

REASONS FOR BANKRUPTCY OF NATURAL PERSONS IN LITHUANIA

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Abstract. *In Lithuania, bankruptcy of natural persons is a relatively new subject that has been scientifically only randomly dealt with. The bill of Bankruptcy of Natural Persons in Lithuania was proposed as early as in spring 2009 (No.XIP-450, 24.03.2009). The bill met with a considerable amount of criticism and was postponed for further improvement. By decree No. 413 of April 7, 2010, the Government of the Republic of Lithuania approved the concept of the bankruptcy of natural persons of the Republic of Lithuania. The principal goal of the concept was to consolidate the main provisions of the future law. The Law of Bankruptcy of Natural Persons of the Republic of Lithuania has come into effect since March 1, 2013.*

The authors of the article overview the concept and models of bankruptcy of natural persons and introduce the advantages and shortcomings of the institute of bankruptcy of natural persons. Based on scientific sources of Lithuanian and foreign authors, the article offers a theoretically systemized version of the main reasons determining the bankruptcy of natural persons. The reasons fall into two categories – economic and social. The article is mainly targeted at defining the reasons that determine the bankruptcy of natural persons in Lithuania. To achieve this goal, a quantitative survey of the questionnaires of natural persons affected by bankruptcy has been taken for the basis. In their questionnaires, the natural persons affected by bankruptcy have been asked to evaluate the reasons of bankruptcy. The results have been analyzed with the help of factor analysis and statistically processed using the SPSS statistical software package.

Key words: *bankruptcy, bankruptcy of natural persons, reasons for the bankruptcy of natural persons*

Introduction

The bankruptcy of natural persons and its consequences are a very urgent topic both in practice and in the context of scientific research. According to Posner (2007), bankruptcy is socially a very unwelcome phenomenon which implies large social losses because in the process of bankruptcy, not only wealth is being redistributed between debtors and creditors, but also expensive resources, such as the time of lawyers, bankers, and judges, are consumed; also, expectations of goods and services provision are being upset; besides, in the process of bankruptcy, often these resources and assets are being used not in the most efficient way (Posner, 2007).

Insolvency of natural persons is usually a result of the growth of financial obligations and limited personal capacity to pay debts. The Law of Bankruptcy of Natural Persons in

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Lithuania, which came into effect since March 1, 2013, is applied to persons incapable of fulfilling financial obligations towards the corresponding institutions when the amount of the obligations exceeds 25 minimum monthly wages approved by the Government.

In the scientific sphere, the level at which the topic of bankruptcy has been researched in other countries has been corroborated by the number and variety of scientific publications analyzing different aspects of bankruptcy of natural persons. Foreign scientific publications deal with the models of bankruptcy of natural persons (Porter et al., 2006), the advantages and disadvantages of the institute of bankruptcy of natural persons (Jackson, 1998; Mankart et al., 2012; Han et al., 2011), reasons causing the bankruptcy of natural persons (Arnst et al., 2009; Fan et al., 2013; Skiba et al., 2009; Niemi et al., 2009; Berthoud et al., 1992; Mangan, 2013; Himmelstein et al., 2004; Boardman et al., 2007;), the problems of the institute of bankruptcy of natural persons (Clancy et al., 2007) and with the peculiarities of bankruptcy of natural persons in Europe and the USA (Gerhardt, 2009; Kiesilainen et al., 2003; Thorne, 2007).

In Lithuania, the first scientific publications regarding the institute of bankruptcy of natural persons appeared in 2010. They analyzed the problems of bankruptcy of natural persons and their legal aspects (Gruodytė et al., 2010), the regulation of bankruptcy of natural persons in Lithuania and its problems (Bazylienė et al., 2013), and the procedure of bankruptcy of natural persons (Aitis, 2013).

In Lithuania, this subject is relatively new and particularly urgent; however, in respect of scientific research, it has been developed not sufficiently and rather randomly. The reason for such situation may be a relatively late adoption of legal acts regulating the bankruptcy of natural persons (Law No. XI-2000 on Bankruptcy of Natural Persons, May 10, 2012).

The process of analysis of scientific researches on the subject of bankruptcy of natural persons has established the fact of insufficient attention to this subject in Lithuania. While wishing to supplement in scientific literature rather randomly analyzed reasons, the attempt is being made to achieve practical and more profound results of the application of this law.

This paper is trying to formulate the scientific problem of what the reasons of bankruptcy of natural persons in Lithuania are. For this purpose, the following tasks have been formulated and raised: to define the concept of bankruptcy of natural persons and its peculiarities; to classify the reasons of bankruptcy of natural persons; to identify the reasons determining the bankruptcy of natural persons in Lithuania.

1. Concept, peculiarities, and reasons of bankruptcy of natural persons: literature review

Incapability to pay debts has always been considered a definite form of crime and violation of civil duty (Weule et al., 2007). Allusions of bankruptcy can be traced back to ancient times. Bankruptcy has been mentioned in the Old Testament (Isaiah 50:1); also, it was known in Ancient Rome where creditors had the right to treat insolvent debtors as they liked.

However, the term of bankruptcy was coined in the Medieval Times. It originated in Italy with the custom to break an insolvent and indebted banker's bench on which he used to pay money. His broken bench showed everyone that this banker was no longer capable to continue with his trade. This Italian custom explains the origin of the word "bankruptcy" which literally means "broken bench" (*banca rotta* in Italian) (Budrikienė, Paliulytė, 2012). In modern times, bankruptcy is a legal procedure beginning with the declaration of a debtor about their incapability to fulfil their financial obligations. The obligatory reason to declare bankrupt is the insolvency of a person (Aitis, 2013).

Bankruptcy of natural persons can be defined by several criteria. The Law of Bankruptcy of Natural Persons of the Republic of Lithuania defines a person as insolvent when he or she is incapable of fulfilling their debtors' obligations which are past due. The law which came into effect on March 1, 2013 states that if a person's debts exceed 25 minimum wages confirmed by the Lithuanian Government (i.e. 7,500 Euros), the person is considered to be insolvent.

Sometimes, especially scientifically, the term "bankruptcy" with its pejorative connotation is replaced by the terms "rehabilitation", "exemption from debts", or "fresh start" (Gruodytė, Kiršienė, Astromskis, 2010). It implies that "bankruptcy" is a sort of possibility to have a new start. Metaphorically, bankruptcy is a "life vest" for a natural person in a strained financial situation.

There are two models of bankruptcy of natural persons. One of these is the so-called Anglo-American "fresh start" model which gives the opportunity to go bankrupt whenever one wishes (Porter et al., 2006). The "fresh start" model originated in Great Britain and the United States of America as an automatic right to be exempt from debts promptly while observing the formal legal procedures of bankruptcy (Gruodytė, Kiršienė, 2010). The "fresh start" model does not mean that debts will be immediately relieved. In this case, usually a plan of repaying debts is employed; however, when part of the debt is paid back (usually it takes up to five years), the person is exempt from the remaining portion of the debt. This model is common in the countries which promote business development and encourage their citizens to make decisions with more responsibility while interfering only moderately into the regulation of crediting relations, credit conditions, and social security of the persons.

The second model is the so-called European “earned fresh start” model which gives the possibility to declare bankruptcy only in cases when responsible debtors get into hopeless situations at somebody else’s fault (Paukštė et al., 2012). Countries with this approach to bankruptcy pay an extra attention to assure the crediting responsibility, to oversee legal regulation, and to limit household indebtedness.

Notably, there are only a few essential differences between the continental and the Anglo-American models. The continental, or European, model attempts to consult debtors and to develop their economic awareness.

China, Turkey, Egypt, Hungary, the Czech Republic, Italy, Brazil, Mexico, and Argentina have especially conservative legal procedures of bankruptcy, while in such countries as India, Japan, the Scandinavian states, Germany, France, Spain, Israel, SAR, and Kenya these procedures are of average complexity. The most liberal legal procedures of bankruptcy exist in the USA, Great Britain, Canada, Australia, Honk Kong, Taiwan, Russia, and the Netherlands (Aitis, 2013).

To summarize the analysis of the conception and models of bankruptcy of natural persons, four principal concepts related to bankruptcy of natural persons can be defined: insolvency, debt exemption, rehabilitation, and the doctrine of “fresh start”. The analysis of scientific sources has shown that there are two main models of bankruptcy of natural persons: the Anglo-American model of “fresh start”, also known as liquidation, and the continental “earned fresh start” called also restructuring. The main difference between the models lies in the liberalism of debt relief.

1.1. Advantages and disadvantages of the institute of bankruptcy of natural persons

The Lithuanian Free Market Institute (2009), Gruodytė and others (2010), while analyzing the Law of Bankruptcy of Natural Persons of the Republic of Lithuania, give the reasons of the necessity for such a law and underline that the Law of Bankruptcy of Natural Persons protects those persons against impoverishment. Talking about the advantages of the institute of bankruptcy, everybody agrees that such a law could promote a more active business development. In the authors’ opinion, the bankruptcy of natural persons can contribute to the promotion of entrepreneurship by encouraging enterprising but lower the risk-tolerant natural persons to assume higher risks, which in its turn influences the growth of economy in the country. The research of Mankart and others (2012) has shown that the optimal regulation of bankruptcy of persons in a country can increase entrepreneurship by 4 percent.

Another advantage of the Law of Bankruptcy of Natural Persons is that natural persons, having the opportunity to rebuild their solvency, instead of hiding their income would be more motivated to get jobs and, according to the plan of the restoration of solvency, to repay debts, at least partially (Jackson, 1998).

The topmost task of the institute of bankruptcy is to protect the rights and rightful interests of insolvent debtors incapable to fulfil their obligations, as well as of the creditors (Mikuckienė, 2005).

Bazylienė and others (2013) have noted that before the adoption of the Law of Bankruptcy of Natural Persons, public notaries, auditors, lawyers, farmers, unlike legal persons, could not overcome their financial difficulties by using the right for bankruptcy. The law of bankruptcy of natural persons could help the above-mentioned professionals to reestablish themselves into business. The authors have also underlined that the plan of the restoration of solvency of natural persons, being no longer than five years, creates favorable conditions for commercial banks to rather promptly regain their funds and to plan cash flows.

The Lithuanian Free Market Institute, having analyzed the bill of Bankruptcy of Natural Persons of the Republic of Lithuania, has also expressed a negative attitude. According to the Institute, the Law of Bankruptcy of Natural Persons could negatively influence the providers of financial services, i.e. creditors, which would negatively influence natural persons themselves by encouraging them to spend inadequately. The Free Market Institute has noted that the legalization of the institute of bankruptcy of natural persons could contribute to the formation of incorrect expectations of people (The Free Market Institute, 2009). First, the bankruptcy of natural persons might encourage natural persons to make risky decisions which in the worst scenario would lead to the situation where risks would have to be covered not by irresponsible natural persons but by unrelated people – creditors and service providers. The Free Market Institute also has pointed out that creditors would have to adapt to the new risks which would lead to the growth of borrowing costs. The risks increased due to irresponsible financial obligations would have to be compensated by other borrowing persons. They would have to encounter higher costs of interest and services. Finally, according to the Institute, the Law of Bankruptcy of Natural Persons could create conditions for natural persons to abuse the system and declare bankruptcy deliberately after having hidden assets and income and in this way having evaded covering debts.

Han and others (2011) have noted that persons who have suffered bankruptcy would face increased loan costs which could reduce their capacity to borrow again.

On the one hand, the Institute of Bankruptcy of Natural Persons creates favorable conditions to abuse the system of bankruptcy and negatively influences loan risks thus creating a loophole for the growth of the cost of credit services; therefore, the bankruptcy institute could contribute to the formation of inadequate expectations of people. On the other hand, the possibility of bankruptcy of natural persons might protect people from total impoverishment, partially protect creditor rights, and encourage persons to start business and be economically active, especially temporarily unemployed people.

TABLE 1. Advantages and disadvantages of the Institute of Bankruptcy of Natural Persons

Advantages of the Institute of Bankruptcy of Natural Persons	Disadvantages of the Institute of Bankruptcy of Natural Persons
1. Protects natural persons from total impoverishment.	1. Encourages natural persons to overestimate their actual financial capabilities.
2. Encourages natural persons to more actively develop their business.	2. Contributes to exaggerated expectations.
3. The possibility to declare bankruptcy encourages natural persons, instead of hiding income, to seek employment and cover debts, at least partially, based on the plan of solvency restoration.	3. By increasing the cost of loan services decreases the availability of credits.
4. Partially protects the rights and legal interests of creditors.	4. Creates conditions to abuse the system and to deliberately declare bankruptcy after having hidden assets.
5. Approximated risk conditions for people involved in different business activities.	

Compiled by the authors based on Gruodytė et al., 2010; Free Market Institute, 2009; Bazylienė et al., 2013

1.2. Reasons determining the bankruptcy of natural persons

The International Association of Restructuring, Insolvency & Bankruptcy Professionals (INSOL International) has indicated six main categories of the reasons for bad debts as the main cases of insolvency (incapacity to fulfil the debtor's obligations): survival debts (debts related to rent, payments for utilities, education); debts due to not living up to possibilities; compensatory debts (debts caused by gambling or alcoholism); relationship debts (due to divorce or death); housing debts (when a person cannot overcome financial difficulties but does not give up the amenities); fraudulent debts (fraud against creditors) (INSOL International, 2001).

The studies of scientific literature show that there are two groups of reasons determining the bankruptcy of natural persons: *economic and social*.

Economic reasons

In their studies, Arnst C., (2009), Fan et al., (2013), Skiba et al., (2009), Niemi et al., (2009), Berthoud et al., (1992) have discovered that the bankruptcy of natural persons is determined by the following economic reasons: job loss; excess use of credit; excess arrearage; fast credits; business failure; excess consumption; low income.

Arnst (2009) has blamed job loss as the most significant reason influencing a person's insolvency. According to the author, about 32 percent of the cases of bankruptcy of natural persons occur due to a person's job loss, the second reason being an irresponsible, excess usage of credits (Arnst, 2009).

The study of Fan and others (2013) has named job loss and excess arrearage as the two main economic reasons making people insolvent.

Skiba and others (2009) have tried to clarify if fast loans influence the bankruptcy of natural persons. The standard theory of economy maintains that credits, even with high interest rates, are able to encourage consumption and relieve financial difficulties, if only not for long. However, the study has also shown that a fast loan is a repetitive process. Once a person has borrowed, the psychological urge for further borrowing is usually unstoppable. Households then are burdened by high interest rates, and with time the accumulated interest and unpaid debts entangle natural persons in the web of bankruptcy (Skiba et al., 2009).

Niemi and others (2009) have given the data of a German research which deals with economic reasons of excess arrearage. Job loss has been named as number one reason (42 percent) (Niemi et al., 2009).

In 1992, Berthoud and others pointed out the main reasons for financial hardships in Great Britain. Income loss was named as the principal reason caused by job loss. According to the authors, less influencing reasons were low income and unacceptably increased necessary expenditure (Berthoud and others, 1992).

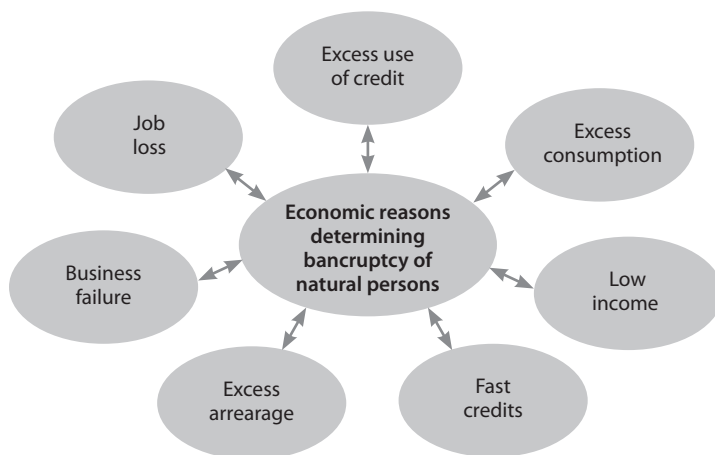


FIG. 1. **Economic reasons determining the bankruptcy of natural persons**
(compiled by the authors based on Arnst, 2009; Fan et al., 2013; Skiba et al., 2009; Niemi et al., 2009; Berthoud et al., 1992)

Social reasons

Not only economic reasons determine the bankruptcy of natural persons, but also social reasons lead to financial problems. Mangan (2013) has given the statistics of insolvency of American citizens. It shows that many Americans have to deal with huge medical bills, although they have health insurance. The article gives the statistics of bankruptcy of natural persons due to medical debts by age groups. The majority (28.9 percent) of the

cases of bankruptcy of natural persons in America fall on the age group of 35 to 44 years. Also, a high percentage (26.4) of bankruptcy cases due to medical expenses can be seen in the age group from 45 to 54 (Mangan, 2013).

The Himmelstein and others' (2004) research attempted to find out the main reasons of the fact that in 2001 1,458 American households filed the bankruptcy of natural persons. Half of the 1771 respondents of the survey named sickness as the main bankruptcy reason due to which they were unable to cover huge debts and were forced to file for bankruptcy (Himmelstein et al., 2004).

Arnst (2009) has also analyzed the correlation between medical problems and the bankruptcy of natural persons. She has discovered that medically related bankruptcy cases have constantly grown in the past decades. According to the author, American researches have shown that 98 percent of medically related bankruptcies were caused by big medical bills or medical expenses when people were forced to mortgage their homes. Due to medical expenses people have lost all their incomes.

Another cause of bankruptcy of natural persons is divorce. This can be an expensive divorce process, alimony, or the maintenance of two properties. In the case when the former partners have to live without one another's financial support, pay legal divorce bills alongside other expenses, divorce contributes to bankruptcy by 8 percent (Arnst, 2009).

Boardman and others (2007) have researched a correlation between gambling and the bankruptcy of natural persons, which, in their opinion, is direct: gambling leads to spending money. On the leisure market, gambling is a commodity equal to any other form of entertainment. However, gambling negatively affects a person, causing addiction (Boardman et al., 2007).

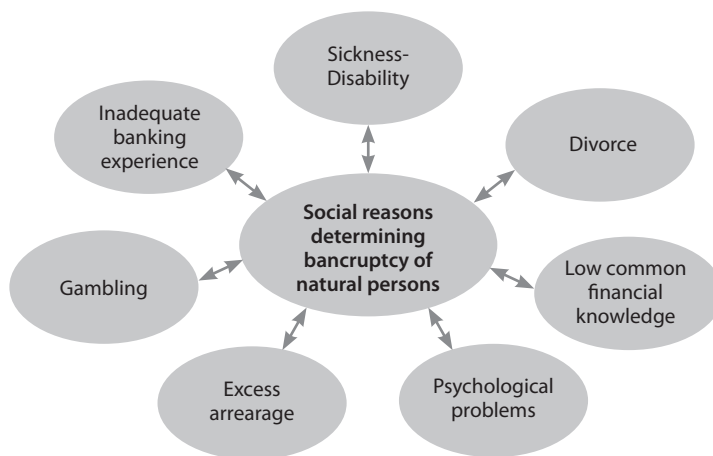


FIG. 2. Social reasons determining bankruptcy of natural persons
 (compiled by the authors based on Forbes 2010; Mangan, 2013; Himmelstein et al., 2004; Arnst, 2009; Fan et al., 2013; Niemi et al., 2009; Boardman et al., 2007)

To summarize, there are seven main economic reasons determining the insolvency of natural persons: job loss; excess use of credit; business crash; excess consumption; low income. However, bankruptcy of natural persons is determined not only by economic reasons but by social causes as well, which in their turn usually become economic. The main social reasons determining the bankruptcy of natural persons are sickness or disability, divorce, low common financial knowledge, psychological problems, inadequate banking experience, and gambling.

2. Methodology

The methodological section of the empirical research presents the target of the research, its tasks, subject and methods, the methodology and period of the research. By the character of its application, it is considered applied. According to the Law of Higher Education and Research of the Republic of Lithuania of 2009, applied research means the experimental and/or theoretical operations carried out for acquiring new knowledge and primarily aimed at attaining specific practical objectives or at solving tasks.

The objective of the research is to determine the reasons of bankruptcy of natural persons in Lithuania. The object of the research is the institute of bankruptcy of natural persons. The method of the research is a quantitative survey of natural persons undergoing the process of bankruptcy.

Primary data are necessary for any extensive and profound analysis of a problem. For this reason, regarding the character and specifics of the subject, we have performed a quantitative research which allows obtaining the newest, most original and useful information.

Nardi (2013) maintains that quantitative research is useful for its representative analysis of characteristics. The method of survey of the quantitative research is most suitable for revealing and verifying the facts analyzed in the theory in question. Primary data will be obtained from the analysis and systematization of the results of an expert survey.

For the analysis of a quantitative research, a questionnaire has been created. The questionnaire offers twenty reasons determining the bankruptcy of natural persons. It also contains demographic data with gender, age, education, and residence of the respondents by districts. The questionnaire is targeted at natural persons undergoing bankruptcy.

The quantitative research has analyzed the results of the survey of natural persons undergoing bankruptcy with the help of factor analysis. Čekanavičius and Murauskas (2002) have underlined that the factor analysis helps to divide variables into groups united by one certain indirect factor. In the process of factor analysis, a big amount of variables has to be systemized in order to concentrate information and to make it more extensive. The factor analysis consists of four stages: verification of data compliance

for factor analysis, factor rotation and interpretation, calculation of the factor value estimates.

The survey has been performed electronically and aided by bankruptcy administrators; due to the incentive, 63 respondents – natural persons undergoing bankruptcy – have completed the questionnaire. The survey has offered a list of bankruptcy reasons for natural persons to be evaluated by the respondents on the Likert scale from 1 to 5 (from absolutely irrelevant to highly influencing).

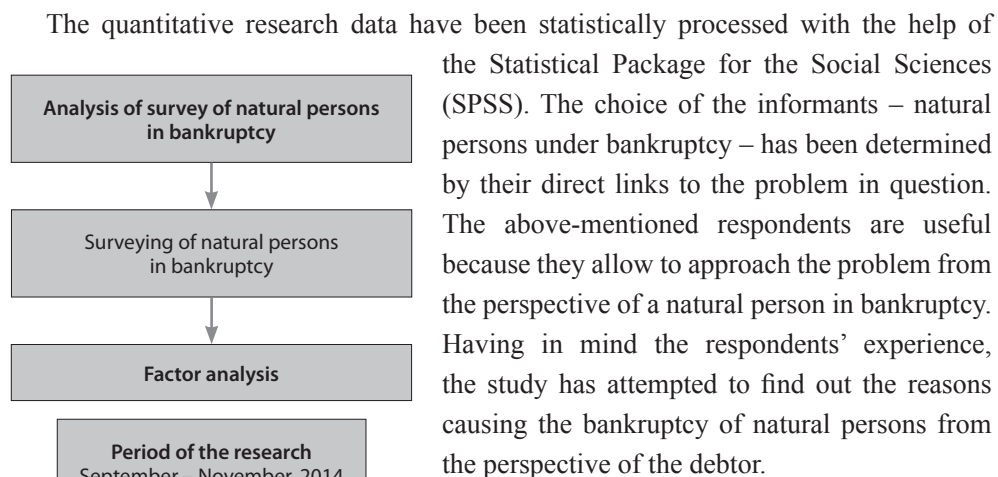


FIG. 3. Model of empirical research

Compiled by the authors.

The quantitative research data have been statistically processed with the help of the Statistical Package for the Social Sciences (SPSS). The choice of the informants – natural persons under bankruptcy – has been determined by their direct links to the problem in question. The above-mentioned respondents are useful because they allow to approach the problem from the perspective of a natural person in bankruptcy. Having in mind the respondents' experience, the study has attempted to find out the reasons causing the bankruptcy of natural persons from the perspective of the debtor.

To summarize the methodology of the research, the model of empirical research has been created (Fig. 3).

3. Quantitative research: factor analysis

The quantitative research aims at identifying the reasons determining the bankruptcy of natural persons. Factor analysis has been used as the basis for obtaining the quantitative research results. The survey has been answered by 63 respondents – natural persons undergoing bankruptcy: 57 percent of men and 43 percent of women. The age groups are as follows: the majority of respondents are between 45 and 64 years (49 percent); 32 percent are from 35 to 44; the 25–34 age group makes up 14 percent; the minority groups are from 18 to 24 and from 65 plus (3 and 2 percent, respectively). The respondents have also been broken into groups by education. The majority of the respondents (19 persons or 30 percent) have an incomplete higher education; 24 percent of the respondents (15) have an academic degree; 19 percent (12 respondents) are of post-secondary education; 14 percent (9) and 13 percent (8), respectively, have claimed unfinished post-secondary and unfinished higher education. The residential groups by districts have shown that the majority of the respondents come from the Klaipėda district (32 percent). The majority

of bankruptcy cases are being filed in this district. The Kaunas district takes the second place by the number of respondents (25 percent), as it does also by the number of natural persons filing for bankruptcy. The further results are as follows: 22 percent – Vilnius district; 10 percent – Panevėžys district; 5 percent – Šiauliai district; 3 percent – Telšiai district; and 2 percent each – Marijampolė and Alytus districts.

The factor analysis follows the analysis of the demographic distribution of the respondents, i.e. natural persons undergoing bankruptcy. Firstly, the data are checked for the adequacy for factor analysis. Secondly, the correlation matrix eigenvalues have to be defined, with the help of which the number of factors is being set. The third step is the factor rotation by the *Varimax* method and factor interpretation. The third step is the calculation of the estimate values of the factors. In the research of the factor analysis, the variables $x_1 \dots x_{20}$, gender, age, education, and district correspond to those coded in the survey. The factor analysis is performed with the help of the principal component method. The *Varimax* method of factor rotation is being used in the process. Initially, in the factor analysis, the factors have been tested for the adequacy for factor analysis, and the measure of adequacy for every variable has been established.

The Kaiser–Meyer–Olkin (*KMO*) measure equals to 0.47134113; therefore, in the analyzed case, this index is very close to the required value of $KMO > 0.5$. The following equation helps to calculate the *KMO* index (Čekanavičius et al., 2002):

$$KMO = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} a_{ij}^2}, \quad (1)$$

where r_{ij} is the correlation coefficient of X_i and X_j , and a_{ij} is the partial correlation coefficient of the variables X_i and X_j .

Table 3 shows the values of the *MSA* (Measures of Sampling Adequacy) for each variable. The measures of sampling adequacy (*MSA*) are calculated by the following formula:

$$MSA_i = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} a_{ij}^2}. \quad (2)$$

The eigenvalues for part of the variables are small; therefore, they should not be included in the factor analysis.

Table 2 shows the eigenvalues of the correlation matrix of the analyzed variables (Eigenvalue column) for determining the number of factors; by the rule Eigenvalue > 1 , the number of factors equals to 9.

TABLE 2. Eigenvalues of correlation matrix

	Eigenvalue	Proportion	Cumulative
1	4.43592029	0.1848	0.1848
2	3.28103460	0.1367	0.3215
3	2.72227110	0.1134	0.4350
4	2.05759079	0.0857	0.5207
5	1.67439474	0.0698	0.5905
6	1.41703747	0.0590	0.6495
7	1.21215347	0.0505	0.7000
8	1.06818045	0.0445	0.7445
9	1.01699786	0.0424	0.7869
10	0.81166806	0.0338	0.8207
11	0.77584708	0.0323	0.8530
12	0.66487529	0.0277	0.8807
13	0.53651118	0.0224	0.9031
14	0.46041121	0.0192	0.9223
15	0.37772688	0.0157	0.9380
16	0.29998083	0.0125	0.9505
17	0.26427038	0.0110	0.9615
18	0.24668183	0.0103	0.9718
19	0.18454319	0.0077	0.9795
20	0.15581545	0.0065	0.9860
21	0.11740915	0.0049	0.9909
22	0.09344623	0.0039	0.9948
23	0.07813495	0.0033	0.9980
24	0.04709754	0.0020	1.000

The linear combinations of the received factors which are uncorrelated, i.e. orthogonal, help make the factor interpretation easier. The most widely applied method of orthogonal rotation is the *Varimax* method. The common factors of the rotated matrix, having taken into account the variables correlating with single factors, are named as unifying properties. The rotation procedure most frequently used in applications corresponds to the orthogonal transformation obtained by maximizing (Kaiser, 1958):

$$\sum_{j=1}^k \left\{ \frac{1}{p} \sum_{i=1}^p \left(\frac{l_{ij}^{*2}}{h_i} \right) - \left[\frac{1}{p} \sum_{i=1}^p \left(\frac{l_{ij}^{*2}}{h_i} \right) \right]^2 \right\} \quad (3)$$

Table 3 serves for the factor interpretation. Every single factor (column) is related to the variables of the research the lines of which give the evaluations of the coefficients (weights) of the factor analysis model. The bigger the absolute weight value (module), the more influencing to the factor is the corresponding variable. The negative weight means a negative correlation between the variable and the factor. Factor analysis helps to interpret data, however, it does not give precise answers. Based on the table, the first four factors have the biggest influence; therefore, each of those factors is given a definition.

TABLE 3. Factors after varimax rotation

		Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Factor8	Factor9
x17	x17	0.83354	.	.	.	.	.	.	.	.
x18	x18	0.74199	.	.	.	.	.	.	.	.
x20	x20	0.72650	.	.	.	.	.	.	.	.
x15	x15	0.72007	.	.	.	.	.	.	.	.
x12	x12	.	0.86588	.	.	.	.	.	.	.
x14	x14	.	0.77802	.	.	.	.	.	.	.
x16	x16	0.53832	0.60947	.	.	.	.	.	.	.
x7	x7	.	.	0.76790	.	.	.	.	.	.
x4	x4	.	.	0.68012	.	.	.	.	.	.
x6	x6	0.44013	.	0.56095	-0.43266	.	.	.	.	.
x5	x5	.	.	.	0.84485	.	.	.	.	.
x10	x10	-0.42971	.	.	0.58678	.	.	.	.	-0.40465
Age		.	.	0.47086	.	0.69872	.	.	.	.
x11	x11	.	.	.	.	0.59219	.	.	.	.
Edu		.	.	.	.	-0.84554	.	.	.	.
x9	x9	.	.	.	.	.	0.86970	.	.	.
x1	x1	0.45452	.	.	.	.	-0.62538	.	.	.
x8	x8	.	.	.	.	.	.	0.78834	.	.
x2	x2	.	.	.	-0.40276	.	.	0.50912	.	.
x3	x3	.	.	0.49903	.	.	.	0.50794	.	.
Gender		.	.	.	.	.	.	.	0.79218	.
x13	x13	.	0.43697	.	.	.	.	.	0.47844	.
x19	x19	.	.	.	.	.	.	.	-0.52302	.
Distr		.	.	.	.	.	.	.	.	0.84589

Factor 1 is influenced by variables x17, x18, x20, x15, x16, x6, and x1, which are considerable medical expenses, poor financial knowledge, unexpectedly increased expenses guaranteeing for other people’s obligations, inadequate education, business crash, and sickness. Since in factor 1 the first variables, i.e. medical expenses, poor financial knowledge, unexpectedly increased expenses, guaranteeing for other people’s obligations, inadequate education, business crash, and sickness have the biggest weight, we can maintain that these are the factors of poor education and, due to various reasons, increased expenses.

Factor 2 is influenced by variables x12, x14, x16, x13, which are alcohol addiction, gambling, poor education, fast credits. These variables could be generalized by the factor called addictions and poor education.

Factor 3 is influenced by variables x7, x4, x6, age, variable x3 which are job loss, irresponsible spending, business crash, age, and irresponsible borrowing. The definition of this factor could be living not up to possibilities, as well as job and business loss.

Factor 4 is influenced by variables x6, x5, x10, x2 which are business crash, divorce, death or sickness of spouse. Since this factor is dominated by personal problems, we could name it the personal crisis factor.

Factor 5 is dominated by the variable of age and x11, which are age and unjustifiable investments. This factor could be called the factor of unjustifiable investments due to age.

Factor 6 is influenced by variable x9 which is irresponsible lending to other persons.

Factor 7 is influenced by variables x8, x2, x3 which mean psychological problems, sickness, and irresponsible borrowing. Since psychological problems and sickness have the biggest weight in the factor, we call it the health disorder factor.

Factor 8 is influenced by variables if gender and x13, i.e. fast credits. We could define it as the male dependability on the fast credits factor.

Factor 9 is dominated by district; therefore, we call it the district factor.

In the process of factor analysis, factor influence has also been computed (Table 4).

TABLE 4. Factor influence

Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Factor8	Factor9
16.49%	11.04%	8.49%	8.19%	8.06%	7.26%	7.14%	6.41%	5.59%

According to Table 4, the factor influence is shown by the part of dispersion of all the variables explained by the factor. In the case of Factor 1 it is 3, 95836/24 (24 is the number of variables and the entire dispersion).

The entire data information is 100 percent, that is: Factor 1 input is $(3.95836/24) * 100\% = 16.49\%$; Factor 2 input is $(2.65024/24) * 100\% = 11.04\%$; Factor 3 input is $(2.03892/24) * 100\% = 8.49\%$; Factor 4 input is $(1.96539/24) * 100\% = 8.19\%$; Factor 5 input is $(1.93455/24) * 100\% = 8.06\%$; Factor 6 input is $(1.74247) * 100\% = 7.26\%$; Factor 7 input is $(1.71362/24) * 100\% = 7.14\%$; Factor 8 input is $(1.53928/24) * 100\% = 6.41\%$; and Factor 9 input is $(1.34275/24) * 100\% = 5.59\%$. In this way, the analysis of factor influence shows that most influencing is Factor 1, i.e. the factor of poor education and due to various reasons increased expenses.

4. Results

The results of the empirical study help to formulate the reasons of bankruptcy of natural persons in Lithuania. Factor analysis has been performed in the process of quantitative research. The evaluation of demographic distribution of the respondents, i.e. natural persons undergoing bankruptcy, shows that the majority of respondents participating in the survey are men (57 percent), the largest age group is between 45 and 64 (49 percent), most respondents have an unfinished higher education (24 percent), and the majority of the respondents are from the Klaipėda district (32 percent).

The factor analysis has singled out nine major factors (Table 5) determining the bankruptcy of natural persons in Lithuania. According to the experts, factor one is named the poor education and increased expenses due to the various reasons factor. Factor two

is the addiction and inadequate education factor. Factor three is the factor of not living up to possibilities, and job and business loss. Factor four is the personal crisis factor. Factor five is the failed investment due to the age factor. Factor six is the factor of irresponsible lending to others factor. Factor seven is the health disorder. Factor eight is the male dependency on the fast credit factor. Factor nine is the district factor.

TABLE 5. Results of the survey of natural persons undergoing bankruptcy

Factor one	Poor education and increased expenses due to various reasons factor
Factor two	Addiction and inadequate education factor
Factor three	Factor of not living up to possibilities and job and business loss
Factor four	Personal crisis factor
Factor five	Failed investment due to age factor
Factor six	Irresponsible lending to others factor
Factor seven	Health disorder factor
Factor eight	Male dependency on fast credit factor
Factor nine	District factor

Ccompiled by the authors based on the results of the quantative research, i.e. factor analysis.

5. Conclusions

Four main concepts related to the bankruptcy of a natural person could be singled out: insolvency, debt exemption, rehabilitation, and the doctrine of fresh start. Commonly, bankruptcy is defined as a legal procedure starting with the debtors declaring that they are unable to carry out their debtor obligations.

Two models of bankruptcy of natural persons can be singled out: the Anglo-American fresh start model, giving the possibility to go bankrupt for everyone who wishes to do so, and the Continental-European earned fresh start model giving a possibility only to those honest natural persons who have got into a strained financial situation for somebody else's fault.

The analysis of scientific sources has revealed the following advantages of the institute of bankruptcy of natural persons: protection of natural persons from total impoverishment; partial protection of the rights and legal interests of creditors; business development advancement; encouragement not to hide the income; approximated business conditions. Meanwhile, the disadvantages of the institute of bankruptcy of natural persons are as follows: encouragement to live not up to possibilities; increase of credit service cost; inadequate formation of expectations; favorable conditions to abuse the system of bankruptcy; decrease in credit availability.

The main economic reasons determining the insolvency of natural persons in Lithuania are as follows: job loss; business crash; excess crediting; too many debts; fast credits; excess consumption; inadequately low income.

The main social reasons are: sickness or disability; divorce; poor financial understanding; psychological problems; insufficient banking experience; gambling. More often than not these reasons transform into economic reasons.

The factor analysis has singled out nine main reasons of bankruptcy of natural persons in Lithuania. These are: factor one – poor education and increased expenses due to various reasons; factor two – addiction and inadequate education; factor three – not living up to possibilities and the job and business loss; factor four – personal crisis; factor five – failed investment due to age; factor six – irresponsible lending to others; factor seven – health disorder; factor eight – male dependency on fast credit; factor nine – the district factor.

The authors of the article recommend the Bank of Lithuania to make the provisions of Responsible Borrowing stricter, especially the conditions of small crediting, which would prevent the risk of increasing costs of credit services and improve the situation of irresponsible borrowing in Lithuania, which is getting worse.

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