies to income tax from legal persons (ITLP) – applies to all income earned by legal persons (capital companies),
- 2) Act of July 26, 1991, applies to income tax from natural persons (ITNP) – contains the general principles of taxation of income earned by the company of natural persons,
- 3) Act of November 20, 1998, applies to flat-rate tax on some parts of income of natural persons (FRITNP) – enables enterprises of natural persons or their companies to establish a simplified flat-tax liability depending on income earned.

Closely connected with the above mentioned tax laws is the Act of September 29, 1994, about accounting (AaA). It regulates the duties of accountancy for all companies organized as capital companies and other legal persons, and also for companies of natural persons, whose earnings during the previous year exceeded € 1 200 000.

The first group of firms consists of entities which are taxed in accordance with general principles. They are required to apply one of the first two above mentioned laws according to the selected legal form. The general principles rely on estimating income as the subtraction of expenses from revenue and then taxing this income using a tax scale.

All legal entities and natural persons that have surpassed the revenues from the sale of € 1 200 000, taxed in accordance with general principles, are required to keep accounting books according to AaA. This system includes accounting books harmonized with the International Accounting Standards. Despite the numerous simplifications, which can be used by small firms, these books fairly and faithfully lay out all the basic financial categories associated with the measurement of business assets, sources of financing, costs and revenues. Applying AaA provides a company with the most informative filing system, but this system is costly and difficult to carry out<sup>3</sup>.

The firms of natural persons that do not exceed the designated level of income, should provide a filing system according to art. 24a. §1 ITNP. It states that they shall keep an in-

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<sup>3</sup> J. Jaworski: *Wpływ ewidencyjnych odstępstw podatkowych na ocenę kondycji finansowej małego przedsiębiorstwa (Changes in Information Needs and The Policy of Simplification in Accounting for Small Enterprises in Poland)*, [w:] *Rachunkowość w małych i średnich przedsiębiorstwach –Finanse, rynki finansowe, ubezpieczenia nr 11*, „Zeszyty Naukowe Uniwersytetu Szczecińskiego” 2008, p. 354.

come and expenditure tax book (Revenue and Disbursement – RaD). The basis of the RaD records are the amounts of revenue and expenditure. As a result, an accountant may at any time determine the profit (revenue minus costs), which is the most basic type of taxation. Except for income and costs, the taxpayer is required to keep other records and procedures concerning the assets (such as records of fixed and intangible assets, records of equipment, mandatory annual inventory etc.). This filing system is simpler than accounting books but still requires a fairly detailed record of economic activity<sup>4</sup>.

For some firms of natural persons, Polish law allows further simplification in accounting through the selection of other, alternative forms of taxation. Taxpayers, whose income didn't exceed € 150 000 in the preceding year or those starting a new business, can choose a flat-rate income taxation. Certain business activities such as pharmacies, pawnbrokers, exchange offices and professions such as lawyers or accountants, as well as the services listed in Annex 2 to FRITNP are excluded from this rule. In this form of taxation (in addition to revenue records) taxpayers are obliged to keep records of staff salaries, fixed and intangible assets and an annual inventory of materials, finished products and goods. It means that the filing system in the flat-rate taxation has more limited capacity than RaD – it does not include level of costs<sup>5</sup>.

Another form of flat-rate taxation is a tax card. Taxpayers choosing this taxation form should be guided by a comprehensive Annex no. 4 to FRITNP. In this regulation, there are 95 activities, mainly in the service sector, which may be subject to using a tax card. The taxation amount for the tax card depends on the type of activity, the number of employees and the population of a territorial community where the business is conducted. The tax card does not require any special records. Companies which have chosen this taxation form, keep only salary cards of their employees. In addition, they are required to keep copies of sales documents. Thus, in terms of difficulty, the tax card is the simplest tax filing system<sup>6</sup>.

As it can be seen from the above considerations, the selection process and then keeping an appropriate accountancy system require sound business knowledge, skills and, consequently, can become relatively expensive. These conditions influence the decisions of entrepreneurs when it comes to choosing bookkeeping methods. Firstly, entrepreneurs can choose to maintain their own bookkeeping. As a second choice, they can choose to pass this task on to their employees. In situation where more complex forms of bookkeeping are necessary, they can employ qualified accountants.

However, despite the economic and legal importance of bookkeeping, it is not a process, which creates added value to an enterprise. It belongs rather to the group of processes

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<sup>4</sup> See more: T. Martyniuk: *Małe przedsiębiorstwo. Rejestracja, podatki, ewidencja, sprawozdawczość* (Small Enterprise. Registration, Taxes, Recording, Reporting), ODDK, Gdańsk 2009, pp. 143–229.

<sup>5</sup> *Ibidem*, pp. 115–141.

<sup>6</sup> *Ibidem*, pp. 109–114.

that supports operational activities<sup>7</sup>. The effect of this is that small entrepreneurs are often not inclined to implement this process on its own and take the responsibility for it. Therefore the last resort is to use an accounting firm<sup>8</sup>.

In addition, enterprises as well as accounting firms, have various tools to facilitate and accelerate bookkeeping. Thus, records can be done manually or by using a computer.

The decisions made by entrepreneurs in this area: who is required and how to keep their records, besides the chosen form of bookkeeping, can be affected by many different factors. Their identification may be a prerequisite to the discussion about legal and economic determinants of bookkeeping in the Polish SME sector.

## Empirical Analysis of Bookkeeping Methods in Polish Small Enterprises

### Sources and Methods Used in the Research

The sources for this research are the results of a questionnaire survey made among Polish small enterprises in mid 2010. 1,008 respondents were asked about their bookkeeping methods. The respondents were divided into groups corresponding to the assumed factors of chosen methods. Factors and criteria for the classification of respondents are shown in Table 1.

For the evaluation of statistical correlation between the set variables (factors and bookkeeping methods) the Chi-square compatibility test was used in all examined cases. This test is used to verify hypothesis concerning the relation between two qualitative variables and is based on Chi-square statistics<sup>9</sup>.

The mathematical aspect of the Chi-square test is reduced to calculate the variables:

$$\chi^2 = \sum_{i=1}^k \sum_{j=1}^l \frac{\left( \frac{n_{ij} - \hat{n}_{ij}}{\hat{n}_{ij}} \right)^2}{\frac{\hat{n}_{ij}}{n}} = \sum_{i=1}^k \sum_{j=1}^l \frac{n_{ij}^2}{\hat{n}_{ij}} - n,$$

where:

$l, k$  – types of first and second variables,

$n_{ij}$  – empirical numbers of simultaneously occurring pairs of variables  $i$  and  $j$ ,

$\hat{n}_{ij} = \frac{n_i \times n_j}{n}$  – expected numbers of simultaneously occurring pairs of variables  $i$  and  $j$ ,

$n$  – number of all respondent answers.

<sup>7</sup> P. Grajewski: *Organizacja procesowa. Projektowanie i organizacja (Process Organization. Projection and Configuration)*, PWE, Warszawa 2007, s. 62.

<sup>8</sup> J. Jaworski: *Dziś i jutro usług biur rachunkowych (Today and tomorrow of Accounting Services)*, „Rachunkowość” 2006, nr 11.

<sup>9</sup> A. Balicki, W. Makać: *Metody wnioskowania statystycznego (Methods of Statistical Inference)*, Wyd. UG, Gdansk 2000, pp. 227–231.

Table 1

## Assumed Factors of Bookkeeping Methods

	Factors	Respondents groups
Characteristics of the enterprise	Forms of filing system	accounting books Revenue and Disbursement revenue records lack of mandatory records
	Kind of activity	production services traders mixed
	Number of employees	only owner 1–9 employees 10–19 employees 20–49 employees
	Business activity time	0–3 years 3–6 years more than 6 years
	Phase of a life cycle*	entry phase growth phase stability phase end-stage phase
	Number of inhabitants of the city, in which business is carried	to 2 thousands 2–20 thousands 20–100 thousands above 100 thousands
Characteristics of the owner/ manager	Sex	Female Male
	Age	to 35 years 36–50 years more than 50 years
	Education	basic or vocational secondary vocational secondary general higher humanities higher technical higher economic

\* the life cycle phase was based on the answers to questions about changes in income, profits and investment needs in the enterprise.

Source: own elaboration.

The calculated statistics are compared with the theoretical value of chi-square distribution, for example, the results from the statistical tables for specific values of  $k$  and  $l$  and also the significance level. If  $\chi^2$  is less or equal to read value, then there is no reason to reject the hypothesis about the independence of variables. On the other hand, there are reasons for the acceptance of an alternative hypothesis that the variables are dependent.

To determine the strength of correlation between each of the examined factors and chosen bookkeeping methods, T-Czuprow and C-Pearson contingency coefficients are used. Both indicators are used in estimating the strength of correlation for the qualitative variables<sup>10</sup>. Mathematical definitions for these coefficients are presented in Table 2.

Table 2

Mathematical Definition of T-Czuprow and C-Pearson Coefficients

T-Czuprow	C-Pearson
$T = \sqrt{\frac{\chi^2}{n \times \sqrt{(k-1) \times (l-1)}}$	$C = \sqrt{\frac{\chi^2}{\chi^2 + n}}$

Source: own elaboration based on : W. Makać , D. Urbanek-Krzystofiak, *Metody opisu statystycznego (Methods of Statistical Description)*, op. cit., pp. 153.

The values of both coefficients are in the range (0–1). The correlation between examined variables is stronger when the values of coefficients are higher. For the purposes of this research it is assumed that<sup>11</sup>:

- The correlation is weak when both indicators are less then 0,30,
- The correlation is moderately strong when one of the indicators is in the range (0,30 – 0,60),
- The correlation is strong when the values of coefficients are higher than 0,60.

In the cases of weak correlation, only a general analysis of examined processes was done. For the rest, detailed analysis of the structure of responses was performed.

### Discussion of the Research Results

Diagram 1 shows of the types bookkeeping methods for the studied sample without dividing them into groups. 45,76% of small enterprises use the services of accounting firms. 36,77% firms employ accountants. Which means, that more than 80% of small companies have their accounting done by a specialist. Only 16,57% of entrepreneurs keep their own records. 4,55% of them hand over this responsibility to another person in the company.

<sup>10</sup> W. Makać, D. Urbanek-Krzystofiak: *Metody opisu statystycznego (Methods of Statistical Description)*, Wyd. UG, Gdansk 2001, pp. 152–158.

<sup>11</sup> More: Z. Barańska: *Podstawy metod statystycznych dla psychologów (Fundamentals of Statistical Methods for Psychologists)*, Wyd. UG, Gdańsk 1999.

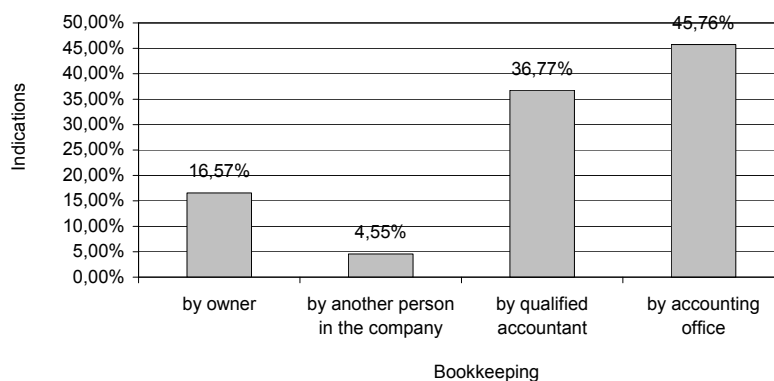


Diagram 1. Bookkeeping Methods for Whole Examined Population

Source: Own elaboration.

Table 3 presents the results of the calculation of Chi-square test and T-Czuprow and C-Pearson coefficients for the assumed factors of choosing a bookkeeping method based on the characteristics of the enterprise. The theoretical value of the chi-square distribution resulted in a significance level of 5%.

Table 3

Research Results for Factors Based on Characteristics of the Enterprise

Factors	Forms of filing system	Kind of activity	Number of employees	Business activity time	Phase of a life cycle	Number of inhabitants
Empirical $\chi^2$	185,76	32,33	328,8	37,28	23,43	9,26
Theoretical $\chi^2$	16,92	16,92	16,92	12,59	16,92	16,92
Hypothesis	variables are dependent	variables are dependent	variables are dependent	variables are dependent	variables are dependent	variables are independent
T-Czuprow	0,2262	0,1043	0,3327	0,1240	0,1527	–
C-Pearson	0,3648	0,1778	0,4993	0,1905	0,2557	–
Strength of correlation	moderately strong	weak	moderately strong	weak	weak	–

Source: own elaboration.

The number of employees strongly influences the choice of bookkeeping methods. What may be surprising is that the chosen form of accounting records is only on the second place. Diagrams 2 and 3 present the survey results for the identified factors.

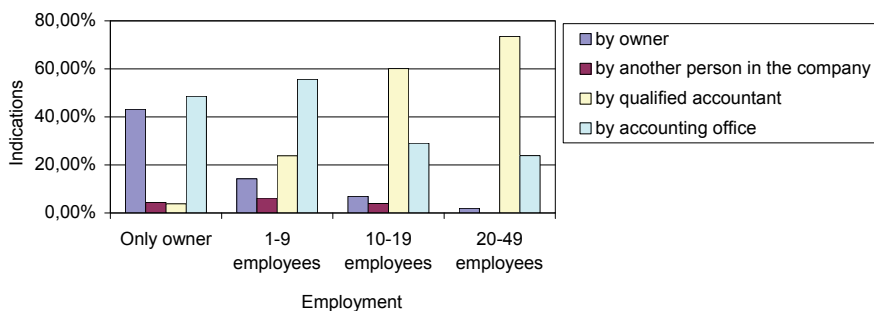


Diagram 2. Relationship between Bookkeeping Methods and Number of Employees

Source: Own elaboration.

The companies with the largest number of workers most often employ qualified accountants. This happens in more than 70% of the enterprises. In smaller firms, the percentage of working accountants is reduced to 60%. In both types of firms, the second most popular choice was the outsourcing of accounting services. Its share is 23.87% for the largest firms and 29.06% of companies employing 10–19 workers. the indicated levels for using other bookkeeping methods was not significant.

In enterprises employing only a few workers, an outsourcing of accounting services dominates (55.68%). In 23.83% of these companies the accountant handles their filing system. The percentage of owners doing their own bookkeeping is also significant – 14.25%. This method is the second most popular for small firms (43,17%). However, these companies more often outsource their bookkeeping to accounting businesses (48,63%). The least popular bookkeeping method for all companies surveyed is to delegate this task to another person within the enterprise.

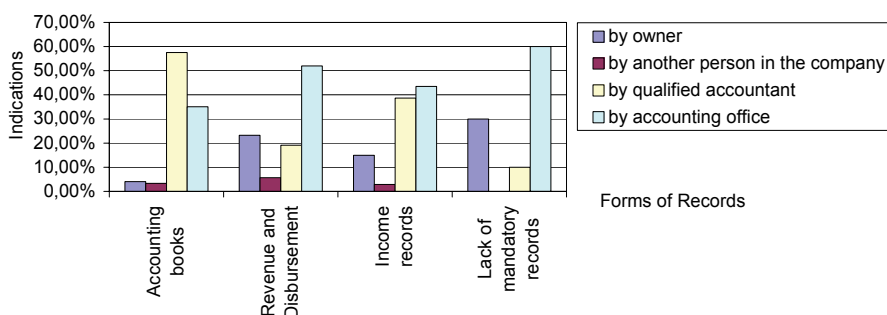


Diagram 3. Relationship between Bookkeeping Methods and Forms of Records

Source: Own elaboration.



Statistically, there is a moderately strong correlation between methods and types of accounting methods used. Accountants employed full-time are in the majority (57.7%) of the companies studied. 35,08% of such companies outsourced their bookkeeping to an accounting firm. This last method is most often used for other accounting procedures (51,95% for RaD, 43,48% for income records and 60% for tax card). Revenue and Disbursement is used in 23,23% of the cases by the owner. The owner provides income records in 14,96% firms, which have chosen this form of accounting procedure. He has a significant role for implementing a tax card (without specified mandatory records).

The rest of the assumed factors concerning the characteristics of an enterprise (types and time of activity, phase of life cycle etc.) affect bookkeeping methods very weakly or do not affect them at all (see table 2).

Table 3 presents the results of the statistical estimates for the factors based on the characteristics of entrepreneurs. They point out the owner's education has a significant impact on the chosen bookkeeping method (diagram 4). The strong influence the business owner's gender also looked interesting (diagram 5). The age of the entrepreneur had no significant importance on the examined phenomenon.

Table 3

Research results for Factors Based on the Demographic Characteristics of Entrepreneurs

Factors	Sex	Age	Education
Empirical $\chi^2$	65,57	18,26	103,57
Theoretical $\chi^2$	7,82	16,92	25,00
Hypothesis	variables are dependent	variables are dependent	variables are dependent
T-Czuprow	0,1958	0,0784	0,1645
C-Pearson	0,2496	0,1346	0,3080
Strength of correlation	weak	weak	moderately strong

Source: own elaboration.

A noticeable and characteristic phenomenon in the analysis of the relation between entrepreneur's education and a chosen bookkeeping method is clearly dominant in companies where a manager has a higher economics education and also a significant number of companies, where the owner with basic or vocational education undertakes to keep their own records. It is probably correlated with a rather obvious relation that a manager with higher and more specialized education usually runs a larger company (see diagram 2). Companies managed by entrepreneurs without an economic education, in most cases, outsource bookkeeping to an accounting firm.

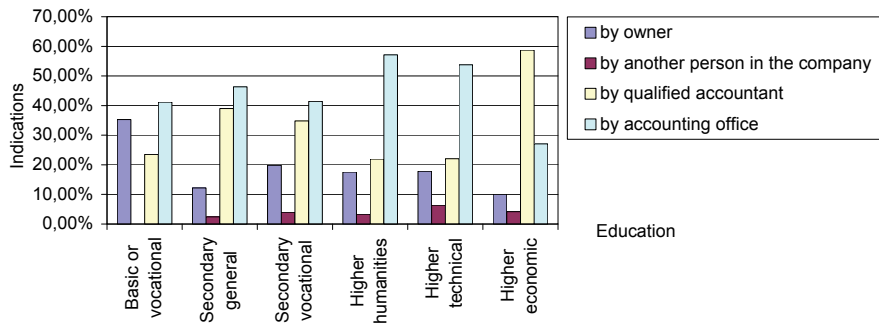


Diagram 4. Relation between Bookkeeping Methods and Entrepreneur's Education

Source: Own elaboration.

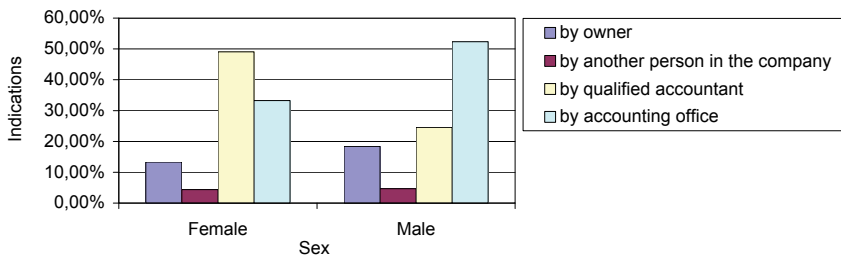


Diagram 5. Relation between Bookkeeping Methods and Entrepreneur's Sex

Source: Own elaboration.

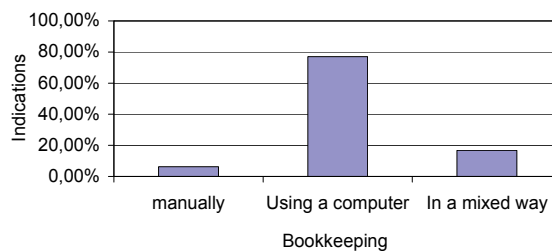


Diagram 6. Relation Between Bookkeeping Methods and Entrepreneur's Sex

Source: Own elaboration.

As presented in the following diagram, female entrepreneurs in most cases (49,08%) employ qualified accountants. Men usually (52,35%) benefit from accounting firms aid. It is also characteristic of men to decide to keep their own books. This data in conjunction with

the previous research results leads to the conclusion that women have a higher economic education more often than men. They also lead larger companies than men.

Finally we should analyze how Polish small enterprises use technology in their bookkeeping. It is presented in diagram 6. Most companies (77%) use computers to keep their books. 16.75% of enterprises partially use computing devices for this purpose, and only 6.25% do their accounting manually.

## Findings and Conclusions

This research shows that the small enterprise sector in Poland is characterized by high maturity in terms of implemented bookkeeping methods. Almost 95% of these enterprises use computers in bookkeeping. As shown above 82% of companies use an accounting specialist. Smaller enterprises order services through accounting firms. Larger companies employ their own accountants. These figures show a high degree of small enterprise managers and a large share of modern technologies in bookkeeping in the Polish SME sector.

The main factors influencing the choice of bookkeeping methods are employment, the form of accounting method and an entrepreneur's education. If the enterprise is bigger, and the accounting system is more complicated, than the companies use specialists more often. This dependency also relates to a manager's education. If it is higher and more business orientated, then the entrepreneur puts their bookkeeping is more often given to qualified accountants.

## Literature

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### **Summary**

The aim of this paper is to analyze bookkeeping methods in the small enterprise sector in Poland and to identify factors influencing the decisions taken in this area by entrepreneurs.

In the first part of the paper forms and methods of bookkeeping used in the Polish SME sector are presented. Subsequently, the identity and statistical analysis of factors influencing the choices made by entrepreneurs is made. The research is based on the results of a conducted questionnaire survey. Findings and conclusions are presented at the end of the paper.

### **SPOSOBY PROWADZENIA EWIDENCJI RACHUNKOWYCH W POLSKIM SEKTORZE MSP. ANALIZA EMPIRYCZNA**

#### **Streszczenie**

Głównym celem artykułu jest analiza empiryczna sposobów prowadzenia ewidencji rachunkowych w sektorze małych przedsiębiorstw w Polsce oraz identyfikacja czynników mających wpływ na podejmowane przez przedsiębiorców decyzje w tym zakresie.

W pierwszej części artykułu zaprezentowano formy oraz stosowane metody prowadzenia ewidencji rachunkowych w sektorze małych przedsiębiorstw. W dalszej kolejności, w oparciu o wyniki badań ankietowych dokonano identyfikacji oraz statystycznej analizy czynników wpływających na dokonywane przez przedsiębiorców wybory. Wnioski i konkluzje zawarto w podsumowaniu rozważań.